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The associations among improvement and alliance expectations, alliance during treatment, and treatment outcome for major depressive disorder

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Abstract
Objective: To examine the associations between treatment/outcome expectations, alliance before and during treatment, and the impact of alliance on symptomatic improvement. **Methods:** One hundred and fifty-three depressed patients randomized to dynamic supportive-expressive psychotherapy (SET), antidepressant medication (ADM) or placebo (PBO) + clinical management completed ratings of treatment expectations, therapeutic alliance (CALPAS, WAI-S), and depressive symptoms (HAM-D). **Results:** Pretreatment expectations of the therapeutic alliance were significantly related to alliance later in therapy but did not differ across treatments and did not predict outcome. Alliance development over time differed between treatments; it increased more in SET than in PBO. After controlling for prior symptom improvement, early alliance predicted subsequent depression change. **Conclusions:** Expectations of alliance and of treatment outcome/improvement, measured prior to treatment onset, predicted subsequent alliance.

Keywords: alliance; depression; expectation; psychodynamic psychotherapy; medication; placebo

The therapeutic alliance is one of the most extensively studied concepts in psychotherapy research for three main reasons. First, clinical scholars from different theoretical approaches have noted that a positive treatment relationship is important, and perhaps necessary for the conduct of an effective psychotherapy (Beck, Rush, Shaw, & Emery, 1979; Greenberg, Rice, & Elliott, 1993; Greenson, 1965; Luborsky, 1995; Raue & Goldfried, 1994). Second, early alliance ratings have been repeatedly shown to have a small, but seemingly robust association with therapeutic outcome (Horvath, Del Re, Flückiger, & Symonds, 2011). Third, clinicians and researchers have often suggested that the therapeutic relationship is, in itself, curative (e.g., Lambert & Barley, 2001). For instance, several studies have argued that the universal effect of therapeutic alliance on outcome is likely to account for the equivalency of outcome found in comparative trials of psychotherapy (e.g., Barber, 2009). In this paper we address several unanswered questions regarding the alliance. First, we examine the idea that the therapeutic alliance develops very early in the relationship, possibly even prior to meeting with the therapist, as well as showing changes over time. Second, we examine patients' expectations about treatment as potential influences on early treatment alliance.

Development of Alliance Over Time

When is the therapeutic alliance created? Some studies suggest that alliance is formed early in treatment and remains stable across sessions, as indicated by moderate to strong correlations

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between alliance ratings early and later in treatment (e.g., Paivio & Bahr, 1998). Even alliance ratings from early assessment sessions before the start of therapy were strong predictors of alliance scores later on (Hilsenroth, Peters, & Ackerman, 2004). Consistent with this notion is the idea that most of the variance in alliance takes place in the first treatment session (Sexton, Hembre, & Kvarme, 1996; Sexton, Littauer, Sexton, & Tømmerås, 2005). In fact, one might argue that at least a portion of the alliance develops very early or even before treatment begins and does not necessarily require much if any therapist-patient interaction. If this is the case, the "starting point" for the development of the therapeutic alliance may depend on general relationship expectations and dispositional tendencies that are independent of and precede patient-therapist encounters. However, few studies have examined this possibility.

In contrast to studies suggesting the stability of alliance, other studies have shown that alliance tends to strengthen throughout treatment, although there are significant differences between patient-therapist dyads (Dinger, Strack, Sachsse, & Schauenburg, 2009). Indeed, several distinct patterns of alliance development have been described in the literature. For example, Kramer, deRoten, Beretta, Michel, and Despland (2008) differentiated three distinct patterns of alliance formation: A group in which alliance increased across sessions, a group in which alliance remained stable throughout treatment, and a group in which the alliance worsened over time. Stiles and colleagues (2004) described four distinct patterns in which alliance was steadily increasing, stable, or steadily decreasing. In addition, a fourth group showed a more rapid early increase with stable alliance scores in the second half of treatment. For very brief treatments of four sessions, U-shaped patterns of alliance development were found with initially high ratings of alliance that decreased during the middle of treatment and then rose again in the last session (Kivlighan & Shaughnessy, 2000). These patterns of alliance development suggest the importance of measuring alliance throughout therapy. However, the majority of researchers have relied on assessments of alliance only during the early phase of therapy (often between session 2 and 5).

Correlation Versus Steps Towards Mapping Causal Relations in Alliance-Outcome Research

Decades of research on alliance in psychotherapy have consistently linked the strength of the therapeutic alliance with therapy outcomes. The most recent meta-analysis combined over 14,000 psychotherapy cases and reported a correlation of .285, with better alliances associated with greater symptomatic improvement (Horvath et al., 2011). Despite such a consistent correlation, the magnitude of the alliance-outcome correlation differs between studies, possibly due to the methodological research strategy employed. For example, if alliance was assessed at only one early session (e.g., session 3), the reported association with overall treatment outcome tended to be lower than when alliance scores were aggregated over several early sessions (Crits-Christoph, Gibbons, Hamilton, Ring-Kurtz, & Gallop, 2011). Although aggregating alliance measures over time is likely to create a more robust and reliable assessment of the alliance, it has the disadvantage of making it hard for researchers to test whether change in symptoms before the measurement of the alliance causes subsequent change in symptoms or whether the change in alliance occurring between the aggregated assessments causes symptom change (Barber, 2009; Crits-Christoph, Connolly Gibbons, & Mukherjee, 2013). In addition, research designs that account for early symptom change (i.e., from intake to early alliance assessment) generally find lower or negligible alliance-outcome correlations than do those not considering early change (Crits-Christoph et al., 2013). Similarly, sudden gains in depressive symptom improvement are at times followed by improvements in the alliance rather than being preceded by alliance improvements (Tang & DeRubeis, 1999). These findings bring into question the causal role of alliance in subsequent symptom change (DeRubeis, Brotman, & Gibbons, 2005). Other studies, however, show that early alliance ratings predict subsequent therapy outcome over and above the effect of previous symptom improvement (Barber, Connolly, Crits-Christoph, Gladis, & Siqueland, 2000; Klein et al., 2003; Zilcha-Mano, Dinger, McCarthy, & Barber, in press). Such divergence among studies calls for more research on the impact of early alliance on outcome while controlling for prior symptomatic improvement (Barber, 2009). Accounting for the correct temporal sequence and for competing influential predictors is the nearest approximation towards establishing a causal relationship that observational studies allow.

Alliance in Different Forms of Treatment

A separate issue regarding the alliance-outcome association is related to treatment modality. Alliance effects have been reported for a broad range of psychotherapies, among them cognitive-behavioral, psychodynamic, interpersonal, and emotion-focused psychotherapy (e.g., Constantino, Arnow, Blasey, & Agras, 2005; Flückiger, Regli, & Grawe, 2005;

Greenberg & Malcolm, 2002; Reis & Grenyer, 2004; Watson, McMullen, Prosser, & Bedard, 2011). Despite some studies reporting lower alliance-outcome correlations for cognitive therapy (CT) and questioning a causal role for alliance in outcome in CT (e.g., Feeley, DeRubeis, & Gelfand, 1999; Strunk, Brotmann, & DeRubeis, 2010; Strunk, Cooper, Ryan, DeRubeis, & Hollon, 2012), a recent meta-analysis found that the alliance-outcome correlation was similar in cognitive behavior therapies (CBT) and other forms of psychotherapies (Flückiger, Del Re, Wampold, Symonds, & Horvath, 2012). However, studies were included in which the alliance assessment preceded the measurement of outcome as well as studies in which the alliance ratings followed outcome assessments.

It is also unclear whether the effect of alliance on outcome is specific to psychotherapy or if it can be found in other forms of mental health treatment. Data from the Treatment of Depression Collaborative Research Study (TDCRP) indicate that alliance correlates with outcome not only in psychotherapy, but also in clinical management of pharmacotherapy and placebo (Krupnick et al., 1994, 1996). However, Strunk, Stewart, et al. (2010) reported that observer-rated early alliance in clinical management of antidepressant medication use or placebo was not significantly related to subsequent change in depression, although greater clinician support in early sessions predicted a lower rate of improvement with placebo. Thus, studies analyzing patient-rated alliance and controlling for prior symptom improvement are needed in pharmacotherapy and placebo treatments as well as psychotherapy if we are to better understand the role of alliance in treatment outcome.

Alliance and Pretreatment Expectations About Treatment Outcome

Alliance measured early in treatment has been shown to be influenced by patient and therapist characteristics. In addition to attachment patterns and interpersonal style (Diener & Monroe, 2011; Dinger, Strack, Leichsenring, & Schauenburg, 2007), research has found an association between patients' pretreatment expectations and alliance quality. Treatment expectations encompass both expectations about the process of therapy (such as the alliance) as well as expectations about therapy outcome (i.e., symptom change or improvement) (Constantino, Glass, Arnkoff, Ametrano, & Smith, 2011). A recent meta-analysis of 78 studies found a very small, but significant effect (r = .12) of expectations of treatment improvement on subsequent symptom improvement across a variety of psychological disorders and therapeutic approaches (Constantino, Arnkoff, Glass, Ametrano, & Smith, 2011). However, the effect sizes for these comparisons were heterogeneous across studies and the failsafe N indicated that 10 unpublished, non-significant studies would have been necessary to challenge the meaningful association. In addition to the association with outcome, higher expectations for improvement have also shown an association with better alliances, especially if alliance is assessed early in treatment (Connolly Gibbons et al., 2003; Constantino et al., 2005). With several studies showing a meaningful effect of expectations for improvement on symptom improvement, it could be that alliance mediates the effect, at least partially (Constantino et al., 2005; Johansson, Høglend, & Hersoug, 2011; Joyce, Ogrodniczuk, Piper, & McCallum, 2003; Meyer et al., 2002). Accordingly, high expectations for improvement would lead to more favorable alliances, which would then facilitate psychotherapeutic change.

Research Questions

The present study investigated the relation between therapeutic alliance and pre-treatment expectations of improvement in a study of treatments for depression. The data originate from a randomized clinical trial comparing supportive-expressive dynamic psychotherapy (SET), antidepressant medication (MED) plus clinical management, and placebo (PBO) plus clinical management for the treatment of Major Depressive Disorder (MDD; Barber, Barrett, Gallop, Rynn, & Rickels, 2012). All three groups improved throughout the course of treatment, with no significant differences emerging between groups. Such equivalence in outcome encourages examination of whether the underlying mechanisms of change are comparable. The present study examined the following five research questions:

1. How are pretreatment expectations about alliance and improvement related to alliance during the course of treatment?
2. Does the alliance differ between the three treatment groups (supportive-expressive therapy, medication and placebo) over time?
3. Do better alliances predict greater improvement in depression? Does the type of treatment (SET, MED, PBO) moderate the alliance-outcome association?
4. Are pretreatment expectations for improvement a predictor of symptomatic improvement? Is treatment group a moderator for the expectation-outcome association?

5. Is the expectation-outcome association mediated by the therapeutic alliance?

Methods

Participants

Of the original 156 patients with Major Depressive Disorder randomized in the original study, 153 could be included for the present analyses. From the original sample, 149 patients completed at least one alliance questionnaire and 150 rated their outcome expectations. The present sample included 92 (60.1%) females, the mean age was 37.8 (SD 12.11), and about half were ethnic minorities (43.8% African Americans, 2% Asians, 49.0% Caucasians, 5.2% Latinos,). Eighty-five percent of patients had at least one comorbid disorder, including anxiety disorders (45.0%) and current substance abuse or past dependence disorder (35%). In addition, 46.3% had a comorbid axis-2 personality disorder. Diagnoses were obtained through structured clinical interviews conducted by doctoral and Master-level diagnosticians (First, Spitzer, Gibbon, & Williams, 1995). Diagnosticians were blind to treatment conditions.

Treatments

All treatments were provided for 16 weeks. Manualized dynamic SET for depression combines supportive techniques fostering a positive therapeutic relationship with a focus on understanding the patient's problematic relationship patterns. The goal is to help the patient work through his/her core relational difficulties within the context of a positive relationship (Luborsky, 1984, 1995). Patients in this study received 20 sessions of individual psychotherapy, with a frequency of twice weekly for the first 4 weeks and weekly for weeks 5–16. Psychotherapists delivering SET were four experienced clinicians with at least 15 years of clinical experience. Patients and therapists in SET could not be blind to treatment conditions.

The MED and PBO conditions were managed by 10 experienced psychopharmacologists who delivered clinical management (CM) as manualized by Fawcett, Epstein, Fiester, Elkin, and Autry (1987). Patients were seen weekly for the first 6 weeks, after which the psychopharmacologist was permitted to extend the time between visits to 2 weeks. The CM manual prohibited formal psychotherapeutic techniques, but supportive interventions (such as acknowledging gains, reinforcing accomplishments, or offering empathy and warmth) were allowed. Patients in the medication condition were treated with either with sertraline (MED) or placebo (PBO) and psychopharmacologists, patients, and evaluators were blind to the MED or PBO assignment (triple blind). At week 8, patients non-responsive to sertraline were switched to venlafaxine. Patients non-responsive to placebo were switched to a second placebo. Patients responding to treatment maintained the same condition (MED or PBO). Blinding was broken at week 16, and PBO patients were offered 16 weeks of open-label medication.

Measures

Alliance. Quality of the therapeutic alliance was assessed with two questionnaires based on different definitions of the therapeutic alliance.

Patients completed the 12-item Working Alliance Inventory-Short Form (WAI-S; Horvath & Greenberg, 1989; Tracey & Kokotovic, 1989). The WAI-S closely follows the theoretical model proposed by Bordin (1979). Four items assess the agreement between patients and therapists on the goals of treatment, another four assess the agreement on the tasks or interventions of treatment, and four measure the affective bond between the patient and therapist. In this study, the total WAI-S score was used. Items are rated on a 7-point Likert-scale from 1 = "*Never*" to 7 = "*Always*". Internal consistency for the total scale in this study ranged from .92 to .95 at the different time points for assessment.

The California Psychotherapy Alliance Scale (CALPAS; Gaston & Marmar, 1994) is a 24-item questionnaire which is designed to "address the separate contributions of the client and therapist to the alliance and the extent of mutual agreement on the working strategies and goals of therapy" (Hatcher & Barends, 1996, p. 1327). This definition is broader than Bordin's (1979) definition of the alliance. Each item is rated on a 7-point Likert scale, ranging from 1 = "*Not at all*" to 7 = "*Very much so*". The items are grouped into four scales: Patient Working Capacity, Patient Commitment, Therapist Understanding and Involvement, and Working Strategy Consensus. Because these four scales were found to be highly intercorrelated (e.g., Barber et al., 1999), the total CALPAS score was used for analysis. The internal consistency scores of the CALPAS total ranged from .75 to .90 at the different assessment points in the current study.

Expectation of the alliance. Patient expectations for alliance were assessed by the CALPAS and WAI-S, which were obtained prior to meeting with the therapist. The following sentence was added to the instructions for both questionnaires: *"Because you have not yet experienced treatment through this*

study, answer the following questions, thinking about how you expect treatment to be."

Expectations for improvement. Patient expectations for treatment improvement were assessed at intake, prior to randomization. Patients responded to the question "Overall, how much improvement do you expect to experience as a result of treatment?" on a 7-point scale ranging from 1 = not at all to 7 = great amount. This 1-item measure was taken from the Patient Attitudes and Expectations questionnaire adapted from the Patient Attitudes and Expectations form used in the NIMH Treatment of Depression Collaborative Research Program (Elkin, Parloff, Hadley, & Autry, 1985).

Outcome. Depressive symptoms were assessed with the 17-item version of the Hamilton Rating Scale for Depression ($HRSD_{17}$; Hamilton, 1960; Williams, 1988). The $HRSD_{17}$ is a clinician-administered measure of depression severity. It consists of 17 items with total possible scores ranging from 0 to 52. Higher scores indicate greater severity in depression. Inter-judge reliability for the current study as assessed by intraclass correlation (ICC [2,1]; Shrout & Fleiss, 1979) was .92.

Procedure

Depressive symptoms were assessed at intake and eight times during therapy (weeks 2, 4, 6, 7, 8, 12, 15, and 16). Outcome expectation was measured during the intake assessment. Alliance was assessed at intake before patients met with their therapist for the first time (alliance expectation) as well as during weeks 2, 4, 8, and 16. Due to missing data and patient dropout, sample size varies at the different time points, and not all patients received and returned questionnaires on the scheduled dates. Including intake alliance, the mean number of usable alliance questionnaires was on average 3.5 alliance questionnaires per patient (SD = 1.45) out of a maximum of five questionnaires. The completion rates of alliance questionnaires varied at the four major time points (intake alliance N = 139, early alliance weeks 2–4 N = 124, mid-treatment alliance weeks 5–11 N = 100, end of treatment alliance weeks 12–16 N = 74).

Statistical Analyses

Correlations among expectations of alliance (assessed at intake), outcome and alliance ratings later in treatment were assessed using Pearson correlations. Analyses of alliance development and symptom change over time were carried out with multilevel models (Raudenbush & Bryk, 2002). All multilevel models were two-level with multiple measurements (level 1) nested within patients (level 2). Time was the only explanatory variable entered as level-1 predictor. Additional predictors were entered on level 2 according to the research question (e.g., alliance, expectation or treatment condition). Treatment condition was entered as categorical variable (MED, SET, PBO); the PBO groups served as reference category. Level-2 predictors were entered as predictors of time slope and therefore are considered two-way interactions of time by predictor. All analyses were carried out with IBM SPSS, version 19.

Results

How are Pretreatment Alliance and Outcome Expectations Related to Alliance Throughout Treatment? How are early and later alliances during treatment related?

At intake, CALPAS and WAI-S alliance expectations were positively correlated (r = .77). In addition, both correlated significantly with the outcome expectation (r_{CALPAS} = .42; r_{WAI} = .43, both p < .001). The correlations between expectation of the alliance at intake and alliance scores later in treatment were significant; the moderate coefficients around r = .50 indicate that about 25% of the variance of alliance levels during treatment is explained by alliance expectations (Table I). The correlations between outcome expectations and alliance were also significant and ranged between low and moderate. Correlations between alliance scores at different time points in therapy were large (ranging from r = .7 to r = .8), showing that more than 50% of the variance of treatment alliances later in treatment was determined by early alliances.

Does Alliance Differ between the three Treatment groups over Time?

All analyses were carried out separately for the CALPAS and the WAI-S alliance measures. Differences failed to be found between the three groups regarding expectations of the alliance at intake, CALPAS: $F(2;130)$ =.57, ns; WAI-S: $F(2;126)$ = .19, ns. Using multilevel modeling, we compared alliance slopes over time for the treatment groups. Multiple measurements were nested within patients. Due to a nonlinear change of individual patient alliance scores over time, a logarithmic transformation of time (weeks) was deemed most appropriate to quantify change in alliance scores (Diggle, Liang, & Zeger, 1994). There was no significant overall effect of time on CALPAS scores. However, the week by

Table I. Correlation of alliance and outcome expectations at intake with alliance scores during treatment

		1.	2.	3.	4.	5.	6.	7.	8.	9.
CALPAS	1. Expectation (N = 133)	1.0								
	2. Early treatment (N = 121)	.59	1.0							
	3. Mid-treatment (N = 99)	.53	.73	1.0						
	4. Termination (N = 60)	.57	.79	.82	1.0					
WAI-S	5. Expectation (N = 129)	.77	.59	.50	.47	1.0				
	6. Early treatment (N = 120)	.43	.88	.64	.69	.55	1.0			
	7. Mid-treatment (N = 99)	.42	.65	.78	.75	.49	.72	1.0		
	8. Termination (N = 58)	.54	.79	.74	.88	.50	.78	.81	1.0	
	9. Outcome expectation	.42	.39	.40	.46	.43	.32	.42	.49	1.0

Note. All depicted correlations significant, with $p < .001$.

treatment interaction ($F(2;127.4) = 5.57$, $p < .005$) indicated that CALPAS slopes differed significantly over the course of time between the groups (Figure 1). For PBO, CALPAS slope estimate decreased over time (−.10, SE = .044 per log week, $t(129.4) = -2.35$, $p < .02$). The estimated slope of the alliance in SET increased significantly by .10 CALPAS units (SE = .045) per log week ($t(130.8) = 2.20$, $p < .03$). The alliance slope for SET was significantly different from the PBO slope ($t(130.1) = 3.21$, $p < .002$). While the estimated MED slope also differed significantly from PBO ($t(125.7) = 2.38$, $p < .019$), its increase over time was not significant.

The average WAI-S slope increased significantly over time ($F(1;130.6) = 19.12$, $p < .001$) (Figure 2). Although the week by treatment interaction did not reach significance for the WAI-S ($F(2;130.5) = 2.06$, $p < .13$), exploratory post hoc analyses indicated that the increase in alliance was significantly steeper for SET compared to PBO ($t(127.6) = 1.99$, $p < .049$). A significant increase over time was observed for the SET group (slope estimate 2.64 per log week, SE .71, $t(136.6) = 3.72$, $p < .001$) and the MED group (slope estimate 1.96 per log week, SE .69, $t(123.4) = 2.84$, $p < .005$), but not for the PBO group. There were no significant differences in change in alliance between MED and SET on either alliance scales.

Do Better Alliances Predict Greater Change in Depression?

We examined this question in three sets of analyses. The first focused on the expectation of alliance before the patient met the therapist/psychiatrist (alliance expectation at intake), the second focused on the alliance during early phases of treatment (weeks 2–4), and the third looked at early changes in the alliance (from intake through week 4). The multilevel model on change in depression was similar to the main outcome multilevel analysis (Barber et al., 2012), using time as logarithmic transformation of weeks but included alliance as a predictor of the slope (rate of change). In addition, we controlled for depression severity at intake. For all analyses we included the treatment condition as a potential moderator of alliance effects on outcome.

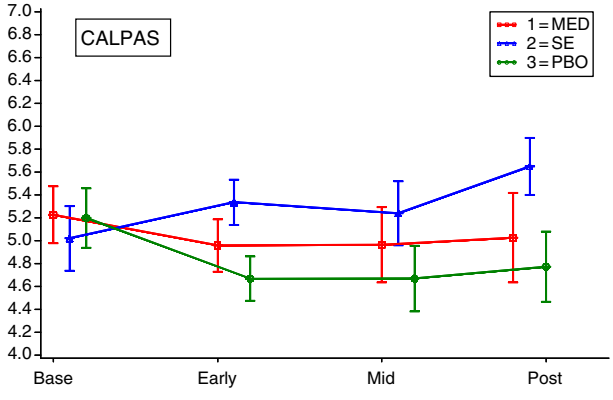

Figure 1. Change in observed CALPAS alliance scores as a function of time and treatment group. The multilevel model assessing group comparison in rate of change per unit of time (time as logarithm of week) showed a significant treatment × time interaction ($F(2;127.4) = 5.57$, $p = .005$).

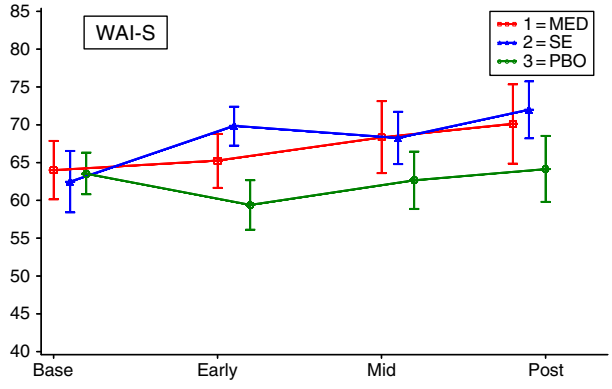

Figure 2. Change in observed WAI-S alliance scores as a function of treatment group. The multilevel model assessing group comparison in rate of change per unit of time (time as logarithm of week) showed a significant average increase over time ($F(1;130.6) = 19.12$, $p < .001$), but no difference in slopes between treatment groups.

Expectation of Alliance

Predicting outcome from the expectation of alliance with the CALPAS showed no significant time by alliance expectation interaction and no significant three-way interaction for time by alliance expectation by treatment group. Together these results indicate that intake CALPAS expectation was not associated with outcome and that the impact of the CALPAS expectation on outcome did not differ per treatment group. In contrast to the CALPAS, the expectation of the alliance measured by the WAI-S was significantly related to symptomatic improvement over the course of therapy (time by alliance expectation: $F(1,108.1) = 6.49$, $p < .012$) but did not differ as a function of treatment. To interpret the impact of the WAI-S alliance expectation, we estimated the change in depression severity for patients with average alliance score, as well as for those who scored one standard deviation above and below the mean (Cohen, Cohen, West, & Aiken, 2003). Table II shows that an individual with an alliance expectation score one standard deviation above the mean changes more in depression severity (1/2 HRSD point per each time period) than patients with an average alliance score.

Predicting Outcome from Alliance During Treatment

We examined the impact of early alliance (weeks 2–4) on subsequent changes in symptoms. The multilevel model on symptom change is restrained to assessments of depressive symptoms after week 4 and controls for initial depression severity. In order to disentangle early alliance from early symptom improvement, we examined the predictive value of alliance both with and without accounting for early change in depressive symptoms. Early symptom improvement was quantified as the subject-specific depression change from intake to the early assessment of the alliance (weeks 2–4, respectively). Early CALPAS alliance was marginally related to subsequent improvement in depression when prior symptom change was not controlled (time by early CALPAS interaction, $F(1,102.9) = 3.61$, $p < .06$) and vanished when early symptom change was controlled ($p = .19$). For both models, there were no significant three-way interactions for time by early alliance by treatment group, indicating that the impact of early CALPAS alliance did not differ between the treatment groups.

A different pattern of results emerged for the WAI-S. Without accounting for prior symptom change, the time by early WAI-S interaction was significant ($F(1,102.5) = 4.94$; $p < .028$). Patients reporting better alliances improved more rapidly during subsequent weeks of treatment. This effect was still significant when controlling for prior symptom improvement ($F(1,95.3) = 4.11$, $p < .045$). There were no significant three-way interactions for time by early WAI-S alliance by treatment group, indicating that the influence of early WAI-S alliance did not depend on the treatment group.

Table II. Estimates of the change in depression as a function of WAI-S at intake (expectation of the alliance)

Label	Estimate	Standard error	*df*	*t*	*p*
Average change	−2.388	.2448	87.7	−9.76	<.001
Average change for +1 SD WAI-S	−2.962	.3299	105.4	−8.98	<.001
Average change for −1 SD WAI-S	−1.816	.3350	106.9	−5.42	<.001

Predicting Outcome from Early Change in Alliance

In the next set of analyses, we focused on the change in alliance from intake through week 4 as a predictor for subsequent improvement in depression. The multilevel model on changes in symptoms is again restrained to assessments of depressive symptoms after week 4. Early change in alliance was quantified as the subject-specific alliance slope from intake to week 4. Initial depression severity was included as a covariate. In addition, the impact of early alliance change was compared for models with and without early improvement in depression (subject-specific depression slope from intake to week 4). Because the pattern of results regarding alliance was similar whether or not early symptomatic improvement was included, only findings for the models including early change in depression are reported. As indicated by the non-significant time by early CALPAS change interaction, change in CALPAS scores from intake to week 4 was not related to later symptom change ($F(1,75.8) = .79$; $p <= .38$). In addition, there was no significant three-way interaction of time by alliance change by treatment group ($F(2,76.9) = .03$; $p <= .98$). Findings looked different for the WAI-S. While there was no direct effect of early WAI-S change on the symptom improvement slope, the three-way interaction of time by alliance change by treatment group interaction was significant ($F(2,89.2) = 4.89$, $p = .01$). To understand the effect, we quantified change in depression as a function of treatment condition at the mean slope estimate in early alliance change, as well as for one

Table III. Slope estimates and within group effect of early change in WAI-S alliance on subsequent change in depressive symptoms

Label	Estimate	Standard error	*df*	*t*	*p*
SET - Average change for mean early WAI-S change	−2.868	.902	96.1	−3.18	.002
SET - Avg change for +1 SD early WAI-S change	−1.701	.979	118.5	−1.74	.085
SET - Avg change for −1 SD early WAI-S change	−4.035	1.123	147.3	−3.59	<.001
Effect in SET	1.167	.544	96.5	2.15	.034
MED - Average change for mean early WAI-S change	−2.505	.896	93.7	−2.80	.006
MED - Avg change for +1 SD early WAI-S change	−3.301	1.014	120.4	−3.26	.001
MED - Avg change for −1 SD early WAI-S change	−1.709	1.701	133.7	−1.59	.113
Effect in MED	−.796	.535	82.1	−1.49	.141
PBO - Average change for mean early WAI-S change	−2.911	.909	98.5	3.20	.002
PBO - Avg change for +1 SD early WAI-S change	−3.480	1.105	141.1	−3.15	.002
PBO - Avg change for −1 SD early WAI-S change	−2.342	.980	119.9	−2.39	.018
Effect in PBO	−.569	.514	86.6	−1.106	.272

standard deviation above and below the mean (Table III). In addition, we estimated the effect of early WAI-S alliance change on subsequent changes in depression within each treatment condition. The slope estimates show a significant effect of early WAI-S change only for SET, indicating that, contrary to expectations, a decrease in early alliance ratings predicted further improvement in depressive symptoms. Although not significant, the effect for the other two conditions MED and PBO is reversed compared to SET, pointing in the expected direction where an increase in alliance is associated with further symptom improvement.

Are Pretreatment Outcome Expectations a Predictor of Symptomatic Improvement?

Next, we examined whether the expectation of treatment improvement/outcome was related to change in depressive symptoms. Similar to the multilevel models with alliance as predictor of outcome, time was modeled as logarithmic transformation of weeks and initial symptom severity was included as a covariate. The time by expectation interaction failed to reach significance ($F(1,108.9) = 2.84$, $p = .095$). The three-way interaction of time by outcome expectation by treatment group was not significant, indicating that the effect of outcome expectations did not differ between the treatment groups.

Is the Improvement Expectation-Outcome Association Mediated by the Therapeutic Alliance?

The last research questions asked whether or not the potential association between expectation for improvement and actual outcome was mediated through the therapeutic alliance. However, as the association between expectations and outcome was not significant, step one of the Baron and Kenny (1986) procedure for mediation analysis was not fulfilled. However, the association between expectations and outcome was not significant. Without a significant and meaningful effect to explain, we decided against a further mediation analysis

Discussion

Using data from an RCT comparing supportive-expressive dynamic psychotherapy with antidepressant medication and placebo (Barber et al., 2012), we investigated the role of expectations for alliance and outcome on the development of the alliance and outcome across these three treatment groups using two different but widely used measures of the therapeutic alliance. Interestingly, our results differed depending on which measure of the alliance was used in the analyses.

In this paper we utilized a measure of what we call alliance expectation, that is, patients were asked to fill out a slightly modified alliance questionnaire before the patient actually met the therapist. A relatively high association was found between alliance expectations and early treatment alliance, suggesting that roughly a quarter of the variance in alliance depends on those pretreatment expectations of the alliance. However, the development of alliance over the course of treatment also impacted subsequent levels of alliance as all correlations among alliance scores over time were highly significant and moderate in magnitude. This finding is consistent with that of earlier studies (e.g., Hilsenroth et al., 2004; Paivio & Bahr, 1998) in which pretreatment alliance expectations as well the ongoing experience of the actual patient-therapist encounter influence the overall alliance.

Patient expectations of good outcome significantly influenced the alliance (see also Connolly Gibbons et al., 2003). This is important as expectations are one of the few patient variables that can potentially

be improved by specifically addressing them at the beginning or prior to treatment (Constantino, Ametrano, & Greenberg, 2012). For example, McKee and colleagues (2007) showed that motivation enhancement resulted in higher outcome expectations for cocaine users receiving CBT compared to those individuals who did not receive motivational enhancement.

The next research question concerned potential differences between the process of the three treatments, keeping in mind that outcome failed to differ between the groups. We found that SET patients reported a strengthening of the alliance as measured by the CALPAS over time consistent with findings reported by Dinger et al. (2009). However, the strength of the alliance decreased over time in the PBO condition, suggesting that treatment processes likely differed among the treatments. For example, the more intense and frequent contacts in SET may have accounted for the strengthening of the alliance whereas less intense and frequent contact in the PBO condition may have weakened the alliance. However, the fact that alliance decreased in PBO but remained unchanged in the MED condition is more difficult to explain as both groups received the same intensity of intervention and the same "treatment" as far as the patients were aware. Despite the worsening of the alliance as measured by the CALPAS in PBO, depressive symptoms in PBO patients improved equally well. It is noteworthy that with the WAI-S, all groups showed significant increases over time. Together these findings reflect the fact that the conceptualization of alliance reflected in the CALPAS is broader than that used in the working alliance (WAI-S).

As there are many ways to test the association between alliance and outcome, we focused on three different sets of analyses. The first set examined alliance expectations at intake as potential predictors of outcome. While alliance expectations as measured with the CALPAS were not related to change in depressive symptoms, WAI expectations turned out to be a significant predictor of symptomatic improvement over the course of therapy. Because most of the existing studies on expectations have focused on outcome expectations (often called role expectations), we do not know of any previous studies on alliance expectations predicting treatment outcome. Based on the diverging findings with the two alliance measurements, our data suggest that expectations of the therapeutic alliance following Bordin's (1979) conceptualization of the alliance may be influential in both psychotherapy and clinical management of depression.

The second set of alliance-outcome analyses examined the impact of early treatment alliance on subsequent change in symptoms. Adding to the discussion of whether or not the alliance-outcome correlation is merely an epiphenomenon of prior symptom change, we examined the predictive value of early alliance scores controlling or not controlling for prior symptom change. While early CALPAS scores were not significantly related to outcome (p = .06), early WAI-S scores significantly predicted subsequent symptom change. This association remained true when controlling for prior symptom change, suggesting that alliance is predictive of outcome over and beyond early symptom change. Due to the inclusions of two clinical management conditions, this study is not directly comparable with many of the studies only examining psychotherapy. However, the lack of significant treatment differences in the alliance-outcome relation replicates findings from the NIMH TDCRP using a different alliance rating (Krupnick et al., 1996). Together, those findings provide evidence that the association between alliance and outcome in clinical management might be comparable to the alliance-outcome association found in psychotherapy.

The third set of analyses on the alliance-outcome relation concerned the early slope of the alliance from intake through week 4. The question was whether an initial decline in the therapeutic alliance (as indicated by a negative slope) or an early positive relationship experience (increase in alliance ratings) related to subsequent outcome differences. Similar to the previous analyses, CALPAS was not related to outcome, but WAI-S was related. The significant three-way interaction with treatment type indicated that the impact of early WAI-S slope on alliance was different in SET compared to the two CM conditions. In SET, an initial decrease in alliance was related to subsequent symptomatic improvement. It is important to keep in mind that this finding is about the shape of the alliance curve, not about the alliance-outcome correlation in general. Previous scholars have suggested that moderately U-shaped alliances that start out high, decrease somewhat towards the middle of therapy, and increase again towards the end of therapy might be found in successful psychotherapies (Gelso & Carter, 1994). This relation might be different for CM, where the therapeutic relationship is not an explicit focus of treatment and patients and therapists do not work through interpersonal difficulties together. It is also possible that predicting outcome from alliance measured so late in treatment may be misleading as much of the change had already occurred.

One recurrent finding in our study is that for all analyses between alliance and outcome, the results differed depending on the alliance questionnaire. This was true despite the high intercorrelation at

each time point. The findings point to the likelihood that different alliance questionnaires measure different aspects of the broader concept of therapeutic alliance. On the one hand, the WAI-S closely follows Bordin's (1979) model of a working alliance; on the other hand, the CALPAS integrates additional aspects of the relationship such as the patient's and therapist's unique contribution (patient commitment, therapist understanding) and patient working capacity (Gaston & Marmar, 1994). The CALPAS assesses aspects of patient participation in the therapeutic relationship (e.g., idealized relationship and negative aspects of the patient participation) that are not captured by the WAI-S or other measures of alliance (see Hatcher & Barends, 1996). The CALPAS can therefore be viewed as a more comprehensive measure of alliance than the WAI-S and perhaps encompasses a concept broader than the therapeutic alliance. In any case, at least in our sample, its comprehensiveness seems to weaken its ability to predict outcome, perhaps because the additional elements included in the CALPAS are not associated with improved outcome. Moreover, measurement of a broader concept of alliance may result in somewhat lower reliability. In our study, the observed CALPAS reliability scores were somewhat lower than the WAI scores, which may have further contributed to a lower correlation with outcome. In contrast to the CALPAS, the WAI assesses agreement on tasks/goals with eight out of 12 items, thereby emphasizing the agreement aspect more so than the bond component. In line with the findings by Webb et al., (2011), it could also be that the alliance-outcome correlation in general is due more to the agreement on tasks and goals than the bond of the therapeutic relationship. We conclude that the two alliance measures capture unique variance of the therapeutic relationships and are not readily interchangeable (see Tichenor & Hill, 1989; but also see Hatcher & Barends, 1996). A potential consequence is that it may be at times inappropriate to generalize from findings that come from different measures of the alliance.

The most recent meta-analysis of the relation between expectation and outcome (Constantino, Arnkoff, et al., 2011) revealed a very small, but significant effect (r = .12). In our fairly large sample of patients, however, we did not find a significant association between outcome expectations and symptomatic improvement. In addition, the association between outcome expectations and change in depression was similar across treatments. Thus, we ruled out the possibility that our PBO group may have had higher expectations, which could have helped explained the lack of significant outcome differences between the groups.

Several limitations have to be considered. Outcome expectation was measured with only one item. Perhaps if we had used more recent, multi-item measures of outcome expectations our results would have been different (Constantino, Glass, et al., 2011) Another limitation regarding generalizability of our results is the fact that patients in our study, like in any RCT, have the bias on being willing to be randomized and were depressed. Furthemore, while recruitment was successful at recruiting an ethnically and socioeconomically diverse sample, the generalizabilty of the findings to non-research settings and non-depressed patients is still limited. Strengths of the current study are the use of multilevel models that can account for missing data as well as frequent measurements of symptoms and alliance throughout therapy.

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References

Barber, J. P. (2009). Towards a working through of some core conflicts in psychotherapy research. *Psychotherapy Research*, *19*, 1–12. doi:10.1080/10503300802609680.

Barber, J. P., Barrett, M. S., Gallop, R., Rynn, M. A., & Rickels, K. (2012). Short-term dynamic psychotherapy versus pharmacotherapy for major depressive disorder: a randomized, placebo-controlled trial. *Journal of Clinical Psychiatry*, *73*, 66–73. doi:10.4088/JCP.11m06831.

Barber, J. P., Connolly, M. B., Crits-Christoph, P., Gladis, L., & Siqueland, L. (2000). Alliance predicts patients' outcome beyond in-treatment change in symptoms. *Journal of Consulting and Clinical Psychology*, *68*, 1027–1032. doi:10.1037/0022-006x.68.6.1027.

Barber, J. P., Luborsky, L., Crits-Christoph, P., Thase, M. E., Weiss, R., Frank, A., … Gallop, R. (1999). Therapeutic alliance as a predictor of outcome in treatment of cocaine dependence. *Psychotherapy Research*, *9*, 54–73. doi:10.1093/ptr/9.1.54.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social-psychological research: Conceptual, strategic and statistical considerations. *Jounral of Personality and Social Psychology*, *51*, 1173–1182.

Beck, A. T., Rush, J. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression*. New York: Guilford Press.

Bordin, E. S. (1979). The generalizability of the psychoanalytic concept of the working alliance. *Psychotherapy: Theory, Research & Practice*, *16*, 252–260. doi:10.1037/h0085885.

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Mahwah, NJ: Lawrence Erlbaum.

Connolly Gibbons, M. B., Crits-Christoph, P., de la Cruz, C., Barber, J. P., Siqueland, L., & Gladis, M. (2003). Pretreatment expectations, interpersonal functioning, and symptoms in

the prediction of the therapeutic alliance across supportive-expressive psychotherapy and cognitive therapy. *Psychotherapy Research*, *13*, 59–76. doi:10.1093/ptr/kpg007.

Constantino, M. J., Ametrano, R. M., & Greenberg, R. P. (2012). Clinician interventions and participant characteristics that foster adaptive patient expectations for psychotherapy and psychotherapeutic change. *Psychotherapy*, *49*, 557–569. doi:10.1037/a0029440.

Constantino, M. J., Arnkoff, D. B., Glass, C. R., Ametrano, R. M., & Smith, J. Z. (2011). Expectations. *Journal of Clinical Psychology*, *67*, 184–192. doi:10.1002/jclp.20754.

Constantino, M. J., Arnow, B. A., Blasey, C., & Agras, W. S. (2005). The association between patient characteristics and the therapeutic alliance in cognitive-behavioral and interpersonal therapy for bulimia nervosa. *Journal of Consulting and Clinical Psychology*, *73*, 203–211. doi:10.1037/0022-006x.73.2.203.

Constantino, M. J., Glass, C. R., Arnkoff, D. B., Ametrano, R. M., & Smith, J. Z. (2011). Expectations. In J. C. Norcross (Ed.), *Psychotherapy relationships that work: Evidence-based responsiveness* (2nd ed., pp. 354–376). New York: Oxford University Press.

Crits-Christoph, P., Connolly Gibbons, M. B., & Mukherjee, D. (2013). Psychotherapy process-outcome research. In M. J. Lambert (Ed.), *Bergin and Garfield's handbook of psychotherapy and behavior change* (6th ed.). New York: Wiley.

Crits-Christoph, P., Gibbons, M. B. C., Hamilton, J., Ring-Kurtz, S., & Gallop, R. (2011). The dependability of alliance assessments: The alliance–outcome correlation is larger than you might think. *Journal of Consulting and Clinical Psychology*, *79*, 267–278. doi:10.1037/a0023668.

DeRubeis, R. J., Brotman, M. A., & Gibbons, C. J. (2005). A conceptual and methodological analysis of the nonspecifics argument. *Clinical Psychology: Science and Practice*, *12*, 174–183. doi:10.1093/clipsy/bpi022.

Diener, M. J., & Monroe, J. M. (2011). The relationship between adult attachment style and therapeutic alliance in individual psychotherapy: A meta-analytic review. *Psychotherapy*, *48*, 237–248. doi:10.1037/a0022425.

Diggle, P., Liang, K.-Y., & Zeger, S. L. (1994). *Analysis of longitudinal data*. Oxford: Oxford University Press.

Dinger, U., Strack, M., Leichsenring, F., & Schauenburg, H. (2007). Influences of patients' and therapists' interpersonal problems and therapeutic alliance on outcome in psychotherapy. *Psychotherapy Research*, *17*, 148–159. doi:10.1080/10503300600865393.

Dinger, U., Strack, M., Sachsse, T., & Schauenburg, H. (2009). Therapists' attachment, patients' interpersonal problems and alliance development over time in inpatient psychotherapy. *Psychotherapy: Theory, Research, Practice, Training*, *46*, 277–290. doi:10.1037/a0016913.

Elkin, I., Parloff, M. B., Hadley, S. W., & Autry, J. H. (1985). NIMH treatment of depression collaborative research program. Background and research plan. *Archives of General Psychiatry*, *42*, 305–316.

Fawcett, J., Epstein, P., Fiester, S. J., Elkin, I., & Autry, J. H. (1987). Clinical management – imipramine/placebo administration manual. NIMH Treatment of Depression Collaborative Research Program. *Psychopharmacology Bulletin*, *23*, 309–324.

Feeley, M., DeRubeis, R. J., & Gelfand, L. A. (1999). The temporal relation of adherence and alliance to symptom change in cognitive therapy for depression. *Journal of Consulting and Clinical Psychology*, *67*, 578–582. doi:10.1037/0022-006x.67.4.578.

First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. W. (1995). The Structured Clinical Interview for DSM-III-R personality disorders (SCID-II): I. Description. *Journal of Personality Disorders*, *9*, 83–91. 10.1521/pedi.1995.9.2.83

Flückiger, C., Del Re, A. C., Wampold, B. E., Symonds, D., & Horvath, A. O. (2012). How central is the alliance in psychotherapy? A multilevel longitudinal meta-analysis. *Journal of Counseling Psychology*, *59*, 10–17. doi:10.1037/a0025749.

Flückiger, C., Regli, D., & Grawe, K. (2005). Allgemeine Psychotherapie im Gruppensetting: Das Zusammenspiel von gruppen- und interventionsspezifischen Wirkfaktoren [General psychotherapy in the group setting: Interaction between group- and intervention-specific factors]. *Gruppenpsychotherapie & Gruppendynamik*, *41*, 306–322.

Gaston, L., & Marmar, C. R. (1994). The California Psychotherapy Alliance Scales. In A. O. Horvath & L. S. Greenberg (Eds.), *The working alliance: Theory, research, and practice* (pp. 85–108). Oxford, England: John Wiley & Sons.

Gelso, C. J., & Carter, J. A. (1994). Components of the psychotherapy relationship: Their interaction and unfolding during treatment. *Journal of Counseling Psychology*, *41*, 296–306. doi:10.1037/0022-0167.41.3.296.

Greenberg, L. S., & Malcolm, W. (2002). Resolving unfinished business: Relating process to outcome. *Journal of Consulting and Clinical Psychology*, *70*, 406–416. doi:10.1037/0022-006x.70.2.406.

Greenberg, L. S., Rice, L. N., & Elliott, R. (1993). *Facilitating emotional change: The moment by moment process*. New York: Guilford Press.

Greenson, R. R. (1965). The working alliance and the transference neurosis. In R. R. Greenson (Ed.), *Explorations in psychoanalysis* (pp. 199–224). New York: International Universities Press.

Hamilton, M. (1960). A rating scale for depression. *Journal of Neurology, Neurosurgery & Psychiatry*, *23*, 56–61. doi:10.1136/jnnp.23.1.56.

Hatcher, R. L., & Barends, A. W. (1996). Patient's view of the alliance of psychotherapy: Exploratory factor analysis of three alliance measures. *Journal of Consulting and Clinical Psychology*, *64*, 1326–1336.

Hilsenroth, M. J., Peters, E. J., & Ackerman, S. J. (2004). The development of therapeutic alliance during psychological assessment: patient and therapist perspectives across treatment. *Journal Of Personality Assessment*, *83*, 332–344. 10.1207/s15327752jpa8303_14

Horvath, A. O., Del Re, A. C., Flückiger, C., & Symonds, D. (2011). Alliance in individual psychotherapy. *Psychotherapy*, *48*, 9–16. doi:10.1037/a0022186.

Horvath, A. O., & Greenberg, L. S. (1989). Development and validation of the Working Alliance Inventory. *Journal of Counseling Psychology*, *36*, 223–233. doi:10.1037/0022-0167.36.2.223.

Johansson, P., Høglend, P., & Hersoug, A. G. (2011). Therapeutic alliance mediates the effect of patient expectancy in dynamic psychotherapy. *British Journal of Clinical Psychology*, *50*, 283–297.

Joyce, A. S., Ogrodniczuk, J. S., Piper, W. E., & McCallum, M. (2003). The alliance as mediator of expectancy effects in short-term individual therapy. *Journal of Consulting and Clinical Psychology*, *71*, 672–679. doi:10.1037/0022-006x.71.4.672.

Kivlighan, D. M., & Shaughnessy, P. (2000). Patterns of working alliance development: A typology of client's working alliance ratings. *Journal of Counseling Psychology*, *47*, 362–371. doi:10.1037/0022-0167.47.3.362.

Klein, D. N., Schwartz, J. E., Santiago, N. J., Vivian, D., Vocisano, C., Castonguay, L. G., … Keller, M. B. (2003). Therapeutic alliance in depression treatment: Controlling for prior change and patient characteristics. *Journal of Consulting and Clinical Psychology*, *71*, 997–1006. doi:10.1037/0022-006x.71.6.997.

Kramer, U.,de Roten, Y., Beretta, V., Michel, L., & Despland, J.-N. (2008). Patients' and therapists' views of early alliance

building in dynamic psychotherapy: Patterns and relation to outcome. *Journal of Counseling Psychology*, *55*, 89–95. doi:10.1037/0022-0167.55.1.89.

Krupnick, J. L., Elkin, I., Collins, J., Simmens, S., Sotsky, S. M., Pilkonis, P. A., & Watkins, J. T. (1994). Therapeutic alliance and clinical outcome in the NIMH Treatment of Depression Collaborative Research Program: Preliminary findings. *Psychotherapy: Theory, Research, Practice, Training*, *31*, 28–35. doi:10.1037/0033-3204.31.1.28.

Krupnick, J. L., Sotsky, S. M., Simmens, S., Moyer, J., Elkin, I., Watkins, J., & Pilkonis, P. A. (1996). The role of the therapeutic alliance in psychotherapy and pharmacotherapy outcome: Findings in the National Institute of Mental Health Treatment of Depression Collaborative Research Program. *Journal of Consulting and Clinical Psychology*, *64*, 532–539. doi:10.1037/0022-006x.64.3.532.

Lambert, M. J., & Barley, D. E. (2001). Research summary on the therapeutic relationship and psychotherapy outcome. *Psychotherapy: Theory, Research, Practice, Training*, *38*, 357–361. 10.1037/0033-3204.38.4.357

Luborsky, L. (1984). *The principles of psychoanalytic psychotherapy*. New York: Basic Books.

Luborsky, L. (1995). Supportive-expressive dynamic psychotherapy of depression: A time-limited version. In J. P. Barber & P. Crits-Christoph (Eds.), *Dynamic therapies for psychiatric disorders* (pp. 41–83). New York: Basic Books.

McKee, S. A., Carroll, K. M., Sinha, R., Robinson, J. E., Nich, C., Cavallo, D., & O'Malley, S. (2007). Enhancing brief cognitive-behavioral therapy with motivational enhancement techniques in cocaine users. *Drug and Alcohol Dependence*, *91*(1), 97–101.

Meyer, B., Pilkonis, P. A., Krupnick, J. L., Egan, M. K., Simmens, S. J., & Sotsky, S. M. (2002). Treatment expectancies, patient alliance and outcome: Further analyses from the National Institute of Mental Health Treatment of Depression Collaborative Research Program. *Journal of Consulting and Clinical Psychology*, *70*, 1051–1055. doi:10.1037/0022-006x.70.4.1051.

Paivio, S. C., & Bahr, L. M. (1998). Interpersonal problems, working alliance, and outcome in short-term experiential therapy. *Psychotherapy Research*, *8*, 392–407. doi:10.1093/ptr/8.4.392.

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear modeling* (2nd ed.). Thousand Oaks, CA: Sage.

Raue, P. J., & Goldfried, M. R. (1994). The therapeutic alliance in cognitive-behavior therapy. In A. Horvath & L. S. Greenberg (Eds.), *The working alliance: Theory, research, practice* (pp. 131–152). New York: Wiley.

Reis, S., & Grenyer, B. F. S. (2004). Fearful attachment, working alliance and treatment response for individuals with major depression. *Clinical Psychology & Psychotherapy*, *11*, 414–424. doi:10.1002/cpp.428.

Sexton, H. C., Hembre, K., & Kvarme, G. (1996). The interaction of the alliance and therapy microprocess: A sequential analysis. *Journal of Consulting and Clinical Psychology*, *64*, 471–480. doi:10.1037/0022-006x.64.3.471.

Sexton, H. C., Littauer, H., Sexton, A., & Tømmerås, E. (2005). Building an alliance: Early therapy process and the client–therapist connection. *Psychotherapy Research*, *15*, 103–116. doi:10.1080/10503300512331327083.

Shrout, J., & Fleiss, J. L. (1979). Intraclass correlations: Uses in assessing rater reliability. *Psychological Bulletin*, *86*, 420–428.

Stiles, W. B., Glick, M. J., Osatuke, K., Hardy, G. E., Shapiro, D. A., Agnew-Davies, R., … Barkham, M. (2004). Patterns of alliance development and the rupture-repair hypothesis: Are productive relationships U-shaped or V-shaped? *Journal of Counseling Psychology*, *51*, 81–92. doi:10.1037/0022-0167.51.1.81.

Strunk, D. R., Brotmann, M. A., & DeRubeis, R. J. (2010). The process of change in Cognitive Therapy for Depression: Predictors of early inter-session symptom gains. *Behaviour Research and Therapy*, *48*, 599–606. 10.1016/j.brat.2010.03.011

Strunk, D. R., Cooper, A. A., Ryan, E. T., DeRubeis, R. J., & Hollon, S. D. (2012). The process of change in cognitive therapy for depression when combined with antidepressant medication: Predictors of early intersession symptom gains. *Journal of Consulting and Clinical Psychology*, *80*, 730–738. doi:10.1037/a0029281.

Strunk, D. R., Stewart, M. O., Hollon, S. D., DeRubeis, R. J., Fawcett, J., Amsterdam, J. D., & Shelton, R. C. (2010). Can pharmacotherapists be too supportive? A process study of active medication and placebo in the treatment of depression. *Psychological Medicine*, *40*, 1379–1387. doi:10.1017/s0033291709991553.

Tang, T. Z., & DeRubeis, R. J. (1999). Sudden gains and critical sessions in cognitive-behavioral therapy for depression. *Journal of Consulting and Clinical Psychology*, *67*, 894–904. doi:10.1037/0022-006x.67.6.894.

Tichenor, V., & Hill, C. E. (1989). A comparison of six measures of working alliance. *Psychotherapy*, *26*, 195–199.

Tracey, T. J., & Kokotovic, A. M. (1989). Factor structure of the Working Alliance Inventory. *Psychological Assessment: A Journal of Consulting and Clinical Psychology*, *1*, 207–210. doi:10.1037/1040-3590.1.3.207.

Watson, J. C., McMullen, E. J., Prosser, M. C., & Bedard, D. L. (2011). An examination of the relationships among clients' affect regulation, in-session emotional processing, the working alliance, and outcome. *Psychotherapy Research*, *21*, 86–96. doi:10.1080/10503307.2010.518637.

Webb, C. A., DeRubeis, R. J., Amsterdam, J. D., Shelton, R. C., Hollon, S. D., & Dimidjian, S. (2011). Two aspects of the therapeutic alliance: Differential relations with depressive symptom change. *Journal of Consulting and Clinical Psychology*, *79*, 279–283. doi:10.1037/a0023252.

Williams, J. B. (1988). A structured interview guide for the Hamilton Depression Rating Scale. *Archives of General Psychiatry*, *45*, 742–747. doi:10.1001/archpsyc.1988.01800320058007.

Zilcha-Mano, S., Dinger, U., McCarthy, K. S., & Barber, J. P. (in press). Does alliance predict symptomatic change, or is it the other way around? *Journal of Counseling and Clinical Psychology*.