Improving the recognition of borderline personality disorder

Using questionnaires and identifying a gate criterion may lead to an earlier diagnosis

Borderline personality disorder (BPD) is associated with impaired psychosocial functioning,1-4 reduced health-related quality of life,5 high utilization of services,6,7 and excess mortality.8-10 Although BPD occurs in up to 40% of psychiatric inpatients11 and 10% of outpatients,12 it is under-recognized.13-15 Often, patients with BPD do not receive an accurate diagnosis until ≥10 years after initially seeking treatment.16 The treatment and clinical implications of failing to recognize BPD include overprescribing medication and underutilizing empirically effective psychotherapies.14

This review summarizes studies of the underdiagnosis of BPD in routine clinical practice, describes which patients should be screened, and reviews alternative approaches to screening.

Underrecognition of BPD
The Rhode Island Methods to Improve Diagnostic Assessment and Services (MIDAS) project is an ongoing clinical research study involving the integration of research assessment methods into routine clinical practice.17 In an early report from the MIDAS project, BPD diagnoses derived from structured and unstructured clinical interviews were compared between 2 groups of psychiatric outpatients in the same practice.15 Individuals in the structured interview cohort were 35 times more often diagnosed with BPD than individuals evaluated with an unstructured clinical interview. Importantly, when the information from the structured interview was presented

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to the clinicians, BPD was more likely to be diagnosed clinically.

Other studies\textsuperscript{13,16} also found that the rate of diagnosing BPD was higher when the diagnosis was based on a semi-structured diagnostic interview compared with an unstructured clinical interview, and that clinicians were reluctant to diagnose BPD during their routine intake diagnostic evaluation.

Clinicians, however, do not use semi-structured interviews in their practice, and they also do not tend to diagnose personality disorders (PDs) based on direct questioning, as they typically would when assessing a symptom-based disorder such as depression or anxiety. Rather, clinicians report that they rely on longitudinal observations to diagnose PDs.\textsuperscript{18} However, the results from the MIDAS project were inconsistent with clinicians’ reports. When clinicians were presented with the results of the semi-structured interview, they usually would diagnose BPD, even though it was the initial evaluation. If clinicians actually relied on longitudinal observations and considered information based on the direct question approach of research interviews to be irrelevant or invalid, then the results from the semi-structured interview should not have influenced the rate at which they diagnosed BPD. This suggests that the primary issue in diagnosing PDs is not the need for longitudinal observation but rather the need for more information, and that there is a role for screening questionnaires.

One potential criticism of studies demonstrating underrecognition of BPD in clinical practice is that patients typically were interviewed when they presented for treatment, when most were depressed or anxious. The possible pathologizing effects of psychiatric state on personality have been known for years.\textsuperscript{19} However, a large body of literature examining the treatment, prognostic, familial, and biological correlates of PDs supports the validity of diagnosing PDs in this manner. Moreover, from a clinical perspective, the sooner a clinician is aware of the presence of BPD, the more likely this information can be used for treatment planning.

Who should be screened for BPD?

BPD is underrecognized and underdiagnosed because patients with BPD often also have comorbid mood, anxiety, or substance use disorders.\textsuperscript{20,21} The symptoms associated with these disorders are typically the chief concern of patients with undiagnosed BPD who present for treatment. Patients with BPD rarely present for an intake evaluation and state that they are struggling with abandonment fears, chronic feelings of emptiness, or an identity disturbance. If patients identified these problems as their chief concerns, BPD would be easier to recognize.

Although several studies have documented the frequency of BPD in patients with a specific psychiatric diagnosis such as major depressive disorder (MDD) or attention-deficit/hyperactivity disorder,\textsuperscript{22-26} the MIDAS project examined the frequency of BPD in patients with various diagnoses and evaluated which disorders were associated with a significantly increased rate of BPD.\textsuperscript{27} The highest rate of BPD was found in patients with bipolar disorder. Approximately 25% of patients with bipolar II disorder and one-third of those with bipolar I disorder were diagnosed with BPD; these rates were significantly higher than the rate of BPD in patients without these disorders (Table 1, page 15). The rate of BPD was second highest in patients with a principal diagnosis of posttraumatic stress disorder (PTSD) and MDD; however, the rate of BPD in these patients was not significantly elevated compared with patients who did not have these principal diagnoses. Three disorders were associated with a significantly lower rate of BPD: adjustment disorder, dysthymic disorder, and generalized anxiety disorder.

It would be easy to recommend screening for BPD in all psychiatric patients. However, that is not feasible or practical. In making screening recommendations, absolute risk should be considered more important than relative risk. Clinicians should screen for BPD in patients presenting to a general psychiatric outpatient practice with a principal diagnosis of MDD, bipolar disorder, PTSD, or panic disorder with agoraphobia. That is, I recommend screening for BPD in patients with a principal diagnosis...
in which the prevalence of BPD is \( \geq 10\% \) (Table 1\(^2\)).

### A brief review of screening statistics

Screening tests for most psychiatric disorders are based on multi-item scales in which a total score is computed from a sum of item scores, and a cutoff point is established to determine who does and does not screen positive on the test. However, sensitivity, specificity, and positive and negative predictive values are not invariant properties of a screening test with a continuous score distribution. Rather, the performance statistics of a scale can be altered by changing the threshold score to distinguish cases from non-cases. When the screening threshold is lowered, sensitivity increases and specificity decreases.

For screening, a broad net needs to be cast so that all (or almost all) cases are included. Therefore, the cutoff score should be set low to prioritize the sensitivity of the instrument. A screening scale also should have high negative predictive value so that the clinician can be confident that patients who screen negative on the test do not have the disorder.

### Screening questionnaires for BPD

Several questionnaires have been developed to screen for PDs (Table 2\(^{28-35} \) page 16). Some screen for each of the DSM PDs\(^{28,36-42} \) and some screen more broadly for the presence or absence of any PD\(^{29,43,44} \). The most commonly studied self-report scale for BPD is the McLean Screening Instrument for Borderline Personality Disorder (MSI-BPD)\(^30\), a 10-item self-report scale derived from a subset of questions from the BPD module of a semi-structured diagnostic interview.

The initial validation study\(^30\) found that the optimal cutoff score was 7, which resulted in a sensitivity of 81% and specificity of 89%. Three studies have evaluated the scale in adolescents and young adults\(^{45-47} \) and 3 studies examined the scale in adult outpatients.\(^{48-50} \) Across all 6 studies, at the optimal cutoff scores determined in each study, the sensitivity of the MSI-BPD

<table>
<thead>
<tr>
<th>DSM-IV disorder</th>
<th>No. with principal diagnosis</th>
<th>No. with BPD</th>
<th>%</th>
<th>Odds ratio(^a)</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major depressive disorder</td>
<td>1,222</td>
<td>144</td>
<td>11.8</td>
<td>1.20</td>
<td>0.96 to 1.5</td>
</tr>
<tr>
<td>Dysthymic disorder</td>
<td>67</td>
<td>1</td>
<td>1.5</td>
<td>0.13</td>
<td>0.02 to 0.91</td>
</tr>
<tr>
<td>Bipolar I disorder</td>
<td>71</td>
<td>24</td>
<td>33.8</td>
<td>4.52</td>
<td>2.7 to 7.5</td>
</tr>
<tr>
<td>Bipolar II disorder</td>
<td>96</td>
<td>26</td>
<td>27.1</td>
<td>3.28</td>
<td>2.1 to 5.2</td>
</tr>
<tr>
<td>Panic disorder</td>
<td>36</td>
<td>1</td>
<td>2.8</td>
<td>0.24</td>
<td>0.03 to 1.7</td>
</tr>
<tr>
<td>Panic disorder with agoraphobia</td>
<td>127</td>
<td>14</td>
<td>11.0</td>
<td>1.05</td>
<td>0.59 to 1.8</td>
</tr>
<tr>
<td>Social phobia</td>
<td>52</td>
<td>4</td>
<td>7.7</td>
<td>0.70</td>
<td>0.25 to 1.9</td>
</tr>
<tr>
<td>Posttraumatic stress disorder</td>
<td>106</td>
<td>16</td>
<td>15.1</td>
<td>1.52</td>
<td>0.88 to 2.6</td>
</tr>
<tr>
<td>Generalized anxiety disorder</td>
<td>171</td>
<td>8</td>
<td>4.7</td>
<td>0.40</td>
<td>0.20 to 0.82</td>
</tr>
<tr>
<td>Obsessive-compulsive disorder</td>
<td>47</td>
<td>1</td>
<td>2.1</td>
<td>0.18</td>
<td>0.03 to 1.3</td>
</tr>
<tr>
<td>Alcohol abuse/dependence</td>
<td>33</td>
<td>1</td>
<td>3.0</td>
<td>0.26</td>
<td>0.04 to 1.9</td>
</tr>
<tr>
<td>Drug abuse/dependence</td>
<td>21</td>
<td>2</td>
<td>9.5</td>
<td>0.89</td>
<td>0.21 to 3.8</td>
</tr>
<tr>
<td>Undifferentiated somatoform disorder</td>
<td>26</td>
<td>2</td>
<td>7.7</td>
<td>0.70</td>
<td>0.17 to 3.0</td>
</tr>
<tr>
<td>Intermittent explosive disorder</td>
<td>26</td>
<td>0</td>
<td>0.0</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Adjustment disorder</td>
<td>211</td>
<td>2</td>
<td>0.9</td>
<td>0.08</td>
<td>0.02 to 0.31</td>
</tr>
</tbody>
</table>

BPD: borderline personality disorder; CI: confidence interval
\(^a\)Indicates the odds of borderline personality disorder in patients with the index principal diagnosis vs all other patients

**Source:** Reference \(^27\)
ranged from 68% to 94% (mean, 80%) and the specificity ranged from 66% to 80% (mean, 72%).

Problems with screening questionnaires.
Although screening scales have been developed for many psychiatric disorders, they have not been widely used in mental health settings. In a previous commentary, I argued that the conceptual justification for using self-report screening scales for single disorders in psychiatric settings is questionable.31 Another problem with screening scales is their potential misuse as case-finding instruments. In the literature on bipolar disorder screening, several researchers misconstrued a positive screen to indicate case-ness.53 Although this is not a problem with the screening measures or the selection of a cutoff score, caution must be taken to not confuse screening with diagnosis.52

Screening for BPD as part of your diagnostic interview
An alternative approach to using self-administered questionnaires for screening is for clinicians to include questions in their evaluation as part of a psychiatric review of systems. When conducting a diagnostic interview, clinicians typically screen for disorders that are comorbid with the principal diagnosis by asking about the comorbid disorders’ necessary features or “gate criteria.” For example, in a patient with a principal diagnosis of MDD, the clinician...
would inquire about the presence of panic attacks, excessive worry, or substance use to screen for the presence of panic disorder, generalized anxiety disorder, or a substance use disorder. In contrast, for polythetically defined disorders such as BPD, there is no single gate criterion, because the disorder is diagnosed based on the presence of at least 5 of 9 criteria and no single one of these criteria is required to be present to establish the diagnosis.

As part of the MIDAS project, the psychometric properties of the BPD criteria were examined to determine if it was possible to identify 1 or 2 criteria that could serve as gate criteria to screen for the disorder. If the sensitivity of 1 criterion or a combination of 2 BPD criteria was sufficiently high (ie, >90%), then the assessment of this criterion (or these criteria) could be included in a psychiatric review of systems, thus potentially improving the detection of BPD. Researchers hypothesized that affective instability, considered first by Linehan and later by other theorists to be of central importance to the clinical manifestations of BPD, could function as a gate criterion. In the sample of 3,674 psychiatric outpatients who were evaluated with a semi-structured interview, the sensitivity of the affective instability criterion was 92.8%, and the negative predictive value of the criterion was 99%.

These results from the MIDAS project were consistent with the results of other, smaller studies that found that >90% of patients with BPD report affective instability, and it was the most frequent BPD criterion. The largest of these studies, the multisite Collaborative Longitudinal Investigation of Personality Study (CLPS), found that sensitivity of affective instability was 94%, which was higher than the sensitivity of the other BPD criteria. Moreover, the CLPS examined the sensitivity of the BPD criteria assessed at baseline in relation to a diagnosis of BPD that was made 2 years later. Affective instability had a 90% sensitivity and 95% negative predictive value in predicting a future diagnosis of BPD. Both of these figures were the highest of the BPD criteria. Other studies have found a negative predictive value >95%. Therefore, a clinician can be highly confident in ruling out a diagnosis of BPD in patients who do not report affective instability. Table 3 lists questions used to assess affective instability in semi-structured interviews.

Identifying a single BPD criterion that is present in the vast majority of patients diagnosed with BPD will allow clinicians to follow their usual clinical practice when conducting a psychiatric review of systems and inquire about the gate criteria of various disorders. Several studies have found that >90% of patients with BPD report affective instability. However, this does not mean that the diagnosis of BPD can be abbreviated to an assessment of the presence or absence of affective instability. Many patients who screen positive will not have BPD when a more definitive diagnostic evaluation is conducted. In the case of BPD, the more costly definitive diagnostic procedure simply entails inquiry of the other diagnostic criteria.

### Table 3

<table>
<thead>
<tr>
<th>Questions to assess the BPD criterion of affective instability</th>
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<tbody>
<tr>
<td>Has anyone ever told you that your moods seem to change a great deal?</td>
</tr>
<tr>
<td><strong>IF YES:</strong> What did they say?</td>
</tr>
<tr>
<td>Do you often have days when your mood changes a great deal? Days when you shift back and forth from feeling like your usual self to feeling angry or depressed or anxious?</td>
</tr>
<tr>
<td><strong>IF YES:</strong> How intense are your mood swings? How often does this happen in a typical week? How long do the moods last?</td>
</tr>
</tbody>
</table>

BPD: borderline personality disorder

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**Clinical Point**

Use a screening scale with a high negative predictive value so you can be confident that patients who screen negative do not have the disorder.

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**References**

Borderline personality disorder (BPD) is underdiagnosed in clinical practice. Detection of BPD can be improved by careful clinical evaluations that inquire about the features of BPD and the use of screening questionnaires. Affective instability may serve as a gate criterion that can be used to rule out BPD or prompt a more definitive diagnostic evaluation.


