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Cognitive-Behavioral Conjoint Therapy for PTSD Improves Various PTSD Symptoms and Trauma-related Cognitions: Results from a Randomized Controlled Trial

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Abstract

Numerous studies document an association between posttraumatic stress disorder (PTSD) and impairments in intimate relationship functioning, and there is evidence that PTSD symptoms and associated impairments are improved by cognitive-behavioral conjoint therapy for PTSD (CBCT for PTSD; Monson & Fredman, 2012). The present study investigated changes across treatment in clinician-rated PTSD symptom clusters and patient-rated trauma-related cognitions in a randomized controlled trial comparing CBCT for PTSD with waitlist in a sample of 40 individuals with PTSD and their partners ($N = 40$) (REDACTED). Compared with waitlist, patients who received CBCT for PTSD immediately demonstrated greater improvements in all PTSD symptom clusters, trauma-related beliefs, and guilt cognitions (Hedge's g s $-.33$ to -1.51). Results suggest that CBCT for PTSD improves all PTSD symptom clusters and trauma-related cognitions among individuals with PTSD and further supports the value of utilizing a couple-based approach to the treatment of PTSD.

Keywords

PTSD; couples; couple therapy; CBCT for PTSD; cognitions; secondary outcomes

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Posttraumatic stress disorder (PTSD) is associated with a range of disturbances in emotion, behaviors, and cognitions (Monson, Fredman, & Dekel, 2010), as well as intimate relationship functioning (Taft, Watkins, Stafford, Street, & Monson 2011). In addition, recent studies have demonstrated that PTSD symptoms are associated with general psychological distress in intimate partners of individuals living with this condition (Lambert, Engh, Hasbun, & Holzer, 2012; Renshaw et al., 2011; Renshaw & Cambell, 2011). Cognitive-behavioral conjoint therapy for PTSD (CBCT for PTSD; Monson & Fredman, 2012) is a conjoint intervention designed to both reduce PTSD and comorbid symptoms and enhance intimate relationship functioning. This is accomplished through the use of 1) behavioral interventions to improve conflict management, enhance communication skills, and reduce effortful and experiential avoidance of trauma-related cues and 2) dyadic cognitive interventions to identify and challenge trauma-related maladaptive beliefs (e.g., safety, trust, control, intimacy) hypothesized to contribute to the development and maintenance of PTSD and relationship distress.

CBCT for PTSD has demonstrated efficacy in reducing PTSD and comorbid symptoms (e.g., depression, anxiety, anger) and improving relationship functioning in uncontrolled trials (e.g., Monson, Schnurr, Stevens, & Guthrie, 2004; Monson et al., 2011; Schumm, Fredman, Monson, & Chard, 2013). In a recent randomized controlled trial (RCT; Monson et al., 2012), participants receiving CBCT for PTSD immediately, compared with participants received delayed treatment, evidenced significant reductions in overall PTSD symptoms, and 71% had lost their PTSD diagnosis by the three-month follow-up (for more details, see Monson et al., 2012). In addition, partners who exhibited clinical levels of distress at pretreatment showed reliable and clinically significant improvements in psychological functioning at posttreatment (Shnaider, Pukay-Martin, Fredman, Macdonald, & Monson, 2014). The current study extends these findings by examining changes in specific PTSD symptom clusters and trauma-related beliefs as a function of CBCT for PTSD.

Studies of PTSD and intimate relationship functioning have found that specific PTSD symptom clusters are differentially related to relationship adjustment, such that emotional numbing symptoms are strongly associated with relationship satisfaction and intimacy (Riggs, Byrne, Weathers, & Litz, 1998), while hyperarousal symptoms are associated with intimate partner aggression (Savarese, Suvak, King, & King, 2001). Individual treatments for PTSD consistently demonstrate efficacy in reducing reexperiencing, effortful avoidance, and hyperarousal symptoms of PTSD (Nishith, Resick, & Griffin, 2002; Foa, Rothbaum, Riggs, & Murdock, 1991); however, they have not been as robust in treating emotional numbing (e.g., Monson et al., 2006; Taylor et al., 2003). In contrast, emerging evidence suggests that conjoint approaches to PTSD have the potential to improve the full range of PTSD symptoms. In one small study of a couple therapy for PTSD with Vietnam veterans, large effect sizes were noted in all symptom clusters, including emotional numbing (Sautter, Glynn, Thompson, Franklin, Han, 2009). This study provides preliminary, promising evidence that incorporating an intimate other into PTSD therapy helps to improve emotional numbing symptoms beyond what is typically seen in individual treatments. Specifically, identifying and sharing emotions in the context of conjoint therapy may serve as an

emotion-focused exposure for the partner with PTSD, allowing new learning regarding the “safety” of emotional experiences.

In addition to evaluating improvements in PTSD symptom and typical comorbidities, it is also important to investigate the extent to which PTSD treatment improves trauma-related cognitions. Following trauma exposure, individuals who develop PTSD typically endorse a range of distorted beliefs in the areas of safety, trust, control, intimacy (e.g., Foa et al., 1999; McCann & Pearlman, 1990; Owens, Pike, & Chard, 2001) and guilt (Kubany, et al., 1996; Nishith, Nixon & Resick, 2005), and these beliefs are thought to contribute to the onset and maintenance of the disorder (Foa et al., 1999; Ehlers & Clark, 2000). As such, the beliefs are the target of several evidence-based individual and group exposure (e.g., Foa & Rauch, 2004) and cognitive (Resick, Monson, & Chard, 2014; Ehlers & Clark, 2000; Diehle, Schmitt, Daams, Boer, & Lindauer, 2014) therapies for PTSD, as well as CBCT for PTSD (Monson & Fredman, 2012). To date, no studies have investigated the efficacy of conjoint interventions that include a focus on cognitions involved in the genesis and maintenance of PTSD to improve PTSD-specific beliefs. Moreover, little research has been conducted on the role of cognitive interventions in couple therapy (Epstien & Baucom, 2002), a purported key element in both generic and disorder-specific couple therapy for PTSD.

The purpose of the current study was to examine changes in specific symptom clusters and trauma-related beliefs as a function of CBCT for PTSD in a waitlist-controlled RCT of 40 couples in which one partner was diagnosed with PTSD. It was hypothesized that participants receiving CBCT for PTSD immediately would demonstrate greater improvements on all symptom clusters and measures of trauma-related beliefs relative to participants waiting 3 months for treatment.

Method

Participants & Procedures

Participants included 40 individuals with PTSD who were involved in an RCT of CBCT for PTSD with their intimate partner (see REDACTED, for more details). Couples were recruited from a Department of Veterans Affairs (VA) Medical Center in Boston, MA, and a psychology department-based clinical research center in Toronto, Ontario, Canada. Approval for this protocol was obtained from the institutional review boards at each study site. The mean age for participants with PTSD was 37.10 years ($SD = 11.26$). Thirty participants with PTSD (75%) were women, 11 (28%) identified as non-White, and 24 (60%) were employed. On average, couples had been romantically involved for 6.85 years ($SD = 7.50$), 3 (8%) were same sex couples, 27 (68%) couples were cohabitating, and 13 (33%) were married. Patients' index events were classified as combat-related (5.0%), childhood sexual assault/abuse (27.5%), adult sexual trauma (20.0%), non-combat physical assault (15.0%) or other (e.g., car accident, sudden death of a loved one; 32.5%). The mean length of time since the index trauma was 15.17 ($SD = 13.52$) years (range = 0.50–44.00 years). There were no significant differences between conditions on demographic variables.

Forty couples were randomized to CBCT for PTSD immediately (CBCT for PTSD) or to a 3-month waitlist condition (WL). Additional assessments were completed at mid-treatment

(after session 7 for CBCT for PTSD and after 4 weeks of waiting for WL) and post-treatment (subsequent to session 15 for CBCT for PTSD and after 12 weeks of waiting for WL).

Measures

PTSD symptoms—The Clinician-Administered PTSD Scale (CAPS; Blake et al., 1995) was used to determine severity of clinician-rated symptoms and PTSD diagnostic status according to the *Diagnostic Statistical Manual, Fourth Edition, Text-Revised* (DMS-IV-TR; American Psychiatric Association, 2000). Independent, condition-blinded clinicians conducted the CAPS assessments. Reliability for CAPS administration as assessed by an independent clinical psychologist was excellent for approximately 10% of the interviews (intraclass correlation of severity was .948 to .997 across four symptom clusters).

Trauma-related cognitions—Two measure of trauma-related cognitions were included in this study. First, a 15-item version of the Personal Beliefs and Reactions Scale-Modified (PBRS-M; Mechanic & Resick, 1993) was used to assess disruptions in beliefs concerning self-blame, safety, trust, control, esteem, and intimacy. Each item is rated on a 6-point scale and summed to provide a total score. Higher scores on the PBRS reflect less distorted cognitions. Coefficient alpha for the total score in the study was .87. Second, the Trauma-Related Guilt Inventory (TRGI; Kubany et al., 1996) is a 32-item questionnaire that assesses several components of trauma-related guilt. Included in this study are the Global Guilt and Guilt Cognitions scales (comprised of 3 subscales: hindsight bias, wrong doing, lack of justification). Items are scored on a 5-point scale, with higher scores indicating greater guilt. Cronbach's alphas were all in the acceptable ranged (.83 to .95) for the subscales, except for wrong-doing, which was alpha = .68.

Intervention

CBCT for PTSD is a 15-session, trauma-focused conjoint therapy designed to simultaneously reduce PTSD symptoms while enhancing relationship functioning (Monson & Fredman, 2012). It consists of fifteen 75-minute sessions that are organized into three treatment phases: (1) treatment rationale and psychoeducation about PTSD and relationships and strategies to promote both physical and emotional safety in the relationship (e.g., conflict management skills); (2) behavioral interventions to enhance relationship functioning, such as communication skills training, and to address PTSD-related avoidance by engaging in couple-level approach behaviors; and (3) a dyadic cognitive intervention designed to contextualize trauma memories and address trauma-relevant cognitions held by either partner that contribute to both PTSD and relationship difficulties.

Analytic Plan

Study hypotheses were investigated using hierarchical linear modeling (HLM; Raudenbush & Bryk, 2002) following intention-to-treat principles. Hierarchical linear models were estimated utilizing a 2-level structure, with time nested within individual. Time, treatment condition (CBCT for PTSD vs. WL), and the time by treatment condition interaction were estimated as fixed effects, and random effects were estimated for the intercept and time to account for individual differences in psychological functioning at baseline and in changes

across treatment. Because the time by treatment interaction provides a test of difference between CBCT for PTSD and WL conditions over time, results focus on evaluating this interaction. Separate models were estimated predicting each outcome of interest. Between-group effect sizes (Hedges' g) were calculated from the least square means at post-treatment (12-weeks waiting) estimated from the multi-level models for each condition, dividing by the associated pooled standard deviation, and adjusting for small sample size. Hedge's g effect sizes are interpreted similarly to Cohen's d : 0.80 or greater is a large effect size, 0.50-0.79 is a medium effect size, and 0.20-0.49 is a small effect size (Cohen, 1988). All analyses were conducted in SAS Version 9.3.

Results

The least square means and standard errors estimated from multi-level models predicting the outcome measures are displayed in Table 1, and the time by treatment condition interaction results from the HLM analyses are presented in Table 2.¹ Results indicated that the participants in the CBCT for PTSD treatment experienced greater improvement than WL on all symptom cluster measures of the CAPS and a number of cognitive measures: all subscales of the TRGI (except Hindsight Bias/Responsibility), and the PBRs (see Table 2). Between-group effect sizes suggested moderate to large effects for CBCT for PTSD over WL for the majority of the outcomes.

Discussion

The current study extended prior findings from a randomized controlled trial of CBCT for PTSD and research on the conjoint treatment of PTSD symptoms (Sautter et al., 2009; Monson et al., 2012). As expected, compared with WL, CBCT for PTSD was associated with greater improvements in all PTSD symptom clusters and participants' trauma-related beliefs. The success of a couple-based treatment for PTSD in improving these cognitions is encouraging and provides support for the use of cognitive interventions in the dyadic treatment of PTSD.

As with individual treatments for PTSD (Nishith et al., 2002; Foa et al., 1991), CBCT for PTSD demonstrated efficacy in reducing reexperiencing, effortful avoidance, and hyperarousal symptoms of PTSD, with results similar to those found than in individual trials (e.g., Foa et al., 1991; Monson et al., 2006). In addition, CBCT for PTSD was related to significant decreases in emotional numbing symptoms, with a large effect size difference relative to WL. These results expand upon findings from a small, uncontrolled study of a conjoint therapy for PTSD (Sautter et al., 2009). This finding is particularly important because emotional numbing symptoms often do not decline as much as other symptoms in individual treatments (e.g., Nishith et al., 2002; Taylor et al., 2003), which is concerning because emotional numbing has been associated with a wide range of impairments in interpersonal functioning (e.g., Pietrzak, Goldstein, Malley, Rivers, & Southwick, 2010). Results from the current study suggests that the interpersonal aspect of conjoint therapy may be particularly important for emotional numbing improvement. Future studies should

¹Zero-order correlations among study variables are available in the online additional supplemental materials (S1).

evaluate whether the improvements in emotional numbering seen in conjoint therapy for PTSD can lead to improvements in other areas of interpersonal functioning.

Dyadic cognitive therapy, in conjunction with behavioral interventions, has been shown to enhance relationship satisfaction and improve cognitions about relationships (e.g., Baucom & Lester, 1986; Baucom, Sayers, & Sher, 1990). No previous studies have investigated whether cognitive therapy for PTSD delivered in a conjoint format is associated with changes in trauma-related cognitions. Beliefs often negatively affected by trauma (e.g., trust, intimacy) significantly improved in CBCT for PTSD relative to WL. This may be due to the fact that the third phase of CBCT for PTSD explicitly aims to help patients and partners develop more balanced beliefs using cognitive challenging strategies by encouraging couples to join together to consider more balanced alternative thoughts. In addition to the cognitive flexibility these exercises may help potentiate, engaging in the process dyadically can provide real-time “evidence” for new, more balanced beliefs (e.g., “my partner *can* be trusted to not judge me for what happened”).

This study also demonstrated that CBCT for PTSD is associated with improvements in trauma-related guilt cognitions, with effect sizes similar to, or greater than, changes in individual trauma-focused interventions (Resick, et al., 2002; Monson et al., 2006). One session of CBCT for PTSD is devoted to beliefs about trauma-related blame and responsibility (e.g., “I was to blame for the rape”), potentially resulting in improvements in beliefs about wrongdoing and lack of justification. Although improvements in hindsight bias failed to meet traditional levels of statistical significance, there was a small-to-medium effect size change suggesting greater improvements in CBCT for PTSD than WL, and this effect size was similar to that found in an individual cognitive-behavioral therapy for PTSD (Resick et al., 2002). The small sample size in the current study may have precluded the ability to detect significant differences between the two conditions across the range of outcomes.

Despite this study's many strength, some limitations and future directions should be noted. First, the small sample size may have affected the ability to detect significant differences across conditions. Future research studies should utilize more advanced statistical methods, such as mediational analyses to investigate whether changes in trauma-related cognitions mediate changes in specific PTSD symptom clusters. Second, data was not collected on partner's trauma-related beliefs, such as the partners' perceptions of the traumatic experience associated with their loved one's PTSD. In a study of National Guard service members and their wives, Renshaw and Campbell (2011) found that partners who *perceived* that the service members experienced potentially traumatic events had lower relationship distress than partners who perceived the service member did not experience these events. These findings demonstrate the importance of partners' trauma-related beliefs, and future research should be conducted to further understand these associations.

There is increasing recognition that intimate relationships play an important role in recovery from PTSD, and previous results have found that CBCT for PTSD improves overall clinician-rated PTSD symptoms as well as patient-rated relationship satisfaction (Monson et al., 2012). The results of the current study suggest the benefits of CBCT for PTSD extends

to all symptom clusters of PTSD, including emotional numbing and trauma-related cognitions, and these improvements are similar to those found in individual therapy. Findings of the current study point to the value of utilizing a couple-based intervention for PTSD, not only for its benefit in treating the specific symptom clusters, but also because of its success in addressing trauma-related cognitive processes, which are hypothesized to maintain symptoms of PTSD.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1
Least Square Means and Standard Errors as a Function of Condition and Time Calculated from Hierarchical Linear Models

Variable	CBCT for PTSD			Waitlist		
	T1	T2	T3	T1	T2	T3
CAPS						
Reexperiencing	17.14 (1.07)	12.51 (1.22)	7.89 (1.81)	20.16 (1.46)	18.60 (1.74)	17.04 (2.41)
Effortful Avoidance	10.86 (0.70)	8.16 (0.78)	5.45 (1.28)	11.62 (0.63)	10.79 (0.73)	9.97 (1.01)
Emotional Numbing	18.90 (1.42)	13.78 (1.45)	8.65 (2.16)	16.97 (0.97)	15.27 (1.29)	13.57 (1.92)
Hyperarousal	22.04 (1.19)	16.63 (1.31)	16.63 (1.31)	24.29 (1.31)	22.29 (1.53)	20.29 (1.94)
TRGI						
Global Guilt	2.05 (0.29)	1.57 (0.22)	1.09 (0.25)	1.99 (0.27)	1.98 (0.26)	1.97 (0.29)
Guilt Cognitions	1.62 (0.22)	1.30 (0.20)	0.98 (0.24)	1.49 (0.21)	1.54 (0.20)	1.59 (0.20)
Hindsight Bias/Responsibility	1.63 (0.28)	1.34 (0.24)	1.05 (0.29)	1.39 (0.25)	1.42 (0.27)	1.45 (0.30)
Wrong doing	1.40 (0.23)	1.14 (0.20)	0.88 (0.23)	1.32 (0.20)	1.51 (0.21)	1.70 (0.27)
Lack of Justification	2.23 (0.28)	1.73 (0.22)	1.22 (0.25)	2.60 (0.29)	2.50 (0.28)	2.399 (0.30)
PBRS-M Total	41.35 (4.18)	32.79 (3.44)	24.23 (4.21)	39.88 (3.82)	38.03 (3.87)	36.18 (4.27)

Note. CAPS = Clinician Administered PTSD Scale; TRGI = Trauma Related Guilt Inventory; PBRS-M = Modified Posttraumatic Beliefs and Reactions Scale. T1 = baseline; T2 = mid-treatment (after session 7 or 4 weeks of waiting); T3 = post-treatment (or after 8 weeks of waiting). An intention-to-treat sample ($N=40$) was used for these analyses. Full model results available from the first author.

Table 2
Hierarchical Linear Models Predicting Outcomes as a Function of Treatment Condition
by Time Interaction

Variable	Coefficient	SE	<i>p</i>	<i>g</i>
CAPS				
Reexperiencing	-3.07	1.29	0.02	-1.51
Effortful Avoidance	-1.88	0.80	0.02	-1.50
Emotional Numbing	-3.42	1.38	0.02	-0.87
Hyperarousal	-3.41	1.20	0.01	-1.33
TRGI				
Global Guilt	-0.47	0.18	0.01	-0.65
Guilt Cognitions	-0.37	0.11	0.00	-0.63
Hindsight Bias/Responsibility	-0.32	0.18	0.09	-0.33
Wrong doing	-0.45	0.15	0.01	-0.80
Lack of Justification	-0.40	0.17	0.02	-0.90
PBRS-M Total	-6.71	2.66	0.02	-0.68

Note. TRGI = Trauma Related Guilt Inventory (Kubany et al., 1996); PBRS-M = Modified Posttraumatic Beliefs and Reactions Scale (Mechanic & Resick, 1993). An intention-to-treat sample ($N=40$) was used for these analyses. A negative Hedges' g represents an effect size in the expected direction. Full model results available from the first author.