Defense Style as a Predictor of Change in Interpersonal Problems among Patients Attending Day Treatment for Personality Disorder

Anthony S. Joyce, Laura E. Stovel, John S. Ogrodniczuk, and Esther Fujiwara

Abstract: Background: Healthy interpersonal functioning, and a reduction of the distress associated with maladaptive interpersonal behavior, is a focus of treatment for personality disorder (PD). Patients with PD are also known to make a preferential use of immature defenses. We examined change in interpersonal problems as a critical outcome, and defense style as a predictor of this outcome.

Methods: Consecutively admitted patients to a group-oriented day treatment (DT) program were recruited (N = 32). Predictor variables were represented by subscale scores from the 40-item Defense Style Questionnaire (DSQ-40); outcomes were represented by the global distress and interpersonal octant scores from the 64-item Inventory of Interpersonal Problems–Circumplex (IIP-C).

Results: Significant inverse correlations were observed between Neurotic defenses and change in both interpersonal distress and problems associated with the Vindictive, Cold, Socially Inhibited, and Non-Assertive octants. Partial correlations, adjusting for baseline IIP-C scores, remained significant. Additional inverse relations between Neurotic defenses and improvement in the Domineering, Exploitable, and Overly Nurturant octants also emerged in the partial correlation analysis.

Discussion: Neurotic defenses are oriented to “splitting off” the affective element of experience; in the case of patients with PD, this affective element may often involve hostility. An orientation to use of Neurotic defenses also appears to be more trait-like and thus resistant to change. The findings highlight deve-
oping skill in affective communication, and addressing maladaptive interpersonal behaviors in the here-and-now, as mechanisms of therapeutic change in DT of patients with PD.

**Limitations:** The sample was small and assessment of defense style and interpersonal problems relied on patient self-report.

Personality disorders (PDs) are serious mental conditions that affect many people, that is, 13% in the general population, and 13%–81% in psychiatric populations (Pilkonis, Neighbors, & Corbitt, 1999). An individual is diagnosed with a PD when emotional, behavioral, and interpersonal traits become inflexible and maladaptive and cause significant impairment or distress. The characteristic features of PDs are longstanding or chronic rather than being limited to episodes of acute illness. High levels of unemployment, substance abuse, marital difficulty, and criminal behavior reflect the chronic impairment of individuals with PDs (Oldham, 1994). As well, those with PDs are among the most frequent users of health and social services (Bender, Dolan, Skodol, et al., 2001). The presence of a PD complicates the assessment and treatment of coexisting psychiatric and non-psychiatric medical illnesses (Reich, 2003). Many clinicians consider patients with PDs among the most difficult to retain in therapy and to treat.

As an intervention, day treatment (DT) appears to have unique advantages for the therapy of patients with PDs. It is a partial hospitalization approach that offers intensive and structured clinical services within a stable therapeutic milieu setting. Day treatment incorporates group psychotherapy, pharmacotherapy, milieu principles, and a systems orientation. Patients participate in a variety of therapy groups over several hours each weekday for several months. The therapy groups draw from different technical orientations. For example, behavioral and cognitive interventions are used in structured, skills-oriented groups, while psychodynamic interventions are used in unstructured, insight-oriented groups.

A number of features of DT contribute to its effectiveness as a treatment for PDs (Piper & Rosie, 1999). First, there is the intensity of the group experience. Patients spend a considerable amount of time participating in many different groups each day. Second, the groups vary in size, structure, objectives, and processes. Such diversity provides a comprehensive approach to treatment. Third, the system of groups is integrated and synergistic. In this way, patients are encouraged to think in terms of interdependency and collaboration. Fourth, patients benefit from working with multiple staff and a large number of other patients.
Fifth, DT capitalizes on the characteristics of a therapeutic community (democratization, reality confrontation, permissiveness, and communality), features which strengthen cohesion among the patients.

Day treatment is recognized as one of the most effective treatments for patients with PD (Ogrodniczuk & Piper, 2001). Several independent groups have investigated DT programs of varying lengths and orientation (e.g., Bateman & Fonagy, 1999, 2001, 2003; Piper, Rosie, Joyce, & Azim, 1996; Wilberg, Karterud, Urnes, Pedersen, & Friis, 1998) and have provided consistently positive findings. Importantly, significant benefits have been demonstrated for patients diagnosed with PDs from all three Axis II clusters (odd-eccentric, dramatic-emotional, anxious-fearful). Commonly, DT programs emphasize a focus on the various manifestations of, and distress associated with, maladaptive interpersonal behavior. Treatment efforts aimed at facilitating healthy interpersonal functioning can generalize to many domains of patients’ lives, namely, personal well-being, intimate relationships, family functioning, work-role satisfaction, and so on. This study examined change in interpersonal problems as a critical outcome of DT, and examined defense style as a predictor of this outcome.

Defense style reflects the individual’s preferential use of certain defense mechanisms, defined as unconscious psychological strategies which involve the manipulation, distortion, or denial of reality to manage anxiety or maintain self-esteem. Commonly, the various defense mechanisms have been ordered into a hierarchy that reflects some degree of adaptiveness or developmental maturity (see Vaillant, Bond, & Vaillant, 1986). For example, the DSM-IV’s Defensive Functioning Axis (American Psychiatric Association, 1994) describes seven levels of adaptiveness for a list of 31 defense and coping mechanisms. Use of more mature defenses has been positively associated, and use of immature defenses has been negatively associated, with indices of health and life success (Bond, 2004). Patients with PDs are assumed to make preferential use of immature defenses and less use of more adaptive defenses; the evidence for this assumption (e.g., Bond, Paris, & Zweig-Frank, 1994; Devens & Erikson, 1998) is reasonably consistent (Bond, 2004). Consequently, we expected that patients with PD in DT would demonstrate relatively greater emphasis on a preferred use of immature defenses, and that defense style evaluated at pre-treatment would likely have some bearing on the degree of improvement demonstrated regarding interpersonal problems from before to after treatment.

The Defense Style Questionnaire (DSQ; Bond, Gardner, Christian, & Sigal, 1983) is a frequently used self-report measure of “empirically validated clusters of perceived defense mechanisms” (Bond, 2004, p. 263). Subjects rate their degree of agreement with statements that
describe behaviors associated with the action of a particular defense mechanism (“derivatives”), using a 9-point Likert scale. Versions of the DSQ, having different numbers of items and somewhat variant factor structures, have been developed over the years (see Petraglia, Thygesen, Lecours, & Drapeau, 2009). A 40-item version (Andrews, Pollock, & Stewart, 1989) is the instrument most often employed in clinical research. The DSQ-40 comprises ratings for 20 defense mechanisms, grouped into three levels (or factors): Mature, Neurotic, and Immature. Findings regarding the predictive value of the DSQ factor scores are mixed. Høglend and Perry (1998) reported that baseline scores for use of adaptive (or mature) defenses predicted improvement in depressive and PD symptoms and global functioning at 6-month follow-up of patients with major depression who had received a range of bona fide psychotherapies. Magalhães, Pinheiro, Faria, et al. (2007) reported that use of immature defenses was associated with dropping out or a non-response to psychotherapy for postpartum depression. In contrast, Bond and Perry (2004) reported that baseline scores had no relationship to outcome of psychodynamic therapy for depressive, anxiety, and personality disorders. In that sample, change in defense style toward greater maturity was directly associated with improvement (Bond & Perry, 2004; see also Kipper, Blaya, Teruchkin, et al., 2005). Others have not found evidence for similar relationships (Hersoug, Sexton, & Høglend, 2002). Bond (2004) concluded that “a sustained change in defense style may therefore be a better predictor of outcome than a single, initial assessment of defense style” (p. 276). Studies have indicated that change in therapy is more likely to occur with immature and mature defense styles, whereas neurotic defenses seem to change less, “acting more like a trait than a state” (Bond, 2004, p. 268). The latter may be “more a part of enduring character than defenses such as suppression and acting-out” (p. 268).

For the current study, pre-treatment scores on defense style were employed as predictors of the change in patients’ interpersonal problems from before to after DT. Examining change in defense style was not possible as the DSQ-40 was only administered at baseline. Interpersonal problems were represented by the overall distress score and octant subscale scores from the circumplex version of the Inventory of Interpersonal Problems (IIP-C; Horowitz, Rosenberg, Baer, Ureño, & Villaseñor, 1988). The sample was drawn from outpatients admitted to an 18-week intensive, group-oriented DT program oriented to the treatment of affective, anxiety, and personality disorders.
METHOD

Setting

Patients were recruited from the Psychiatric Day Treatment Program (DTP), a component of the outpatient Psychodynamic Psychiatry Service of the Department of Psychiatry at the University of Alberta Hospital in Edmonton. The DTP is a group- and dynamically oriented partial hospital treatment program. Patients commonly present with Axis I mood and anxiety disorders and Axis II disorders from Clusters B and C. Approximately 80–100 patients complete the 18-week DTP annually. Previous reports have provided evidence for the effectiveness of the program (Ogrodniczuk, Lynd, Joyce, et al., 2011; Piper, Rosie, Joyce, & Azim, 1996).

Patients

The DTP is known to community referral sources as a service that treats patients with PDs or maladaptive PD traits. Roughly one quarter of referrals are from the affiliated Psychiatric Treatment Clinic and the remainder from community physicians and allied mental health professionals. Inclusion criteria consider whether the patient (1) evidences poor interpersonal functioning, (2) is at least 18 years of age, and (3) has a reasonable capacity for group participation. Exclusion criteria address if the patient (1) is overtly psychotic or in need of inpatient care, (2) is acutely suicidal, or (3) is cognitively impaired. Patients reporting current substance abuse are asked to demonstrate abstinence for 4 months before being admitted; patients facing legal charges are expected to have these cleared before being admitted. A history of violent behavior does not represent an exclusion criterion, but patients are expected to express feelings verbally as opposed to acting out.

The sample for the present study comprised 32 consecutively admitted patients with a mean age of 41.6 years ($SD = 10.8$, range = 23–66). Nineteen (59.4%) were female. Ten patients (31.3%) were single, 12 (37.5%) were married or living common-law, and 10 (31.3%) reported being separated or divorced. Eleven patients (34.4%) reported a high school diploma or less, 17 (53.1%) had a technical school or college diploma, and 4 (12.5%) reported a university degree. Clinically, 30 (93.8%) patients reported previous psychiatric treatment, and 10 (31.3%) reported previous hospital admissions. Baseline Axis I and Axis II diagnoses were assigned by the DTP therapist who conducted the initial
intake assessment, according to the *DSM-IV-TR* (American Psychiatric Association, 2000). Axis I affective disorders were diagnosed most frequently: recurrent major depressive disorder was identified for 18 patients (56.3%), dysthymic disorder for 14 (43.8%), and a single episode of major depression for 4 (12.5%). Anxiety disorders were also common: generalized anxiety disorder was observed in 11 patients (34.4%), obsessive-compulsive disorder and PTSD were diagnosed for 3 patients each (9.4%), and cases of panic disorder (1, 3.1%) and social phobia (2, 6.3%) were also seen. Problems with alcohol or substance abuse/dependence were diagnosed in 7 cases (21.9%). On Axis II, borderline PD was diagnosed most frequently (20 patients, 62.5%); narcissistic PD was also often present (12 patients, 37.5%). Cluster C PDs were also observed: obsessive-compulsive PD (5 cases, 15.6%), avoidant PD (2, 6.3%), and dependent PD (1, 3.1%). Personality disorder not otherwise specified was diagnosed for 4 cases (12.5%).

**The Day Treatment Program**

The DTP offers an ongoing, structured therapeutic milieu characterized by an emphasis on psychodynamic group psychotherapy. Patients attend the program daily for seven hours each day, excepting a half-day on Friday. Patients participate for a time-limited period of 18 weeks; an open-ended follow-up group is available for patients who complete the program. One to two patients are admitted and a corresponding number complete the program in a given week. The objective of treatment is to increase the individual’s personal, social, and emotional well-being with a view to more effective functioning in the community. No individual therapy is offered.

**Medication**

It is unusual for patients to receive other forms of mental health care while in the DTP given program demands for daily participation. Most patients are however prescribed psychotropic medication. Antidepressants are frequently used given a high incidence of comorbid depressive and/or anxiety disorders. Neuroleptics and SSRIs are also used in the treatment of PDs (e.g., for affective lability associated with BPD).
The majority of the sample (73%) was on a therapeutic dose of medication during treatment, usually antidepressants (92%).

Measures

*Defense Style.* The 40-item Defense Style Questionnaire (DSQ-40; Andrews, Singh, & Bond, 1993; Bond, Perry, Gauthier, et al., 1989) is a self-report instrument assessing derivatives of commonly used defense mechanisms. It is comprised of 40 items descriptive of “personal attitudes” that the patient rates on a 9-point Likert scale, ranging from 1 (strongly disagree) to 9 (strongly agree). The DSQ-40 provides subscale scores for three clusters of defenses, as follows: *Immature defenses* (projection, passive aggression, acting-out, isolation, devaluation, autistic fantasy, denial, displacement, dissociation, rationalization, and somatization), *Neurotic defenses* (undoing, pseudo-altruism, idealization, and reaction formation), and *Mature defenses* (sublimation, suppression, anticipation, and humor). Andrews et al. report moderate to high internal consistency (Cronbach’s alpha ranging from .58–.80) and high test-retest reliability (ranging from .75–.85) for the three subscales.

*Interpersonal Problems.* The circumplex version (Alden, Wiggins, & Pincus, 1990) of the Inventory of Interpersonal Problems (IIP-C; Horowitz, Rosenberg, Baer, et al., 1988) is a 64-item self-report assessing distress associated with problems in interpersonal interactions. The measure consists of 64 items describing difficulties in executing particular interpersonal behaviors (“It is hard for me to . . .”), or difficulties in exercising restraint (“I do . . . too much”). Each item is rated on a 5-point Likert scale ranging between 0 (Not at all distressing) to 4 (Extremely distressing). Studies have shown that the subscales of the instrument can be modelled geometrically as a circumplex model; each 8-item subscale represents an octant within this model. The 8 octant scales reflect interpersonal problems characterized by the following adjectives: Domineering, Vindictive, Cold, Socially Avoidant, Non-Assertive, Exploitable, Overly Nurturant/Self-Sacrificing, and Intrusive. In addition to the octant scales, the IIP-C also provides a total score for overall interpersonal distress. The IIP-C is one of the most widely used instruments in psychotherapy outcome research (Strupp, Horowitz, & Lambert, 1997) and has strong psychometric properties. Estimates of internal consistency range from .88 to .89 for the total score and from .68 to .84 for the subscales. Test-retest reliabilities are also high, ranging from .71 to .83 for the total score and from .41 to .85 for the subscales.
Procedure

Patients were informed about the study following the intake assessment and decision to admit to the DTP; successfully recruited patients completed informed consent prior to their first day in the program. Ethics approval for the study was provided by the Health Research Ethics Board of the University of Alberta. Patients completed questionnaire measures for the baseline assessment immediately after providing informed consent. The IIP-C was re-administered to patients at their time of discharge from the 18-week program.

Approach to Analysis

Baseline scores on the DSQ-40 and IIP-C were compared to normative values provided in source articles or recent representative studies using the measures. Relationships between defense style and baseline disturbance (interpersonal distress and number of Axis I and II diagnoses) were examined using Pearson correlation coefficients. Change from pre- to post-treatment on the IIP-C scales was evaluated using MANOVA. Relationships between defense style and IIP-C change (expressed as difference scores) were examined using Pearson correlations, followed by partial correlation coefficients to control for the influence of baseline status on the IIP-C variables.

RESULTS

Initial Status

Defense Style. Scores on the three DSQ-40 factors (Immature, Neurotic, Mature) for the sample of 32 DTP patients were compared to values provided for a nonclinical sample of community respondents \((N = 388)\) described by Andrews, Singh, and Bond (1993, p. 251). Patients in the DTP did not significantly differ from the Andrews et al. (1993) sample on scores reflecting use of Immature defenses \((DTP \text{ mean } = 3.74, SD = 0.88; \text{ Andrews et al. sample mean } = 3.54, SD = 0.95), t = 1.15, df = 418, ns\), or use of Neurotic defenses \((DTP \text{ mean } = 4.11, SD = 1.07; \text{ Andrews et al. sample mean } = 4.32, SD = 1.28), t = -0.90, df = 418, ns\). However, patients in the DTP reported significantly less use of defenses from the Mature level \((DTP \text{ mean } = 4.21, SD = 1.33; \text{ Andrews et al. sample mean } = 5.76), t = -5.00, df = 418, p < 0.001\).
DEFENSE STYLE AS A PREDICTOR OF CHANGE

\[ SD = 1.15, t = -7.24, df = 418, p < .0001. \] The effect size of this difference was medium (Cohen’s \( d \) = .71). Relative to a sample of inpatients (\( N = 55 \)) evaluated by Devens and Erikson (1998), the DTP patients reported significantly less use of defences at each level: Immature (inpatient mean = 4.36, \( SD = 1.19 \)), \( t = -2.56, df = 85, p < .02 \); Neurotic (inpatient mean = 4.96, \( SD = 1.31 \)), \( t = -3.11, df = 85, p < .003 \); and Mature (inpatient mean = 4.78, \( SD = 1.25 \)), \( t = -2.00, p < .05 \). The effect sizes of these differences were .55, .67, and .43, respectively, that is, in the medium range.

Interpersonal Problems. Pre-treatment IIP-C total and octant scores for the DTP sample were compared with scores from samples described in two recent studies in clinical settings. Hilsenroth, Menaker, Peters, and Pincus (2007) drew a sample of 74 outpatients from a university-based community clinic. One subgroup (\( n = 23 \)) was diagnosed as having Borderline PD or significant traits of the condition; the remaining subgroup (\( n = 51 \)) was characterized by a range of PD pathology excepting BPD and regarded as “non-BPD patients.” The DTP patients were expected to report interpersonal difficulties that were more similar to the BPD than non-BPD patients in the Hilsenroth et al. sample; given the DTP patients were engaged in partial hospital treatment as opposed to outpatient care, however, DTP patients were still expected to report significantly greater interpersonal problems overall relative to the sample in Hilsenroth et al. (2007). Luyten, Lowyck, and Vermotte (2010) examined a sample of 44 patients involved in a year-long, hospital-based residential/day treatment program for PD in Belgium. This sample likely reflected greater PD pathology than represented in Hilsenroth et al. (2007), so it was expected that the DTP sample would report an equivalent profile of interpersonal problems. Table 1 presents the descriptive statistics for the IIP-C variables for each sample and the results of the three sample comparisons. For each set of comparisons, a Bonferroni adjustment (.05/9) was implemented; the significance criterion was therefore .006.

The expectations regarding the interpersonal problems of DTP patients were essentially confirmed. Relative to the BPD patients in the Hilsenroth et al. (2007) outpatient sample, the DTP patients reported significantly greater problems in the areas of being Vindictive (BC; \( d = .98 \)), Cold (DE; \( d = .93 \)), and Socially Avoidant (FG; \( d = .84 \)). Relative to the non-BPD patients in the Hilsenroth et al. (2007) sample, DTP patients reported significantly greater interpersonal distress (\( d = 1.13 \)) and greater problems in all octants of the IIP-C (mean \( d = .78, SD = .13, range = .65–1.02 \)). Relative to the residential/day treatment sample from Luyten et al. (2010), DTP patients reported significantly greater
Table 1. Comparison of Pre-Treatment IIP-C Scores from DTP Patients (N = 32) Relative to Three Independent Samples

<table>
<thead>
<tr>
<th>IIP-C Scale</th>
<th>DTP Sample</th>
<th>BPD</th>
<th>Non-BPD</th>
<th>Luyten et al.</th>
<th>t1</th>
<th>t2</th>
<th>t3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>Total score</td>
<td>1.79</td>
<td>0.46</td>
<td>1.44</td>
<td>0.44</td>
<td>1.24</td>
<td>0.49</td>
<td>1.68</td>
</tr>
<tr>
<td>PA</td>
<td>1.22</td>
<td>0.60</td>
<td>0.87</td>
<td>0.51</td>
<td>0.68</td>
<td>0.47</td>
<td>0.93</td>
</tr>
<tr>
<td>BC</td>
<td>1.41</td>
<td>0.58</td>
<td>0.87</td>
<td>0.51</td>
<td>0.93</td>
<td>0.58</td>
<td>0.99</td>
</tr>
<tr>
<td>DE</td>
<td>1.76</td>
<td>0.84</td>
<td>1.03</td>
<td>0.70</td>
<td>1.24</td>
<td>0.76</td>
<td>1.45</td>
</tr>
<tr>
<td>FG</td>
<td>2.21</td>
<td>0.83</td>
<td>1.50</td>
<td>0.87</td>
<td>1.49</td>
<td>0.80</td>
<td>2.10</td>
</tr>
<tr>
<td>HI</td>
<td>2.29</td>
<td>0.79</td>
<td>1.88</td>
<td>0.90</td>
<td>1.67</td>
<td>0.94</td>
<td>2.42</td>
</tr>
<tr>
<td>JK</td>
<td>2.07</td>
<td>0.75</td>
<td>1.91</td>
<td>0.79</td>
<td>1.57</td>
<td>0.72</td>
<td>2.18</td>
</tr>
<tr>
<td>LM</td>
<td>1.98</td>
<td>0.62</td>
<td>2.05</td>
<td>0.80</td>
<td>1.43</td>
<td>0.66</td>
<td>2.09</td>
</tr>
<tr>
<td>NO</td>
<td>1.33</td>
<td>0.74</td>
<td>1.22</td>
<td>0.57</td>
<td>0.87</td>
<td>0.53</td>
<td>1.28</td>
</tr>
</tbody>
</table>

Note. Hilsenroth et al. refers to Hilsenroth, Menaker, Peters, and Pincus (2007); Luyten et al. refers to Luyten, Lowyck, and Vermotte (2010). t1 refers to the comparison between the DTP sample and the sample of BPD patients from Hilsenroth et al. (2007); t2 refers to the comparison between the DTP sample and the sample of non-BPD patients from Hilsenroth et al. (2007); t3 refers to the comparison between the DTP sample and the sample of residential/day treatment patients from Luyten et al. (2010). Degrees of freedom for the three sets of comparisons are 53, 81, and 74, respectively. A Bonferroni adjustment for each set of comparisons (.05/9) results in a criterion significance level of .006; t-test values in bold represent comparisons that met the adjusted significance criteria. PA = Domineering, BC = Vindictive, DE = Cold, FG = Socially Avoidant, HI = Non-Assertive, JK = Exploitable, LM = Overly Nurturant/Self-Sacrificing, and NO = Intrusive. *p < .05; **p < .01; ***p < .001.
problems in only one area, again regarding issues associated with being Vindictive (BC; $d = .78$).

**Relationships between Defense Style and Initial Disturbance**

Table 2 presents the correlation coefficients representing the relationships between defense style and initial disturbance, the latter defined as interpersonal distress (IIP-C scores) and number of DSM Axis I and II diagnoses. Greater use of Immature defenses was directly associated with the pre-treatment level of interpersonal distress, interpersonal problems in the areas of being Vindictive, Cold, Socially Avoidant, or Overly Nurturant, and the presence of PD pathology (number of Axis II diagnoses). Use of Neurotic defenses was not strongly associated with initial disturbance, demonstrating weaker relationships with interpersonal problems associated with being Exploitable or Intrusive and PD pathology. Use of Mature defenses tended to be inversely associated with measures of initial disturbance; significant negative relationships were demonstrated with problems associated with being Socially Avoidant and PD pathology.

<table>
<thead>
<tr>
<th>Initial Disturbance</th>
<th>Defense Style</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Immature</td>
</tr>
<tr>
<td>IIP-C Total Score</td>
<td>0.49**</td>
</tr>
<tr>
<td>IIP-C PA (Domineering)</td>
<td>0.32</td>
</tr>
<tr>
<td>IIP-C BC (Vindictive)</td>
<td>0.58***</td>
</tr>
<tr>
<td>IIP-C DE (Cold)</td>
<td>0.53***</td>
</tr>
<tr>
<td>IIP-C FG (Socially Avoidant)</td>
<td>0.49**</td>
</tr>
<tr>
<td>IIP-C HI (Non-Assertive)</td>
<td>0.06</td>
</tr>
<tr>
<td>IIP-C JK (Exploitable)</td>
<td>0.18</td>
</tr>
<tr>
<td>IIP-C LM (Overly Nurturant)</td>
<td>0.38*</td>
</tr>
<tr>
<td>IIP-C NO (Intrusive)</td>
<td>0.03</td>
</tr>
<tr>
<td>Number of Axis I diagnoses</td>
<td>0.14</td>
</tr>
<tr>
<td>Number of Axis II diagnoses</td>
<td>0.54***</td>
</tr>
</tbody>
</table>

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

Table 2. Relations between Pre-Treatment Measures of Defense Style and Initial Disturbance ($N = 32$)
Change in Interpersonal Problems

A repeated measures MANOVA was conducted for the nine IIP-C variables (total score and 8 octant scores), assessed at pre-treatment and again at termination of the 18-week DTP. The multivariate $F$ for the within-subjects effect of time was significant, $F(8, 24) = 6.93, p < .0001$, and of medium size (partial eta$^2 = .70$). Univariate analyses were significant in each instance, the majority of these at $p < .0001$; lower significance values were demonstrated for the octant scores for Domineering (PA; $p < .01$), Vindictive (BC; $p < .02$), Cold (DE; $p < .01$), and Intrusive (NO; $p < .04$). Medium effects were seen for overall interpersonal distress ($\eta^2 = .54$) and problems associated with being Exploitable (JK; $\eta^2 = .68$); all other effects fell into the range of being “small” (mean $\eta^2 = .30$, $SD = .14$, range = .13-.48). The smallest effects ($\eta^2 < .25$) were observed for problems associated with being Domineering (PA; $\eta^2 = .25$), Vindictive (BC; $\eta^2 = .18$), Cold (DE; $\eta^2 = .22$), and Intrusive (NO; $\eta^2 = .13$).

Relationships between Defense Style and Change in Interpersonal Problems

To evaluate the ability of the DSQ variables to predict change in interpersonal problems, we first examined correlations between the pre-treatment DSQ scores and difference scores (pre-treatment minus post-treatment) for each of the IIP-C variables. A positive difference score therefore denotes improvement on the IIP-C variable, while a negative difference score denotes deterioration. Subsequently, we examined partial correlations between the DSQ and IIP-C difference score variables, controlling for the influence of the pre-treatment score on the IIP-C measure. Table 3 presents the correlation coefficients associated with these relationships.

There was little evidence that use of Mature or Immature defenses at pre-treatment predicted change in the patient’s interpersonal problems. Use of immature defenses was associated with less improvement in problems associated with being Exploitable when the pre-treatment scores on the IIP-C measure were controlled. The use of Neurotic defenses was much more likely to have an impact on change in interpersonal problems. Pearson correlations indicated that use of Neurotic defenses was associated with poor outcome (or deterioration) for overall interpersonal distress and problems associated with being Vindictive, Cold, Socially Avoidant, and Non-Assertive. These relationships were
Table 3. Defense Style Variables as Predictors of Change in Interpersonal Problems (N = 32)

<table>
<thead>
<tr>
<th>IIP-C Variable</th>
<th>Total Score</th>
<th>PA</th>
<th>BC</th>
<th>DE</th>
<th>FG</th>
<th>HI</th>
<th>JK</th>
<th>LM</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immature Defenses</td>
<td>Pearson r</td>
<td>-0.09</td>
<td>-0.16</td>
<td>0.09</td>
<td>0.13</td>
<td>0.08</td>
<td>-0.24</td>
<td>-0.26</td>
<td>-0.09</td>
</tr>
<tr>
<td></td>
<td>Partial r</td>
<td>-0.25</td>
<td>-0.31</td>
<td>-0.16</td>
<td>-0.27</td>
<td>-0.26</td>
<td>-0.31</td>
<td>-0.43*</td>
<td>-0.24</td>
</tr>
<tr>
<td>Neurotic Defenses</td>
<td>Pearson r</td>
<td>-0.41*</td>
<td>-0.20</td>
<td>-0.42*</td>
<td>-0.39*</td>
<td>-0.38*</td>
<td>-0.18</td>
<td>-0.27</td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td>Partial r</td>
<td>-0.52**</td>
<td>-0.36*</td>
<td>-0.47**</td>
<td>-0.38*</td>
<td>-0.48**</td>
<td>-0.56***</td>
<td>-0.50**</td>
<td>-0.41*</td>
</tr>
<tr>
<td>Mature Defenses</td>
<td>Pearson r</td>
<td>-0.14</td>
<td>0.03</td>
<td>0.06</td>
<td>-0.07</td>
<td>-0.36*</td>
<td>-0.12</td>
<td>-0.29</td>
<td>-0.1</td>
</tr>
<tr>
<td></td>
<td>Partial r</td>
<td>-0.10</td>
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<td>0.16</td>
<td>0.08</td>
<td>-0.21</td>
<td>-0.02</td>
<td>-0.2</td>
<td>-0.12</td>
</tr>
</tbody>
</table>

*Note. *p < .05; **p < .01; ***p < .001.
also observed when partial correlations were calculated, controlling for the pre-treatment scores on the IIP-C measures; in all but one instance, the size of the coefficient increased. On average, use of Neurotic defenses accounted for 23.5% of the variation in the outcome for these interpersonal problems ($SD = 6.3\%$, range $= 14.4–31.4\%$). In addition, once pre-treatment scores on the IIP-C measure were accounted for, partial correlations also indicated that use of Neurotic defenses was associated with poor outcome or deterioration in three other domains of interpersonal problems, namely those associated with being Domineering, Exploitable, and Overly Nurturant. Use of Neurotic defenses, on average, accounted for 18.3% of the variation in outcome on these three octants ($SD = 6.1\%$, range $= 13.0–25.0\%$).

**DISCUSSION**

In terms of the self-reported use of Immature and Neurotic defenses, the sample of patients who received treatment in the DTP resembled a large community sample (Andrews et al., 1993). However, the DTP patients reported being significantly less likely to make use of Mature defenses than community respondents. Patients in the DTP reported less use of defenses at each level when compared against a sample of inpatients with more pronounced personality pathology (Devens & Erikson, 1998). These findings are in line with previous studies of personality disorder (Bond, 2004), highlighting the lesser emphasis on adaptive defenses in these patients, and also suggest that patients in the DTP fall into a moderate to severe range regarding the severity of PD pathology.

The specific nature of the interpersonal problems at the outset of treatment further distinguished patients in the DTP. Relative to patients with Borderline PD being seen for outpatient therapy (Hilsenroth et al., 2007), patients in the DTP reported significantly more severe problems in the areas of being Vindictive, Cold, and Socially Avoidant. Problems being Vindictive also significantly differentiated DTP patients from a sample of patients with PD receiving intensive, year-long residential/day treatment (Luyten et al., 2010). These differences suggest that patients in the DTP struggle with more profound feelings of hostility and anger than patients with more severe PD in the two comparison samples. Relative to non-BPD patients from the Hilsenroth et al. (2007) sample, patients in the DTP reported significantly greater interpersonal distress and problems in each octant of the circumplex. Between-sample differences that reached significance represented medium to large effects, underscoring that, in terms of interpersonal dysfunction, pa-
tients in the DTP present with profound difficulties dealing with anger and considerable interpersonal pathology.

Relationships between the DSQ and IIP-C variables at pre-treatment illuminated the nature of the interpersonal issues DTP patients presented for treatment. The use of Immature defenses was directly associated with the interpersonal problems that distinguished patients in the DTP (i.e., from the Vindictive, Cold, and Socially Avoidant octants), as well as with problems associated with being Overly Nurturant. Interestingly, the latter octant is the direct opposite of Cold on the circumplex; with patients admitted to the DTP, this could perhaps represent behaviors associated with defensive maneuvers to contain feelings of hostility. In addition, the use of Immature defenses was directly associated with the severity of PD pathology, represented by the number of Axis II diagnoses. Again, this is a common finding in studies involving patients with PDs (Bond, 2004).

Use of Neurotic defenses was directly associated with problems associated with being Exploitable or Intrusive at baseline, and to some degree with PD pathology. These two octants of the interpersonal circumplex reflect behaviors associated with maintaining connections to others, in the sense of sustaining an attachment, and differ only in the direction of interpersonal control or assertion. By contrast, the interpersonal behaviors found to be associated with the use of Immature defenses tend to highlight an interpersonal stance of “pushing away” or acting against the other. One might speculate that patients in the DTP who demonstrate a preferential use of Immature defenses would also demonstrate a dismissing style of attachment, while patients who rely on a preferential use of Neurotic defenses might be more likely to report a fearful or preoccupied attachment style (Rholes & Simpson, 2004).

The use of Mature defenses demonstrated associations with only two indices of initial disturbance, but in each instance the indication was that the association reflected greater health. That is, use of Mature defenses was negatively associated with problems associated with being Socially Avoidant and with the severity of PD pathology.

Participation in the DTP was associated with significant change from pre- to post-treatment on all indices of the IIP-C; overall, this broad improvement represented a substantial treatment effect. This general finding could be further differentiated into an important patterning of different degrees of change observed across the IIP-C octants. The effect of the DTP was strongest for the level of interpersonal distress and problems associated with being Exploitable. An emphasis on developing a capacity for healthy assertiveness is a cardinal feature of much of the therapeutic work that occurs in the DTP. The effects of treatment
were less pronounced for interpersonal problems associated with being
Domineering, Vindictive, Cold, and Intrusive. Two of these octants—
Vindictive and Cold—were those that distinguished the interpersonal
pathology of the DTP sample. This finding also corresponds to previous research that identified that problems from the “hostile dominant”
area of the circumplex are particularly resistant to change in psycho-
therapy (Horowitz et al., 1988; Horowitz, Rosenberg, & Bartholomew,
1993; Huber, Henrich, & Klug, 2007).

The findings of analyses addressing the ability of the DSQ subscales
to predict change in interpersonal problems were somewhat surpris-
ing. Our expectation was that a preferential use of Mature defenses
would be associated with better outcomes, given the assumption that
insights and lessons learned in treatment would be more readily gen-
eralizable to interpersonal relationships in the patient’s life. We also ex-
pected that an emphasis on use of Immature defenses, given that it has
been consistently associated with PD symptomatology and maladap-
tive functioning, would be associated with less benefit—or even deter-
riation—from participation in the DTP. Use of Mature defenses was
not associated with change in interpersonal problems. Use of Immature
defenses demonstrated a significant prediction of poorer outcome in
interpersonal problems associated with being Exploitable when pre-
treatment scores on the IIP-C measure were controlled. This was an
outcome index that demonstrated a substantial effect of treatment.
Thus, patients who relied on the use of Immature defenses and tended
to be overly compliant and submissive in their relationships appeared
to be somewhat resistant to DTP interventions stressing the develop-
ment of healthy assertiveness. The emergence of greater comfort with
assertiveness may correspondingly reduce the need for reliance on
Immature or maladaptive defenses, but this may represent a difficult
pathway for such patients to negotiate. Nonetheless, this represented
a single predictive relationship out of nine outcome indices, indicating
that our initial expectation was provided with relatively little support.

Use of Neurotic defenses demonstrated a substantial relationship to
change in interpersonal problems as a function of participation in the
DTP. The strongest findings indicated that a preferential use of Neu-
rotic defenses was associated with poorer outcome (or deterioration)
for interpersonal problems associated with being Vindictive, Cold, So-
cially Avoidant, and Non-Assertive. These relationships were evident
in the Pearson correlations of the DSQ variables with simple difference
score measures of change for the IIP-C variables, and were even more
pronounced when initial status on the IIP-C variable was controlled.
Once again, many of these behaviors are oriented on the hostile side of
the interpersonal circumplex, and three of the four octant scores at pre-
treatment significantly differentiated the DTP patients from other clinical samples. These behaviors can perhaps all be characterized by covert hostility, that is, the angry feelings are commonly not given expression during interpersonal interaction (this issue may be one of several reasons for behaving interpersonally in a socially avoidant or non-assertive manner). Patients with these issues would be likely to struggle with engagement (i.e., the ability to trust and take risks) in DTP groups. Further, given that a reliance on Neurotic defenses has been identified as more trait-like and rigid (Bond, 2004), the development of interpersonal behaviors that are more active than passive, especially regarding feelings of anger and hostility, could represent a particularly difficult therapeutic challenge for DTP patients that rely on these strategies.

The analysis also provided some indication that preferential use of Neurotic defenses was associated with poorer outcome in other interpersonal domains. Scores from the DSQ were predictive of deterioration in interpersonal problems associated with being Domineering, Exploitable, and Overly Nurturant, but notably only when initial status on the IIP-C variable was accounted for in partial correlations. This might suggest that the shift in these behaviors demonstrated during treatment in the DTP was relatively slight and only evident when overlap with initial status was controlled. Consequently, some caution regarding these findings is advisable. Interestingly, these interpersonal behaviors can all be characterized by overt displays of control, submissiveness, or care-taking, and thus may be more amenable to modification during group therapy transactions.

A number of clinical implications could be drawn from the present study. The “profile” of the defense style and interpersonal problems of DTP patients at pre-treatment (i.e., less use of mature defenses, and interpersonal problems associated with hostility and more reliance on immature defenses) confirmed the importance of the interpersonal emphasis that characterizes the group approach throughout the program. It also underscores the importance of continuing to address anger and defenses against anger expression in the group process. At the same time, there was evidence that this particular kind of interpersonal dysfunction is difficult to treat with a large degree of success. Consequently, clinicians can have more realistic expectations regarding the goals of treatment for patients with PDs with primary concerns about hostile, angry feelings and interactions. Certainly, it would be important to evaluate whether these patients demonstrate a rigid adherence to defenses from the Neurotic level (e.g., idealization, reaction formation) as this may contribute to greater resistance to the effects of treatment. In other words, these represent challenging problems to address therapeutically not only because of their nature (covert hostility)
but also because they tend to be associated with defenses that represent a degree of entrenchment in the patient’s character. Once again, this information may allow clinicians to temper their expectations for change in certain patients. In contrast, interpersonal behaviors associated with being Domineering, Exploitable, or Overly Nurturant can be directly challenged in the here-and-now of the therapy group, and the rigid Neurotic defenses associated with maintenance of these behaviors can simply be bypassed. Patients who engage in acting out or overt displays of hostility may receive more time and attention from the therapists, whereas those patients with an interpersonal style reflecting more covert hostility may actually have a greater therapeutic need. In a sense, the current findings highlight the complexity of the clinical tasks confronting therapists in the DTP.

Certain limitations of the current study also bear mention. The sample size was relatively small, particularly considering the number of analyses; at the same time, the participants were bona fide clinical patients. Perhaps the primary deficiency, apart from the small sample size, was the omission of repeated evaluations of defense style. This would have allowed for consideration of the change in defense style that occurred as a function of therapy, as well as perhaps for analyses to test whether defense style change preceded change in interpersonal problems. More generally, our assessment of both domains—defense style and interpersonal problems—was based on patient self-report. A more in-depth evaluation of both by means of clinical interview would perhaps have highlighted which relationships were reliable and which were idiosyncratic to this particular sample and not generalizable. Expanding the assessment of outcome to other domains of functioning (e.g., self-esteem, quality of life) might also have enriched the yield of findings (subject to the limitations of the restricted sample size). Finally, consideration of the relations between defense style and change in interpersonal problems at points of follow-up after the conclusion of treatment would have provided a test of the durability of the relationships presented and a perspective on the continuing benefit of DTP after termination.

The current study provided clarification regarding the interpersonal problems experienced by DTP patients, as well as the nature of the defenses employed that might serve to perpetuate those problems. Future studies should consider the relationships between these constructs over time in treatment and after, as a way of improving our understanding of the mechanisms of change in partial hospitalization treatment of patients with personality disorder.
REFERENCES


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