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Predictors of 2-Year Outcome for Patients With Borderline Personality Disorder

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Objective: The primary purpose of this report was to investigate whether characteristics of subjects with borderline personality disorder observed at baseline can predict variations in outcome at the 2-year follow-up.

Method: Hypothesized predictor variables were selected from prior studies. The patients (N=160) were recruited from the four clinical sites of the Collaborative Longitudinal Personality Disorders Study. Patients were assessed at baseline and at 6, 12, and 24 months with the Structured Clinical Interview for DSM-IV Axis I Disorders; the Diagnostic Interview for DSM-IV Personality Disorders, a modified version of that instrument; the Longitudinal Interval Follow-Up Evaluation; and the Childhood Experiences Questionnaire–Revised. Univariate Pearson’s correlation coefficients were calculated on the primary predictor variables, and with two forward stepwise regression models, outcome was assessed with global functioning and number of borderline personality disorder criteria.

Results: The authors’ most significant results confirm prior findings that more severe baseline psychopathology (i.e., higher levels of borderline personality disorder criteria and functional disability) and a history of childhood trauma predict a poor outcome. A new finding suggests that the quality of current relationships of patients with borderline personality disorder have prognostic significance.

Conclusions: Clinicians can estimate 2-year prognosis for patients with borderline personality disorder by evaluating level of severity of psychopathology, childhood trauma, and current relationships.
that represent probable phenotypic traits of borderline personality disorder—affective, impulsive, and interpersonal—that have been identified by factor analytic studies (13–16) with support from family history (17, 18) and attachment (19) studies.

**Method**

**Subjects**

The overall Collaborative Longitudinal Personality Disorders Study aims, background, design, methods, and group characteristics are detailed elsewhere (1, 20). In brief, this was a repeated-measures prospective study in which treatment-seeking subjects who met criteria for one of the four personality disorders were compared to subjects with major depressive disorder without personality disorder to examine stability, interactions with axis I disorders, alternative classification systems, and prognostic factors. This report focuses on the predictors for 160 subjects with borderline personality disorder—affective, impulsive, and interpersonal—that have been identified by factor analytic studies (13–16) with support from family history (17, 18) and attachment (19) studies.

**Procedures**

All participants signed written informed consent. Clinically experienced research assistants interviewed subjects who screened positive for borderline personality disorder (or the other study diagnostic groups) with the Structured Clinical Interview for DSM-IV Axis I Disorders, Patient Edition (SCID-P) (21) and the Diagnostic Interview for DSM-IV Personality Disorders (22). Convergent support of the Diagnostic Interview for DSM-IV Personality Disorders diagnosis of borderline personality disorder was required by either the self-reported Schedule for Nonadaptive and Adaptive Personality (23) or an independent clinician-rated Personality Assessment Form (24). The participants were interviewed at 6, 12, and 24 months after the baseline assessment. The course of the group was assessed with 1) a modified version of the Diagnostic Interview for DSM-IV Personality Disorders (the Diagnostic Interview for DSM-IV Personality Disorders Follow-Along Version), which provided monthly ratings of the borderline personality disorder criteria, and 2) the Longitudinal Interval Follow-Up Evaluation (25) for assessment of axis I disorders, social relationships, and other domains of functioning.

**Assessment Instruments**

The Diagnostic Interview for DSM-IV Personality Disorders is a semistructured diagnostic interview for the assessment of all DSM-IV personality disorders (22). Each of the criteria for all disorders is assessed with one or more questions, which are then rated on a 3-point scale (0—not present, 1—present but of uncertain clinical significance, and 2=present and clinically significant). The Diagnostic Interview for DSM-IV Personality Disorders requires that the criteria be present and pervasive for at least 2 years and that it be characteristic of the person for most of his or her adult life to be counted toward a diagnosis. In the present study, the interrater reliability for borderline personality disorder, based on 84 pairs of raters, was kappa=0.68. The test-retest reliability, based on 52 cases, was kappa=0.69 (26).

The Diagnostic Interview for DSM-IV Personality Disorders was used to assess the following predictor variables measuring baseline severity: 1) the number of borderline personality disorder criteria, and 2) the number of other personality disorder criteria. It was also used to assess the three component personality traits as defined by combining criteria whose groupings have been shown to be familial (18), i.e., affect dysregulation (affective instability, emptiness, and anger), behavioral dyscontrol (impulsivity and self-injurious behavior), and interpersonal instability (intense unstable relationships and efforts to avoid abandonment).

The Diagnostic Interview for DSM-IV Personality Disorders Follow-Along Version was used to determine criteria-based outcome. It provided a record of the presence of borderline personality disorder criteria for each month of the follow-up period. Reliability for retrospective reporting on the Diagnostic Interview for DSM-IV Personality Disorders Follow-Along Version was found to be good, with kappa scores ranging from 0.68 to 0.78 for individual personality disorders.

The SCID-P is a diagnostic interview that assesses current and lifetime axis I psychiatric disorders (21). In the current study, kappa coefficients for interrater reliability for axis I disorders ranged from 0.57 to 1.00, with a median kappa of 0.76. Test-retest reliability ranged from 0.35 to 0.78, with a median kappa of 0.64 (26). The SCID-P was used at study intake to measure severity variables (Global Assessment of Functioning [GAF] Scale score and the number of axis I disorders) and axis I comorbidity variables (PTSD and alcohol or substance abuse and dependence).

The Longitudinal Interval Follow-Up Evaluation is a semistructured interview rating system with demonstrated reliability for assessing the longitudinal course of axis I mental disorders (25). In addition, the Longitudinal Interval Follow-Up Evaluation assesses the nature and quantity of all forms of treatment received and provides

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**TABLE 1. Variables Found to Predict Worse Outcome for Patients With Borderline Personality Disorder**

<table>
<thead>
<tr>
<th>Study</th>
<th>Year</th>
<th>Number in Group</th>
<th>Study Interval (years)</th>
<th>Predictor Variable and Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>McGlashan (2)</td>
<td>1985</td>
<td>81</td>
<td>15</td>
<td>Low IQ (O), affective instability (T), distractability (T), duration of previous hospitalizations (P)</td>
</tr>
<tr>
<td>Paris et al. (4)</td>
<td>1987</td>
<td>100</td>
<td>15</td>
<td>Dysphoria (C), family mental illness (P), early psychiatric contact (P)</td>
</tr>
<tr>
<td>Paris et al. (9)</td>
<td>1988</td>
<td>100</td>
<td>15</td>
<td>Childhood problems with mothers (D), childhood separation and loss (D)</td>
</tr>
<tr>
<td>Stone (8)</td>
<td>1990</td>
<td>251</td>
<td>15</td>
<td>Parental brutality (D), substance abuse (C), father-daughter incest (D), schizotypal personality disorder (C), antisocial personality disorder (C)</td>
</tr>
<tr>
<td>Plakun (5)</td>
<td>1991</td>
<td>33</td>
<td>14</td>
<td>Parental divorce (D), early psychiatric contact (P), absence of self-destructive acts during hospitalizations (O)</td>
</tr>
<tr>
<td>Links et al. (3)</td>
<td>1993</td>
<td>65</td>
<td>2</td>
<td>Substance abuse (C), impulsivity (T), early psychiatric contact (P)</td>
</tr>
<tr>
<td>Links et al. (11)</td>
<td>1998</td>
<td>81</td>
<td>7</td>
<td>Disability insurance benefits level of psychopathology (S), paranoid traits (T), number of comorbid personality disorders (S)</td>
</tr>
<tr>
<td>Najavits and Gunderson (10)</td>
<td>1995</td>
<td>20</td>
<td>3</td>
<td>Depression (C), low Global Assessment Scale score (S), obsessiveness (T)</td>
</tr>
<tr>
<td>Mitton et al. (6)</td>
<td>1997</td>
<td>28</td>
<td>7</td>
<td>Childhood sexual abuse (D)</td>
</tr>
<tr>
<td>Hooley and Hoffman (7)</td>
<td>1999</td>
<td>35</td>
<td>1</td>
<td>Emotional underinvolvement in family (D)</td>
</tr>
</tbody>
</table>

*P=psychiatric history, S=severity, C=comorbidity, T=personality traits, D=developmental experience, O=other.*
specific scales for rating impairment in relationships with parents, spouse, siblings, and children. These monthly ratings are combined to give an overall scale score on the quality of the patients’ relationships to all others in their family during the follow-up period.

The Childhood Experiences Questionnaire–Revised is a semistructured interview that assesses a variety of developmental adversities, including experiences of neglect and abuse (27). It has excellent interrater reliability, with kappas that range from 0.64 to 1.00 and a median kappa of 0.88 (27). The Childhood Experiences Questionnaire–Revised was included to measure the historical predictor variables of childhood abuse and neglect.

Data Analysis

For the purposes of this report, outcome was defined by two different methods. One method involved the level of borderline personality disorder psychopathology, and the other involved the level of functional impairment. The first method used a definition of outcome based on the mean number of borderline personality disorder criteria in the 6 months before the 2-year assessment (number of criteria for months 19–24: mean=3.97, SD=2.47). The second method used the average GAF Scale score during the 6 months before the 2-year assessment (GAF Scale score for months 19–24: mean=53.72, SD=11.29). These two outcome measures were negatively correlated (r=–0.48, p<0.0001). Although correlated, these measures of outcome have significant independent variances as demonstrated by other analyses from the Collaborative Longitudinal Personality Disorders Study data set (28, 29).

Univariate Pearson's correlation coefficients were calculated on 12 primary predictor variables (Table 2). Because these variables are hypothesis driven, the need for a multiple test adjustment (i.e., Bonferroni correction) was arguable (30, 31). Nonetheless, to distinguish findings from our analyses that would bear the only significant variable (beta=–0.41, p<0.005). The clearest and strongest finding from this study was that the greater the severity of the level of dysfunction and psychopathology at baseline of the subjects with borderline personality disorder, the worse their outcome. Measures of severity also emerged in both of the multiple regression analyses, which, although they confirmed the importance of severity, did not diminish the significance of the variables found through univariate analyses. The overriding importance of severity as a predictor found here replicates a finding reported by Links et al. (3, 11). Our finding that an early history of abuse and neglect is associated with a poor prognosis echoes prior reports. Of note, abuse emerged as the more important component. This finding expands on the study by Stone (8) that identified specific types of abuse as predictors of borderline personality disorder, i.e., father-daughter incest and parental brutality.

Perhaps the most interesting but difficult findings to interpret are that the three variables reflecting the quality of the borderline patients’ relationships—i.e., the trait of interpersonal instability, current family relationships, and relationship with children—were each predictive of outcome. However, because our measure of the borderline personality disorder interpersonal trait is composed of two of the nine DSM-IV borderline personality disorder criteria, its correlation with the number of borderline personal-
ity disorder criteria at outcome is partly circular. Similarly, because functioning within family relationships is a component of the GAF Scale scoring, this finding, too, is partially circular. The third relationship variable that emerged from a secondary analyses is that for the borderline patients who are parents, the quality of their relationships (i.e., whether good or poor) are prognostically significant. This is consistent with clinical reports that some patients with borderline personality disorder find motherhood a source of self-esteem and security, whereas others can be immobilized by the conflicts related to nurturing or disciplining their children (32, 33). Overall, although the predictive strength of our interpersonal relationship findings is unclear, they do suggest that assessing the quality of relationships can help in estimating a prognosis for patients with borderline personality disorder. This suggestion is consistent with treatment strategies that try to effect changes in troubling relationships with an expectation that this can improve the prognosis.

Some predictor variables found in prior reports were not assessed in the present report. Most notably, our data set did not include assessments of age of first psychiatric contact or number of prior hospitalizations. We could look at a related variable, i.e., amount of prior treatment, and by finding that it predicted functional outcome, we did directly confirm those predictors. One prior predictor variable that we evaluated, i.e., impulsivity, found surprisingly modest support whether measured by comorbid antisocial personality disorder or alcohol or substance abuse or as a borderline personality disorder behavioral component trait. On the other hand, the number of antisocial personality disorder criteria did predict functional outcome. The relative weakness of impulsivity as a predictor in this study may be due to our use of improved methodology, i.e., reliable and prospective assessments, or, conversely, it may be because prior studies that supported the prognostic significance of impulsivity had much longer periods of follow-up (3, 8). Examination with subsequent longer-term data from the Collaborative Longitudinal Personality Disorders Study will help clarify this.

In conclusion, our findings indicate that in developing a 2-year prognosis for patients with borderline personality disorder, assessments of severity, both symptomatic (i.e., criterion) and functional (i.e., the GAF Scale score), are most important. Our findings also suggest that a thorough examination of the present relationships and past relational history of patients with borderline personality disorder, specifically a history of early childhood maltreatment, may add to estimates of the expected prognosis. Implications for future research include the need for replications of studies.
of borderline personality disorder—a point underscored by our inconsistent replication of findings from prior studies—and the need to test the significance of these 2-year findings with follow-ups that assess a longer-term course.

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