

BRIEF REPORT

Client Characteristics as Moderators of the Relation Between the Therapeutic Alliance and Outcome in Cognitive Therapy for Depression

Lorenzo Lorenzo-Luaces and Robert J. DeRubeis
University of Pennsylvania

Christian A. Webb
Harvard University

Objective: Little is known about the variability of the alliance–outcome correlation across identifiable client subsets. This question was explored in a sample of 60 clients receiving cognitive therapy for depression, from which an overall correlation of .23 was observed between alliance ratings and subsequent symptom change. **Method:** We examined interactions between the observer-rated version of the Working Alliance Inventory–Short Observer-Rated version (WAI–O; Tracey & Kokotovic, 1989) and client demographics, features of depression, personality, and other clinical features in predicting subsequent symptom change. **Results:** After correcting for multiple comparisons, interactions between the WAI–O and the number of prior depressive episodes, as well as the severity of baseline anxiety symptoms, were significant predictors of symptom change. When both interactions were controlled for, number of prior depressive episodes emerged as a statistically significant moderator. The alliance predicted outcome in the subgroup of clients with 0–2 prior episodes ($r = .52$), but not in those with 3 or more prior episodes ($r = -.02$). These findings were obtained despite similar univariate distributions on the alliance and symptom change in the 2 subgroups. **Discussion:** Differences that were observed in the predictive relation of alliance to outcome as a function of number of prior episodes suggest that different therapy processes may account for change in these subgroups. If the pattern observed in the present study is replicated, it would suggest that the alliance–outcome association has been both under- and overestimated.

Keywords: moderation, alliance, outcome, depression, psychotherapy processes

Estimates from meta-analytic reviews indicate a small- to medium-sized association between the therapeutic alliance and treatment outcomes (Horvath, Del Re, Flückiger, & Symonds, 2011). Although methodological issues in research on the alliance have prompted questions about the direction of the causal influence in the relation between symptom change and the alliance (e.g., DeRubeis, Brotman, & Gibbons, 2005), the alliance remains an important construct in psychotherapy research and practice. A relatively unexplored question is to what extent alliance–outcome associations are moderated by identifiable client characteristics.

Research on client characteristics and the alliance has, for the most part, focused on predictors of the alliance (Castonguay, Constantino, & Holtforth, 2006) or on the alliance as a mediator of

the relationship between client characteristics and outcome (e.g., Shahar, Blatt, Zuroff, & Pilkonis, 2003). Less severe clinical pictures, fewer difficulties in interpersonal relationships, and improvement during therapy tend to be associated with higher alliance scores. A separate question, which is the focus of this report, is whether client characteristics moderate the alliance–outcome relationship. Using simulations, DeRubeis, Gelfand, German, Fournier, and Forand (2013) have shown that the magnitude of the association between process variables and outcome can be heavily influenced by characteristics of the client sample in which the correlation is studied. In a meta-analysis that illustrates this point, Sharf, Primavera, and Diener (2010) found that the association between the alliance and study dropout tends to be smaller in studies that contain higher proportions of clients who completed high school.

Although moderation of the alliance–outcome relationship has been explored in other meta-analyses (e.g., Del Re, Flückiger, Horvath, Symonds, & Wampold, 2012), a meta-analysis allows one to make inferences about samples, not individuals. To our knowledge, only Falkenström, Granström, and Holmqvist (2013) have used individual patient data to test client variables as moderators of the alliance–outcome relationship. The objective of this study is to identify client characteristics that moderate the alliance–outcome correlation in cognitive therapy (CT) for depression. We explored demographic variables, personality traits, and

This article was published Online First February 17, 2014.

Lorenzo Lorenzo-Luaces and Robert J. DeRubeis, Department of Psychology, University of Pennsylvania; Christian A. Webb, Harvard Medical School/McLean Hospital, Harvard University.

This research was supported in part by National Institute of Mental Health Grant 2-R01-MH-060998-06.

Correspondence concerning this article should be addressed to Lorenzo Lorenzo-Luaces, Department of Psychology, University of Pennsylvania, 3720 Walnut Street D20, Philadelphia, PA 19104. E-mail: lorenzl@sas.upenn.edu

other clinical features that have been hypothesized to affect the alliance or its relation to outcome.

Insofar as demographic features, such as gender, age, or marital status, influence clients' perceptions of interpersonal relationships, these may interact with the alliance in promoting change (see Flückiger et al., 2013). Personality traits have also been explored in relation to the alliance and improvement in psychotherapy. Del Re et al. (2012) found that the percentage of clients with personality disorders in studies of the alliance was unrelated to the strength of the alliance–outcome relationship. However, in a large, heterogeneous sample of mental health clinic outpatients, Falkenström et al. (2013) found that the alliance–outcome relationship was stronger in clients with personality problems. It has also been suggested that in depression, the alliance might be of particular importance with clients with more severe, chronic, and recurrent forms (see Arnou et al., 2013). Finally, features that reflect the complexity of a client's clinical picture, including, for example, comorbid anxiety (Horvath et al., 2011) or substance use (Flückiger et al., 2013), have been considered potential moderators of the alliance–outcome associations.

Method

Data were drawn from the CT arm ($N = 60$) of a randomized controlled trial comparing CT versus antidepressants in the treatment of moderate to severe major depressive disorder (DeRubeis et al., 2005). The study was approved by the local institutional review boards.

Measures

Beck Depression Inventory—Second Edition (BDI–II; Beck, Steer, & Brown, 1996). Depressive symptoms were assessed with the BDI–II, a 21-item self-report measure that was completed by all clients before the start of each therapy session as well as at the end of the 16-week treatment period. When a client did not provide an end-of-treatment BDI–II, which happened in nine dropouts, we used the last available BDI–II score to represent outcome on this instrument.

Working Alliance Inventory—Short Observer-Rated version (WAI–O; Tracey & Kokotovic, 1989). On the WAI–O, observers rate each of 12 items on a 7-point scale (from 0 = *never* to 6 = *always*; range: 0–72). Ratings used in the present brief report constitute a subset of the ratings used by Webb et al. (2011). For each of the 59 clients who completed at least three sessions of CT, two raters (from a pool of five) rated an early session of therapy (Session 3 if available; otherwise Session 2 or 4). Raters were assigned sessions according to a balanced incomplete block design. Pooled ratings for each session yielded estimates of the quality of the alliance. Raters received training on the WAI–O and were unaware of the treatment outcomes. They achieved adequate reliability (see Webb et al., 2011, for a more thorough description of the procedure).

Potential Moderators

Demographics. We included age (in years), sex, years of education, marital status (married or cohabiting with a partner vs. single), and estimated IQ (derived from the Shipley-Harford Living Scale; Shipley, 1940).

Personality. We included the five factors of the NEO Five-Factor Inventory: Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism (Costa & McCrae, 1992) and the number of Cluster B and C symptoms individuals endorsed in the Structured Clinical Interview for *DSM–IV* Axis II disorders (Gibbon, Spitzer, & First 1997).

History and features of depression. This set consisted of depression severity (Hamilton Rating Scale for Depression; Hamilton, 1960), atypical depression, duration of current episode, age at first episode, number of prior episodes, and number of prior depression treatments (all assessed by the Structured Clinical Interview for *DSM–IV–TR* Axis I Disorders; First, Spitzer, Gibbon, & Williams, 2001).

Other clinical features. We also included number of life events (Psychiatric Epidemiology Research Interview Life Events Scale; Dohrenwend, Askenasy, Krasnoff, & Dohrenwend, 1978), history of substance abuse (from the Structured Clinical Interview for *DSM–IV–TR* Axis I Disorders interview), severity of anxiety symptoms (Hamilton Anxiety Inventory; Hamilton, 1959), hopelessness (Beck Hopelessness Scale; Beck, Weissman, Lester, & Trexler, 1974) and total score on the Attributional Style Questionnaire (ASQ; Peterson et al., 1982).

Analytic Plan

Continuous variables were centered at their mean. Binary ones were coded ± 0.5 . Outliers at three or more standard deviations were Winsorized, and nonnormal variables were transformed to meet linearity assumptions. The outcome variable was residualized subsequent change in depressive symptoms, calculated as the difference between the BDI–II score from before the start of the rated session and the end-of-treatment BDI–II score, controlling for the session BDI–II score. For each of the 23 potential moderators, we ran regression models predicting residualized change from (a) the WAI–O, (b) the main effect of the potential moderator, and (c) the interaction of the potential moderator and the WAI–O. We corrected for multiple comparisons with the Benjamini–Hochberg method (Benjamini & Hochberg, 1995), using a false discovery rate of $p < .05$. After this correction, potential moderators and their respective interactions with the WAI–O were included together in a regression model predicting subsequent change. We used Pothoff's modification to the Johnson–Neyman technique to assess the effect of interactions (Hayes & Matthes, 2009). This yields an estimate of the point along the values of the moderator at which the predictor–criterion association transitions between statistically significant and nonsignificant.

Results

Table 1 presents descriptive statistics as well as the correlations of all 23 pretreatment variables with the WAI–O and subsequent change. By itself, the WAI–O was related to subsequent symptom change, $\beta = 0.23$, $\chi^2(1) = 11.31$, $p < .001$. The main effect of none of the 23 variables was significant in the prediction of symptom change. However, four of the 23 tests of moderation (interaction with the alliance) were significant at the $p < .05$ level (uncorrected). The alliance–outcome relationship became stronger with increasing severity of baseline anxiety symptoms, $\beta = 0.23$, $\chi^2(1) = 14.89$, $p < .001$; increasing levels of self-reported con-

Table 1

Characteristics of the Sample and Bivariate Associations Between Client Baseline Characteristics, WAI-O Ratings, and Subsequent Change

| | <i>M</i> or % | (<i>SD</i>) or <i>n</i> | WAI-O <i>r</i> | Subsequent change <i>r</i> |
|--------------------------------------|---------------|---------------------------|----------------|----------------------------|
| Focal predictor and outcome | | | | |
| WAI-O | 52.5 | 5.41 | | 0.23*** |
| Subsequent change in BDI | 12.2 | (8.51) | 0.23*** | |
| Demographics | | | | |
| Years of education | 14.6 | (2.50) | -0.10 | 0.08 |
| Female | 58% | 35 | 0.02 | 0.02 |
| Age | 40.3 | (11.51) | 0.03 | 0.06 |
| Married or cohabiting | 30% | 18 | -0.05 | 0.17 |
| IQ | 109.7 | (10.21) | -0.12 | 0.17 |
| Personality | | | | |
| NEO-FFI | | | | |
| Agreeableness (0-48) | 28.4 | (6.38) | 0.27 | 0.12 |
| Conscientiousness (0-48) | 26.6 | (8.63) | 0.17 | 0.07 |
| Extraversion (0-48) | 20.7 | (6.53) | 0.08 | 0.01 |
| Neuroticism (0-48) | 32.4 | (7.56) | 0.00 | 0.05 |
| Openness (0-48) | 28.4 | (6.72) | -0.06 | 0.15 |
| Number of Cluster B criteria | 2.4 | (2.49) | -0.08 | -0.24 |
| Number of Cluster C criteria | 4.3 | (3.50) | -0.11 | -0.01 |
| History of depression | | | | |
| Met atypical depression criteria | 28% | 17 | 0.01 | 0.00 |
| Depression severity: HRSD (0-53) | 23.9 | (3.08) | -0.20 | -0.14 |
| Duration of current episode (months) | 31.4 | (35.23) | -0.19 | -0.04 |
| Number of prior episodes | 2.3 | (2.00) | -0.19 | 0.01 |
| Prior antidepressant treatments | 1.7 | (1.81) | -0.26 | -0.04 |
| Age of onset of first episode | 24.2 | (12.95) | 0.17 | 0.09 |
| Other clinical features | | | | |
| Number of life events: PERI (0-102) | 6.8 | (4.37) | 0.14 | 0.15 |
| Past history of substance abuse | 28% | 17 | -0.07 | 0.14 |
| Attributional style: ASQ | 0.36 | (3.05) | -0.23 | -0.14 |
| Anxiety severity: HAI (0-48) | 16.6 | (5.93) | -0.17 | 0.09 |
| Hopelessness: BHS (0-20) | 11.2 | (5.16) | 0.18 | 0.08 |

Note. WAI-O = Working Alliance Inventory, observer ratings; BDI = Beck Depression Inventory—Second Edition; HRSD = Hamilton Rating Scale for Depression; NEO-FFI = NEO Five-Factor Inventory; ASQ = Attributional Styles Questionnaire (positive-negative); HAI = Hamilton Anxiety Inventory; BHS = Beck Hopelessness Scale. For dichotomous variables, point-biserial correlations with the WAI-O and subsequent change are provided. For continuous variables, Pearson product-moment correlations with the WAI-O and subsequent change are provided.

*** $p < .001$.

scientiousness, $\beta = 0.22$, $\chi^2(1) = 4.60$, $p = .03$; lower scores on measured IQ, $\beta = -0.19$, $\chi^2(1) = 4.68$, $p = .03$; and fewer prior episodes, $\beta = -0.30$, $\chi^2(1) = 18.45$, $p < .001$. After we corrected for multiple comparisons, only the interactions with anxiety severity and number of prior depressive episodes remained significant. When a model predicting subsequent change contained the WAI-O, these two moderators, and their interactions, only the interaction between the WAI-O and prior episodes remained significant, $\beta = -0.25$, $\chi^2(1) = 4.20$, $p = .04$. The interaction between the WAI-O and anxiety was reduced to a trend level, $\beta = 0.40$, $\chi^2(1) = 3.07$, $p = .08$.

The region of significance for predicting outcome with the WAI-O was estimated by the Johnson-Neyman technique as all values of prior episodes below 1.89. Figure 1 provides a graphical representation of this association. As depicted in Figure 2, among clients with zero to two prior episodes of depression, the WAI-O predicted symptom change, $r = .52$, 95% confidence interval (CI) [.22, .73], $p = .001$, and its prediction of symptom change was

higher than in the group with three or more prior episodes, $r = -.02$, 95% CI [-0.41, .38], $p = .89$. These relationships held for the WAI-O total and were not specific to either of its subscales. The means of WAI-O scores were similar for those with zero to two versus three or more prior episodes (51.2 vs. 53.6), $t(57) = 1.65$, $p = .10$, as were the variances (5.23 vs. 5.67), $F = 0.95$, $p = .34$. Residualized change in BDI-II score was also similar between the groups (11.42 vs. 13.20), $t(57) = -0.80$, $p = .43$; variances: 8.64 versus 8.40, $F = 0.18$, $p = .67$.

Discussion

In this sample, the overall alliance-outcome correlation of .23 was well within the range of values produced by the latest meta-analysis (Horvath et al., 2011). However, the size of this relation varied substantially as a function of the number of prior episodes of depression reported at baseline. For clients with fewer than three prior depressive episodes, the alliance-outcome correlation was

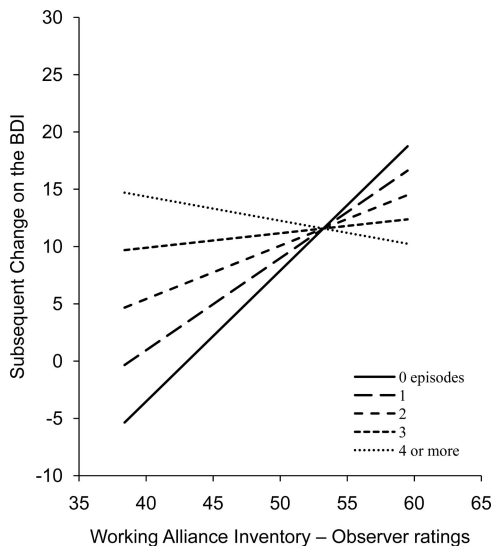


Figure 1. Predicted association between therapeutic alliance and subsequent symptom change across prior depressive episodes. BDI = Beck Depression Inventory—Second Edition.

substantially higher than what is commonly observed in the literature. In contrast, in the sample of 24 patients who had experienced three or more episodes, the alliance was not predictive of symptom change. If replicated, this would suggest that by ignoring interactions with patient variables, the alliance–outcome correlation can be both over- and underestimated.

Tests of interaction effects require larger sample sizes than tests of main effects do. The present study could thus be considered underpowered. In an adequately powered study, we may have identified more moderators. The small sample also precluded tests

of therapist effects or the interaction of therapist and client characteristics. Because of the paucity of research on interactions of client characteristics and the alliance, we conducted exploratory analyses of multiple potential moderators.

Despite these limitations, the study makes a novel contribution in finding a significant interaction between the alliance and an important client variable in predicting outcome. That this finding was obtained after correcting for multiple comparisons and that it remained significant after controlling for several potential confounds suggest it may be robust. The data were well-suited for our research question, as they allowed for the control of temporal confounds, and the alliance ratings were obtained from observers who were unaware of the treatment outcomes as well as most client characteristics. Additionally, using observer ratings avoids the potential for the shared variance confound that exists when clients’ ratings are used both for the alliance and for the outcome variable. It is important to note that the interaction between prior episodes and the alliance in the prediction of outcome could not be accounted for by differences in the means or variances of the measures of alliance or outcome. Thus, it does not appear to be a statistical artifact.

Ma and Teasdale (2004) found evidence that patients with three or more prior episodes of depression report more childhood adversity, an earlier age of first onset of depression, and depressive relapses that more often came out of the blue when compared with patients with less recurrent forms of depression. Additionally, it is this group with three or more prior episodes of depression that evidences the benefit of an intervention to prevent relapse. These findings may be taken to suggest that patients who have had zero to two versus three or more prior depressive episodes represent essentially different subgroups. Consistent with this research, less recurrent forms of depression may be more reactive to negative as well as positive life events, whereas more recurrent forms may

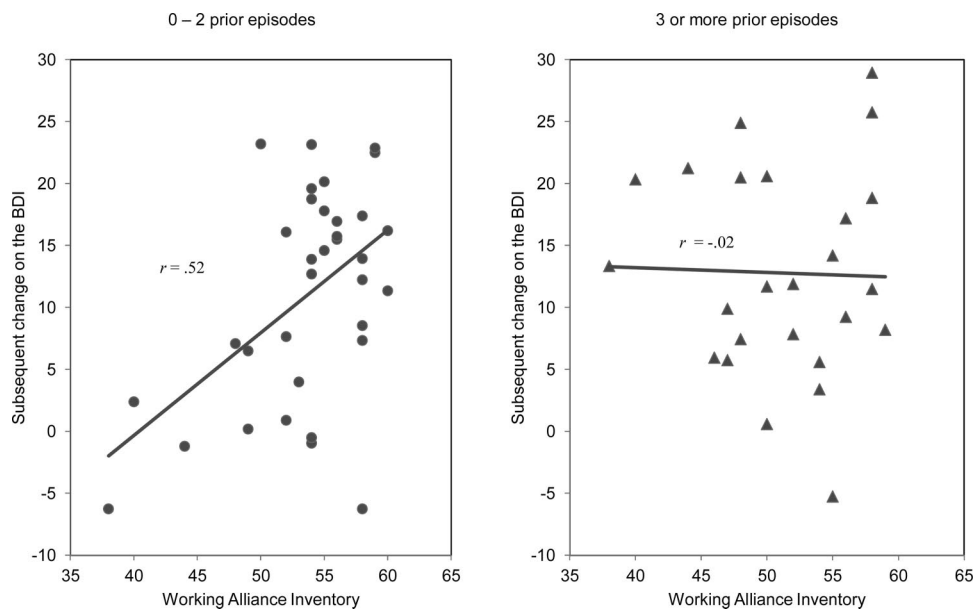


Figure 2. Observed relationship between early ratings of the therapeutic alliance and subsequent change, by prior number of episodes. BDI = Beck Depression Inventory—Second Edition.

indicate the presence of ruminative and autonomous depressogenic processes. Similarly, Wakefield and Schmitz (2013) argued that the recurrence of depressive episodes can be understood as an indicator of underlying pathology in the individual, as opposed to reactions to life stressor and contextual variables. It is possible that patients with less recurrent depressions tend to be more reactive to positive and negative interpersonal interactions, including those that are captured in assessments of the therapeutic alliance. For those with recurrent depressions, however, the relationship with their therapist, as is true of their interpersonal experiences generally, might have little impact on the course of their depressive episode, relative to therapy processes that address the intrapsychic processes that are known to be especially problematic in this group.

Although it is widely held that clients are helped differentially by different aspects of therapy, few findings in the literature speak to this. The existence of an interaction between prior depressive episodes and the alliance in the prediction of subsequent symptom change, as well as other interactions between process variables and client characteristics (e.g., Strunk, Brotman, DeRubeis, & Hollon, 2010), adds empirical support to this clinical intuition. However, these findings also present a challenge for psychotherapy research and theories of the mechanisms of therapeutic change. Indeed, the existence of substantial moderators of process–outcome correlations might be responsible for the difficulty in identifying mechanisms of change in therapy (DeRubeis et al., 2013). Therapist variables are also likely to interact with client characteristics and the alliance to influence outcome. Thus, in the interest of achieving a better and more nuanced understanding of mechanisms of change in treatment, there is a great need to explore client and therapist variables that moderate this and other process–outcome relationships. Consistent with recent calls to personalize treatments according to patient characteristics (DeRubeis et al., 2014), this type of research would facilitate the tailoring of psychological interventions to specific individuals.

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Received July 4, 2013
 Revision received December 24, 2013
 Accepted January 13, 2014 ■

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