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Understanding Factors Associated With Early Therapeutic Alliance in PTSD Treatment: Adherence, Childhood Sexual Abuse History, and Social Support

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Abstract

Objective—Therapeutic alliance has been associated with better treatment engagement, better adherence, and less dropout across various treatments and disorders. In treatment of posttraumatic stress disorder (PTSD), it may be particularly important to establish a strong early alliance to facilitate treatment adherence. However, factors such as childhood sexual abuse (CSA) history and poor social support may impede the development of early alliance in those receiving PTSD treatment. We sought to examine treatment adherence, CSA history, and social support as factors associated with early alliance in individuals with chronic PTSD who were receiving either prolonged exposure therapy (PE) or sertraline.

Method—At pretreatment, participants (76.6% female; 64.9% Caucasian; mean age = 37.1 years, $SD = 11.3$) completed measures of trauma history, general support (Inventory of Socially Supportive Behaviors), and trauma-related social support (Social Reactions Questionnaire). Over the course of 10 weeks of PE or sertraline, they completed early therapeutic alliance (Working Alliance Inventory) and treatment adherence measures.

Results—Early alliance was associated with PE adherence ($r = .32, p < .05$) and overall treatment completion ($r = .19, p < .05$). Only trauma-related social support predicted the strength of early alliance beyond the effects of treatment condition ($\beta = .23, p < .05$); CSA history was not predictive of a lower early alliance.

Conclusions—Given the associations with adherence, clinicians may find it useful to routinely assess alliance early in treatment. Positive trauma support, not CSA history, may be particularly important in the development of a strong early therapeutic alliance.

Keywords

therapeutic alliance; social support; PTSD treatment; childhood sexual abuse

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Meta-analytic reviews have suggested a consistent relationship between strong therapeutic alliance and better psychotherapy treatment outcomes (e.g., Martin, Garske, & Davis, 2000). Additionally, quality of therapeutic alliance is associated with lower psychotherapy dropout (e.g., Arnow et al., 2007). There is less research on alliance in relation to pharmacotherapy outcome and adherence, although published findings show a pattern similar to that seen in psychotherapy (e.g., Gaudiano & Miller, 2006; Weiss, Gaston, Propst, & Wisebord, 1997).

Despite the potential importance of early alliance, we know very little about factors that impact its development in posttraumatic stress disorder (PTSD). Several factors, such as avoidance and negative beliefs about others (Safran, Crocker, McMain, & Murray, 1990), may complicate the development of alliance in PTSD treatment. Among those receiving treatment for PTSD related to childhood sexual abuse (CSA), higher client-rated early alliance predicted better posttreatment PTSD outcome (Cloitre et al., 2004). Individuals with a history of CSA are at increased risk of developing PTSD (e.g., Carey, Walker, Rossouw, Seedat, & Stein, 2008) and, in comparison to those without such a history, display worse interpersonal functioning across a variety of domains including intimate relationships, family life, and social situations (e.g., Zlotnick, Zakriski, Shea, & Costello, 1996). Given the significant interpersonal difficulties experienced by many with a CSA history, these individuals may have difficulty forming a strong therapeutic relationship.

Perceived quality of social support may also impact early alliance for those receiving PTSD treatment. Across meta-analyses, lack of support is one of the strongest predictors for the development of PTSD (e.g., Brewin, Andrews, & Valentine, 2000). An emerging body of evidence supports the importance of support in forming a strong therapeutic bond during treatment (Connors et al., 2000; Strauss & Johnson, 2006). Higher levels of support relate to a stronger alliance in those receiving treatment for substance disorders (Connors et al., 2000) or bipolar disorder (Strauss & Johnson, 2006). No study to date has examined this relationship in treatment for PTSD.

In this study, we examined treatment adherence, CSA history, and social support as potential factors associated with early alliance in a sample of men and women receiving either psychotherapy (i.e., prolonged exposure; Foa et al., 1999) or pharmacotherapy (i.e., sertraline; Brady et al., 2000) for chronic PTSD. There were three main hypotheses. First, we hypothesized that lower client-rated early alliance would be associated with worse psychotherapy homework completion, medication adherence, and treatment completion. Second, we hypothesized that those with a CSA history would report lower levels of positive support than would those with no such history. Third, we hypothesized that over and above the impact of the type of treatment received, lower positive social support and CSA history would predict lower early therapeutic alliance.

Method

Participants

Participants were 188 women (76.6%, $n = 144$) and men (23.4%, $n = 44$) between the ages of 18 and 65 and with a primary diagnosis of PTSD. Participants were recruited for a larger, two-site PTSD treatment outcome study (Site 1, $n = 93$; Site 2, $n = 107$) via referrals and advertisements. Exclusion criteria included (a) current psychosis, unstable bipolar disorder, substance dependence, or high suicide risk and, (b) in assault cases, an ongoing relationship with the perpetrator. Of those evaluated for eligibility, 35% were not eligible, primarily because PTSD was not present or not primary. Sixteen percent were eligible but declined participation or did not follow through. Participants' average age was 37.1 years ($SD = 11.3$); average time since trauma was 11.9 years ($SD = 11.0$). See Table 1 for sample characteristics. Although 17.8% of those sampled reported CSA as their primary target

trauma, in terms of history of prior trauma exposure, 43.6% of the sample ($n = 82$) reported having a history of CSA.

Interview Measures

Interview measures were completed by independent evaluators who received standardized training. Before serving as independent evaluators, they had to meet an 80% reliability criterion for each interview measure. All interviewers were trained mental health professionals ranging from doctoral candidates to PhD-level psychologists.

PTSD Symptom Scale—Interview Version (PSS-I; Foa, Riggs, Dancu, & Rothbaum, 1993)—Seventeen items were rated on frequency and severity of symptoms according to the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*; American Psychiatric Association, 1994), yielding a total severity score and diagnosis. We used this well-validated measure to determine PTSD diagnosis. In the current study, over 10% of cases were rerated for interrater reliability; reliability was high for PTSD severity scores (intraclass correlation = .95) and PTSD diagnosis ($\kappa = 1.00$).

Structured Clinical Interview for *DSM-IV* (SCID-IV; First, Spitzer, Gibbon, & Williams, 1995)—The SCID-IV, a well-validated, semistructured interview, was used to determine if other Axis I disorders were primary. In the current study, 10% of the SCID-IVs were rerated for interrater reliability; reliability across current diagnoses was acceptable ($\kappa = 0.80$).

Prior trauma history—Based on a standardized trauma history interview (Resnick, Best, Freedy, Kilpatrick, & Falsetti, 1993), individuals were determined to have a history of CSA if they reported having at least one experience before the age of 13 in which someone five or more years older than they were had sexual contact with them. Sexual contact was defined as hand-to-genital or genital-to-genital contact between someone else and the participant's sexual organs or the participant and someone else's sexual organs.

Pretreatment Self-Report Measures

PTSD and depression severity—The PTSD Symptom Scale—Self-Report (PSS-SR; Foa et al., 1993) and the Beck Depression Inventory (BDI; Beck & Steer, 1987) were utilized as well-validated measures of PTSD and depression severity.

Received general social support—Level of social support received from others was assessed with the Inventory of Socially Supportive Behaviors (ISSB; Barrera, Sandler, & Ramsey, 1981). This 40-item measure assesses supportive experiences (e.g., gave them money, expressed concern for their well-being) in the past 2 weeks, with a higher score indicating higher support. This measure shows good reliability and validity (Barrera et al., 1981).

Trauma-related social support—The Social Reactions Questionnaire (SRQ; Ullman, 2000), which demonstrates adequate reliability, comprises 48 items assessing trauma-related support. The SRQ generates two total scores, frequency of positive reactions (e.g., “how often someone told you it was not your fault”) and frequency of negative reactions (e.g., “how often someone told you that you were to blame”); higher scores indicate higher levels of negative or positive support.

In-Session Measures

Therapeutic alliance—The Working Alliance Inventory 12 item short form (WAI; Tracey & Kokotovic, 1989) is a well validated measure used to assess client-rated therapeutic alliance. Responses are made with a 7-point Likert scale ranging from 1 (*never*) to 7 (*always*); higher scores indicate a stronger therapeutic alliance. In the present study, clients completed WAI at the beginning of Sessions 2 and 4. Mean early alliance was calculated.

Homework adherence for psychotherapy—At each session, beginning at Session 2, participants in PE completed the Usefulness of Techniques Inventory (Foa et al., 1999), assessing adherence from the last session. Participants rated their level of completion during the past week of in vivo homework, imaginal exposure homework, and breathing retraining homework on scale from 1 (*not at all*) to 5 (*more than 10 times* for breathing retraining; *more than 7 times* for imaginal and in vivo homework) Homework adherence was scored by adding up total adherence each session and then calculating mean adherence across completed sessions.

Medication adherence—Using participant self-report, we recorded the number of days in the past week that the medication was taken; scores ranged from 0 to 7 days. Mean adherence across all completed sessions was calculated.

Total number of sessions—To examine overall treatment completion, we recorded total number of sessions completed Scores ranged from 0 to 10.

Overview of Treatment

For psychotherapy, all clinicians had at least master's-level clinical training. For pharmacotherapy, all clinicians were board certified psychiatrists. All clinicians received standardized clinical training, through multiple-day initial training workshops and on going clinical supervision.

Psychotherapy—Prolonged exposure (PE; Foa, Hembree, Dancu, 2002) consisted of 10 weekly, 90- to 120-min sessions, which included psychoeducation, breathing retraining, approaching avoided situations outside of therapy (i.e., *in vivo* exposure), and approaching the memory of the trauma repeatedly (i.e., imaginal exposure). Clients were assigned weekly homework.

Pharmacotherapy—Pharmacotherapy consisted of 10 weeks of sertraline (SER), an empirically supported (e.g., Brady et al 2000), FDA-approved medication for PTSD, monitored by a study psychiatrist. Each session ranged from 30 to 45 min. SER was adjusted based on a standardized titration algorithm (Brady et al 2000), starting at 25 mg/day and proceeding up to 200 mg/day, indicated. For this sample, the mean dosage at the end of treatment was 135.68 mg/day ($SD = 66.80$). During visits the psychiatrist monitored side effects, adjusted medication dosage, and provided general encouragement and support.

Procedure

Participants provided written informed consent during initial interview with an independent evaluator. Primary diagnosis of chronic PTSD was determined via the PSS-I and SCID-IV. Following this intake, eligible participants were randomly assigned to treatment condition and self-reports were completed. Following this visit, patients received 10 weekly sessions of PE or SER.

Results

Power and Preliminary Analyses

A priori, we determined medium effect sizes (Cohen's $d = 0.3$ or above) to be potentially clinically meaningful. Using the G*Power 3 software (Faul, Erdfelder, Lang, & Buchner, 2007), we were well powered above .80 for all hypotheses, given the number of variables and our sample size. Prior to conducting regression analyses, we plotted a histogram of the residuals of each variable against the normal curve to determine normality. No transformations were necessary. One case was deleted due to a self-reported early alliance score greater than 3 standard deviations below the mean. No imputations were made for missing data.

Pretreatment PTSD, Depression, Social Support, and Treatment Alliance

Mean scores for measures of psychopathology, alliance, and support are shown in Table 2. In general, this sample of individuals with chronic PTSD showed moderate-to-severe psychopathology and strong levels of early alliance.¹

Therapeutic Alliance Across Treatments and Its Relationship to Treatment Adherence

To examine if there were differences in alliance between those receiving PE and SER, we conducted an ANOVA. There was a significant difference in early alliance, $F(1, 152) = 7.60, p < .01$, Cohen's $d = .450$, with those in PE reporting stronger early therapeutic alliance ($M = 67.37, SD = 11.07$) than those in SER ($M = 62.00, SD = 12.59$).

To examine our first hypothesis that lower alliance would be associated with worse overall therapeutic adherence, we conducted a series of correlations. Overall, early alliance was associated with PE homework adherence ($r = .32, p < .05$). However, early alliance was not strongly associated with SER adherence ($r = .23, n.s.$) or end SER dosage ($r = .17, n.s.$). In the total sample, after controlling for treatment condition, early alliance was modestly associated with total number of sessions completed ($r = .17, p = .05$).²

Do Individuals With and Without a History of CSA Differ on Pretreatment Social Support?

To examine our second hypothesis, we compared those who reported a history of CSA ($n = 82$) and those who did not ($n = 106$) on pretreatment psychopathology and social support. As shown in Table 3, those with a history of CSA exhibited no significant differences on psychopathology severity. However, individuals with a CSA history did report a higher level of negative trauma-related support.

Does History of CSA and Pretreatment Social Support Predict the Strength of the Early Therapeutic Alliance?

To examine our third hypothesis that lower positive social support and CSA history would predict a lower early alliance, in a regression, we entered treatment condition ($-.5 = PE, .5 = SER$) in Step 1 and entered history of CSA ($-.5 = no\ CSA\ history, .5 = CSA\ history$) and centered pretreatment social support (ISSB, SRQpos, SRQneg) in Step 2. As shown in Table 4, PE was associated with a stronger early therapeutic alliance than was SER ($\beta = -.22, p < .05$). Positive trauma-related social support emerged as the sole predictor of a strong early alliance ($\beta = .23, p < .05$), above and beyond treatment modality.³

¹Levels of alliance were, similarly, as strong as those seen in other trials examining early alliance in a PTSD sample (e.g., Cloitre, Stovall-McClough, Miranda, & Chemtob, 2004).

²We also examined whether there was a differential effect of treatment modality on the relationship between alliance and total sessions completed by running a moderated regression. The interaction term between alliance and treatment modality was not significant, $B = 0.003, SE(B) = 0.04, \beta = .01, p = .94$.

Discussion

This is one of the first studies to examine factors associated with early alliance in PTSD treatment across a psychotherapy and pharmacotherapy. Of note, early therapeutic alliance was stronger for prolonged exposure and was significantly associated with adherence in PE only. With exposure homework, the client approaches trauma-related activities he or she has been avoiding (e.g., driving) and repeatedly listens to recounting of the trauma memory. This potentially requires not only an understanding of the rationale but also faith in the therapist that this rationale is correct. Perhaps taking a medication does not require as in-depth an understanding of or faith in the rationale. In addition, current methods of assessing alliance may not be as applicable to pharmacotherapy.

It is encouraging that CSA history was not predictive of a lower early alliance. This is in line with previous work showing that despite relationship difficulties, adults with histories of abuse were able to develop relationships with their therapist that were of the same quality as those of adults who had not been abused during childhood (Paivio & Patterson, 1999). Also, this study provides the first evidence highlighting the role of perceived trauma-related social support in the development of a strong alliance for individuals with chronic PTSD. Trauma support may be particularly important in alliance building for clients with PTSD, because this type of support may most closely mirror the therapeutic relationship.

A few limitations of the present study should be noted. We examined perceived social support and not other forms of support (e.g., number of social contacts, interpersonal functioning) that may also play a role in alliance. Similarly, social support and alliance were both self-reported perceptions of relationships; thus, effects may be exaggerated due to the shared method variance. Other factors such as attachment style (e.g., Kanninen, Salo, & Punamäki, 2000) and the presence of Axis II disorders, which were not examined, may account for a portion of the relationship between support and early alliance. Another limitation of the study is that we examined CSA history but did not examine the impact of different trauma types (e.g., childhood physical abuse). Finally, we did not examine changes in social support over the course of treatment; thus, we could not examine whether the observed relationships were causal in nature.

These results point toward the potential importance of an increased focus on early alliance building in clients who report low levels of perceived trauma related support. Therapists should place special emphasis on conveying a supportive, non-blaming attitude, especially in relation to the trauma itself. Clinicians may also want to focus on helping clients with PTSD develop stronger support networks, particularly in relation to their traumatic experience, outside of the therapeutic environment. Given our findings that early client-rated alliance is associated at least modestly with treatment adherence in PE and with treatment completion, clinicians may find it useful to routinely assess alliance early in treatment so that weak or damaged alliances can be addressed.

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³We also examined the relationship between social support and early alliance among those with a history of interpersonal violence ($n = 145$). The pattern of regression results did not change.

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Table 1

Sample Characteristics

Demographic variable	%
Primary trauma	
Adult sexual assault	30.9
Childhood sexual assault	17.8
Adult nonsexual assault	22.0
Accident (motor vehicle accident, natural disaster)	14.1
Childhood nonsexual assault	6.8
Death/violence to a loved one	5.8
Combat/war	2.6
Education level	
Not college educated	69.1
Income	
<\$20,000 per year	49.2
≥\$20,000 per year	50.8
Ethnicity	
Caucasian	64.9
African American	21.5
Other	13.6

Table 2

Means and Standard Deviations for Self-Reported PTSD Severity, Depression Severity, Early Alliance, and Social Support at Pretreatment

Self-report measure	<i>M (SD)</i>	Range
PTSD severity (PSS–SR)	33.93 (8.59)	11–51
Depression severity (BDI)	24.90 (9.80)	4–48
Average early alliance (WAI-C)	65.37 (12.59)	31–84
General social support (ISSB)	84.19 (29.59)	39–169
Positive trauma-related social support (SRQpos)	37.23 (15.84)	0–73
Negative trauma-related social support (SRQneg)	31.03 (18.45)	0–88

Note. PTSD = posttraumatic stress disorder; PSS–SR = PTSD Symptom Scale—Self-Report ($n = 188$); BDI = Beck Depression Inventory ($n = 185$); WAI-C = Working Alliance Inventory, mean of Sessions 2 and 4 ($n = 153$); ISSB = Inventory of Socially Supportive Behaviors ($n = 181$); SRQpos = Social Reactions Questionnaire, positive support scale ($n = 183$); SRQneg = Social Reactions Questionnaire, negative support scale ($n = 183$).

Comparison of Childhood Sexual Abuse (CSA) and No CSA on Pretreatment PTSD Severity, Depression Severity, Early Alliance, and Social Support

Table 3

Self-report measure	CSA (<i>n</i> = 82)		No CSA (<i>n</i> = 106)		<i>F</i>	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
PTSD severity (PSS-SR)	34.54	8.71	33.46	8.51	0.73	0.12
Depression (BDI)	25.71	9.14	24.33	10.29	0.91	0.14
Early alliance (WAI-C)	64.74	11.09	65.81	12.47	0.30	0.06
Positive trauma-related support (SRQpos)	37.00	14.64	37.40	16.74	0.03	0.02
Negative trauma-related support (SRQneg)	34.10	20.40	28.80	16.48	3.77*	0.80
General support (ISSB)	83.20	27.91	84.95	30.95	0.15	0.06

Note. PTSD = posttraumatic stress disorder; PSS-SR = PTSD Symptom Scale—Self-Report; BDI = Beck Depression Inventory; mean of Sessions 2 and 4; SRQpos = Social Reactions Questionnaire, positive support scale; SRQneg = Social Reactions Questionnaire, negative support scale; ISSB = Inventory of Socially Supportive Behaviors.

* $p < .05$.

Table 4

Treatment Modality, Social Support, and Childhood Sexual Abuse (CSA) as Predictors of Early Client-Rated Therapeutic Alliance

Prediction of early therapeutic alliance	Step ΔR^2	<i>B</i>	<i>SE(B)</i>	β
Step 1 ^a	.05*			
Treatment modality		-5.38	1.97	-.22*
Step 2 ^b	.12*			
Treatment modality		-5.17	1.89	-.21*
CSA history		-0.36	1.88	-.02
Positive trauma-related support (SRQ)		0.18	0.07	.23*
Negative trauma-related support (SRQ)		-0.07	0.05	-.11
General social support (ISSB)		0.05	0.04	.11

Note. Dependent variable = client-rated early alliance.

^aStep 1: $R = .22$, $F(1, 149) = 7.41$, $p < .05$.

^bStep 2: $R = .41$, $F(5, 149) = 5.77$, $p < .05$.

* $p = .05$.