Role of treatment alliance in the clinical management of bipolar disorder: Stronger alliances prospectively predict fewer manic symptoms

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Abstract

The strength of the treatment alliance between patients and their clinicians may play a unique role in the management of bipolar disorder. However, few empirical studies have examined the alliance in bipolar disorder or its effects on patient outcomes. This study investigates variables associated with a strong treatment alliance in bipolar disorder, and the prospective effects of treatment alliance on patients' mood symptoms and treatment attitudes. Participants were 58 longitudinally followed individuals with Bipolar I disorder. We found that alliance ratings covaried with depressive symptoms, such that alliance strength increased as depressive symptoms decreased, and stronger alliances were associated with more social support. Tests of temporal association indicated that stronger alliances predicted fewer manic symptoms 6 months later. Stronger alliances also predicted less negative attitudes about medication and less of a sense of stigma about bipolar disorder. Thus, a strong treatment alliance may help to reduce manic symptoms over time. It may be that a strong treatment alliance encourages patients' greater acceptance of bipolar disorder and psychopharmacological interventions, and thus contributes to improved medication adherence and clinical outcomes. Considered in sum, these findings suggest that the treatment alliance is an integral component of the long-term management of bipolar disorder.

Keywords

Mood disorders; Physician–patient relations; Health knowledge; attitudes; practice; Patient compliance; Social support

1. Introduction

The quality of the treatment alliance between patients and their clinicians may play a unique role in the management of bipolar disorder (Berk et al., 2004; Havens and Ghaemi, 2005; Newman et al., 2001). However, few empirical studies have examined the treatment alliance in bipolar disorder and surprisingly little is known about its effects on clinical outcomes

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(Berk et al., 2004). The current study explores predictors of alliance strength, and associations between alliance strength and illness course in a sample of patients diagnosed with Bipolar I disorder.

The empirical and clinical literatures provide preliminary support for the hypothesized association between the alliance and the course of bipolar disorder. Several studies have shown that a strong relationship between these patients and their psychiatrists can positively influence medication adherence (Bauwens et al., 1997; Shou, 1997; Staner et al., 1997; Stefos et al., 1996). As nonadherence rates as high as 65% are well-documented among these patients (Colom et al., 2000; Shumann et al., 1999; Vestergaard et al., 1998), improved medication adherence may significantly impact the long-term management of bipolar disorder (Shou, 1997; Silverstone, 2000). A strong alliance also may help encourage patients to tolerate medication side effects and to openly discuss treatment concerns, illness-related attitudes, and symptom fluctuations (Berk et al., 2004; Shou, 1997). Some also consider the alliance to be an important source of support for patients who may encounter stigmatization and social rejection in their everyday lives (Havens and Ghaemi, 2005; Silverstone, 2000).

Alliance strength also has been associated with measures of patients' general functioning and well-being. One study of the alliance between patients with severe mental illnesses, including Bipolar I disorder, and their case managers showed a positive association between alliance strength and patients' self-rated quality of life, life satisfaction, and satisfaction with social and family relationships. Patients with stronger alliances also reported less depression and received higher Global Assessment of Functioning (GAF) ratings (Tyrrell et al., 1999). These findings suggest that the alliance may play an important role in the effective treatment of severe mental illnesses. The association between alliance strength and total days hospitalized in the previous 12 months was not significant, implying that the quality of the alliance may not appreciably affect illness course. However, in this study alliance strength was measured after the treatment dyads had been working together for seven months, patients were diagnosed with a range of Axis I disorders, and data collection was cross-sectional. Thus, these findings do not speak to the prospective effects of establishing a strong alliance early in the treatment of bipolar disorder. Overall, preliminary findings, although mixed, suggest that the alliance may affect clinical and functional outcomes in these patients. However, prior research in this area has been largely limited to retrospective and cross-sectional studies that do not address the predictive value of alliance on symptoms in bipolar disorder (Berk et al., 2004). Thus, the role of the treatment alliance in the clinical management of bipolar disorder is not known.

The overall goal of the current study was to determine the effect of the alliance on symptom course in a prospectively followed sample of patients diagnosed with Bipolar I disorder. We had three primary study aims. Our first goal was to determine if patients' alliance ratings would covary with fluctuations in their mood states over time. We hypothesized that depressive symptoms would be associated with lower alliance ratings and hypomanic symptoms would be associated with relatively higher alliance ratings. Our second goal was to identify patient variables hypothesized to be associated with forming a strong early alliance. That is, we examined how alliance strength related to demographic, illness, social support, and personality variables. On the basis of previous empirical findings (Bauwens et al., 1997; Kulhara et al., 1999; Shou, 1997; Staner et al., 1997; Stefos et al., 1996), we predicted that alliance strength would be positively predicted by patients' marital status, illness duration, social support, and Agreeableness. We also predicted that alliance strength would be inversely related to illness severity and Neuroticism. Our third goal was to prospectively examine relationships between alliance strength and mood symptoms. We hypothesized that stronger alliances would predict less mood symptoms later in treatment.

We also hypothesized that stronger alliances would be associated with more positive patient attitudes about treatment.

2. Methods

2.1. Design

Participants were enrolled in a naturalistic, longitudinal study of psychosocial risk variables and Bipolar I disorder (Johnson et al., 1999). Previous reports examine life events (Johnson et al., 2000), social support (Johnson et al., 1999), and personality traits (Lozano and Johnson, 2001) as predictors of the course of the disorder. For this study, we examined the 58 individuals (47% male) who completed self-report ratings of the quality of their relationship with their psychiatrists. This study was conducted in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans. Written informed consent was provided by all participants prior to study enrollment.

2.2. Participants

Participants who met diagnostic criteria for Bipolar I disorder (assessed with the Structured Clinical Interview for DSM-IV; SCID; First et al., 1996) were recruited from hospitals, outpatient clinics, support groups, and community advertising in South Florida. Exclusion criteria included 1) mood symptoms secondary to a general medical condition, 2) alcohol abuse or substance abuse or dependence in the past year, 3) age<18, or 4) inability to speak English or independently complete self-report measures.

In this sample, the mean age was 44.09 (range: 19 to 73; S.D.=9.36). The mean number of years of education was 14.93 (range: 9 years through advanced degrees; S.D.=2.55). Approximately 21% were employed full-time, 12% were employed part-time, 5% were students, 33% were on disability, 7% were retired, and 19% were unemployed. According to Hollingshead occupational criteria, 33% had most recently held a job as higher executives, business managers, or administrative personnel.

Upon enrollment, 97.1% were experiencing a mood episode. Of the total, 27.6% entered the study in a manic episode, 43.1% in a depressed episode, 12% cycling from one polarity to another without recovery, and 10.3% in a mixed episode. Episode severity was varied: 46.8% experienced mild or moderate episodes, 31.9% had severe episodes without psychosis, 17% had mood-congruent psychosis, and 4.3% had mood-incongruent psychosis. The median number of previous manic episodes was 6 (range=1–50+) and the median number of previous depressive episodes was 8 (range=0–50+). None were experiencing their first episode. All were followed for up to two years from study entry.

2.3. Procedures

Following written informed consent, the SCID was administered to determine if participants met study diagnostic criteria. Symptom severity and treatment status measures were completed monthly either by telephone or face-to-face interview, if preferred (*Mdn* length of follow-up=22 months). Participants' social support and treatment attitudes were assessed after allowing at least two months time for recovery, and personality traits were assessed at 6 and 18 months after study entry. Anyone experiencing severe symptoms completed assessments at a later date, so that psychotic, tangential, or disorganized thinking would not compromise the quality of assessments. Analyses confirmed that acute symptoms remitted for the vast majority of participants by two months. To provide a more stable index of personality traits, scores were averaged across time. The Working Alliance Inventory (WAI)

was administered at months 2, 6, 12, 18, and 24. Unless otherwise noted, initial WAI scores were used in the analyses.

Follow-up retention has been successful. Two participants were lost to follow-up, five moved from the area, and two voluntarily dropped out. Eight were ruled out early in the study due to ambiguous diagnostic factors (3), mental status (2), and language difficulties (3). Finally, 11 were excluded because they had no provider to refer to in completing the WAI. There were no significant differences between individuals who did and did not complete the WAI on baseline illness severity, depression or manic symptoms, lifetime number of manic and depressive episodes; age of onset for manic and depressive episodes; number of previous psychiatric hospitalizations; or age. Study completers had a slightly higher mean education level, $t(80)=-3.29$, $P=0.001$.

2.4. Measures

2.4.1. Diagnosis—
Diagnosis was assessed with the SCID (First et al., 1996). Interviewers were supervised by a clinical psychologist with extensive SCID experience. Previous studies have found kappa for bipolar disorder to be 0.84 (Williams et al., 1992). For our team, inter-rater reliability has been high (kappa=1.0 for mania in 7 interviews evaluated by 2 raters, $r=0.94$ for specific symptoms of mania, $N=74$, $P<0.0001$).

2.4.2. Symptom severity—
The Modified Hamilton Rating Scale for Depression (MHRSD; Miller et al., 1985) was administered monthly to evaluate depression symptom severity. The 17-item MHRSD is a widely-used, semi-structured interview that is sensitive to fluctuations in clinical status. Inter-rater reliability is high with intra-class correlations of .93 (Shrout and Fleiss, 1979). Within our team, inter-rater correlation=0.95.

Severity of manic symptoms was determined using the Bech–Rafaelsen Mania Scale (BRMS) (Bech et al., 1979), a widely-used interview of manic symptom severity that is sensitive to changes in these symptoms (Bech, 2002). We have added standard probes and anchors to bolster inter-rater reliability. Our inter-rater reliability (intraclass correlation=0.92), and internal consistency estimate were high (alpha=0.92). A factor analysis with varimax rotation of the MHRSD and BRMS indicated two factors. Examination of eigenvalues above 1.0 suggested that the first scale included depressive symptoms and the second included manic symptoms. Both the MHRSD and BRMS assessed symptoms during the most severe week within each month.

2.4.3. Treatment alliance—
The strength of the treatment alliance was assessed with the Working Alliance Inventory, client version (Horvath and Greenberg, 1989). The WAI is a 36-item self-report questionnaire that assesses patients' perceptions of the treatment alliance. Items are counterbalanced and scored on a 7-point Likert scale. The WAI has three 12-item subscales, developed to capture Bordon's transtheoretical reconceptualization of the alliance (Bordin, 1979): Goals (agreement about the goals of treatment), Tasks (agreement about the tasks of treatment), and Bond (the emotional bond between patient and clinician).

Reliability estimates have ranged from 0.82 to 0.93 (Horvath and Greenberg, 1989). In clinical samples, the WAI is a robust predictor of psychopharmacological and psychotherapy outcomes (Krupnick et al., 1996; Martin et al., 2000). Two meta-analytic studies demonstrated larger associations between treatment outcomes and patients' ratings relative to clinicians' assessments of the relationship (Horvath and Bedi, 2002; Horvath and Symonds, 1991). In the current study, the WAI was completed by patients only. As previous studies have demonstrated high interscale correlations for the WAI (Hatcher et al., 1995; Tracey and Kokotovic, 1989), total WAI scores were used in this study. In the current sample, the WAI total score demonstrated strong internal consistency, alpha=0.96.

2.4.4. Social support—Social support was assessed with the Interpersonal Support Evaluation List (ISEL; Cohen et al., 1985). The ISEL is a 40-item self-report measure of social support that includes four subscales: Tangible Assistance (material aid), Appraisal (availability of someone to talk to about problems), Self-Esteem (positive appraisal from others and positive self-comparison to others), and Belonging (people with whom to do things). Responses are coded on a 4-point Likert scale.

In community samples, the ISEL has obtained high internal consistency (Cronbach's alpha=0.90), moderately high six-month test–retest stability coefficients, and predicts longitudinal changes in psychiatric symptoms and well-being (Cohen et al., 1985). The mean ISEL total score for the current sample was 79.23 (S.D.= 22.04) and scores demonstrated strong internal consistency (alpha=0.92). Sample means, standard deviations, and alpha values for each of the four ISEL subscales were: Tangible (M=19.31, S.D.=5.76, Cronbach's alpha=0.71); Appraisal (M=20.98, S.D.=7.18, Cronbach's alpha=0.88); Self-esteem (M=19.67, S.D.=5.80, Cronbach's alpha=0.50); Belonging (M=19.27, S.D.= 6.79, Cronbach's alpha=0.85).

2.4.5. Personality traits—Personality traits were assessed with the short version of the NEO Five-Factor Inventory (NEO-V; Costa and McCrae, 1992). The 60 scale items are measured on a 5- point scale and assess five subscales: Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness. Correlations between the NEO-Vand the longer NEO PI-R were 0.92, 0.90, 0.91, 0.77, and 0.87 for N, E, O, A, and C domains, respectively. Internal consistency coefficients for the NEO-V scales were 0.86, 0.77, 0.73, 0.68, and 0.81 for N, E, O, A, and C, respectively (Costa and McCrae, 1992). For the current sample, subscale means, standard deviations, and alpha values were: N (M = 25.76, S.D. = 12.57, Cronbach's alpha=0.92); E (M=28.25, S.D.=7.89, Cronbach's alpha = 0.75); O (M = 31.30, S.D. = 6.14, Cronbach's alpha=0.51); A (M=30.09, S.D.=7.42, Cronbach's alpha=0.75); C (M=32.57, S.D.=9.12, Cronbach's alpha=0.78).

2.4.6. Treatment attitudes—The 49-item Treatment Attitudes Questionnaire (TAQ) is a self-report scale developed by our team to assess a broad range of variables theoretically and empirically linked to treatment adherence in bipolar disorder. Patients recruited from inpatient centers and local support groups (N=31) were interviewed individually and asked to describe attitudes that facilitated and deterred treatment involvement. Their personal statements were transcribed and combined with other dimensions described in the treatment attitudes literature. A team of psychologists reviewed each item for clarity and overlap. An original set of 65 items was given to a group of individuals with bipolar disorder, who were asked to identify unclear items. These items were eliminated, as were those with little variability.

Respondents are asked to rate the extent to which each statement describes them on a 5-point Likert scale, ranging from 1 ("*not at all*") to 5 ("*definitely*"). The 49 scale items address theoretically-derived subscales: awareness of illness and possibility of future episodes; acknowledgement of need for medications; negative aspects of medications (e.g., side effects); stigma concerning the illness; and positive aspects of mania (e.g., creativity and humor). The scale has been shown to have expected links with substance abuse in bipolar disorder (Johnson et al., 1995) and medication compliance (Miklowitz et al., 1998). For the current sample, alpha values were: Awareness of Illness (13 items; Cronbach's alpha=0.85); Need For Medications (4 items; Cronbach's alpha = 0.88); Negative Aspects of Medications (9 items; Cronbach's alpha = 0.79); Stigma (6 items; Cronbach's alpha = 0.63); and Positive Aspects of Mania (2 items; Cronbach's alpha = 0.82). Due to the small number of participants who completed the scale, factor analysis could not be conducted.

2.5. Training of interviewers

Interviewers were trained with didactic materials, role-plays, and co-interviews for the SCID and symptom severity measures. Before conducting interviews, all were required to meet inter-rater reliability (correlation coefficients and percent agreements of above 0.90) with a certified interviewer's ratings. Interviews were intermittently audiotaped and supervised to maintain reliability, and team meetings were held to generate consensus ratings and to protect against rater drift.

2.6. Analysis plan

Analyses focused on three broad aims: to determine if the patients' alliance ratings covaried with fluctuations in their mood states over time, to identify variables associated with a strong treatment alliance in bipolar disorder, and to examine the prospective effects of treatment alliance on mood symptoms and attitudes towards treatment. For the first aim, we used random regression models to examine within-subject correlations between treatment alliance ratings and mood symptoms and to test whether treatment alliance ratings covaried with a person's changes in symptom states. Next, we examined correlations between patients' early assessments of the alliance and social support and personality variables, hypothesized to be associated with alliance strength. To evaluate the effects of treatment alliance on the course of the disorder, hierarchical multiple regression models were calculated. These analyses examined whether treatment alliance predicted changes in symptoms over a 6-month follow-up, after controlling for baseline symptoms. Separate analyses were conducted for depression and mania. Finally, we computed partial correlations between early alliance ratings and patients' treatment attitudes, controlling for baseline depression.

3. Results

3.1. Analyses of potential confounds

We computed bivariate tests of associations between participants' earliest alliance scores and potential demographic and illness-related confounds, including: age, gender, education level, ethnicity, number of lifetime episodes of mania and depression, and age of onset of mania and depression. None of these tests reached statistical significance. In addition, and contrary to prediction, ANOVAs revealed that neither marital status nor illness duration was significantly associated with participants' alliance ratings. All regression analyses described below were conducted including these eight potential confound variables in block 1. In each case, results were parallel. Given these results, simpler models are presented here.

3.2. Does alliance strength covary with mood states over time?

To examine whether alliance strength covaried with symptom levels within individuals, random effect regression models were calculated separately for depression (MHRSD) and mania (BRMS) using SPSS subroutines developed by Hedeker and colleagues (Hedeker et al., 1994; Hedeker and Gibbons, 1996). These analyses examined the within-subjects correlation between the alliance and symptom severity scores for each month the alliance assessment (WAI) was completed. During the months when the WAI was completed, depression scores ranged from 0 to 29, M=10.07, S.D.=7.62. Mania scores ranged from 0 to 40, M=7.46, S.D.=8.72. These analyses included 145 alliance ratings gathered from 57 persons. Results indicated that strength of alliance decreased as depressive symptom scores increased, z=−2.54, β=−1.22, P=0.01. However, alliance ratings did not vary significantly within subjects as manic symptom scores fluctuated, z=0.66, β=0.30, P=0.51. Given these findings, depression scores, corresponding with the time of the alliance assessments, were controlled for in subsequent analyses.

3.3. What patient variables are associated with alliance strength?

Our next goal was to examine social support and personality variables as predictors of changes in alliance, using the first WAI completed. First, we computed partial correlations of alliance scores with social support (ISEL), and personality factors (NEO-V), controlling for depression symptoms measured at time of the alliance assessment (see Table 1). Of the social support variables, significant associations with alliance strength were noted for ISEL total scores (pr=0.47, P=0.003), and three of the four ISEL subscales. Of the personality variables, significant associations with alliance strength were noted for Neuroticism (pr= −0.44, P=0.004) and Agreeableness (pr=0.34, P=0.03). Variables significant in these analyses were entered into a hierarchical multiple regression model, predicting alliance scores and controlling for the effect of depression scores. To avoid overfitting the regression model, ISEL total scores, but not subscale scores, were included. Depression scores at the time of the alliance assessments were entered in block 1, and social support total scores (ISEL) and personality scores (NEO-V) were considered in block two. In this adjusted model, higher social support scores were associated with stronger alliance ratings, β=0.49, P<0.005. The two personality variables no longer predicted alliance and the effect for depression was not significant. The full model accounted for 22% of outcome variance (F=5.19, P<0.01).

3.4. Does alliance strength prospectively predict symptom course in bipolar disorder?

We conducted additional hierarchical multiple regression analyses to examine whether alliance ratings predicted changes in depressive and manic symptoms six months after the alliance assessments. In each analysis, baseline symptom scores (depression or mania) were entered in block 1, and alliance scores were entered in block 2. As expected, baseline depression symptoms predicted depression scores six months after the alliance ratings, β=0.66, R^2 =0.43, P<0.001. However, early alliance scores were not a significant predictor of subsequent depression levels, after controlling for baseline depression symptoms, β= −0.12, ΔR^2 =0.01, P<0.05. In a parallel regression model examining changes in manic symptoms, baseline manic symptoms significantly predicted higher manic symptoms six months after the alliance ratings, β=0.34, P<0.001. In addition, after controlling for baseline manic symptoms, higher alliance ratings were associated with lower manic symptoms six months later, β=−0.31, P=0.01. The full model accounted for 39% of outcome variance (R^2 =0.39, P<0.001).

3.5. Is alliance strength associated with patients' attitudes about treatment?

Finally, we examined whether alliance strength was associated with treatment attitudes. We computed partial correlations to examine links between alliance ratings and treatment attitudes, controlling for depression symptom scores at the time of alliance assessment. Significant associations were found between strength of alliance ratings and two treatment attitude subscales, Negative Aspects of Medication, pr=−0.37, P=0.02, and Stigma, pr= −0.51, P=0.001. All other tests of association were nonsignificant, pr's>−0.27, Ps>0.05. Hence, a strong alliance was associated with less negative attitudes about medication and less sense of stigma regarding bipolar disorder.

4. Discussion

To our knowledge, this is the first empirical study of predictors of the strength of the alliance in bipolar disorder, and clinical outcomes associated with alliance strength. As predicted, alliance ratings covaried with depressive symptoms, such that alliance strength decreased as depressive symptoms increased. Contrary to prediction, alliance ratings did not covary with manic symptoms. Results indicated that poor social support and depressive symptoms may interfere with the early development of a strong treatment alliance between

individuals with bipolar disorder and their psychiatrists. Also as predicted, a stronger alliance early in the course of treatment was associated with more positive attitudes about medication and less concern about stigma. Most importantly, stronger early alliances predicted fewer manic symptoms over time, even after controlling for baseline symptom levels. The alliance appeared to be less important in the prediction of depression.

Before interpreting the current findings, it is important to note several weaknesses of this study. First, because our study sample is small, the failure to find significant relationships of alliance with many demographic and symptom characteristics could simply reflect limited statistical power. Second, in addition to replicating these findings, it is important that future investigations assess whether these results generalize to other settings, with particular attention paid to differences among types of health care providers and treatment clinics. As this sample did not include patients with comorbid alcohol or substance use disorders, which may strongly effect the quality of the alliance and medication adherence (Rosenheck, 1995; Keck et al., 1997), we recommend that future studies include dually diagnosed patients. Finally, this study is limited by the reliance on a self-report measure of alliance, as important information may be gained from providers' and third parties' reports (Horvath and Bedi, 2002).

Although few previous studies have focused on the alliance in bipolar disorder, our finding that depression severity predicts alliance strength is highly congruent with literatures on other psychopathologies. Depression has been tied to interpersonal difficulties in contexts ranging from interactions with strangers (Strack and Coyne, 1983) to marital problems (Karney and Bradbury, 1994; Whiffen et al., 2001). These findings have particular implications for bipolar disorder, as negative mood shifts and intermittent depressive episodes are characteristic of this condition (Karkowski and Kendler, 1997; Weissman and Myers, 1978). In the current study, stronger treatment alliances were associated with higher levels of patient social support, as predicted. This finding fits well with other findings on the importance of social support in bipolar disorder. The availability of social support has been associated with better adherence and response to lithium therapy (Kulhara et al., 1999; O'Connell et al., 1985), more rapid recovery from bipolar mood episodes and lowered vulnerability to depression over time (Johnson et al., 1999), and lower risk of major affective reoccurrence (Johnson et al., 2003; Stefos et al., 1996). In addition, social support may be understood as an index of general psychosocial functioning including, as our results indicate, one's ability to align with a treatment provider.

Alliance strength predicted patients' attitudes about treatment. Patients who reported stronger alliances with their providers reported more positive attitudes about medication and stigma. In keeping with these findings, alliance strength also predicted less severe manic symptoms over time. Although treatment adherence was not directly measured in this study, it is possible that a strong alliance promoted greater acceptance of medication, which could partially explain the lower levels of mania over time. This interpretation dovetails with recent findings that serum lithium levels for patients with bipolar disorder increased when clinicians focused on collaborative relationship building, attitudes and acceptance of bipolar disorder, and the necessity of maintenance medications (Taylor et al., 2000). Thus, clinicians' efforts to openly address patients' treatment and illness-related attitudes and concerns may significantly improve adherence, and such discussions may be most productive in the context of trusting, collaborative doctor–patient relationship (Berk et al., 2004; Frank et al., 1995; Lewis, 2005).

The current results suggest that understanding the barriers to a strong alliance may be particularly important in preventing mania. Helping patients accept the need for rapid treatment may be harder for mania than depression. In one study, adherence to

antidepressants was predicted by the severity and number of depressive episodes (Johnson, 2003). It may be that the discomforts of depression motivate treatment-seeking, even in the absence of a strong alliance. In contrast, manic symptoms are associated with decreased insight (Michalakeas et al., 1994) and anti-manic agents are associated with more side effects than antidepressants. Denial of illness severity, fear of side effects, and negative attitudes about medication use are associated with higher rates of nonadherence to mood stabilizing medications (Scott, 2002). Hence, a strong relationship may be more central to the difficult task of accepting the need for anti-manic treatment and responding to rapid changes in symptom status.

An important next step in this research will be to directly assess the association between alliance strength and medication adherence. We also suggest that future investigations examine patient and provider contributions to the alliance that may be augmented to improve outcomes. Such investigations may inform the development of patient interventions and provider training programs to improve clinicians' ability to forge and maintain alliances and to achieve the best possible outcomes for these patients.

Acknowledgments

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Table 1

Partial correlation coefficients for personality, social support and alliance, controlling for depression

Variable	pr
ISEL total score	0.47[**]
ISEL Tangible Assistance subscale	0.44[**]
ISEL Appraisal subscale	0.27
ISEL Self-Esteem subscale	0.48[**]
ISEL Belonging subscale	0.44[**]
NEO-V Neuroticism subscale	−0.44[**]
NEO-V Extraversion subscale	0.21
NEO-V Openness to Experience subscale	−0.23
NEO-V Agreeableness subscale	0.34[*]
NEO-V Conscientiousness subscale	0.29

Alliance assessed with Working Alliance Inventory (WAI); partial correlation coefficients control for Modified Hamilton Rating Scale for Depression (MHRSD) scores at time of the alliance assessment; ISEL= Interpersonal Support Evaluation List; NEO-V=NEO Five-Factor Inventory;

[*] $P<0.05$,

[**] $P<0.01$.