THE RELATIONSHIP BETWEEN AGREEABLENESS AND THE DEVELOPMENT OF THE WORKING ALLIANCE IN PATIENTS WITH BORDERLINE PERSONALITY DISORDER

Jacob B. Hirsh, PhD, Lena C. Quilty, PhD, CPsych,
R. Michael Bagby, PhD, CPsych, and Shelley F. McMain, PhD, CPsych

The working alliance between therapist and patient is an important component of effective interventions for borderline personality disorder (BPD). The current study examines whether client personality affects the development of the working alliance during the treatment of BPD, and whether this influences treatment effectiveness. Data was based on 87 patients with BPD who were participants in a randomized controlled trial comparing Dialectical Behavior Therapy (DBT) and general psychiatric management. Higher levels of trait Agreeableness were associated with steeper increases in working alliance throughout treatment, but only in the DBT condition. Increases in working alliance were in turn associated with better clinical outcomes. Mediation models revealed a significant indirect path from Agreeableness to better clinical outcomes, mediated through larger improvements in working alliance over time. These results highlight the role that patient personality can play during the therapeutic process, with a specific focus on the importance of Agreeableness for alliance development.

A long tradition in clinical research emphasizes the importance of the working alliance between patients and therapists for promoting effective therapeutic outcomes. While numerous theoretical formulations of this alliance exist, one of the most influential has been the integrative model proposed by Bordin (1979). The basic tenets of this model are that the collaborative relationship between patient and therapist provides the context for all effective interventions, and that stronger bonds are associated with better clinical outcomes. While this framework has been elaborated upon over time (Horvath & Luborsky, 1993), there are now a number of studies indicating that stronger alliances are indeed associated with more suc-

cessful interventions (Horvath & Symonds, 1991; Martin, Garske, & Davis, 2000). Consequently, there has been a continued interest in exploring the factors that influence the developmental dynamics of the working alliance during treatment (Kivlighan & Shaughnessy, 1995, 2000; Kokotovic & Tracey, 1990; Mallinckrodt & Nelson, 1991).

While the working alliance has been conceptualized as an important component of the therapeutic process regardless of the particular diagnosis or treatment regiment, there has also been research specifically examining the development of the working alliance among those with borderline personality disorder (BPD). BPD is characterized by pronounced affective and cognitive disturbances, interpersonal disruption, and impulsive behavior (Lieb, Zanarini, Schmahl, Linehan, & Bohus, 2004). It has a prevalence of 1–2% in the general population, although it affects up to 20% of psychiatric inpatients (Torgersen, Kringlen, & Cramer, 2001). Individuals with BPD have a high suicide rate, with approximately 10% of patients committing suicide, and up to 84% of patients attempting suicide (Black, Blum, Pfohl, & Hale, 2004).

Given the difficulty that individuals with BPD experience when trying to maintain stable relationships, the development of a strong alliance between therapist and patient is thought to be especially important for effective intervention (Gunderson, 2008). Despite the importance of the alliance with BPD patients, there are a number of challenges inherent in establishing such a relationship. In particular, the relational instability associated with BPD diagnosis can have a negative impact on the development and maintenance of a working alliance between patient and therapist (Frieswyk et al., 1986; Gabbard et al., 1988; Taft, Murphy, Musser, & Remington, 2004). Nonetheless, patients with BPD who develop an effective alliance are more likely to see positive treatment outcomes as a result of therapeutic interventions (Marziali, Munroe-Blum, & McCleary, 1999; Yeomans et al., 1994).

Although the working alliance is recognized as an important variable in therapeutic process and outcome research, there has been relatively little work examining how a patient's dispositional characteristics influence the development of this alliance. The research that exists on this topic focuses on differences in attachment processes (Eames & Roth, 2000; Kivlighan, Patton, & Foote, 1998), rather than the traits that are described by the five-factor model of personality (Goldberg, 1993). Studies that have employed the five-factor model suggest that client personality can be an important variable in predicting vulnerability to psychopathology, as well as likelihood of positive treatment outcomes (Bagby, Joffe, Parker, Kalemba, & Harkness, 1995; Costa & McCrae, 1990, 1992a; Saulsman & Page, 2004). Despite the growing interest in the relationship between clinical processes and personality factors, there has not yet been any research examining the relationship between the five-factor model and the development of the working alliance. There is reason to believe, however, that client personality may influence the development of the working alliance.

Specifically, the personality trait of Agreeableness describes variation in the dispositional tendencies toward interpersonal concern, empathy, trust, and compliance (Goldberg, 1993; Graziano & Tobin, 2002), all of which appear to be important for the development of an effective working alliance (Bordin, 1979; Horvath & Luborsky, 1993). Accordingly, there is reason to believe that more agreeable patients would develop a stronger working alliance during the course of treatment, compared to less agreeable individuals.

The current study tested this possibility by examining whether personality traits were able to predict the development of the working alliance among BPD patients. In particular, it was hypothesized that patients with higher levels of Agreeableness would develop a stronger alliance throughout the course of treatment. A second goal of the study was to examine whether these increases in working alliance predicted patient outcomes at the end of a one-year treatment period. Given that previous research suggests a positive relationship between alliance and treatment outcome (Horvath & Symonds, 1991; Martin et al., 2000), we expected to find additional evidence for this relationship in the current study.

Finally, we examined whether these relationships might be moderated by the type of treatment being administered. In particular, the current study compared the role of personality in a group of BPD patients undergoing dialectical behavior therapy (DBT) with those undergoing a general psychiatric management (GPM) treatment. DBT is a cognitive-behavioral intervention that was designed specifically for the treatment of BPD (Linehan, 1993; Linehan, Armstrong, Suarez, Alimón, & Heard, 1991). One of the key tenets of this approach is the importance of unconditional acceptance and validation, so that a therapeutic alliance between therapist and client can be established. While both of these interventions have proven effective with BPD patients (Linehan et al., 2006; McMain et al., 2009), the importance of client personality may still vary between the two treatments. In particular, the explicit emphasis upon the therapeutic relationship in DBT may be particularly effective with more agreeable patients, as it would capitalize on their natural tendency toward developing social bonds. Although the therapeutic relationship is also important in GPM, in DBT there is a greater emphasis on self-disclosure, out of session contact with patients, and genuine communication. Accordingly, we examined whether the hypothesized relationship between Agreeableness and working alliance would be more pronounced during DBT compared to GPM.

METHODS
PARTICIPANTS

Participants were 87 outpatients who received either DBT or GPM treatment for BPD as part of a randomized controlled trial (McMain et al., 2009). The sample for the analyses was limited to those participants who

were also enrolled in a genetic study on BPD and were therefore assessed with the NEO. Study participants (a) met DSM-IV criteria for BPD, (b) were 18–60 years of age, and (c) had at least two episodes of suicidal or nonsuicidal self-injurious episodes in the past five years, at least one of which was in the three months preceding enrollment. Table 1 presents the de-

Table 1. Baseline Demographic and Diagnostic Characteristics of Patients.

	DBT (*N* = 43)		GPM (*N* = 44)		Total (*N* = 87)	
Variable	**N**	**%**	**N**	**%**	**N**	**%**
Women	38	88.4	37	84.1	75	86.2
Marital Status						
Married or living with partner	13	30.2	13	30.2	26	29.9
Separated, divorced, or widowed	6	14	6	13.6	12	13.8
Never married	24	55.8	25	56.8	49	56.3
Education						
Less than high school	12	27.9	11	25	23	26.4
High school graduate	11	25.6	13	29.5	24	27.6
Some college or technical school	15	34.9	12	27.3	27	31
College graduate	5	11.6	8	18.2	13	14.8
Employment						
Full time	18	41.9	19	43.2	37	42.5
Part time	19	44.2	17	38.6	36	41.4
Unemployed	6	14	8	18.2	14	16.1
Annual Income						
<$15000	26	60.5	27	61.4	53	60.9
$15,000–$29,000	13	30.2	9	20.5	22	25.3
$30,000–$49,000	1	2.3	5	11.4	6	6.9
>$50,000	3	7	3	6.8	6	6.9
Lifetime DSM-IV axis I diagnoses						
Major depressive disorder	32	74.4	33	75	65	74.7
Panic disorder	14	32.6	10	22.7	24	27.6
Posttraumatic stress disorder	23	53.5	23	52.3	46	52.9
Any anxiety disorder	36	83.7	33	75	69	79.3
Any substance use disorder	20	46.5	10	22.7	30	34.5
Any eating disorder	17	39.5	10	22.7	27	31
Current DSM-IV axis I and II diagnoses						
Major depressive disorder	20	46.5	22	50	42	48.3
Panic disorder	13	30.2	6	13.6	19	21.8
Posttraumatic stress disorder	16	37.2	22	50	38	43.7
Any anxiety disorder	34	79.1	34	77.3	68	78.2
Any substance use disorder	10	23.3	1	2.3	11	12.6
Any eating disorder	5	11.6	4	9.1	9	10.3
Axis II cluster A disorders	2	4.7	5	11.4	7	8
Axis II cluster B disorders (excluding						
borderline personality disorder)	9	20.9	6	13.6	15	17.2
Axis II cluster C disorders	20	46.5	15	34.1	35	40.2
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**
Global Assessment of Functioning score	52.53	9.48	52.20	8.50	52.37	8.94
Current axis I disorders	2.93	1.70	2.86	2.00	2.90	1.84
Lifetime axis I disorders	5.00	2.77	4.05	2.13	4.52	2.50
Axis II disorders (excluding borderline						
personality disorder)	0.98	1.10	0.73	1.00	0.85	1.05
Age (years)	30.56	9.56	32.25	9.87	31.41	9.70
Extraversion	43.83	11.17	40.09	11.36	41.94	11.36
Agreeableness	41.41	13.24	42.55	15.64	41.99	14.43
Conscientiousness	34.32	13.12	37.42	12.98	35.89	13.06
Neuroticism	73.61	14.18	72.13	11.08	72.86	12.66
Openness	53.92	14.42	54.58	9.48	54.10	12.11
Client-Rated Working Alliance at Time 1	19.74	5.47	19.99	4.60	19.88	4.97

scriptive statistics for the sample. Participants who completed personality assessments did not differ from the larger sample on any of the study variables (all ps > .05)

PROCEDURE

Participants received treatment between July 2003 and April 2006 at one of two teaching hospitals in Toronto. This paper is a secondary analysis of data from patients who were participating concurrently in a genetic study and a treatment study. The protocols for both studies were approved by the centers' ethics boards. Patients were provided written informed consent prior to enrollment; separate written consent forms were used for each study. Working alliance and clinical outcomes were assessed at baseline and every 4 months during a year of treatment. Additional details can be obtained from the full report of the trial (McMain et al., 2009).

MEASURES

Revised NEO Personality Inventory (NEO-PI-R; Costa & McCrae, 1992b; mean α = .89). The NEO PI-R assesses the five major domains of personality (Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness), as well as six facets within each domain. The questionnaire consists of 240 five-point Likert questions. It is among the most widely used and validated measures of the five factor model. Therapist ratings of patient personality were obtained, with 53 patients being assessed within the first month, 11 within the first four months, and 21 after the first four months. Although the personality assessments were not administered at the same time for all patients, personality traits tend to be characterized by remarkable inter- and intra-individual stability (Caspi, Roberts, & Shiner, 2005; McCrae & Costa, 1994), even throughout the course of a therapeutic intervention (De Fruyt, Van Leeuwen, Bagby, Rolland, & Rouillon, 2006). Accordingly, the time of personality assessment was not expected to influence the results of the study. Patients who received assessments at different periods did not differ from one another in any of the study variables. Additionally, including time of personality assessment as a covariate in the analyses described below did not influence the obtained results. Personality ratings were converted to *T*-scores using the NEO-PI-R community norms.

Working Alliance Inventory (WAI; Horvath & Greenberg, 1989; α = .93). The short form of the WAI employs 12 items on a seven-point Likert scale to assess perceptions of the client-therapist relationship. Although the instrument contains three subscales, it can be used as an overall measure of working alliance. Given that client-rated working alliance tends to be a better predictor of therapeutic outcomes than therapist-rated alliance (Horvath & Symonds, 1991), we focused our analyses on the client's perception of alliance.

Outcome Measures. The Beck Depression Inventory-II (BDI; Beck, Steer,

& Brown, 1996; α = .86) was administered as a widely used and validated measure of patient depression; the Symptom Checklist-90-Revised (SCL; Derogatis, 1983; α = .97) was used as a measure of general symptom distress; the Zanarini Rating Scale for Borderline Personality Disorder (Zanarini et al., 2003; α = .74) was used as a clinician-administered scale to assess DSM-IV borderline psychopathology; the State-Trait Anger Expression Inventory (STAXI; Spielberger, 1988; α = .86) was used to assess outcomes specifically related to impulsive anger and hostility. Additionally, suicide attempts and self-injurious episodes were assessed with the Suicide Attempt Self-Injury Interview (SASII; Linehan, Comtois, Brown, Heard, & Wagner, 2006).

RESULTS

No baseline differences were observed between treatment conditions on any variables (see Table 1 for descriptive statistics). Individual growth modeling (Francis, Fletcher, Stuebing, Davidson, & Thompson, 1991) was used to examine the association between personality characteristics and the development of the working alliance in both groups, as well as the effects of the alliance on treatment outcomes.

PERSONALITY AND WORKING ALLIANCE

We first examined whether personality scores influenced the development of the working alliance throughout the treatment. Individual growth models were tested with the intercept, treatment condition, time since start of treatment, and Agreeableness entered as fixed predictors in a full factorial model. Intercept and time since start of treatment were also entered as random predictors. Client-rated working alliance was the dependent variable. All variables were grand-mean centered prior to analysis. Significant increases in working alliance were observed during the course of treatment (b = .44, SE = .17, t = 2.52, p = .02), and this was not moderated by treatment condition (b = −.02, SE = .17, t = 0.10, p = .92). As expected, the effect of time significantly interacted with Agreeableness (b = .03, SE = .01, t = 2.72, p = .01), indicating that the increases in working alliance over time were significantly larger for more agreeable patients.

A three-way interaction also emerged, such that the steeper increase in working alliance for more agreeable individuals was moderated by treatment condition (b = .03, SE = .01, t = 2.10, p = .04). A simple slopes analysis revealed that Agreeableness predicted more rapid increases in working alliance in the DBT group (b = .06, SE = .02, t = 3.06, p < .01), but not in the GPM group (b = .01, SE = .01, t = .51, p = .62). These effects were specific to Agreeableness, as entering the other personality dimensions into the model as fixed predictors did not influence these results, nor were other traits able to predict changes in working alliance over time.

Because BPD is associated with low Agreeableness scores (Lynam &

Widiger, 2001; Saulsman & Page, 2004), one potential explanation of these results is that Agreeableness is acting as a proxy for symptom severity and that it is simply the more severe cases of BPD that are associated with reduced working alliance development. To rule out this possibility, the BPD symptom count from the International Personality Disorder Examination (IPDE; Loranger, 1999) was entered into the model as a fixed predictor, allowing us to directly examine the influence of symptom severity on working alliance development. Including this variable in the model did not alter the observed relationship between higher Agreeableness scores and steeper increases in working alliance over time, and was therefore removed from subsequent analyses.

To examine whether these effects emerge at the lower-order trait level, the simple slopes analysis of the DBT condition was repeated separately with each of the 6 NEO-PI Agreeableness facets replacing the broad domain score. The relationship with increases in working alliance over time appeared to be reasonably similar in magnitude for several of the facets, including Altruism ($b = .02$, $SE = .01$, $t = 2.13$, $p = .04$), Straightforwardness ($b = .03$, $SE = .01$, $t = 2.05$, $p = .05$), and Trust ($b = .02$, $SE = .01$, $t = 1.76$, $p = .08$). Attenuated trends were also observed for Compliance ($b = .02$, $SE = .01$, $t = 1.37$, $p = .18$) and Tender Mindedness ($b = .02$, $SE = .01$, $t = 1.21$, $p = .23$). Only Modesty showed no indications of the effect ($b = -.05$, $SE = .10$, $t = .49$, $p = .63$). Given that five of the six facet scales demonstrated some evidence of the relationship, the most parsimonious explanation is that these processes are operating at the broad domain level of personality, with more agreeable individuals displaying a steeper increase in working alliance scores throughout the therapeutic process.

WORKING ALLIANCE AND THERAPEUTIC OUTCOMES

We next examined whether working alliance ratings were able to predict therapeutic outcomes. In particular, we wanted to see whether the rate of increase in client-rated working alliance during the course of therapy had any relationship with treatment outcome. Another multilevel model was examined to test this question with the intercept, working alliance scores, treatment condition, and time since start of treatment (in months) entered as fixed predictors in a full factorial model. Agreeableness was also entered into the model as a fixed predictor in order to control for differences in personality. The intercept was entered as a random variable. The slope variable (indicating months since start of treatment) was excluded from the random predictors because it tended to have a negative impact on model convergence. Tests of the covariance parameters when the random slope was included confirmed that the between-person variance in the slope of the growth model was not significantly different from zero (Wald $Z = 1.29$, $p = .20$), indicating the appropriateness of a fixed slope parameter. SASII data was nonnormally distributed and was analyzed with a Poisson loglinear generalized estimating equation.

Table 2 displays the estimated model parameters for each of the clinical outcomes. There are three parameters that reach or approach significance across each of the outcome measures: (1) outcomes improved over time; (2) higher working alliance scores were associated with more positive outcomes; (3) the rate at which working alliance increased throughout the course of therapy predicted clinical outcomes, with more rapid increases being associated with better results (over and above the influence of baseline working alliance scores). The frequency of suicide attempts was the only exception to this pattern, most likely due to the low number of episodes at baseline (Mean = 2.21, Mode = 0). No condition effects were observed with any outcome measure. Agreeableness was significantly related to lower trait anger ($b = -.18$, $SE = .04$, $t = 4.23$, $p < .01$) and anger expression ($b = -.34$, $SE = .06$, $t = 5.85$, $p < .01$) scores, but did not moderate the relationship between working alliance and outcome.

MEDIATION ANALYSIS

Analyses were next conducted to examine whether there was a significant indirect path from Agreeableness to treatment outcome, mediated by increases in working alliance during therapy. The recommended product of coefficients method suggested by MacKinnon, Lockwood, Hoffman, West, and Sheets (2002) was employed to examine the significance of the indirect path. Significant mediation effects were observed for post-treatment SCL Positive Symptom Distress ($z' = 1.73$, $p < .05$), BDI ($z' = 1.88$, $p < .05$), STAXI Trait Anger ($z' = 2.31$, $p < .05$), Zanarini BPD scores ($z' = 1.34$, $p < .05$), and frequency of self-injurious episodes ($z' = 1.84$, $p < .05$). In each of these cases, simple slopes analyses of the relationship between Agreeableness and increases in working alliance revealed that the mediation effects were significant in the DBT condition (all ps < .05), but not the GPM condition (all ps > .05). Accordingly, while increases in working alliance

Table 2. Working Alliance and Treatment Outcome

	Time			WAI			Time * WAI		
	b	**SE**	**t**	**b**	**SE**	**t**	**b**	**SE**	**t**
BDI	−.81	.17	4.89*	−.31	.06	4.92*	−.03	.01	2.77*
SCL PSD	−.03	.01	4.89*	−.01	.00	3.51*	−.00	.00	2.38*
ZAN	−.61	.08	7.60*	−.07	.03	2.53*	−.01	.01	1.65
STX TA	−.16	.08	2.09*	−.11	.03	3.66*	−.02	.01	4.68*
STX AI	−.15	.05	3.32*	−.07	.02	3.61*	−.01	.00	3.40*
STX AE	−.35	.11	3.17*	−.09	.04	2.10*	−.01	.01	1.65
SASII SH	−.16	.03	25.76*	−.03	.01	12.03*	−.00	.00	7.08*
SASII SA	−.05	.02	10.09*	−.01	.01	2.92	.00	.00	.21

Notes. WAI = Working Alliance Inventory; BDI = Beck Depression Inventory; SCL PSD = Symptom Checklist Positive Symptom Distress; ZAN = Zanarini Rating Scale for BPD; STX = State-Trait Anger Expression Inventory (Subscales: TA = Trait Anger, AI = Anger-In, AE = Anger Expression); SASII = Suicide-Attempt Self-Injury Interview (SH = Nonsuicidal Self-Harm Episodes; SA = Suicide Attempts). For SASII results, Wald Chi-Square values are used in place of *t* values.
*Significant at $p < .05$

predicted better outcomes in both treatment conditions, the patients' Agreeableness levels only predicted working alliance development in the DBT condition. Follow-up analyses with therapist-rated alliance revealed a similar overall pattern, with slightly weaker effect sizes.

DISCUSSION

The development of a working alliance is considered an important component of the therapeutic process (Horvath & Luborsky, 1993), such that a stronger relationship between client and therapist is predictive of more successful outcomes (Horvath & Symonds, 1991; Martin et al., 2000). Building a good therapeutic relationship appears to be especially important for the effective treatment of BPD (Gunderson, 2008; Linehan, 1993), which is characterized by unstable interpersonal relationships. The current study found that therapist ratings of client personality can predict the developmental trajectory of the working alliance among patients with BPD. Specifically, those patients with higher levels of the personality trait of Agreeableness displayed a larger increase in the working alliance throughout the course of a one year intervention. Larger increases in working alliance were in turn associated with better outcomes at the end of the treatment period, including reduced depression, anger, general symptom distress, and borderline symptom severity. Mediation analyses revealed a significant indirect path between client Agreeableness and improved treatment outcomes, mediated through greater increases in working alliance throughout the course of therapy. These results highlight the role that client personality can play in therapeutic processes and outcomes (Costa & McCrae, 1992a).

Interestingly, the relationship between client personality and the development of the working alliance was observed in the DBT group, but not in the GPM group. One explanation for this finding is that the DBT therapists' emphasis on intimacy, warmth, and genuine engagement in the client-therapist relationship is particularly effective with more agreeable individuals. Conversely, the GPM treatment did not appear to differentially affect patients based on their levels of Agreeableness. While both treatments demonstrated overall effectiveness, the pattern of results suggests that client Agreeableness may moderate the beneficial impact of DBT.

It should also be noted that although the mean Agreeableness levels in the current study are comparable to other borderline samples, they are considerably lower than those found in the general population (Morey et al., 2002; Saulsman & Page, 2004). Borderline samples thus have a somewhat restricted range of Agreeableness scores, as they are biased toward the low end of the spectrum. It may, in fact, be the case that the difficulty in forming an alliance with BPD patients (Gunderson, Najavits, Leonhard, Sullivan, & Sabo, 1997) is partially a consequence of their low Agreeableness scores. Nonetheless, the current results suggest that even within this narrowed range of scores, higher levels of Agreeableness were able to

predict the growth of a stronger alliance. An interesting question for future research is whether the likelihood of developing an effective alliance when treating patients with a particular disorder is a function of the personality profile associated with that disorder. Specifically, disorders that are associated with low levels of Agreeableness may be characterized by greater difficulties in establishing an effective alliance.

While the current study provides a valuable step toward understanding the relationship between client personality and working alliance processes, there remain a number of questions for future research. For instance, it is important to examine whether Agreeableness is related to the growth of the working alliance across multiple disorders. Given that agreeable individuals appear to have a stronger interpersonal orientation (Graziano & Tobin, 2002), it may be the case that higher levels of Agreeableness can facilitate the growth of the working alliance regardless of the particular diagnostic or treatment context. Conversely, these results may be specific to treatment regiments that cultivate a genuine, warm and intimate relationship between the therapist and patient, such as in DBT. Future research can help to elaborate the situations in which client personality contributes to the working alliance process.

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