

Therapist-Reported Alliance: Is It Really a Predictor of Outcome?

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Most of the literature on the alliance-outcome association is based exclusively on differences between patient reports on alliance. Much less is known about the unique contribution of the therapist's report to this association across treatment, that is, the association between therapist-reported alliance and outcome over the course of treatment, after controlling for the patient's contribution. The present study is the first to examine the unique contribution of the therapist-reported alliance to outcome, accounting for reverse causation (symptomatic levels predicting alliance), at several time points in the course of treatment. Of 156 patients randomized to dynamic supportive-expressive psychotherapy, antidepressant medication with clinical management, and placebo with clinical management, 149 were included in the present study. Alliance was assessed from the perspective of both the patient and the therapist. Outcome measures included the patients' self-reported and diagnostician-rated depressive symptoms. Overall, the findings demonstrate that the therapists' contribution to the alliance-outcome association was explained mainly by prior symptomatic levels. However, when a time lag of several sessions was introduced between alliance and symptoms, a positive association emerged between alliance at 1 time point and symptomatic distress assessed several sessions later in the treatment, controlling for previous symptomatic level. The findings were similar whether or not we controlled for the patient's perspective on the alliance. Taken together, the findings attest to the importance of improving therapists' ability to detect deterioration in the alliance.

Keywords: alliance, therapist perspective, depression, psychotherapy process, psychodynamic psychotherapy

The therapeutic alliance is commonly defined as the emotional bond between patient and therapist, and as the agreement between them on the goals and tasks of treatment (Bordin, 1979; Hatcher & Barends, 2006). The association between alliance and treatment outcome is robust and well-documented. A recent meta-analysis of more than 14,000 treatments showed a small-to-moderate ($r = -.27$) correlation between alliance and outcome, with no significant differences between treatment orientations (Horvath,

Del Re, Flückiger, & Symonds, 2011). Most studies, however, assessed the therapeutic relationship either (a) at a single point in time or (b) by aggregating alliance scores to create a single estimate. A study design of this type estimates the alliance-outcome association *between* patients, but it does not model how alliance may change over the course of treatment for a specific patient-therapist dyad, or how changes in alliance may contribute to changes in outcomes (for notable exceptions, see Crits-Christoph, Gibbons, Hamilton, Ring-Kurtz, & Gallop, 2011; Falkenström, Granström, & Holmqvist, 2013; Zilcha-Mano & Errázuriz, *in press*). Furthermore, most previous studies have examined alliance based on patient self-reports alone. For example, in the meta-analysis conducted by Horvath et al. (2011), 112 of 175 independent effect sizes were categorized based on the patient's point of view, and only 23 on that of the therapist (the rest were observer ratings).

As a dyadic construct, alliance is shaped and perceived by both patient and therapist. Differences may exist not only in the way they report on the relationship but also in the associations between patient and therapist alliance and outcome (Marcus, Kashy, Wintersteen, & Diamond, 2011). Two key differences may exist in how therapists and patients build and perceive a relationship. First, the capacity of individuals (both therapist and patient) to engage in an interpersonal interaction is influenced by their personal history

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and internal representations of self and others (e.g., Bowlby, 1982; Zilcha-Mano, McCarthy, Dinger, & Barber, 2014). Second, the divergent roles of therapists and patients may create differences in how they construe the therapeutic relationship. For example, patients' perspectives on the alliance may be based on their knowledge and beliefs about what proved helpful to them in the past and what would be helpful to them in the future, whereas therapists may rely on experiences with previous patients to gauge the alliance in the present relationship. Therapists may also have training and expertise in identifying aspects of the relationship that fall outside the patients' awareness.

Several studies have examined the differences and similarities between therapists' and patients' perceptions of alliance. Therapist and patient ratings of alliance were significantly correlated across studies (e.g., Tryon, Blackwell & Hammel, 2007), and in general, therapist mean ratings of the alliance were lower than patient ratings (Fitzpatrick, Iwakabe, & Stalikas, 2005; Hartmann, Joos, Orlinsky, & Zeeck, 2015; Tryon et al., 2007). A few studies demonstrated that the alliance reported by therapists can predict the outcome reported by them, but results concerning the ability of therapist-reported alliance to predict patient-reported outcomes were mixed (Kivlighan, 2007; Kivlighan, Marmarosh, & Hilsenroth, 2014). Similar patterns of inconsistent results were reached when focusing on other aspects of the therapeutic relationship, such as the real relationship (Gelso et al., 2012; Markin, Kivlighan, Gelso, Hummel, & Spiegel, 2014). Additionally, although some studies showed that agreement between therapist and patient on the therapeutic alliance can predict outcome (Bachelor, 2013; Kivlighan, 2007; Marmarosh & Kivlighan, 2012; Rozmarin et al., 2008), others failed to find a significant association between differences in therapist and patient alliance levels and outcome (Fitzpatrick, Iwakabe, & Stalikas, 2005) or dropout (Meier & Donmall, 2006).

A recent meta-analysis showed that although the therapist reports of alliance had a significant effect on outcome ($r = .20$), the percentage of variance in effect size over and above random (chance) variation was 57% (Horvath et al., 2011). This level of variability indicates that the effect of therapist-reported alliance on outcome is not homogeneous. Previous studies rarely examined both the therapist and patient alliance ratings in the same analysis (Kivlighan, 2007), therefore little is known about the *unique* contribution of the therapist's report to the alliance-outcome association, that is, the association of therapist-reported alliance to symptom change, when taking into account the contribution of patient-rated scores. The heterogeneity of findings regarding the effect of therapist's alliance on outcome may be partially due to whether or not studies examined the unique contribution of the therapist report (i.e., whether they controlled for the patient report). Examining the alliance perception of one of the partners, therapist or patient, together with that of the other partner in the same analysis is especially important in view of the high correlation between them (Tryon et al., 2007).

Although the meta-analysis by Horvath et al. (2011) found a small-to-moderate association between the therapist's perspective of alliance and outcome, no distinction was made between studies that examined the unique contribution of the therapist and those that did not. The few studies that focused on the unique contribution of the therapist questioned the importance of this contribution in predicting outcome (Fitzpatrick et al., 2005; Gaston, Marmar,

Gallagher, & Thompson, 1991; Huppert et al., 2014; Marcus, Kashy, & Baldwin, 2009). Specifically, whereas some studies that focused on therapist-reported alliance did not find any significant effect of the therapists' alliance on outcome (Marcus et al., 2011), others found that for certain outcome measures the therapist's general tendency to report better alliance across patients was associated with better outcomes for the patients (Marcus et al., 2011). Given the minimal support in the literature for the ability of therapist alliance to predict outcome, it is reasonable to challenge the assumption that therapists' report on the alliance contributes uniquely to outcome.

Another reason for challenging the assumption that therapists' reported alliance predicts outcome is the possibility of reverse causation. Some researchers have argued that the quality of the alliance may be the result of preceding symptomatic change, and that it is early symptomatic improvement that accounts for the alliance-outcome association (e.g., Barber, 2009; DeRubeis, Brotman, & Gibbons, 2005; DeRubeis & Feeley, 1990). Several studies have examined the temporal relationship between patient-reported alliance and outcome (Falkenström et al., 2013; Zilcha-Mano, Dinger, McCarthy, & Barber, 2014; Zilcha-Mano & Errázuriz, *in press*), but almost nothing is known about the temporal relationship between therapist-reported alliance and outcome. Most of the studies that have examined therapist-reported alliance did not control for early treatment symptomatic change (but see Barber et al., 1999; Gaston et al., 1991; Huppert et al., 2014). Moreover, to the best of our knowledge, none of the studies accounted for temporal precedence between alliance and symptoms over the course of treatment, which is necessary in order to address the possibility of reverse causation. Evidence of reverse causation would challenge the assumption that therapist alliance predicts outcome. It is possible to speculate that symptom reduction induces in therapists a general feeling of competence in improving patient outcome, which in turn enhanced the perception of a strong alliance with the patient. Thus, the association between the therapist's report of the alliance and outcome may be the result and not the cause of symptomatic change. Therefore, it is essential to explore the possibility of reverse causation in the therapist's report of alliance for understanding the alliance-outcome relationship.

In the present study, we examined the therapist's contribution to the alliance-outcome association. Using data from a randomized controlled trial comparing three treatments for depression, we systematically explored the robustness of the unique effect of therapist's report of alliance on outcome, accounting for reverse causation. We examined this effect over the course of treatment. Consistent with the methodological literature on longitudinal analyses (Curran & Bauer, 2011; Raudenbush & Bryk, 2002), we evaluated the nature of the alliance effect on outcome by assessing whether it is improvement in alliance over the course of treatment or a general tendency to form a good alliance that predicts symptomatic change.

Method

Participants

Patients diagnosed with major depressive disorder were randomly assigned to one of three treatment conditions: supportive-expressive therapy (SET), antidepressant medication combined

with clinical management (MED + CM), and placebo combined with clinical management (PBO + CM; for details, see Barber, Barrett, Gallop, Rynn, & Rickels, 2012). Of the 156 patients in the original study, 149 patients who completed an alliance questionnaire at least once and had at least two outcome measures were included in the present study. The mean age of patients was 37.8 years ($SD = 12.1$), and 92 participants (60.1%) were female. About half (49%) were White, 43.8% African American, and the remainder were Latino (5.2%) or Asian (2%). Eighty-five percent of patients had at least one comorbid disorder, commonly an anxiety disorder (45%), current substance abuse or past dependence disorder (35%), and/or personality disorder (46.3%).

Treatments and Therapists

All treatments were administered for 16 weeks. In the SET condition ($n = 49$), patients received 20 sessions, 45–50 min each, of time-limited manualized dynamic therapy for depression (Luborsky, 1995) twice weekly for the first month, then weekly for the remaining 3 months. The therapists delivering SET were four experienced psychologists (three women, one man; all White), each with at least 15 years of clinical experience and at least 10 years of experience in SET. All had served as therapists and/or supervisors in prior SET studies. In the other two conditions, patients received manualized supportive clinical management (CM, Fawcett, Epstein, Fiester, Elkin, & Autry, 1987) combined with either Sertraline (MED + CM, $n = 51$) or a placebo pill (PBO + CM, $n = 49$). Patients in both these conditions met weekly with their psychopharmacologist for the first 6 weeks of treatment, and could switch to sessions every other week for the remaining study period if warranted. The first session lasted 30 min, and subsequent ones 20 min. In both CM conditions, techniques specific to a psychotherapeutic orientation were prohibited, but supportive interventions, such as acknowledging gains and accomplishments, and offering empathy and warmth, were allowed. The CM was delivered by 10 experienced psychopharmacologists (four women, six men; eight White, one South Asian, one East Asian), each with at least 7 years of experience. In the current study, the therapists' median caseload was 11 (range: 3–41). The study was approved by the university Institutional Review Board.

Measures

Therapeutic alliance. The quality of the therapeutic alliance was assessed with the 12-item Working Alliance Inventory (WAI)-Short Form (Tracey & Kokotovic, 1989), using the Patient and Therapist versions. Items were rated on a 7-point Likert scale ranging from 1 (*never*) to 7 (*always*). In the current study, the internal reliability range for the four time points was .92–.95 for the patient report and .84–.91 for the therapist report.

Clinician-based evaluation of depressive symptoms. Severity of depressive symptoms was assessed by diagnosticians with the 17-item semistructured interview version of the Hamilton Rating Scale for Depression (HRSD; Hamilton, 1967), higher scores indicating greater severity of depression. The HRSD was administered by six trained diagnosticians (master- or doctoral-level psychologists), blind to treatment assignment. Interjudge reliability for the current study, as assessed by intraclass correlation (ICC [2, 1]; Shrout & Fleiss, 1979), was .92.

Patient report of depressive symptoms. The self-reported severity of patients' depressive symptoms was assessed with the 21-item Beck Depression Inventory (BDI-II; Beck, Steer & Garbin, 1988), higher scores indicating greater severity of depression. In the current study, the internal reliability range for the four time points was .91–.94.

Procedure

Therapeutic alliance (reported by both patients and therapists) and outcomes (diagnostician ratings and patient self-reports on depressive symptoms) were all assessed at four time points: Weeks 2, 4, 8, and 16. Patients were informed that their therapists would not have access to their responses on these session measures.

Overview of Data Analysis

We accounted for several types of nonindependence in the data. Nonindependence occurred because the data were hierarchically nested with three levels: assessments nested within patients nested within therapists. To account for the resulting nonindependence of assessments, and to prevent inflation of the effects, the patient and therapist were added as random effects, using the SAS PROC MIXED procedure for multilevel modeling (Littell, Milliken, Stroup, Wolfinger, & Schabenberger, 2006). All analyses were conducted within a three-level hierarchically nested model (see Baldwin & Imel, 2013, for a comprehensive description), regardless of the significance of the therapist's random effect.

We used ICC to measure the amount of unexplained variance in outcomes due to the random effects of the therapist and patient. ICCs represent the proportion of variance due to the random effects of the therapist and patient. Therapist's random effects were calculated as follows: $ICC = \sigma_{therapist}^2 / (\sigma_{therapist}^2 + \sigma_{patient}^2 + \sigma_{error}^2)$, with $\sigma_{therapist}^2$ as the variance of the therapist's random effect, $\sigma_{patient}^2$ as the variance of the patient's random effect, and σ_{error}^2 as the variance of the error. The contribution of the patient's random effect was examined using a similar procedure.

Similarly to other randomized controlled trials (RCTs), the total number of treatment providers in the current study was relatively small ($n = 14$). Nevertheless, we decided not to ignore the therapist's random effects and examined the data for a possible major effect that may influence other results. Doing so with a relatively small sample of therapists, we must address at least two difficulties in estimating the variance of therapist's random effects. First, the point estimate can be zero, with no standard error for the construction of confidence intervals. Second, the asymptotic distribution of the estimated standard error can be questionable. Therefore, we used the Markov Chain Monte Carlo (MCMC) estimation, which is based on Bayesian statistics and can deal with these challenges. We report the MCMC 95% confidence interval for the variance components in our model.¹

First, we conducted analyses using only therapist alliance components (between and within individuals) as predictors of outcome

¹ To be consistent with previous studies, the estimates of the other coefficients reported (except for the confidence interval) were taken from the standard MIXED procedure; in this way, our findings are comparable to those of previous studies. Estimates for the other effects using the MCMC method can be obtained upon request from the first author.

(without patient alliance). Next, to examine the unique contribution of the therapist reported alliance on patient outcomes, we repeated all analyses with both patient and therapist alliance effects on outcome as predictors in the same multilevel model. We evaluated the nature of the alliance effect on outcome by assessing whether symptoms were predicted by improvements in alliance throughout treatment or by a general tendency to form a good alliance (Curran & Bauer, 2011; Raudenbush & Bryk, 2002). Therefore, the effect of alliance, as reported by both the patient and therapist, was divided into three levels. First, the *within-patient* effect represents the change in alliance within a patient (i.e., how a specific change in patient alliance during treatment is associated with change in patient outcomes, Falkenström et al., 2013). Second, the *between-patients* effect reflects whether patients who generally reported stronger alliance also reported better outcomes than did patients who were treated by the same therapist and reported weaker alliance. Finally, we assessed how differences between the average alliances of the therapists across their patients were related to their patients' average outcomes, namely, a *between-therapists effect* (see Baldwin, Wampold, & Imel, 2007).

To disentangle the three levels of effect for both therapist reports of alliance (TRA) and patient reports of alliance (PRA), we followed the recommendations of Raudenbush and Bryk (2002) and of Bolger and Laurenceau (2013) and centered the TRA and PRA within context. Specifically, for within-patient effects, we centered both the TRA and PRA around the individual patient's mean (denoted by mTRA and mPRA, respectively); for between-patient effects within therapist, we centered both the mTRA and mPRA around the individual therapist's mean (denoted by tmTRA and tmPRA, respectively); and for between-therapists effects, we centered both the tmTRA and tmPRA around the global therapists' mean. This procedure yielded independent coefficients for within-individual and between-individuals effects (Bolger & Laurenceau, 2013).

It is important to note that Curran and Bauer (2011) argued in their work that when the explanatory variable (in our study, the alliance) shows a linear time trend, the within-subject effect should be disaggregated by applying a linear regression of the alliance against time within each subject, with the residuals used as the within-effect covariate. Due to missing data and dropouts, most of the patients in our dataset did not have all four measurement points, and some had only two. Therefore, centering around the relevant means was the most suitable statistical solution for the current dataset (for more information, see Bolger & Laurenceau, 2013). Furthermore, based on analyses of actual data and on simulations, a recent study suggested that in the type of analysis conducted in our research, detrending may not be necessary for studying between- and within-person effects, even when time-varying variables show trends over time (Wang & Maxwell, 2015).

To examine whether the fixed between-therapists effect of alliance on outcome had a significant contribution, we compared two multilevel models separately for each outcome. Model 1 included all three alliance level effects: within-patient effects, between-patients effects within-therapist, and between-therapists effects (see equation Model 1, described below). Model 2 was identical to Model 1, except for the removal of the between-therapists effects (see Equation Model 2). To compare the two models, we used the significance of the change in -2 log-likelihood of the models as an indicator: If the change was significant, we retained the between-

therapists effects and used Model 1 in all analyses for the relevant outcome measure; otherwise, Model 2 was used. In either case, as noted above, we conducted all analyses within a three-level hierarchically nested model.

Model 1: This model predicts outcomes over the course of treatment based on three levels of effects of alliance on outcome (within-patient effects, between-patients effects within therapist, and between-therapists effects).

$$\begin{aligned}
 Y_{ijk} \text{ (outcome at time } k \text{ for individual } j \text{ of therapist } i) \\
 &= \beta_0 + \beta_1 * (\text{lagged outcome [time } k - 1]) \\
 &+ \beta_2 * (\text{PRA at time } k - \text{mPRA}) \\
 &+ \beta_3 * (\text{TRA at time } k - \text{mTRA}) \\
 &+ \beta_4 * (\text{mPRA} - \text{tmPRA}) + \beta_5 * (\text{mTRA} - \text{tmTRA}) \\
 &+ \beta_6 * (\text{tmPRA} - \text{mean(tmPRA)}) \\
 &+ \beta_7 * (\text{tmTRA} - \text{mean(tmTRA)}) \\
 &+ [u_i + u_{j(i)} + r_{ij}],
 \end{aligned}$$

where $j(i)$ stands for patient j within therapist i . Variables inside brackets are random effects, and coefficients outside brackets are fixed effects. β_1 is the effect of the outcome score at the previous time point on the current outcome variable; β_2 and β_3 are the within-patient effects of the patients' and therapists' reports, respectively, and index the association between the variability of patients' and therapists' reports in alliance and outcomes, respectively. β_4 and β_5 are the between-patients within therapist effect of the patient's and therapist's reports, respectively, and index the variability in alliance between patients within a therapist. β_6 and β_7 are the between-therapists effects of the patient's and therapist's reports, respectively, and index the association between therapist variability in alliance and outcomes.

Model 2: This model predicts outcomes over treatment based on two levels of effects of alliance on outcome (within-patient and between-patients effects).

$$\begin{aligned}
 Y_{ijk} \text{ (outcome variable at time } k \text{ for individual } j \text{ of therapist } i) \\
 &= \beta_0 + \beta_1 * (\text{lagged outcome [time } k - 1]) \\
 &+ \beta_2 * (\text{PRA at time } k - \text{mPRA}) \\
 &+ \beta_3 * (\text{TRA at time } k - \text{mTRA}) \\
 &+ \beta_4 * (\text{mPRA} - \text{tmPRA}) + \beta_5 * (\text{mTRA} - \text{tmTRA}) \\
 &+ [u_{j(i)} + u_i + r_{ij}]
 \end{aligned}$$

The two models were examined separately for two different outcomes: patient reports and diagnostician evaluations of outcome. Both models were repeated twice: with and without controlling for the autoregressive effects of the outcome variables (i.e., controlling for the previous levels of the outcome variable over time, β_1 ; see Bolger & Laurenceau's, 2013, recommendations). Additional models were examined, in which the alliance at the last alliance measurement point (in a several session interval), was

used to predict outcome. This step was aimed at creating a temporal precedence of alliance on outcome.

To examine a potential effect of treatment condition, an overall comparison was performed between two types of models: the original models without treatment conditions and without the interactions of alliance with treatment conditions, and the original models with the inclusion of treatment conditions as main effects, and with the interactions between the alliance components and treatment condition. Based on previous reports on this dataset (Barber et al., 2012; Zilcha-Mano, Dinger, McCarthy, Barrett, & Barber, 2014), we anticipated no significant differences between treatment conditions for the effects of alliance on outcome.

To examine the possibility of reverse causation, all analyses regarding the ability of alliance to predict outcome were repeated with the alliance as the dependent variable and psychotherapy outcomes (HRSD and BDI) as the independent variables. A time variable was not added to the models because the paper describing the main outcome for this database showed that symptom levels were correlated with log of time (Barber et al., 2012). In the current analyses (due to the original study design) exponential time intervals ($T = 2, 4, 8, 16$) were used between measurement points, and therefore the decrease in symptoms scores was constant between these time points. To examine whether time made any contribution when the lag of the dependent variable is in the model (linearity), we introduced time into the models. However, time did not make a significant contribution to the model predicting HRSD (T) from previous HRSD scores ($T - 1$), $\beta = 0.04$, $SE = .05$, $p = .39$, to the model predicting BDI (T) from previous BDI scores ($T - 1$), $\beta = 0.09$, $SE = 0.09$, $p = .32$, or to the model predicting alliance (T) from previous alliance scores ($T - 1$), $\beta = -.0001$, $SE = 0.006$, $p = .98$. Therefore, time trend was not added into the models. Finally, missing data were not associated with early alliance (Barber et al., 2014).

Results

Overall, average ratings of alliance as perceived by therapists were significantly lower ($M = 4.98$, $SD = 0.58$) than average ratings of alliance by patients ($M = 5.46$, $SD = 1.00$), $t(131) = 5.4$, $p < .0001$. The correlation between the two ratings was small-to-moderate but significant, $r(131) = .28$, $p = .001$, suggesting that therapist and patient reports reflect related but not identical aspects of the alliance.

The Effect of Treatment Conditions

The omnibus tests for the main effect and interactions with treatment conditions were not significant. Specifically, the change in log-likelihood of the model was not significant, $\chi^2(8) = 6.4$, $p = .60$ for HRSD and $\chi^2(8) = 6.1$, $p = .63$ for BDI. Repeating the same procedure for alliance as the predicted variable yielded similar findings, and the log-likelihood test of the model failed to reach significance as well, $\chi^2(8) = 10.6$, $p = .22$ for HRSD and $\chi^2(8) = 12.4$, $p = .13$ for BDI. Similar findings were obtained for the various models reported in the present study.²

Therapist's Random Effect

Table 1 presents the estimated variance of the therapist's random effects and the confidence intervals. The estimated variances

of the therapist's random effect in the three-level models were null and nonsignificant for the two outcome measures (HRSD and BDI), and the ICCs for the therapist effects in these models were also null. Similar results were obtained for alliance as the dependent variable, with either HRSD or BDI as the independent variables. This finding indicates that the therapist's random effects did not contribute significantly to variance in outcomes or alliance.

Patient's Random Effect

Table 1 also presents the estimated variance of the patient's random effects and the confidence intervals. The estimated variances of the patient's random effect in the three-level models were significant for the two outcome measures (HRSD and BDI), indicating that patient's random effects contributed significantly to the variance in outcomes. When controlling for autoregressive effects of the dependent variables (i.e., the effect of previous levels of the same outcome measure on the current levels), the random effects of the patient on the BDI remained significant, but the effect on the HRSD was no longer significant. When the autoregressive effect of the dependent variable was not controlled, the proportion of unexplained variance due to the patient as a random effect was higher than 55% for both outcome measures. However, when we controlled for the autoregressive effect of the dependent variable, the ICCs became quite different in magnitude for the two measures: 0 and 61.53%. In other words, controlling for prior symptom levels differentially altered the variability of the outcomes between individual patients. When alliance was used as the dependent variable for predicting both BDI and HRSD, patient's random effects made a significant contribution to the variance in HRSD and a moderately significant one to the variance in BDI. When previous alliance levels were controlled, however, both became insignificant.

Between-Therapists Effect of Alliance and Symptoms

Next, we tested whether the between-therapists effect of alliance made a significant contribution to outcome by comparing the fit of Model 1 (with between-therapists effect) and Model 2 (without between-therapists effect) for each outcome measure (HRSD and BDI), and also for alliance as the dependent variable. In the models examining HRSD as the dependent variable, the between-therapists alliance effect (tmTRA and tmPRA) did not improve the model significantly, by a -2 log-likelihood test, $\chi^2(2) = 2.8$, $p = .24$, without controlling for the autoregressive effect of the HRSD, and $\chi^2(2) = 1$, $p = .60$, controlling for the autoregressive effect. Similar results were obtained for alliance as the dependent variable predicted by BDI, $\chi^2(2) = 1$, $p = .60$, without controlling for the autoregressive effect of the WAI, and $\chi^2(2) = 0.8$, $p = .60$, controlling for the autoregressive effect, and for alliance as the dependent variable predicted by HRSD, $\chi^2(2) = 2$, $p = .36$, without controlling for the autoregressive effect of the WAI, and $\chi^2(2) = 0$, $p = 1$, controlling for the autoregressive effect. Therefore, we used Model 2 in the analyses involving HRSD and WAI as the dependent variables, centering the mPRA and mTRA around

² As an exploratory exercise, we tested whether any of the interactions with treatment condition by itself was significant. Findings suggest that none of the interactions reached significant level (all $ps \geq .13$).

Table 1
Estimated Variance of the Therapist's and Patient's Random Effects

Model (type of outcome)	Estimate	SE	z	p	% of variance (ICC)	95% confidence interval
Therapist's random effect without controlling for the autoregressive effect of the dependent variable						
HRSD _(predicted by WAI)	0	—	—	1	0	[0, 2.8]
BDI _(predicted by WAI)	0	—	—	1	0	[0, 3]
WAI _(predicted by HRSD)	0	—	—	1	0	[0, 3.93]
WAI _(predicted by BDI)	0	—	—	1	0	[0, 3.89]
Patient's random effect without controlling for the autoregressive effect of the dependent variable						
HRSD _(predicted by WAI)	20.79	3.62	5.74	<.0001	55.77	[45, 66.4]
BDI _(predicted by WAI)	93.15	14.03	6.64	<.0001	71.37	[63, 79]
WAI _(predicted by HRSD)	.15	.03	3.98	<.0001	11.95	[18.9, 56.9]
WAI _(predicted by BDI)	.05	.03	1.52	.06	13.43	[20.4, 55.3]
Patient's random effect controlling for the autoregressive effect of the dependent variable						
HRSD _(predicted by WAI)	0	—	—	1	0	[0, 6]
BDI _(predicted by WAI)	63.47	16.78	3.78	<.0001	61.53	[41, 76]
WAI _(predicted by HRSD)	.004	.03	.14	.44	1.61	[0, 12.2]
WAI _(predicted by BDI)	.004	.008	.52	.30	1.78	[0, 9.8]

Note. % of variance = the proportion of therapist or patient effect variance unexplained by the fixed effects in the specific outcome measure; ICC = intraclass correlation; HRSD = Hamilton Rating Scale for Depression; WAI = Working Alliance Inventory; BDI = Beck Depression Inventory.

their grand means (and not their therapist's mean).³ In the models that included the BDI as the dependent variable, the between-therapists alliance effect (tmTRA and tmPRA) improved the model significantly, $\chi^2(2) = 6.6, p = .03$, without controlling for the autoregressive effect of the BDI, and $\chi^2(2) = 6.5, p = .03$, controlling for the autoregressive effect. Therefore, Model 1 was used in the analyses for BDI as the dependent variable.

Alliance Effects Between and Within Patients as Predictors of Diagnostician-Rated Depressive Symptoms (HRSD)

Table 2 presents the regression coefficients for the models testing the effects of therapists' reports of alliance on outcome. We conducted a three-level model analysis in which therapist-reported alliance within- and between-patient effects were the predictors, and HRSD was the outcome. Without controlling for the lagged effects of the outcome variables (i.e., not accounting for the autoregressive effect), the effect of differences within patients on therapist-reported alliance was significant: stronger alliance was a significant predictor of better outcomes. However, when we controlled for lagged effects of the outcome variables, therapist-reported alliance effects became nonsignificant, so that when controlling for the autoregressive effect of the HRSD, therapists' reports of alliance no longer contributed significantly to predicting HRSD. Finally, using alliance obtained several sessions earlier as a predictor of outcome, controlling for the autoregressive effect of the HRSD, produced a significant effect, in which a weaker alliance several sessions before was a significant predictor of a better outcome.

Diagnostician-Rated Depressive Symptoms (HRSD) Effects Between and Within Patients as Predictors of Alliance

Table 2 presents the regression coefficients from the models testing the effects of diagnostician-rated depressive symptoms on

alliance. We conducted a three-level model analysis in which diagnostician-rated depressive symptoms within- and between-patient effects were the predictors, and therapist's perception of alliance was the outcome. Without controlling for the lagged effects of the alliance (i.e., not accounting for the autoregressive effect), the effect of changes within patients in HRSD was significant. Similar findings were obtained when we controlled for lagged effects of the alliance. Finally, using the HRSD obtained several sessions earlier as a predictor of alliance resulted in no significant effect.

Alliance Effects Between and Within Therapists and Patients as Predictors of Patient-Rated Depressive Symptoms (BDI)

We conducted a three-level model analysis in which the effects of therapist-reported alliance between-therapists and the effects of therapist-reported alliance within- and between- patients were the predictors, and patient-rated depression (i.e., BDI) was the outcome. Without controlling for the lagged effects of the outcome variables, the effect of therapist-reported alliance for the within-patient effect was significant (see Table 2). However, when we controlled for the lagged effects of the outcome variables, the within-patient effect of therapist-reported alliance was no longer significant. A significant effect was found for differences between therapists in therapist-reported alliance. Thus, except for differences between therapists, therapist-reported alliance no longer contributed significantly to predicting BDI when accounting for the autoregressive effect of BDI. Finally, using the alliance obtained several sessions earlier as a predictor of outcome produced a significant effect, in which the weak alliance reported several sessions before was a significant predictor of better outcomes.

³ Repeating the analyses using Model 1 resulted in similar findings.

Table 2

Alliance Effect Within and Between Patients and Between Therapists Based on the Therapist's Report as a Predictor of Patients' Clinician-Rated and Self-Reported Depressive Symptoms as Well as Symptoms Effect Within and Between Patients and Between Therapists on Alliance

Dependent variable	Therapist report of the predictor at time T - 1						Therapist report of the predictor at time T					
	Within patient		Between patients		Between therapists		Within patient		Between patients		Between therapists	
	<i>B</i>	(<i>p</i>)	<i>B</i>	(<i>p</i>)	<i>B</i>	(<i>p</i>)	<i>B</i>	(<i>p</i>)	<i>B</i>	(<i>p</i>)	<i>B</i>	(<i>p</i>)
Without controlling for the autoregressive effect of the dependent variable												
HRSD _(predicted by WAI)	1.07	(.68)	.08	(.93)	—	—	-1.43*	(.01)	-.12	(.90)	—	—
BDI _(predicted by WAI)	1.94*	(.04)	-3.06	(.18)	-5.02	(.13)	-1.83*	(.02)	-1.71	(.40)	-4.89	(.14)
WAI _(predicted by HRSD)	-.003	(.70)	-.01	(.19)	—	—	-.01*	(.01)	-.001	(.85)	—	—
WAI _(predicted by BDI)	.002	(.46)	-.004	(.39)	—	—	-.01**	(.003)	-.005	(.18)	—	—
Controlling for the autoregressive effect of the dependent variable												
HRSD _(predicted by WAI)	2.08**	(.008)	.48	(.42)	—	—	-.78	(.28)	.83	(.24)	—	—
BDI _(predicted by WAI)	4.24*	(.001)	-1.75	(.08)	-.84	(.55)	-1.12	(.19)	-2.17	(.29)	-6.99*	(.04)
WAI _(predicted by HRSD)	-.08	(.41)	-.01	(.11)	—	—	-.02*	(.01)	-.009	(.17)	—	—
WAI _(predicted by BDI)	.005	(.30)	-.006	(.08)	—	—	-.01	(.07)	-.006*	(.04)	—	—

Note. *B* = unstandardized coefficients; HRSD = Hamilton Rating Scale for Depression; WAI = Working Alliance Inventory; BDI = Beck Depression Inventory. For each dependent variable the relevant model was used (two-level models for HRSD and WAI; three-level models for BDI).

* $p < .05$. ** $p < .01$. *** $p < .001$.

Patient-Rated Depressive Symptoms (BDI) Effects Between and Within Patients as Predictors of Alliance

Table 2 presents the regression coefficients from the models testing the effects of patient-rated depressive symptoms on alliance. We conducted a three-level model analysis in which patient-rated depressive symptoms within- and between-patient effects were the predictors, and therapist's alliance was the outcome. Without controlling for the lagged effects of the alliance (i.e., not accounting for the autoregressive effect), the effect of changes in BDI within patients was significant. Controlling for the lagged effects of the alliance, the effect of changes in BDI within patients became insignificant, but the effect of changes in BDI between patients became significant. Finally, using the BDI obtained several sessions earlier as a predictor of alliance resulted in no significant effect but only a moderately significant between-patients BDI effect.

We repeated all analyses controlling for the within-patient, between-patients, and between-therapists effects of the patient's perspective of the alliance. The findings regarding the therapist's perspective of the alliance were largely similar to those reported earlier.⁴

Discussion

The present study sought to contribute to the ongoing conceptual debate in the literature regarding the importance of the therapist's report of alliance for outcomes. To this end, we systematically examined the effect of the therapist's report of alliance on outcome, accounting for reverse causation and disentangling between and within effects of therapists and patients. We examined treatment outcome not only from the patient's point of view, but also from the perspective of an independent diagnostician.

When we did not control for the effect of prior symptom levels on alliance, our findings showed that the contribution of the

therapist's report of alliance to predicting the outcome is mainly a within-patient effect rather than a between-patients effect. Specifically, time-specific strengthening of a therapist's rating of his or her alliance with an individual patient was related to a decrease in depressive symptoms, whether the symptoms were rated by the patient or by an independent diagnostician. By contrast, the therapist's average alliance score for individual patients was not related to outcome. These findings are consistent with previous studies that did not control for reverse causation (see Horvath et al., 2011). This finding may suggest that therapist's perception of time-specific strengthening of alliance over the course of treatment results in treatment success. However, because the model did not control for prior symptomatic levels, better alliance over time may also be the result of previous symptomatic improvement.

Indeed, we found that alliance was predicated by symptomatic levels, whether rated by the patient or by an independent diagnostician. After controlling for prior symptomatic level, the ability of therapist alliance to predict symptoms disappeared almost entirely. The remaining effect was the between-therapists one, so that therapists who tended to report better alliance across their caseload had patients who reported better outcomes. Note, however, that this effect was found only for the patient-reported and not for the diagnostician-reported outcome.

⁴ Given the method in which between-patients and between-therapists alliance was calculated in the current study (i.e., aggregated scores across time points), it may not be possible to infer temporal precedence among between-patients and between-therapists alliance and symptoms. To address this issue, we reanalyzed the data, this time using the first measurement of alliance, as reported by the therapist as the between-patients alliance level and the mean first alliance measurement for each therapist across his or her patients as the between-therapists alliance level. Findings were very similar to the ones reported with the aggregated scores across time points.

Taken together, these findings suggest that the therapist's report of the alliance perhaps does not contribute much to the alliance-outcome relationship beyond prior symptomatic change. As our results suggest, the contribution of the therapist-reported alliance to predicting outcome may be a byproduct of prior symptomatic change. It is, therefore, possible that therapists assess the alliance based on their patients' symptomatic changes, and estimate having a stronger alliance with a patient who shows symptomatic improvement than with one who is not improving, or is even deteriorating.

The current findings are consistent with previous studies that questioned the ability of therapists to accurately evaluate various aspects of the patient's treatment. A recent study (Huppert et al., 2014) found, similarly to ours, that when controlling for prior symptomatic change, the therapist's report of alliance made a relatively minor contribution to the alliance-outcome association. Indeed, studies have consistently shown that therapists are seldom able to accurately estimate the effectiveness of their therapy (Hannan et al., 2005; Lilienfeld, Ritschel, Lynn, Cautin, & Latzman, 2014; Walfish, McAlister, O'Donnell, & Lambert, 2012).

The results of the present study, together with previous findings, may demonstrate a need to improve therapists' ability to assess more accurately the alliance and patients' symptomatic improvement in the course of treatment. This concern may be addressed by placing greater emphasis in training programs on the development of a strong alliance and by increasing therapists' awareness of possible alliance ruptures (Eubanks-Carter, Muran, & Safran, 2015; Safran & Muran, 2000). Additionally, previous studies suggest that it could be beneficial to provide therapists with systematic feedback on the alliance throughout the treatment. For example, alliance monitoring can provide increased opportunities to work on improving the alliance and repairing ruptures (Ackerman et al., 2001). Studies in which therapists received feedback on the therapeutic alliance found a lower dropout rate and better outcomes in the feedback condition (Harmon et al., 2007; Whipple et al., 2003). Support for the potential contributions of systematic feedback on the alliance comes from a recent study showing that feedback on the alliance contributes to a stronger alliance-outcome association (Zilcha-Mano & Errázuriz, *in press*).

Additional support for the beneficial effect of therapists' awareness of alliance deterioration to the success of treatment may come from our present analyses in which alliance rating obtained several sessions earlier were used to predict current symptomatic level. We found a positive association in these analyses, in which a weaker within-patient alliance predicted better outcome, whether rated by the patient or by an independent diagnostician. It is possible to suggest several potential explanations for this finding. According to one of these, during the long time interval between alliance measurements (a mean of 7.5 weeks in the present study), therapists who identified a deterioration in alliance intervened accordingly, improving the patient's progress. In contrast, when therapists perceived having a strong alliance with a patient, they may have been less attentive to sustaining and strengthening it, thereby slowing the patient's progress. These findings may further support the utility of providing systematic and frequent feedback to therapists, and stress the importance of awareness of alliance fluctuations for treatment success. This explanation has not been tested empirically directly and should therefore be treated with caution, but some preliminary support can be found in previous

studies emphasizing the importance of adopting a "better safe than sorry" approach when it comes to facilitating the alliance (Atzil-Slonim et al., 2015). It follows that taking a more active approach may improve therapists' attunement to fluctuations in the alliance. These suggestions are also consistent with previous findings showing that therapists who rated themselves as generally forming stronger real relationships also rated poorer treatment progress (Kivlighan, Gelso, Ain, Hummel, & Markin, 2015), and with findings showing that patients rated sessions less smooth when their ratings of the alliance were lower than their therapists' ratings of the alliance, and they rated sessions as more smooth when their ratings of the alliance were higher than their therapists' ratings of the alliance (Marmarosh & Kivlighan, 2012).

We failed to find significant differences between treatments in any of the analyses examining the alliance-outcome association. The lack of significant difference between treatments is consistent with previous studies that found no significant general differences between these treatments (Barber et al., 2012; Elkin et al., 1989; Frank et al., 2005; Imber et al., 1990) and with studies in which alliance was identified as a common factor across different treatment orientations (Horvath et al., 2011). The findings are also consistent with previous findings specifically demonstrating the important role of alliance for therapeutic change in case management (Zilcha-Mano, Roose, Barber, & Rutherford, 2015).

It is possible to argue that the design of the study limited the implications of the current findings. Specifically, the nature of the study—an RCT with a small number of experienced therapists using manualized treatment, and a relatively low therapist-patient ratio (Baldwin & Imel, 2013; Crits-Christoph et al., 2011; DeRubeis, Gelfand, German, Fournier, & Forand, 2014)—may have contributed to the lack of a significant therapist effect. This possibility is consistent with previous studies that used a larger sample size of therapists and were able to find a significant therapist effect (e.g., Baldwin et al., 2007). Furthermore, the type of outcome measure used may also have contributed to the fact that a therapist effect was found for the BDI but not for the HRSD. It has been suggested that one of the variables that affect the therapist effect on the association between therapist-reported alliance and outcome is the type of outcome measure used (Marcus et al., 2011). Consistent with Marcus et al. (2011), the present study also found that the therapist alliance level was a significant predictor of patients' self-report symptom reduction, but not of other outcome measures (but see also Marcus et al., 2009).

The design of the present study, however, cannot by itself explain the near lack of findings supporting the common assumption that a stronger alliance, as reported by the therapist, can predict better outcomes, which was our main focus. Rather, it is reasonable to expect that the therapists in this study, who had extensive experience and training, would have been able to reliably evaluate a stronger alliance indicating better outcomes. Furthermore, the methodological characteristics of the current study do not explain why therapists' evaluations of stronger alliances were indicative of successful treatment when we did not control for previous symptomatic levels, but showed almost no association when we did. Therefore, it is reasonable to conclude that the lack of ability of stronger alliances reported by therapists to predict better outcomes is not simply a byproduct of our design.

The current findings should be considered in light of the limitations of our methods and sample. Since our study is the first to

examine the unique contribution of therapist reports while accounting for temporal precedence between alliance and symptoms in the course of treatment, the findings need to be replicated, and future studies should also use other treatment conditions and different study designs. Our findings should also be viewed within the context of other attempts in the literature to understand patient and therapist contributions to the alliance-outcome association. For example, although the therapist alliance effect on outcome was not a consistent predictor of outcome across the analyses, it may be suggested, based on previous research (Marmarosh & Kivlighan, 2012), that the agreement between patient and therapist alliances has a consistent effect on outcome. Note further that although previous studies have demonstrated the importance of alliance in different treatment conditions and orientations, including supportive treatment (Horvath et al., 2011), in some cases supportive clinical management and psychotherapy may demonstrate different processes in which alliance is related to outcome (Ulvenes et al., 2012).

The present study is also limited by a relatively small sample size. Although the present RCT was sizable when compared to others, the sample was not large enough to allow for within-patient and between-patients interaction effects of both therapists' and patients' reports of alliance. Nor did the sample provide sufficient statistical power to explore specific small differences between conditions. It would also have been desirable to have more time points of measurement (e.g., every session) throughout the treatment. Because of the small number of observations for each patient, it was not possible to use the detrending approach suggested by Curran and Bauer (2011) to control for the general time trend in the predictor variable. Additionally, although our analysis was designed to rule out the possibility of reversed causality, the results do not rule out the existence of unmeasured, third-variable explanations. Furthermore, therapists were not randomly assigned to treatment conditions.

Although our study found therapist-reported alliance to have relatively little significant contribution to outcome (at least when a gap of several sessions between alliance and symptoms is not introduced), we do not believe that alliance can be reduced simply to the patient's experience when predicting outcome. Patient and therapist reports of alliance may capture related but distinct concepts, as indicated by the significant but small correlation we found between these perspectives, so that the two concepts may influence different aspects of outcomes. In the present study, the therapist's contribution was less related to the diagnostician's evaluation of depressive symptoms than to the patient's report, but it remains unclear whether the therapist's report on the alliance has a greater effect on therapist-reported outcomes (e.g., Bachelor, 2013; Kivlighan et al., 2014, but see also Kivlighan, 2007) or on outcomes related to other aspects of the patient's life (e.g., coping with intraindividual struggles).

In sum, the present study examined the unique contribution of therapist-reported alliance on outcome, beyond what is accounted for by patient reports of alliance. When we did not account for temporal precedence between therapist alliance and outcome, a time-specific increase in the strength of therapist-reported alliance throughout treatment predicted better outcome. However, when controlling for previous symptomatic levels, therapist alliance no longer affected outcome. Therefore, our findings suggest that the effect of therapist-reported alliance on outcome may simply reflect

prior symptomatic change rather than being a true predictor of outcome. The present findings may also suggest that therapists' awareness of alliance deterioration (perhaps due to deterioration in symptom severity) may contribute to better outcomes in the long term. Therapists are encouraged to consider formal methods of identifying changes in alliance.

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