

BRIEF REPORT

The Role of Posttraumatic Growth in a Randomized Controlled Trial of Cognitive–Behavioral Conjoint Therapy for PTSD

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Posttraumatic growth (PTG) is defined as a positive psychological change that can emerge following a traumatic life event. Although documented in noninterventional studies of traumatized individuals, there are scant data on the potential for therapy to induce or improve PTG. Thus, the primary goal of this study was to examine changes in PTG in a controlled trial of cognitive–behavioral conjoint therapy for posttraumatic stress disorder versus waitlist (CBCT for PTSD; Monson & Fredman, 2012). We also examined whether pretreatment relationship satisfaction and PTSD symptomatology moderated change in PTG. There were 40 couples (75% with a female partner with PTSD) who were randomized to either immediate CBCT for PTSD or a 3-month waitlist (WL). Compared to WL, individuals who received treatment immediately demonstrated a significant increase in PTG. There was a moderate effect size between-group difference (Hedge's $g = 0.45$). There was a nonsignificant relationship with a moderate effect size (Hedge's $g = 0.65$) for the positive effect of pretreatment relationship satisfaction on the trajectory of PTG, but no effect of pretreatment PTSD symptoms. Results suggested that CBCT for PTSD facilitated PTG, even with a limited focus on PTG in this conjoint intervention. Future research should target PTG as a treatment goal and further examine the role of close others in facilitating development of PTG.

Posttraumatic growth (PTG) refers to positive psychological change that can emerge following exposure to trauma, and which may be the result of having survived the trauma and seeing new possibilities in life (e.g., thinking about how best to live; Calhoun & Tedeschi, 2014). Although PTG is thought to reflect a cognitive adaptation process among those who experience posttraumatic stress disorder (PTSD) in response to a trauma (Dekel, Mandl, & Solomon, 2011), little is known about the potential for PTSD treatments to enhance PTG. Thus, the purpose of this study was to examine changes in PTG in a controlled trial of cognitive–behavioral conjoint therapy (CBCT)

for PTSD (Monson & Fredman, 2012) compared to waitlist. We also sought to examine whether relationship satisfaction and PTSD symptomatology at baseline moderated PTG change.

PTG is an important and desirable occurrence, as it is positively associated with hope, interpersonal relationship functioning, meaning-making of the traumatic event, and the ability to cope with future stressors; it is negatively associated with avoidance (Prati & Pietrantonio, 2009; Tedeschi & Calhoun, 2004). Research directly evaluating PTG as an outcome of PTSD treatment is scant; findings from one treatment trial of individual CBT for PTSD found increases in some areas of PTG (e.g., new possibilities and personal strength), but not others (relations to others, spiritual change, and appreciation of life; Zoellner, Rabe, Karl, & Maercker, 2011).

Interpersonal factors have a strong association with PTG and may be key elements in the facilitation of its development (e.g., Prati & Pietrantonio, 2009). Responses of close others to trauma disclosure, positive role modeling of PTG, and shared perceptions, interpretations, and beliefs with close others about the trauma are positively associated with PTG (e.g., Calhoun & Tedeschi, 2014). Given the importance of social factors in PTG,

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dyadic PTSD interventions may be particularly well suited to enhancing the development of PTG in individuals with PTSD. CBCT for PTSD (Monson & Fredman, 2012) is a trauma-focused conjoint therapy that was developed to both treat PTSD symptoms and enhance relationship functioning. CBCT for PTSD protocol has one session specifically devoted to PTG. Thus, the goals of the current study were to examine the effect of CBCT for PTSD on PTG and to examine the association of PTG with pretreatment relationship satisfaction in order to determine whether satisfaction influences growth. Data from a waitlist (WL) controlled trial was used. An additional exploratory goal was to examine the association of PTG with pretreatment PTSD symptomatology. We hypothesized that (a) PTG would increase more with treatment than without (WL); (b) pretreatment relationship satisfaction would moderate the trajectory of PTG over the course of treatment, such that higher pretreatment relationship satisfaction would be positively associated with PTG outcomes; (c) PTG outcomes would not be moderated by pretreatment PTSD symptomatology because the literature suggests that PTSD symptoms and PTG are not necessarily associated (Calhoun & Tedeschi, 2014).

Method

Participants and Procedure

The 40 intimate couples who were randomized to immediate CBCT for PTSD or a 3-month WL were drawn from a pool of 107 potential couples who were self- or clinician-referred. The most common reason for not participating was declining to give consent ($n = 31$ couples; see Monson et al., 2012 for further details and a full description of demographic characteristics). Participants with PTSD had a mean age of 37.10 years ($SD = 11.26$), 30 (75.0%) were female, 29 (72.5%) identified as Non-Hispanic White, 3 (7.5%) as Black, 2 (5.0%) as Hispanic, and 6 (15.0%) as another ethnicity or race. Thirteen (32.5%) were married, and the average length of relationship was 6.85 years ($SD = 7.50$). The majority were employed ($n = 24$, 60%), the mean years of education was 15.80 ($SD = 2.70$, median = 16.00, range = 7 to 21), and the median household income was between \$35,000 and \$49,999 per year. Participants were recruited from a U.S. Veteran's Affairs outpatient clinic in Boston, Massachusetts, and a university-based research center in Toronto, Ontario, Canada. There was no site difference on any study variable. To be eligible, both partners had to be between 18 and 75 years of age. If a partner was on psychotropic medication, he or she had to have been on a stable regimen for at least 2 months. One partner in each couple had to meet diagnostic criteria for current PTSD according to the Clinician-Administered PTSD Scale (CAPS; Blake et al., 1995). Traumatic events were heterogeneous, including interpersonal (e.g., sexual assault), combat, and others. Exclusion criteria were imminent suicidal, homicidal, or self-injurious behavior within the previous 6 months; meeting diagnostic criteria for current substance dependence;

having an uncontrolled psychotic or bipolar disorder as assessed by the Structured Clinical Interview DSM-IV-Patient Version (SCID-P; First, Spitzer, Gibbon, & Williams, 2002); both partners meeting criteria for current PTSD; or endorsement of severe intimate partner sexual or physical aggression in the past 12 months.

Ethics approval was received from Ryerson University, the VA Boston Healthcare System, and the Boston University School of Medicine. Participants were recruited via posters and postings online and were screened by telephone. Interested participants provided written informed consent in person, and their eligibility was subsequently assessed. Master's and doctoral-level clinicians who were blind to treatment assignment conducted the assessments, which took on average 2 to 3 hours to complete. Assessments were conducted at baseline (T1), midtreatment (T2; after session 7 of treatment), and post-treatment (T3; within one month of ending treatment) for the treatment immediately group. For WL participants assessments were conducted at baseline (T1), 4 weeks waiting (T2), and 12 weeks waiting (T3; which then served as their pretreatment assessment). WL participants then went through treatment, and had an additional assessment at the end of 15 sessions of treatment (WL posttreatment assessment). Participants received \$25 compensation following each assessment.

CBCT for PTSD is a 3-phase, 15-session, manualized, trauma-focused conjoint therapy designed to simultaneously reduce PTSD symptoms and enhance intimate relationship functioning (Monson & Fredman, 2012). In the first phase, the treatment protocol and rationale are presented, and psychoeducation about PTSD symptoms and relationships is provided. The second phase is focused on improving communication, decreasing emotional numbing and avoidance associated with PTSD, and increasing relationship satisfaction. The third phase is focused on making meaning of the traumatic event by re-evaluating it to arrive at an adaptive interpretation of the event. In addition, the treatment involves the completion of assignments between sessions to facilitate skill acquisition. Session 14 of the protocol specifically addresses PTG and barriers to PTG, including content such as, "If I experience positive outcomes after the trauma, then what I experienced was not actually traumatic." Growth and change following the trauma, both individually and as a couple, are discussed, and both partners' beliefs are examined using a dyadic cognitive process. Sessions are conducted twice per week in Phases 1 and 2 and weekly thereafter. Participants who were unable to attend sessions twice per week in Phases 1 and 2 were seen weekly throughout treatment.

Measures

Current PTSD diagnostic status and symptom severity were determined using the CAPS (Blake et al., 1995). Ten percent of the CAPS conducted at each site in this study were randomly sampled and evaluated by an independent reliability monitor, yielding an intraclass correlation of .99 for total

Table 1
Means and Standard Deviations by Time Separately for Treatment Condition

Variable	Baseline			Mid-Tx/4wkwait			Post-Tx/12wkwait			Post-Tx WL		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
Immediate CBCT												
PTGI	46.88	25.14	2–104	51.33	24.25	6–100	60.80	27.15	7–105	–	–	–
CAPS	69.45	12.74	45–92	50.72	21.44	4–88	32.31	24.81	0–80	–	–	–
DAS	101.29	22.25	25–124	102.71	17.74	64–130	117.15	10.21	98–131	–	–	–
Waitlist												
PTGI	43.47	24.13	0–82	44.37	24.24	0–83	46.37	27.55	0–99	53.00	25.52	10–91
CAPS	74.80	14.96	54–114	63.72	23.58	19–111	63.11	26.02	27–116	35.00	23.46	3–68
DAS	98.12	20.78	50–127	98.34	21.66	43–126	101.77	20.41	43–132	106.59	24.80	52–138

Note. Sample sizes vary due to participants not completing all measures at each time point. For Immediate CBCT: PTGI (Baseline, $n = 17$; Mid-Tx, $n = 18$; Post-Tx, $n = 15$); CAPS (Baseline, $n = 20$; Mid-Tx, $n = 18$; Post-Tx $n = 16$); DAS (Baseline, $n = 20$; Mid-Tx, $n = 17$; Post-Tx $n = 13$). For Waitlist: PTGI (Baseline, $n = 19$, 4-week wait, $n = 17$; 12-week wait, $n = 19$; Post-Tx, $n = 14$); CAPS (Baseline, $n = 20$; 4-week wait, $n = 18$; 12-week wait, $n = 19$, Post-Tx, $n = 14$); DAS (Baseline, $n = 20$; 4-week wait, $n = 18$; 12-week wait, $n = 19$; Post-Tx, $n = 14$). Mid-Tx/4wkwait = Midtreatment (immediate treatment group) or 4 weeks of waiting (WL group); Post-Tx/12wkwait = Posttreatment (treatment immediately group) or 12 weeks of waiting (WL group); Post-Tx WL = Posttreatment (WL group); PTGI = Posttraumatic Growth Inventory; CAPS = Clinician Administered PTSD Scale; DAS = Dyadic Adjustment Scale.

symptom severity and a κ of 1.00 for diagnostic status. The SCID-P (First et al., 2002) was used to assess Axis 1 disorders according to the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; DSM-IV-TR; American Psychiatric Association, 2000) other than PTSD and to determine exclusion criteria. The reliability of the SCID-P diagnoses was excellent ($\kappa = .71$ to 1.00) across all conditions except mood disorders, where reliability was moderate ($\kappa = .60$).

The Post-Traumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996) was completed by the patient with PTSD. The PTGI is a 21-item self-report measure of posttraumatic growth in the following five domains: relations to others, perceptions of new possibilities, personal strength, spiritual change, and appreciation of life. Each item is scored on a 6-point scale, ranging from “I did not experience this change as a result of my crisis” to “I experienced this change to a very great degree as a result of my crisis.” The PTGI demonstrated good internal consistency in this sample across pre-, mid-, and posttreatment assessment points ($\alpha = .94, .93, \text{ and } .94$, respectively).

The Dyadic Adjustment Scale (DAS; Spanier, 1976), a 32-item self-report measure of relationship quality in romantic dyads, was used to assess relationship satisfaction. Scores on the DAS can range from 0 to 151. Scores ≥ 98 designate satisfaction. The internal consistency in this study was $\alpha = .96$.

Data Analysis

Intention-to-treat principles were used in conducting the analyses. Hierarchical linear modeling (HLM; Raudenbush & Bryk, 2002) was used, with PTG as the outcome variable and time, condition, and the Time \times Condition interaction as independent variables to test the first hypothesis. The first analysis used baseline (T1), midtreatment (treatment immediately)/4 weeks

of waiting (WL; T2), and posttreatment (treatment immediately)/12 weeks of waiting (WL) assessment time points (T3). The groups did not differ at baseline on any of the key variables (CAPS, DAS, or PTGI). To test the potential for pretreatment relationship satisfaction and PTSD symptoms to moderate PTG outcomes, all participants who were offered therapy (immediately or after waiting) were collapsed into a single sample ($n = 37$; due to missing data for one participant on baseline DAS and CAPS and two participants on PTGI). For participants in the immediate treatment condition, assessments during treatment were analyzed for pre-, mid-, and posttreatment; for the waitlist condition, assessments were analyzed for pre- and posttreatment, as a midtreatment assessment was not conducted for PTG. HLM models were then conducted with pretreatment DAS and CAPS scores predicting PTG trajectory, respectively. Hedge’s g (Hedges & Olkin, 1985), a measure of effect size, was calculated and interpreted according to Cohen’s (1988) descriptions of .20 small, .50 medium, and over .80 large.

Results

Mean and standard deviations were calculated for the PTGI, CAPS, and DAS at each time point (see Table 1). Scores demonstrated that on average, patients were relatively satisfied in their relationships across the study period and were experiencing moderately severe PTSD symptoms at baseline. The interaction between time and treatment conditions was significant in the first model. Compared with WL, individuals receiving CBCT for PTSD demonstrated a significant increase in PTG over time, with a between-group moderate effect size difference ($g = 0.45$; see Table 2 and Figure 1). Additionally, the HLM model predicting PTG over time based on pretreatment DAS revealed a positive, albeit not significant, association between baseline DAS and increasing PTG and was of a moderate size ($g = 0.65$;

Table 2
Two-Level HLM Models (Time Nested Within Individual)
Predicting PTGI

Variable	Coefficient	SE	<i>t</i>	<i>df</i>
Waitlist vs. treatment immediately				
Intercept	45.19	5.27	8.57**	42.1
Time	0.31	1.74	0.18	36.3
Condition	0.06	7.58	0.01	42.6
Time × Condition	6.24	2.60	2.40*	38.8
Pretreatment DAS				
Intercept	65.32	14.08	4.64**	36
DAS	-0.19	0.14	-1.41	36
Time	-8.90	6.94	-1.28	36
Time × DAS	0.14	0.07	2.01	36

Note. For the Time × Condition Interaction, Hedge's *g* between group effect size = 0.45. For the Time × DAS Interaction, Hedge's *g* effect size = 0.65. HLM = Hierarchical linear modeling; PTGI = Posttraumatic Growth Inventory; DAS = Dyadic Adjustment Scale.

p* < .05. *p* < .01.

see Table 1). The HLM model predicting PTG over time as a function of pretreatment CAPS was not significant.

Discussion

The results of this study revealed that CBCT for PTSD facilitated PTG despite the relatively brief focus on PTG of CBCT for PTSD. Participation in the intervention led to a moderate effect-size increase in PTG scores. Consistent with prior research and theory, the improvements found in PTG may be associated with the interpersonal nature of this conjoint intervention, along with reducing avoidance and the process of meaning-making associated with trauma-focused work. Previous research on individual CBT for PTSD found a small effect size for change in PTG (Zoellner et al., 2011), compared to the moderate effect size in the current study. These findings suggest that the presence of supportive intimate relationships in trauma-focused interventions, as well as the explicit focus on PTG in treatment, may help foster growth. Previous research has found that the presence of a relationship is not directly related to PTG; rather, it is the quality of the relationship that seems to be of greater value (Barsakova & Oesterreich, 2009). In this study, PTG may have been promoted by the couple (a) discussing the trauma together, (b) addressing barriers to PTG together, (c) considering individual growth, (d) considering growth of the couple as a unit, all in the context of a therapeutic relationship. Findings from this study were in line with previous research suggesting that treatment that focuses on making meaning of the trauma and modifying maladaptive beliefs about the events, behaviors, or symptoms are critical for the development of PTG (Tedeschi, 1999). The finding that pretreatment PTSD symptoms were not associated with PTG was consistent with

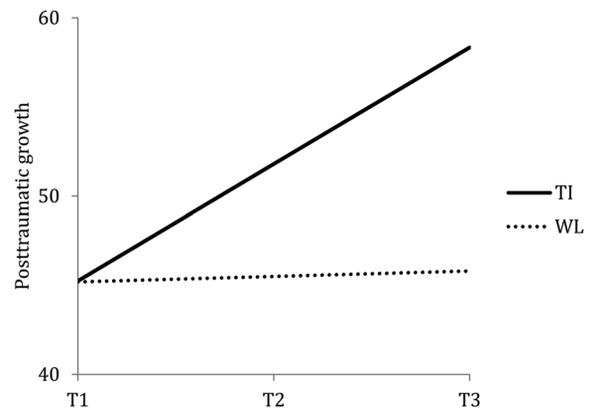


Figure 1. Change in posttraumatic growth as a function of treatment group, treatment immediately (TI) versus waitlist (WL) assessed at three time points, baseline (T1), midtreatment/4-week wait (T2), and posttreatment/12-week wait (T3; *n* = 40).

previous research suggesting that symptoms and growth seem to be independent constructs (e.g., Calhoun & Tedeschi, 2014).

There were several limitations of this study. First, the sample size was small. Second most couples were satisfied with the relationship. Our findings should be replicated in larger and more distressed samples, including those with greater racial/ethnic and gender diversity. Additionally, only one member of the dyad had PTSD and completed the measure of PTG. Future work should (a) include additional measures of this construct to be completed by both members of the dyad and in dual PTSD cases, (b) examine whether low versus high pretreatment relationship satisfaction moderates the relationship between time and treatment, and (c) include longitudinal assessment of PTG at long-term follow-up to determine if gains are maintained; previous research indicated that PTG has been maintained over time (e.g., Linley & Joseph, 2004). These limitations notwithstanding, our initial findings suggested that trauma-focused couple therapy helped promote a significant increase in PTG. Further targeting PTG in the context of dyadic PTSD treatment should be considered in the future because it capitalizes on the fertile ground of intimate relationships to promote growth.

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