Journal of Consulting and Clinical Psychology
2003, Vol. 71, No. 6, 997–1006

0022-006X/03/$12.00 DOI: 10.1037/0022-006X.71.6.997

Therapeutic Alliance in Depression Treatment: Controlling for Prior Change and Patient Characteristics

Daniel N. Klein, Joseph E. Schwartz, Neil J. Santiago, Dina Vivian, and Carina Vocisano
State University of New York at Stony Brook

Louis G. Castonguay
Pennsylvania State University

Bruce Arnow
Stanford University

Janice A. Blalock
University of Texas Medical Branch at Galveston

Rachel Manber
University of Arizona

John C. Markowitz
Cornell University Medical College

Lawrence P. Riso
Georgia State University

Barbara Rothbaum
Emory University

James P. McCullough
Virginia Commonwealth University

Michael E. Thase
University of Pittsburgh

Frances E. Borian
Bristol-Myers Squibb

Ivan W. Miller and Martin B. Keller
Brown University

Although many studies report that the therapeutic alliance predicts psychotherapy outcome, few exclude the possibility that this association is accounted for by 3rd variables, such as prior improvement and prognostically relevant patient characteristics. The authors treated 367 chronically depressed patients with the cognitive–behavioral analysis system of psychotherapy (CBASP), alone or with medication. Using mixed effects growth-curve analyses, they found the early alliance significantly predicted subsequent improvement in depressive symptoms after controlling for prior improvement and 8 prognostically relevant patient characteristics. In contrast, neither early level nor change in symptoms predicted the subsequent level or course of the alliance. Patients receiving combination treatment reported stronger alliances with their psychotherapists than patients receiving CBASP alone. However, the impact of the alliance on outcome was similar for both treatment conditions.

Numerous studies have demonstrated that the therapeutic alliance has a modest, but consistent, relationship with outcome in psychotherapy (Constantino, Castonguay, & Schut, 2002; Horvath, 1994). In a recent meta-analytic review of 68 studies, Martin, Garske, and Davis (2000) reported that the overall weighted alliance–outcome correlation was .22. The effect was consistent

Daniel N. Klein, Departments of Psychology and Psychiatry and Behavioral Sciences, State University of New York at Stony Brook; Joseph E. Schwartz, Department of Psychiatry and Behavioral Sciences, State University of New York at Stony Brook; Neil J. Santiago, Dina Vivian, and Carina Vocisano, Department of Psychology, State University of New York at Stony Brook; Louis G. Castonguay, Department of Psychology, Pennsylvania State University; Bruce Arnow, Department of Psychiatry and Behavioral Sciences, Stanford University; Janice A. Blalock, Department of Psychiatry, University of Texas Medical Branch at Galveston; Rachel Manber, Department of Psychiatry, University of Arizona; John C. Markowitz, Department of Psychiatry, Cornell University Medical College; Lawrence P. Riso, Department of Psychology, Georgia State University; Barbara Rothbaum, Department of Psychiatry, Emory University; James P. McCullough, Department of Psychology, Virginia Commonwealth University; Michael E. Thase, Department of Psychiatry, University of Pittsburgh; Frances E. Borian, Bristol-Myers Squibb, Princeton, New Jersey; Ivan W. Miller and Martin B. Keller, Department of Psychiatry, Brown University.

Carina Vocisano is now at the Department of Psychology, Southern Connecticut State University; Janice A. Blalock is now at the M. D. Anderson Cancer Center, University of Texas; Rachel Manber is now at the Department of Psychiatry and Behavioral Sciences, Stanford University.

This research was supported by Bristol-Myers Squibb.

Correspondence concerning this article should be addressed to Daniel N. Klein, Department of Psychology, State University of New York at Stony Brook, Stony Brook, New York 11794-2500. E-mail: daniel.klein@stonybrook.edu

across form of psychotherapy, source (patient, therapist, observer), point in treatment that the alliance was assessed (early, middle, late, average across all sessions), and with one exception, the measure used to assess the alliance. However, despite the large number of studies documenting this association, important questions remain about whether the alliance has a causal effect on outcome or whether the association is spurious or even runs in the opposite direction, with change in symptoms influencing the alliance (Feeley, DeRubeis, & Gelfand, 1999).

Most studies of the association between the therapeutic alliance and psychotherapy outcome have assessed the alliance at one or more points after the initiation of treatment and correlated the alliance with change from baseline to the end of treatment. This raises the possibility that some of the change being "predicted" has already occurred prior to the point the alliance is assessed. Moreover, early symptomatic change in therapy may play a causal role in the development of the alliance, with improvement strengthening a patient's bond with their therapist. Indeed, several studies have reported that early change predicts a subsequent increase in the therapeutic alliance (Barber, Connolly, Crits-Cristoph, Gladis, & Siqueland, 2000; DeRubeis & Feeley, 1990). Thus, early change may be a confounding third variable that accounts for the relationship between the alliance and later change.

We are aware of five studies that have examined the association between the therapeutic alliance and changes in symptomatology occurring after the assessment of the alliance (Barber et al., 1999, 2000; DeRubeis & Feeley, 1990; Feeley et al., 1999; Gaston, Marmar, Gallagher, & Thompson, 1991). Three of these studies also controlled for change prior to the assessment of the alliance (Barber et al., 1999, 2000; Gaston et al., 1991). In two small samples of depressed patients (*N*s = 25 and 32, respectively), DeRubeis and Feeley (1990) and Feeley et al. (1999) failed to find significant associations between the alliance and subsequent change during a course of cognitive therapy. In a sample of 54 elderly depressed patients receiving behavioral, cognitive, or brief dynamic therapy, Gaston et al. (1991) found that the association between the alliance and subsequent change was not significant after controlling for improvement in depressive symptoms prior to the assessment of the alliance. Similarly, in a large sample of patients with cocaine dependence receiving several different treatments, Barber et al. (1999) reported that the alliance was not associated with subsequent change after controlling for prior improvement. However, in the one positive study, Barber et al. (2000) found that in a sample of 88 patients with depressive, anxiety, and/or personality disorders treated with psychodynamic psychotherapy, the alliance predicted subsequent change in symptoms even after controlling for prior improvement.

Another set of factors that could potentially produce a spurious association between the alliance and outcome is patient characteristics, such as chronicity, comorbidity, poor social functioning, and a history of abuse and neglect by caretakers. There is evidence that the quality of patients' early relationships with caretakers, current interpersonal relationships, and personality traits and disorders are associated with the alliance (Hardy et al., 2001; Hilliard, Henry, & Strupp, 2000; Muran, Segal, Samstag, & Crawford, 1994; Piper et al., 1991; Zuroff et al., 2000). These variables have also been found to predict outcome in clinical trials and naturalistic studies (Diguer, Barber, & Luborsky, 1993; Durbin, Klein, & Schwartz, 2000; Hardy et al., 2001; Ogrodniczuk, Piper, Joyce, & McCallum, 2001; Shea et al., 1990). Thus, these factors might explain the relationship between the alliance and treatment outcome. Unfortunately, few studies of the association between the alliance and psychotherapy outcome have attempted to rule out patient characteristics as a source of spuriousness.

In this article, we address the potential confounds of prior change and patient characteristics in examining the relationship between the early alliance and subsequent change in symptoms in a large sample of outpatients with chronic forms of major depression. In addition, we examine whether the relationship is reciprocal, or runs in the oppositive direction, by determining whether baseline severity and early improvement in depressive symptoms predict the subsequent level and course of the alliance. We focus primarily on the role of the early alliance because the early alliance may be a stronger predictor of outcome than the middle and late alliance (Constantino et al., 2002; Horvath, 1994); has greater clinical implications, as there is more opportunity to improve a poor alliance early than later in treatment; and provided the most follow-up data for assessing change. The data come from a clinical trial comparing the efficacy of the cognitive–behavioral analysis system of psychotherapy (CBASP), a structured, short-term psychotherapy that was developed specifically for chronic depression (McCullough, 2000), with antidepressant medication and the combination of CBASP and medication (Keller et al., 2000).

The design of the larger study also provided an opportunity to address the question of whether receiving concurrent medication influences the quality of patients' alliances with their psychotherapists or the association between the alliance and treatment outcome. Many psychotherapy patients are treated concurrently with medication, typically by a different clinician. For example, in two large national surveys, 45% of outpatients treated for depression received both psychotherapy and antidepressant medication (Olfson et al., 2002). However, we are unaware of studies that have examined the effects of concurrent medication on either the alliance in psychotherapy or the association between the alliance and outcome. Influences in both directions are plausible. Concurrent medication might increase the strength of the alliance with the psychotherapist by reducing symptoms more rapidly or by enabling the patient to engage in psychotherapy more quickly, or the greater total time and attention from two professionals could produce a halo effect that increases the patient's satisfaction with their psychotherapist. In contrast, if the patient believes that pharmacotherapy is more effective than psychotherapy, concurrent medication could diminish the alliance with the psychotherapist by reducing the patient's investment in psychotherapy (Klerman et al., 1994; Miller & Keitner, 1996).

Concurrent medication could also strengthen or weaken the association between the alliance and treatment outcome. For example, if a good alliance with the psychotherapist increased compliance with medication, it would strengthen the relation between the alliance and outcome. Similarly, if the alliance contributes to a positive response to psychotherapy, and medication amplifies the effects of psychotherapy, the association between the alliance and outcome would be stronger with concurrent medication. On the other hand, there may be two subgroups of patients who respond to combined treatment: those responding primarily to medication and those responding primarily to psychotherapy (Keller et al., 2000). If some patients who respond to combined treatment are responding primarily to the pharmacological component, the as-

sociation between the alliance with the psychotherapist and outcome should be diluted compared with patients receiving psychotherapy alone (Thase, 2000).

Method

Participants

The treatment conditions and procedures are described in Keller et al. (2000). A total of 681 patients at 12 academic centers were randomized to 12 weeks of treatment with CBASP alone, Nefazodone alone, or the combination. Patients were recruited through a combination of clinical referrals and advertisements. The present report is limited to the 455 patients who were randomized to the CBASP alone ($n = 228$) and combination ($n = 227$) conditions.

All patients met *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; American Psychiatric Association, 1994) criteria for a current episode of chronic major depressive disorder (MDD), MDD superimposed on a preexisting dysthymic disorder (DD), or recurrent MDD with incomplete remission and a total duration of continuous illness of at least 2 years. To be eligible for the study, patients had to be between the ages of 18 and 75 and to have a score of at least 20 on the 24-item Hamilton Rating Scale for Depression (HRSD; Hamilton, 1967) at screening and, after a 2-week drug-free period, at baseline. Exclusion criteria included: a history of psychotic, bipolar, or obsessive–compulsive disorder; eating disorders within the past year; substance abuse or dependence in the past 6 months; a high risk for suicide; antisocial, schizotypal, or severe borderline (i.e., high risk for hospitalization) personality disorder; poorly controlled or serious medical disorders; and a history of failing adequate trials of two types of antidepressant medications or two different courses of empirically supported psychotherapy for depression within the past 3 years. All patients provided informed consent.

Treatments

CBASP (McCullough, 2000) is a structured time-limited psychotherapy developed to treat chronic depressions. It uses a technique referred to as "situational analysis" (SA) to help patients to change their patterns of coping, improve their interpersonal skills, understand the consequences of their behavior, and interact more effectively with others. In SA, the patient identifies a recent, distressing interpersonal situation and examines it with the therapist. The process consists of three phases: elicitation, remediation, and generalization. In the elicitation phase, the patient describes: (a) the interpersonal event, (b) their behavior, (c) their interpretation of what occurred, (d) the outcome of the event, (e) what they would have liked the outcome to be (desired outcome), and (f) whether the desired outcome was achieved. In the remediation phase, the patient works with the therapist to revise his or her interpretations and behaviors during the situation to increase the probability of achieving a more desirable outcome. In the generalization phase, the patient and therapist review what has been learned and explore how the patient's new understanding and skills can be applied to similar situations in the future.

The psychotherapists followed a manual and study protocol specifying twice-weekly sessions during Weeks 1 through 4 and weekly sessions during Weeks 5 through 12. Twice-weekly sessions could be extended until Week 8 if the patient was not adequately performing the SA procedure. The mean number of CBASP sessions was 16.0 ($SD = 4.7$) and 16.2 ($SD = 4.8$) in the CBASP alone and combination conditions, respectively.

Psychotherapists ($n = 52$) had at least 2 years of clinical experience after earning a doctorate in psychology or psychiatry or a medical degree, or they had at least 5 years of experience after earning a master's of social work. They attended a 2-day workshop conducted by James P. McCullough and met criteria for mastery of CBASP procedures during two videotaped pilot cases. Sessions were videotaped and reviewed weekly by the CBASP supervisor at each site or by James P. McCullough to assess adherence to the treatment procedures.

Nefazodone was routinely initiated at 100 mg twice daily, with a dose of 300 mg/day required after Week 3 and subsequent titration permitted up to 600 mg/day in divided doses. The mean final dose of Nefazodone in the combination condition was 460 mg ($SD = 139$ mg). Different clinicians conducted pharmacotherapy and psychotherapy. Pharmacotherapy visits followed a manual (Fawcett, Epstein, Fiester, Elkin, & Autry, 1987), focused on symptoms and side effects, and lasted 15–20 min. Formal psychotherapeutic interventions were prohibited.

Measures

Diagnoses were derived using a modified version of the Structured Clinical Interview for the *DSM–IV* (SCID-I/P; First, Spitzer, Gibbon, & Williams, 1995) for Axis I disorders and an abbreviated version of the SCID-II (First, Gibbon, Spitzer, Williams, & Benjamin, 1997) for Axis II disorders during the screening evaluation. The SCID-II was limited to a subset of personality disorders that were required to assess inclusion and/or exclusion criteria or are common in chronic depression: antisocial, borderline, schizotypal, avoidant, dependent, and obsessive-compulsive. A physical examination, routine laboratory tests, and urine toxicology screen were also performed.

Our primary outcome measure was the 24-item HRSD, which was administered at screening, baseline, and Weeks 1, 2, 3, 4, 6, 8, 10, and 12 by certified raters who were unaware of patients' treatment conditions (see Keller et al., 2000, for details).

The alliance was assessed using the abbreviated version (Tracey & Kokotovic, 1989) of the patient report form of the Working Alliance Inventory (WAI; Horvath & Greenberg, 1989). The WAI is one of the most commonly used and best-established measures of the alliance. It is pantheoretical, moderately correlated with other measures of the alliance, and has been shown to predict psychotherapy outcome in numerous studies (Horvath, 1994; Martin et al., 2000).

We used patients' reports of the alliance, as they tend to predict psychotherapy outcome somewhat more strongly than therapist reports (Constantino et al., 2002; Horvath, 1994). Patients were instructed to complete the WAI with respect to their psychotherapist regardless of whether they also had a pharmacotherapist. The alliance with pharmacotherapists was not assessed.

The WAI consists of three 12-item subscales: Goals, reflecting patient and therapist agreement on the goals of treatment; Tasks, reflecting patient and therapist agreement on how to achieve the goals; and Bond, or the affective quality of the patient–therapist relationship. Each item is rated on a 7-point scale, with higher scores reflecting a better alliance.

The abbreviated WAI was developed through a confirmatory factor analysis of the original WAI (Tracey & Kokotovic, 1989). The original three subscales were preserved, but the number of items was reduced by retaining only the four items with the highest loadings on their respective factors. Both the original and abbreviated versions of the WAI exhibit a two-level structure, with a general alliance factor that can be split into the Goal, Task, and Bond subscales (Tracey & Kokotovic, 1989). In light of the evidence for a general factor and the high intercorrelations of the three subscales in our data (i.e., for the alliance at Week 2, the median $r = .71$; range = .62–.72), we limited our analyses to the general alliance factor (or total score). The WAI was administered during Week 2 (after 3–4 sessions), Week 6 (after 8–12 sessions), and Week 12 (after 16–20 sessions). Coefficient alphas at Weeks 2, 6, and 12 were .92, .94, and .94, respectively. The WAI had moderate–high stability over the course of the study: product-moment correlations between Weeks 2 and 6, Weeks 6 and 12, and Weeks 2 and 12 were .70, .73, and .64, respectively.

The battery of measures administered at baseline included the Longitudinal Interval Follow-Up Evaluation Base (LIFE Base; Keller et al., 1987) and a measure of childhood abuse and neglect adapted from Lizardi et al.

(1995). The LIFE Base is a semistructured interview that assesses social functioning in a variety of areas, including work; relationships with partner, children, other family members, and friends; and recreational activities. In the present analyses, we used the interviewer-rated highest level of global social functioning in the past 5 years, scored on a 5-point scale (1 = *very good* to 5 = *very poor*). The measure of childhood abuse and neglect was based on a semistructured interview assessing physical and sexual abuse and caretaker neglect prior to age 15. The threshold for scoring items as present was strict and corresponded to a level that would ordinarily require reporting to Child Protective Services. We created a composite index reflecting the presence or absence of definite sexual or physical abuse or neglect. We did not assess the interrater reliability of the LIFE Base or abuse and/or neglect ratings; however, acceptable levels of interrater reliability for these measures have been reported in previous studies (Keller et al., 1987; Lizardi et al., 1995).

Data Analysis

Previous studies of the effects of the therapeutic alliance on treatment outcome have used autoregressive techniques, particularly multiple regression analysis with the baseline level of the dependent variable partialled out to create a residual change score. In recent years, autoregressive approaches to the analysis of change have been criticized on a number of grounds, including: (a) the assumption that a single parameter adequately characterizes stability over time for all participants rather than considering heterogeneity of change (i.e., fixed, rather than random, effects); (b) analyses are typically based on covariances between time points, ignoring information about mean changes over time; and (c) change is examined as one or more comparisons between pairs of time points rather than being viewed as a continuous trajectory over multiple time points (Curran, 2000; Rogosa, 1995). Critics have argued that random-effects-growth-curve approaches (including mixed effects and latent-growth-curve models) are more appropriate because they can model participants' intercepts and slopes as random, rather than fixed, effects; incorporate information about mean changes over time; and examine the full trajectory of change over time (Curran, 2000; Willett & Sayer, 1994). In this study, we used mixed-effects-growth-curve models to examine the relationships between the therapeutic alliance and change in depressive symptoms. However, as autoregressive and growth-curve approaches can produce different results when applied to the same data (Schnall, Schwartz, Landsbergis, Warren, & Pickering, 1998; Stoolmiller, Duncan, Bank, & Patterson, 1993), we also analyzed the data using multiple regression analysis, following the procedure described by Barber et al. (2000). Despite the differences between these approaches, the results of the regression analyses were consistent with the major results and conclusions reported later. Site × Treatment Condition interactions were not significant, hence they were not included in the growth-curve models. The number of participants varied in some analyses because of missing data.

Results

The results are presented in four sections. First, we examine sampling bias and present descriptive data on the sample. Second, we test the prospective effects of the early (Week 2) alliance on subsequent (Weeks 3–12) change in depressive symptomatology, controlling for prior (baseline–Week 2) change in symptoms. In these analyses, we also examine whether the relationship between the early alliance and treatment response differs between patients receiving CBASP alone versus those receiving combination treatment. Third, we repeat these analyses after controlling for other patient characteristics (gender, chronicity, comorbidity, social functioning, and history of abuse/neglect) that could potentially account for the alliance-outcome relationship. Finally, we consider the possibility of reverse causation (or reciprocal effects) by examining the effects of initial severity and early improvement of depression on the early alliance. As part of this analysis, we also explore the effects of treatment condition on the course of the alliance over time.

Sampling Bias and Descriptive Characteristics

Data on the early alliance were available for 367 (80.7%) of the 455 patients receiving CBASP alone or combination treatment. Of the patients with early alliance ratings, data on the middle and late alliance were available for 344 (93.7%) and 315 (85.8%) patients, respectively.

We compared patients with data on the early alliance with those without data (because of early dropout [5.1%] or failure to complete the measure [14.3%]) on treatment condition, gender, age, race, marital status, chronic depression diagnosis, age at onset of MDD, duration of index MDD episode, number of MDD episodes, age at onset of DD, duration of index DD episode, baseline HRSD, baseline Global Assessment of Functioning score, concurrent anxiety disorder, lifetime alcohol abuse and/or dependence, lifetime drug abuse and/or dependence, and concurrent personality disorder using chi-square, *t* test, and Wilcoxon's rank-sum test. There were significant differences on 4 of these 17 variables. Of the 227 patients randomized to combination treatment, 87.2% had data available on the early alliance, compared with 74.1% of the 228 patients randomized to CBASP alone, $\chi^2(1, N = 455) = 12.52$, $p = .001$. Compared with patients without data on the early alliance, those with data had a greater number of MDD episodes ($M = 7.4$, $SD = 21.5$ vs. $M = 3.1$, $SD = 10.5$), Wilcoxon's rank-sum test $Z = 2.36$, $p = .02$, and a higher rate of personality disorders (37.6% vs. 21.6%), $\chi^2(1, N = 455) = 8.05$, $p = .005$, but a lower rate of drug abuse and/or dependence (11.4% vs. 26.1%), $\chi^2(1, N = 455) = 12.51$, $p = .001$. Thus, patients randomized to CBASP alone and those with fewer MDD episodes, with a history of drug abuse, and without personality disorders are somewhat underrepresented in the analyses.

Descriptive characteristics of the patients in the CBASP alone and combination conditions with data available on the early alliance appear in Table 1. The two treatment conditions differed significantly on only 1 of the 17 variables. Patients in the combination condition had a higher rate of concurrent anxiety disorders, $\chi^2(1, N = 367) = 4.85$, $p = .03$.

Effects of the Alliance on Subsequent Change in Depression Controlling for Prior Change

The means and intercorrelations of the alliance and HRSD scores appear in Table 2. Mixed-effects-growth-curve models were used to examine the effects of the early alliance on subsequent change in depression after controlling for prior level and change in depression. The intercept and slope of HRSD scores between Weeks 3 and 12 were treated as random effects, and an autoregressive covariance structure of the residuals was used. Twenty-six patients who were missing data on one of the covariates (HRSD at baseline, Week 1, and Week 2) or who dropped out of the study without completing any HRSD assessments after Week 2 were excluded from these analyses, leaving a sample size of 341.

Table 1
Descriptive Characteristics of Patients Receiving CBASP Alone and Combination Treatment

Characteristic	CBASP alone (n = 169)	Combination (n = 198)
Female, %	62.7	70.7
Age, in years, *M* (*SD*)	43.7 (10.6)	44.6 (10.5)
Caucasian, %	92.9	93.4
Marital status, %		
Married or cohabiting	44.4	42.4
Single	27.8	24.7
Widowed	1.8	2.5
Divorced or separated	26.0	30.3
Primary study diagnosis, %		
Chronic MDD	32.0	32.8
MDD superimposed on DD	25.4	20.2
Recurrent MDD with incomplete remission	26.0	22.7
Chronic MDD superimposed on DD	16.6	24.2
Baseline 24-item HRSD, *M* (*SD*)	26.5 (4.8)	27.2 (4.9)
Baseline 17-item HRSD, *M* (*SD*)	20.0 (3.6)	20.6 (3.8)
Baseline GAF, *M* (*SD*)	53.9 (5.6)	53.6 (5.7)
Age at onset of MDD, in years, *M* (*SD*)	27.2 (12.9)	27.4 (13.3)
Duration of current MDD episode, in years, *M* (*SD*)	7.5 (9.6)	8.1 (9.5)
No. of MDD episodes, *M* (*SD*)	7.1 (20.7)	7.7 (22.3)
Age at onset of DD, in years, *M* (*SD*)	19.7 (14.1)	20.3 (14.4)
Duration of current DD episode in years, *M* (*SD*)	22.2 (15.0)	25.0 (15.8)
Current anxiety disorder, %[a]	17.2	26.8
Lifetime alcohol abuse and/or dependence, %	29.0	25.8
Lifetime drug abuse and/or dependence, %	11.2	11.6
Comorbid personality disorder, %	33.1	41.4
LIFE social functioning past 5 years, *M* (*SD*)	2.5 (0.9)	2.6 (0.9)
History of abuse or neglect, %	27.2	36.4

Note. Analyses are limited to patients with data on the early alliance. CBASP = cognitive–behavioral analysis system of psychotherapy; MDD = major depressive disorder; DD = dysthymic disorder; HRSD = Hamilton Rating Scale for Depression; GAF = Global Assessment of Functioning Scale; LIFE = Longitudinal Interval Follow-Up Evaluation.
[a] $\chi^2(1, N = 367) = 4.85, p < .03$.

The initial, or baseline, model examined the effects of treatment condition and severity of depression at baseline and Weeks 1 and 2 (and, implicitly, the change in depression from baseline–Week 1 and from Week 1–Week 2) on the subsequent course of depression from Week 3 onward (see Table 3). Consistent with our earlier report (Keller et al., 2000), the two treatment conditions differed significantly on the slope of HRSD scores between Weeks 3 and 12, with patients who received combined therapy exhibiting a steeper reduction of depressive symptoms over time. In addition, HRSD scores at Weeks 1 and 2 significantly predicted the intercept (i.e., the estimated HRSD score at Week 3), indicating, not surprisingly, that patients with more severe depression in the first 2 weeks after entering treatment had a higher level of depression at the start of the remaining 9 weeks of the study. Finally, Week 1 HRSD scores significantly predicted the slope of HRSD scores between Weeks 3 and 12, indicating that a higher level of depression at Week 1 predicted a steeper decline in depressive symptoms from Weeks 3–12.

In the second model, the effects of the therapeutic alliance at Week 2 on the intercept and slope of HRSD scores from Weeks 3–12 were added to the model. This produced a significant improvement in model fit, $\chi^2(2, N = 341) = 10.8, p = .005$. After controlling for the effects of treatment condition and baseline–Week 2 HRSD scores on the intercept and slope of HRSD scores from Weeks 3–12, the early alliance did not predict the intercept (or estimated HRSD score at Week 3). However, the alliance at Week 2 significantly predicted change in depressive symptoms between Weeks 3 and 12, with a better alliance predicting a steeper decline in HRSD scores.

In the third model, we explored whether the relationship between the early alliance and change in depressive symptoms differed as a function of treatment condition. Terms for the interactions between treatment condition and the alliance on the intercept and slope of HRSD scores from Weeks 3–12 were entered into the model. Neither of these effects was statistically significant and the fit of the overall model did not improve, $\chi^2(2, N = 341) = 0.5$, $p = .75$, indicating that treatment condition did not moderate the association between the early alliance and the subsequent level or change in depressive symptoms.

Effects of the Alliance on Subsequent Change Controlling for Selected Patient Characteristics

Next, we extended the mixed-effects-growth-curve models by controlling for additional patient characteristics, including gender, chronicity (coded as the length of the index MDD or DD episode, or the longer of the two if both were present), concurrent anxiety disorder, lifetime alcohol and drug use disorders, personality disorder, highest level of social functioning in the past 5 years, and a

Table 2
Correlations Between the Alliance and Depressive Symptomatology

Variable	$HRSD_0$	$HRSD_1$	$HRSD_2$	$HRSD_3$	$HRSD_4$	$HRSD_6$	$HRSD_8$	$HRSD_{10}$	$HRSD_{12}$	*M* (*SD*)
WAI_2	−.04	−.06	−.15*	−.10	−.08	−.15*	−.10	−.17*	−.24*	66.6 (12.0)
WAI_6	−.02	−.05	−.09	−.12*	−.10	−.24*	−.20*	−.24*	−.29*	69.6 (11.6)
WAI_{12}	.02	.00	−.07	−.07	−.10	−.17*	−.22*	−.25*	−.40*	72.7 (10.7)
M (*SD*)	26.9 (4.0)	24.1 (6.1)	22.5 (6.6)	20.9 (7.8)	19.8 (7.9)	17.0 (8.4)	15.3 (8.5)	13.7 (8.5)	11.9 (8.6)	

Note. *n*s range from 275 to 367 because of missing data (mainly attributable to participants dropping out before completion of trial). The subscripted numbers after HRSD and WAI reflect the week of administration; 0 = baseline assessment. HRSD = Hamilton Rating Scale for Depression; WAI = Working Alliance Inventory.
* $p < .05$.

Table 3
Parameter Estimates (and Standard Errors) for Mixed Effects Models Examining the Relationship Between the Working Alliance and Response to Cognitive–Behavioral Analysis System of Psychotherapy (CBASP)

Variable	Model 1	Model 2	Model 3	Model 4
Condition	0.861 (0.637)	0.836 (0.642)	0.726 (0.663)	1.017 (0.649)
Condition × Week	0.289 (0.117)**	0.255 (0.117)*	0.257 (0.121)*	0.215 (0.116)†
$HRSD_0$	0.093 (0.074)	0.094 (0.074)	0.093 (0.074)	0.062 (0.075)
$HRSD_1$	0.331 (0.066)***	0.331 (0.066)***	0.334 (0.066)***	0.321 (0.066)***
$HRSD_2$	0.470 (0.059)***	0.468 (0.060)***	0.469 (0.060)***	0.461 (0.059)***
$HRSD_0$ × Week	−0.003 (0.013)	−0.003 (0.013)	−0.003 (0.013)	0.004 (0.013)
$HRSD_1$ × Week	−0.033 (0.011)**	−0.032 (0.011)**	−0.032 (0.011)**	−0.031 (0.011)**
$HRSD_2$ × Week	−0.017 (0.011)	−0.019 (0.011)†	−0.019 (0.011)†	−0.018 (0.010)†
Gender				−1.154 (0.707)
Chronicity				0.024 (0.022)
Anxiety disorder				0.025 (0.804)
Alcohol use disorder				−1.252 (0.753)†
Drug use disorder				0.515 (1.060)
Personality disorder				0.207 (0.697)
Social functioning				0.298 (0.376)
History of abuse and/or neglect				0.207 (0.685)
Gender × Week				0.140 (0.124)
Chronicity × Week				−0.008 (0.004)*
Anxiety Disorder × Week				−0.019 (0.137)
Alcohol Use Disorder × Week				0.140 (0.128)
Drug Use Disorder × Week				−0.360 (0.182)*
Personality Disorder × Week				−0.107 (0.119)
Social Functioning × Week				0.066 (0.064)
Abuse and/or Neglect × Week				−0.043 (0.117)
WAI_2		−0.010 (0.027)	−0.024 (0.034)	−0.015 (0.027)
WAI_2 × Condition			0.036 (0.055)	
WAI_2 × Week		−0.013 (0.005)**	−0.013 (0.007)**	−0.014 (0.005)**
WAI_2 × Condition × Week			−0.001 (0.010)	
−2 log likelihood	11,778.4	11,767.6	11,767.1	11,713.8

Note. Condition is CBASP alone versus combined CBASP and Nefazodone. The subscripted numbers following the HRSD and WAI refer to the assessment week. One participant is missing from the analyses for Model 4. When Model 2 is rerun without this participant, the 2 log likelihood is 11,732.2. HRSD = Hamilton Rating Scale for Depression; WAI = Working Alliance Inventory.
† $p < .10$. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

history of abuse or neglect prior to age 15. As the effects of the interaction between treatment condition and the alliance on the intercept and slope of Week 3–12 HRSD scores were nonsignificant in Model 3, these terms were not included in the next model. One patient was missing data on social functioning, hence the sample size for this analysis was 340.

Correlations among the patient characteristics and between the patient characteristics and the early alliance and HRSD are available on request. None of the covariates was significantly correlated with the early alliance, and only 3 of the 42 correlations between the covariates and HRSD scores from Weeks 3–12 were significant (gender with Week 4 HRSD, $r = .12$; alcohol abuse and/or dependence with Week 12 HRSD, $r = -.13$; and drug abuse and/or dependence with Week 3 HRSD, $r = -.13$), the latter two of which were in the nonexpected direction.

The results of the mixed-effects-growth-curve model examining the relationship between the early alliance and subsequent change in depression after controlling for early severity and improvement in depression and the eight demographic and clinical covariates are presented in the fourth model in Table 3. Chronicity of depression and a history of drug abuse and/or dependence significantly predicted the slope of HRSD scores between Weeks 3 and 12. Surprisingly, greater chronicity and a history of drug abuse were associated with a steeper decline in depressive symptoms over time. After controlling for the other variables in the model, gender, comorbid anxiety, alcohol use, and personality disorders, highest level of social functioning in the past 5 years and history of abuse and/or neglect were not significantly associated with level or rate of change in depressive symptoms between Weeks 3 and 12. Overall, the addition of the eight patient characteristics did not

significantly improve the fit of the model, $\chi^2(16, N = 340) = 18.4$, $p = .30$. Most important, after controlling for treatment condition, prior and concurrent depressive symptoms, and the eight patient characteristics, the Week 2 alliance continued to significantly predict subsequent change in depressive symptoms between Weeks 3 and 12.

Effects of Early Depression and Treatment Condition on the Alliance

Our final set of analyses examined whether depressive symptomatology at baseline and Week 1 influenced the level and course of the therapeutic alliance from Weeks 2–12. In addition, we examined whether treatment condition influenced the level and course of the alliance. To address these issues, we estimated another mixed-effects-growth-curve model using treatment group, baseline HRSD, and Week 1 HRSD (which implicitly also controls for change in HRSD from baseline–Week 1) as independent variables and alliance scores at Weeks 2, 6, and 12 as the dependent variable with a random intercept and slope. We examined only a linear trend in the alliance, as there was no evidence of curvilinearity. The sample for this analysis consisted of 363 patients with data on all the covariates and at least one alliance rating.

The two treatment conditions differed significantly on the intercept for the alliance (i.e., estimated level at Week 2), $B = -3.28$ ($SE = 1.28$), $t(360) = -2.56$, $p = .01$, with patients in combination treatment rating the early alliance with their psychotherapist a little over 3 points higher than patients receiving CBASP monotherapy. In addition, the alliance exhibited a small but significant linear increase over time in both the CBASP monotherapy ($B = 0.61$, $SE = 0.09$, $p = .001$) and combination ($B = 0.50$, $SE = 0.07$, $p = .001$) conditions. However, treatment condition did not influence change (i.e., slope) in the alliance over time, $B = 0.11$ ($SE = 0.11$), $t(342) = 1.00$, $p = .32$. In addition, baseline HRSD score did not affect the intercept or slope of the alliance, $B = -0.16$ ($SE = 0.13$), $t(283) = -1.21$, $p = .23$ and $B = 0.01$ ($SE = 0.01$), $t(283) = 0.92$, $p = .36$, respectively. Similarly, change in HRSD from baseline–Week 1 did not influence the intercept or slope of the alliance, $B = -0.14$ ($SE = 0.11$), $t(283) = -1.28$, $p = .20$, and $B = 0.00$ ($SE = 0.01$), $t(283) = 0.16$, $p = .87$, respectively.[1]

Discussion

Despite the large literature documenting an association between the therapeutic alliance and psychotherapy outcome (Constantino et al., 2002; Horvath, 1994; Martin et al., 2000), important questions remain as to whether the alliance has a causal impact on the outcome of psychotherapy or whether the association is spurious or even runs in the opposite direction, with change in symptoms influencing the alliance (Feeley et al., 1999). We investigated the relationship between the alliance and subsequent change in symptomatology in a large sample of chronically depressed patients after controlling for two potential sources of spuriousness: (a) early change in symptomatology, which may influence both the alliance and subsequent change in symptoms, and (b) patient characteristics that may contribute to both a poor alliance and a poor outcome. The results were unambiguous. The early alliance significantly predicted subsequent change in depressive symptoms even after controlling for prior and concurrent levels of depressive symptoms, gender, chronicity, comorbid anxiety, substance use, personality disorders, highest level of social functioning in the past 5 years, and a history of abuse and neglect in childhood. In contrast, early change in depressive symptomatology did not predict the subsequent level or course of the alliance. Importantly, our measures of the alliance and depressive symptoms were independent and based on different methods. Hence, the association between the alliance and outcome was not inflated by shared method variance. The results also cannot be attributed to a lack of change in depressive symptoms during the first few weeks of treatment, as change in HRSD between baseline and Week 1 significantly predicted subsequent change in depression from Weeks 3–12. In addition, the results of our mixed-effects-growth-curve models were concordant with more traditional autoregressive analyses. This strengthens our confidence in the findings, as these two approaches can produce different results (Schnall et al., 1998; Stoolmiller et al., 1993).

Our finding that the early alliance continued to predict change in depressive symptoms after controlling for prior change replicates the recent study by Barber et al. (2000) and extends their findings by using a larger sample, a different treatment approach (CBASP, rather than psychodynamic psychotherapy), an alternative measure of the alliance (the WAI, as opposed to the California Psychotherapy Alliance Scale), an interview measure of depressive symptoms conducted by an independent rater rather than a self-report inventory (the Beck Depression Inventory), and a different data analytic approach (mixed effects growth-curve analysis instead of multiple regression) and by controlling for the effects of a number of patient characteristics that could potentially confound the alliance–outcome relationship. However, our findings are not consistent with previous studies by Barber et al. (1999), DeRubeis and Feeley (1990), Feeley et al. (1999), and Gaston et al. (1991). Barber et al. (1999) examined patients with cocaine dependence, suggesting that the effects of the alliance may vary depending on the nature of the disorder. The reason for the discrepancy between our findings and those of DeRubeis and Feeley (1990), Feeley et al. (1999), and Gaston et al. (1991) is less clear, as each of these studies focused on depression, and most patients received cognitive–behavioral psychotherapies. One factor that may account for these differences is statistical power. Each of these studies used fairly small samples, and Gaston et al. (1991) reported moderate effect sizes for the association between the alliance and outcome that failed to reach statistical significance. A second consideration may be that

[1] Barber et al. (2000) and DeRubeis and Feeley (1990) reported that change in depressive symptoms predicted the alliance later in treatment; hence, we conducted several additional analyses examining this issue. As the alliance was not assessed frequently enough to use mixed-effects-growth-curve models later in the course of treatment, we used multiple regression analyses. First, we regressed the middle (Week 6) alliance on baseline and Week 4 HRSD scores (and, implicitly, change from baseline HRSD to Week 4 HRSD) after controlling for treatment condition and the early (Week 2) alliance. Residualized change in HRSD from baseline to Week 4 was not significant. Next, we regressed the late (Week 12) alliance on baseline and Week 10 HRSD scores (and, implicitly, change from baseline HRSD to Week 10 HRSD) after controlling for treatment condition and the early alliance. In this analysis, residualized change in HRSD from baseline to Week 10 made a significant unique contribution, $B = -.23$, $SD = .06$, $t(275) = 3.89$, $p < .001$.

CBASP is an integrative treatment that differs from traditional forms of cognitive and cognitive–behavioral therapy in a number of respects, including a greater focus on interpersonal problems and more emphasis on managing the patient–therapist relationship (McCullough, 2000).

Although the alliance was a robust predictor of outcome in the present study, the magnitude of the association was modest and comparable to previous studies (Martin et al., 2000). However, identifying significant predictors of change/slope (as opposed to predictors of levels/intercepts) has proven to be extremely difficult in the behavioral sciences (Muthén & Muthén, 2001). Hence, it is noteworthy that the alliance not only predicted subsequent change in symptoms but also continued to do so after introducing a large number of relevant covariates.

Consistent with Barber et al. (2000) and DeRubeis and Feeley (1990), we found that early levels and improvement in depressive symptoms did not influence the level of the early alliance. However, both of these studies (as well as Feeley et al., 1999, at a trend level) found that prior change in depression predicted the subsequent level of the alliance in the middle and later phases of treatment. When we examined this issue, we found that change in depressive symptoms did not predict the middle alliance, but it did have an independent effect on the late alliance. These data are consistent with Barber et al's. (2000) suggestion that there may be reciprocal effects between change in the alliance and change in depressive symptoms. However, our results indicate that during the early phase of treatment the alliance has a greater impact on change in depression than change in depression has on the alliance. The effect of symptom reduction on the alliance does not appear to emerge until later in the course of treatment. Unfortunately, as we assessed the alliance at only three time points, we were not able to use more powerful growth-curve models to examine this question. The issue of reciprocal effects warrants further attention in the future and requires more frequent assessments of the alliance during the course of treatment.

To our knowledge, this is the first study to compare the alliance with the psychotherapist between patients receiving both psychotherapy and medication and patients receiving psychotherapy alone. We found a small but statistically significant difference in the level of the alliance between the combination and CBASP monotherapy conditions, with patients in combination treatment reporting stronger alliances with their psychotherapists. The magnitude of this difference was stable over the course of treatment, as treatment condition did not influence the slope of the alliance over time. The reason for the stronger alliance in the combination condition is unclear. It is not due to more rapid improvement, as early change in symptoms was controlled in these analyses. Instead, it may be that the greater total time and attention provided by receiving care from two clinicians influenced ratings of the alliance with the psychotherapist. In addition, the majority of patients in the study (58%) expressed a preference for combined treatment prior to randomization (12% preferred CBASP alone, 9% preferred medication alone, and 22% had no preference). Hence, patients in the combination condition were more likely to receive their preferred treatment, which may have also contributed to a more positive alliance. Regardless of the mechanism, however, these data suggest that, in most cases, referring patients to another clinician for concurrent pharmacotherapy will not have an adverse impact on the alliance with the psychotherapist.

Despite the difference between the combination and CBASP monotherapy conditions on the strength of the alliance, the relationship between the alliance and treatment outcome was similar in both conditions. Importantly, the stronger alliances of patients in combination therapy cannot account for their superior outcomes (Keller et al., 2000), as treatment condition continued to predict HRSD slope when the early alliance was included in the model.

The majority of studies of the therapeutic alliance have focused on psychodynamic and humanistic psychotherapy (Constantino et al., 2002; Horvath, 1994). However, our findings are consistent with a number of recent studies indicating that the alliance also plays an important role in more structured approaches, such as cognitive and cognitive–behavioral psychotherapies (Castonguay, Goldfried, Wiser, Raue, & Hayes, 1996; Hardy et al., 2001; Krupnick et al., 1996; Raue, Goldfried, & Barkham, 1997). Further work is needed to determine whether the role of the alliance differs as a function of the emphasis on interpersonal issues in cognitive–behavioral therapies and to delineate the relationships between the alliance, specific cognitive–behavioral techniques, and treatment outcome (Rector, Zuroff, & Segal, 1999).

The literature on patient characteristics that contribute to the alliance is fairly small, with few replicated findings (Constantino et al., 2002). In addition, the much larger literature on patient variables predicting psychotherapy outcome has been notoriously inconsistent (Garfield, 1994; Petry, Tennen, & Affleck, 2000). In the present study, patient characteristics such as gender, chronicity, comorbidity, social functioning, and history of abuse and/or neglect were not correlated with the early alliance, and few were associated with change in depressive symptomatology over time. Moreover, of the few significant associations between patient characteristics and change in depressive symptoms, several were in the nonexpected direction. However, there is evidence that some other variables that were not assessed in this study, such as perfectionism (Zuroff et al., 2000), hostility (Muran et al., 1994), an underinvolved interpersonal style (Hardy et al., 2001), and more subtle aspects of dysfunctional parental relationships (Hilliard et al., 2000), may be associated with the alliance and/or psychotherapy outcome.

This study had a number of strengths, including an unusually large, and carefully assessed, sample; the use of mixed-effects-growth-curve models that can model participants' intercepts and slopes as random effects, incorporate information about mean changes over time, and examine the full trajectory of change (Curran, 2000; Willett & Sayer, 1994); the comparison of psychotherapy provided as a monotherapy versus in conjunction with medication; the availability of measures of a large set of patient characteristics that could plausibly confound the association between the alliance and psychotherapy outcome; independent measures of the alliance and depressive symptomatology; and well-trained and experienced psychotherapists.

However, the study also had a number of limitations. First, the alliance was assessed only from the patient's perspective, rather than from the therapist's or an observer's perspective. Second, we used the abbreviated, rather than original, form of the WAI. Third, we were unable to control for all potentially relevant patient characteristics. Fourth, we did not take into account dependencies in the data caused by the same therapist seeing multiple patients. Fifth, the interrater reliability of the interview measures was not evaluated. Sixth, this was a clinical trial with a number of exclu-

sion criteria and a short-term, manualized, treatment. Thus, some patients with particularly poor alliances may have been excluded, and the generalizability to treatment in the community may be limited. Seventh, combination treatment was conducted in a favorable context, as the psychotherapists and pharmacotherapists were familiar with one another and were generally receptive to combining both treatment modalities. The effects of concurrent medication on the alliance with the psychotherapist might differ in situations where the treating clinicians have a less collaborative and collegial relationship. Finally, even among patients entering the trial, some were excluded from the analyses because of early dropout or failure to complete the assessments. Fortunately, the differences between patients who were and were not included in the analyses were minor and probably did not have a substantial impact on the findings.

In conclusion, we found that the early alliance was a robust predictor of subsequent symptom change in chronically depressed outpatients receiving CBASP. These findings held even after controlling for prior improvement in symptomatology and a broad range of potentially confounding patient characteristics. In contrast, there was no evidence that early improvement in symptoms influenced subsequent levels of the alliance. In addition, patients receiving antidepressant medication in conjunction with CBASP reported slightly, but significantly, stronger alliances with their psychotherapists than patients receiving CBASP alone. However, the alliance was an equally strong predictor of response in both treatment conditions. These data provide strong evidence that the association between the therapeutic alliance and treatment outcome is a real, rather than spurious, effect.

References

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.

Barber, J. P., Connolly, M. B., Crits-Cristoph, 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.

Barber, J. P., Luborsky, L., Crits-Cristoph, P., Thase, M. E., Weiss, R., Frank, A., et al. (1999). Therapeutic alliance as a predictor of outcome in treatment of cocaine dependence. *Psychotherapy Research, 9,* 54–73.

Castonguay, L. G., Goldfried, M. R., Wiser, S., Raue, P. J., & Hayes, A. M. (1996). Predicting the effect of cognitive therapy for depression: A study of unique and common factors. *Journal of Consulting and Clinical Psychology, 64,* 497–504.

Constantino, M. J., Castonguay, L. G., & Schut, A. J. (2002). The working alliance: A flagship for the "scientist–practitioner" model in psychotherapy. In G. Tryon (Ed.), *Counseling based on process research* (pp. 81–131). New York: Allyn & Bacon.

Curran, P. J. (2000). A latent curve framework for the study of developmental trajectories in adolescent substance use. In J. S. Rose, L. Chassin, C. C. Presson, & S. S. Sherman (Eds.), *Multivariate applications in substance use research: New methods for new questions* (pp. 1–42). Mahwah, NJ: Erlbaum.

DeRubeis, R. J., & Feeley, M. (1990). Determinants of change in cognitive therapy. *Cognitive Therapy and Research, 14,* 469–482.

Diguer, L., Barber, J. P., & Luborsky, L. (1993). Three concomitants: Personality disorders, psychiatric severity, and outcome of dynamic psychotherapy of major depression. *American Journal of Psychiatry, 150,* 1246–1248.

Durbin, C. E., Klein, D. N., & Schwartz, J. E. (2000). Predicting the 2 ½ year outcome of dysthymic disorder: The roles of childhood adversity and family history of psychopathology. *Journal of Consulting and Clinical Psychology, 68,* 57–63.

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.

First, M. B., Gibbon, M., Spitzer, R. L., Williams, J. B. W., & Benjamin, L. S. (1997). *Structured Clinical Interview for DSM–IV Axis II Disorders (SCID-II).* Washington, DC: American Psychiatric Press.

First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. W. (1995). *Structured Clinical Interview for DSM–IV Axis I Disorders—Patient Edition (SCID-I/P, Version 2.0).* New York: Biometrics Research Department, New York State Psychiatric Institute.

Garfield, S. L. (1994). Research on client variables in psychotherapy. In A. E. Bergin & S. L. Garfield (Eds.), *Handbook of psychotherapy and behavior change* (4th ed., pp. 190–228). New York: Wiley.

Gaston, L., Marmar, C. R., Gallagher, D., & Thompson, L. W. (1991). Alliance prediction of outcome beyond in-treatment symptomatic change as psychotherapy processes. *Psychotherapy Research, 1,* 104–113.

Hamilton, M. (1967). Development of a rating scale for primary depressive illness. *British Journal of Social and Clinical Psychology, 6,* 278–296.

Hardy, G. E., Cahill, J., Shapiro, D. A., Barkham, M., Rees, A., & Macaskill, N. (2001). Client interpersonal and cognitive styles as predictors of response to time-limited cognitive therapy for depression. *Journal of Consulting and Clinical Psychology, 69,* 841–845.

Hilliard, R. B., Henry, W. P., & Strupp, H. H. (2000). An interpersonal model of psychotherapy: Linking patient and therapist developmental history, therapeutic process, and types of outcome. *Journal of Consulting and Clinical Psychology, 68,* 125–133.

Horvath, A. O. (1994). Research on the alliance. In A. O. Horvath & L. S. Greenberg (Eds.), *The working alliance: Theory, research, and practice* (pp. 259–286). New York: Wiley.

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

Keller, M. B., Lavori, P. W., Friedman, B., Nielsen, E., Endicott, J., McDonald-Scott, P., & Andreasen, N. C. (1987). The longitudinal interval follow-up evaluation: A comprehensive method for assessing outcome in prospective longitudinal studies. *Archives of General Psychiatry, 44,* 540–548.

Keller, M. B., McCullough, J. P., Klein, D. N., Arnow, B., Dunner, D. L., Gelenberg, A. J., et al. (2000). A comparison of Nefazodone, the cognitive–behavioral analysis system of psychotherapy, and their combination for the treatment of chronic depression. *New England Journal of Medicine, 342,* 1462–1470.

Klerman, G. L., Weissman, M. M., Markowitz, J. C., Glick, I., Wilner, P. J., Mason, B., & Shear, M. K. (1994). Medication and psychotherapy. In A. E. Bergin & S. L. Garfield (Eds.), *Handbook of psychotherapy and behavior change* (4th ed., pp. 734–782). New York: Wiley.

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.

Lizardi, H., Klein, D. N., Ouimette, P. C., Riso, L. P., Anderson, R. L., & Donaldson, S. K. (1995). Reports of the childhood home environment in early onset dysthymia and episodic major depression. *Journal of Abnormal Psychology, 104,* 132–139.

Martin, D. J., Garske, J. P., & Davis, M. K. (2000). Relation of the therapeutic alliance with outcome and other variables: A meta-analytic review. *Journal of Consulting and Clinical Psychology, 68,* 438–450.

McCullough, J. P. (2000). *Treatment for chronic depression: Cognitive–behavioral analysis system of psychotherapy.* New York: Guilford Press.

Miller, I. W., & Keitner, G. I. (1996). Combined medication and psychotherapy in the treatment of chronic mood disorders. *Psychiatric Clinics of North America, 19,* 151–172.

Muran, J. C., Segal, Z. V., Samstag, L. W., & Crawford, C. E. (1994). Patient pretreatment interpersonal problems and therapeutic alliance in short-term cognitive therapy. *Journal of Consulting and Clinical Psychology, 62,* 185–190.

Muthén, L. K., & Muthén, B. O. (2001, November). Growth modeling with latent variables using Mplus [Workshop]. Santa Monica, CA: Mplus Short Courses.

Ogrodniczuk, J. S., Piper, W. E., Joyce, A. S., & McCallum, M. (2001). Using *DSM* Axis II information to predict outcome in short-term individual psychotherapy. *Journal of Personality Disorders, 15,* 110–122.

Olfson, M., Marcus, S. C., Druss, B., Elinson, L., Tanielian, T., & Pincus, H. A. (2002). National trends in the outpatient treatment of depression. *JAMA, 287,* 203–209.

Petry, N. M., Tennen, H., & Affleck, G. (2000). Stalking the elusive client variable in psychotherapy research. In C. R. Synder & R. E. Ingram (Eds.), *Handbook of psychological change* (pp. 88–108). New York: Wiley.

Piper, W. E., Azim, H. F. A., Joyce, A. S., McCallum, M., Nixon, G. W. H., & Segal, P. S. (1991). Quality of object relations vs. interpersonal functioning as predictor of therapeutic alliance and psychotherapy outcome. *Journal of Nervous and Mental Disease, 179,* 432–438.

Raue, P. J., Goldfried, M. R., & Barkham, M. (1997). The therapeutic alliance in psychodynamic–interpersonal and cognitive–behavioral therapy. *Journal of Consulting and Clinical Psychology, 65,* 582–587.

Rector, N. A., Zuroff, D. C., & Segal, Z. V. (1999). Cognitive change and the therapeutic alliance: The role of technical and non-technical factors in cognitive therapy. *Psychotherapy, 36,* 320–328.

Rogosa, D. R. (1995). Myths and methods: "Myths about longitudinal research" plus supplemental questions. In J. Gottman (Ed.), *The analysis of change* (pp. 2–65). Mahwah, NJ: Erlbaum.

Schnall, P. L., Schwartz, J. E., Landsbergis, P. A., Warren, K., & Pickering, T. G. (1998). A longitudinal study of job strain and ambulatory blood pressure: Results from a three-year follow-up. *Psychosomatic Medicine, 60,* 697–706.

Shea, M. T., Pilkonis, P. A., Beckham, E., Collins, J. F., Elkin, I., Sotsky, S. M., & Docherty, J. P. (1990). Personality disorders and treatment outcome in the NIMH Treatment of Depression Collaborative Research Program. *American Journal of Psychiatry, 147,* 711–718.

Stoolmiller, M., Duncan, T., Bank, L., & Patterson, G. R. (1993). Some problems and solutions in the study of change: Significant patterns in client resistance. *Journal of Consulting and Clinical Psychology, 61,* 920–928.

Thase, M. E. (2000). Psychopharmacology in conjunction with psychotherapy. In C. R. Synder & R. E. Ingram (Eds.), *Handbook of psychological change* (pp. 474–497). New York: Wiley.

Tracey, T. J., & Kokotovic, A. M. (1989). Factor structure of the Working Alliance Inventory. *Psychological Assessment, 1,* 207–210.

Willett, J. B., & Sayer, A. G. (1994). Using covariance structure analysis to detect correlates and predictors of change. *Psychological Bulletin, 116,* 363–381.

Zuroff, D. C., Blatt, S. J., Sotsky, S. M., Krupnick, J. L., Martin, D. J., Sanislow, C. A., & Simmens, S. (2000). Relation of therapeutic alliance and perfectionism to outcome in brief outpatient treatment of depression. *Journal of Consulting and Clinical Psychology, 68,* 114–124.

Received May 10, 2002
Revision received December 5, 2002
Accepted January 6, 2003 ■