Journal of Personality Disorders, 19(5), 505–523, 2005

THE MCLEAN STUDY OF ADULT DEVELOPMENT (MSAD): OVERVIEW AND IMPLICATIONS OF THE FIRST SIX YEARS OF PROSPECTIVE FOLLOW-UP

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The McLean Study of Adult Development (MSAD) began 12 years ago. It is the first NIMH-funded prospective study of the course and outcome of borderline personality disorder (BPD). After careful analysis of the first six years of follow-up, 5 main findings concerning the symptomatic and psychosocial course of BPD have emerged from this study. The first finding is that remissions are far more common than previously recognized (about 74%). The second is that these remissions are quite stable and thus, recurrences are quite rare (about 6%). The third finding is that completed suicides are far more rare than anticipated (about 4% vs. 10%). The fourth finding is that a "complex" model of borderline psychopathology best describes BPD. In this model, some symptoms resolve relatively quickly, are the best markers for the disorder, and are often the immediate reason for needing costly forms of treatment, such as psychiatric hospitalizations. We termed these symptoms (e.g., self-mutilation, help-seeking suicide threats or attempts) acute symptoms. Other symptoms resolve more slowly, are not specific to BPD, and are closely associated with ongoing psychosocial impairment. We termed such symptoms (e.g., chronic feelings of intense anger, profound abandonment concerns) temperamental symptoms. Fifth, it was also found that borderline patients were improving psychosocially over time, particularly remitted borderline patients; psychosocial functioning of remitted patients continued to improve as time progressed, suggesting that they were somewhat belatedly achieving the milestones of young adulthood and not simply returning to a prodromal level of functioning. Taken together, these results suggest that the prognosis for BPD is better than previously recognized.

Borderline personality disorder (BPD) is a common psychiatric disorder; the only relevant epidemiological study estimates that 1.8% of American adults between the ages of 19 and 55 meet research criteria for BPD

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Supported by NIMH grants MH47588 and MH62169.

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(Swartz, Blazer, George, & Winfield, 1990). It has also been estimated that approximately 19% of psychiatric inpatients and approximately 11% of psychiatric outpatients meet current criteria for BPD (Widiger & Frances, 1989). In addition, cross-sectional studies have found that BPD is associated with high levels of mental health service utilization (Bender et al., 2001; Skodol, Buckley, & Charles, 1983; Swartz et al., 1990) and a serious degree of psychosocial impairment (Skodol et al., 1983; Skodol et al., 2002; Swartz et al., 1990). Taken together, these facts suggest that BPD is a serious public health problem and yet, no large-scale, prospective study of the course of BPD has been conducted.

Studies of the course and outcome of BPD are important as a means of validating the disorder (Robins & Guze, 1970). However, their greatest importance lies in their ability to elucidate the natural history of the disorder. This elucidation, in turn, is critical for establishing realistic expectations for patients, their families, and the clinicians treating them.

The McLean Study of Adult Development (MSAD) began 12 years ago. It is the first NIMH-funded prospective study of the course and outcome of borderline personality disorder (BPD). The MSAD was undertaken to fill a gap in our knowledge about the course of BPD. More specifically, there were no methodologically rigorous, large-scale, prospective studies of the short-term, mid-term, or long-term course of BPD.

Prior to the start of the MSAD, 11 small-scale, prospective studies of the short-term course and outcome of BPD in adult patients had been conducted (Akiskal et al., 1985; Barasch, Frances, Hurt, Clarkin, & Cohen, 1985; Grinker, Werble, & Drye, 1968; Gunderson, Carpenter, & Strauss, 1975; Links, Mitton, & Steiner, 1990; Mehlum et al., 1991; Modestin & Villiger, 1989; Nace, Saxon, & Shore, 1986; Perry & Cooper, 1985; Pope, Jonas, Hudson, Cohen, & Gunderson, 1983; Tucker, Bauer, Wagner, Harlam, & Sher, 1987). During the ensuing years, the results of six additional small-scale, prospective studies of the short-term course of BPD have been published (Antikainen, Hintikka, Lehtonen, Koponen, & Arstila, 1995; Linehan, Heard, & Armstrong, 1993; Najavits & Gunderson, 1995; Sandell et al., 1993; Senol, Dereboy, & Yuksel, 1997; Stevenson & Mears, 1992). Prior to the start of the MSAD, four large-scale, follow-back studies of the long-term course and outcome of BPD in adult patients had also been conducted (McGlashan, 1986; Paris, Brown, & Nowlis, 1987; Plakun, Burkhardt, & Muller, 1985; Stone, 1990).

The results of these 17 short-term, prospective studies have generally been interpreted to mean that most borderline patients are doing relatively poorly 1 to 7 years after their initial evaluation. In contrast, the results of these long-term, follow-back studies have generally been interpreted to mean that most borderline patients are doing reasonably well a mean of 15 to 16 years after their index admission.

While all studies of the course of BPD provided useful information and many were considered state of the art at the time that they were conducted, all also suffered from one or more methodological problems that

limited what could be generalized from their results. Chief among these limitations were: the use of chart review or clinical interviews to diagnose BPD, no comparison group or the use of less than optimal comparison subjects, reliance on small-size samples with high attrition rates, only basic information collected at baseline and follow-up, typically only one post-baseline reassessment, nonblind post-baseline assessments, and variable number of years of follow-up in the same study. In addition, only one of the four long-term follow-back studies used a socioeconomically representative sample (Paris et al., 1987).

RESEARCH DESIGN AND MEASURES

All patients were between the ages of 18 and 35, had an IQ of 71 or higher, and were fluent in English. In addition, none had ever met criteria for schizophrenia, schizoaffective disorder, bipolar I disorder, or been diagnosed with a serious organic condition that could cause psychiatric symptoms (e.g., multiple sclerosis, systemic lupus erythematosus).

After signing informed consent, each patient met with our research team three times during his or her index admission, which averaged 6 days in length. The first meeting concerned premorbid psychosocial functioning, previous psychiatric treatment, borderline psychopathology, and co-occurring Axis I and II disorders. At this meeting, five semistructured interviews were administered: the Baseline Information Schedule (BIS; Zanarini, Frankenburg, Khera, & Bleichmar, 2001), the Structured Clinical Interview for DSM-III-R Axis I Disorders (SCID I; Spitzer, Williams, Gibbon, & First, 1992), the Revised Diagnostic Interview for Borderlines (DIB-R; Zanarini, Gunderson, Frankenburg, & Chauncey, 1989), the Lifetime Self-Destructiveness Scale (LSDS; Zanarini, Yong et al., 2002), and the Diagnostic Interview for DSM-III-R Personality Disorders (DIPD-R; Zanarini, Frankenburg, Chauncey, & Gunderson, 1987).

The second meeting, which was conducted blind to the patient's diagnostic status, concerned family history of psychiatric disorder, psychiatric disorders in environmentally important others (e.g., step-parents, spouses), and pathological and protective childhood experiences. At this meeting, three other semistructured interviews were administered: the Revised Family History Questionnaire (FHQ-R; Zanarini, Gunderson, Marino, Schwartz, & Frankenburg, 1988), the Revised Childhood Experiences Questionnaire (CEQ-R; Zanarini, Gunderson, Marino, Schwartz, & Frankenburg, 1989), and the Abuse History Interview (AHI; Zanarini et al., 1999).

At a third meeting, each patient filled out five self-report instruments. These measures were: the Dissociative Experiences Scale (DES; Bernstein & Putnam, 1986), the Dysphoric Affect Scale (DAS; Zanarini, Frankenburg, DeLuca et al., 1998), the Positive Affect Scale (PAS; Zanarini & DeLuca, 1994), the Five-Factor NEO Inventory of Personality (NEO-FFI; Costa & McCrae, 1992), and the Defense Style Questionnaire (DSQ; Bond, 1992).

At each follow-up wave, each patient was first sent a letter indicating that his or her follow-up date was approaching. Each patient was then contacted by phone and a mutually convenient time and place for the follow-up interview was arranged. At this interview, which covered the past 2 years, informed consent was obtained. Then six semi-structured interviews were administered: the Revised Borderline Follow-up Interview (BFI-R, the follow-up analog to the BIS, Zanarini, Frankenburg, Hennen, & Silk, 2004), a change version of the SCID I (covering only the past 2 years), the DIB-R, the follow-up version of the LSDS, the DIPD-R, and the follow-up version of the AHI. Five self-report instruments were also readministered at this time: the DES, the DAS, the PAS, the NEO-FFI, and the DSQ. Each follow-up evaluation was conducted blind to baseline diagnosis by an interviewer with at least 2 years of clinical experience working with personality-disordered patients.

With the 6-year wave, we added two semistructured interviews to our assessment battery and these have been readministered at each subsequent wave: the Life Events Assessment (LEA; Shrout et al., 1989) and the Medical History and Services Utilization Interview (MHSUI; Frankenburg & Zanarini, 2004). We also added a (one time only) measure to assess intelligence (the Shipley Institute of Living Scale [Zachary, 1994]).

Subjects

Baseline diagnostic interviews were administered to 378 consecutive inpatients at McLean Hospital meeting inclusion/exclusion criteria. Two hundred and ninety patients met both DIB-R and DSM-III-R criteria for BPD and 72 met DSM-III-R criteria for at least one nonborderline Axis II disorder (and neither criteria set for BPD). Sixteen others were excluded from the study because they either met criteria for schizophrenia ($N = 2$) or bipolar I disorder ($N = 2$) or failed to meet DSM-III-R criteria for any Axis II disorder ($N = 12$).

Of the 72 comparison subjects, 4% met DSM-III-R criteria for an odd cluster personality disorder, 33% met DSM-III-R criteria for an anxious cluster personality disorder, and 18% met DSM-III-R criteria for a nonborderline dramatic cluster personality disorder. An additional 53% met DSM-III-R criteria for personality disorder not otherwise specified (NOS; which was operationally defined in the DIPD-R as meeting all but one of the required number of criteria for at least two of the 13 Axis II disorders described in the DSM-III-R).

At baseline, borderline patients and Axis II comparison subjects were similar in terms of mean age (about 27) and racial background (less than 15% nonwhite). However, a significantly higher percentage of borderline patients than Axis II comparison subjects were female (80.3% vs. 63.9%). They also came from a significantly lower mean socioeconomic background (3.4 vs. 2.8) as measured by the five-point Hollingshead-Redlich scale (1 = highest, 5 = lowest) (Hollingshead, 1957) and had a significantly

lower mean GAF score than Axis II comparison subjects (38.9 vs. 43.5) (although both groups had a mean GAF score in the impaired range).

Sample Retention

As noted above, the MSAD began 12 years ago. We have completed four waves of blind follow-up: 2-, 4-, 6-, and 8-year follow-up evaluations. In addition, we are more than 95% of the way through the 10-year follow-up wave and started the 12-year wave of follow-up in June of 2004. The trace rate in this series of patients has remained extremely high. After three waves of completed follow-up (on which the longitudinal findings presented below are based), 96% of the surviving borderline patients and 89% of the surviving axis II comparison subjects were still participating. Even at the 8- and 10-year marks, 93% of the surviving borderline patients and 86% of the surviving Axis II comparison subjects are still participating in the study.

Reliability Substudies

We have also conducted four reliability substudies involving the entire MSAD interview battery. Baseline interrater reliability was assessed using 45 conjoint interviews, while test-retest reliability was assessed using two separate, blind interviews of 30 subjects. We also assessed two different forms of interrater reliability during the follow-up periods. Follow-up interrater reliability was assessed using 48 conjoint interviews of subjects participating in either their 2- or 4-year follow-up assessment. Follow-up longitudinal (interrater) reliability was assessed using 36 videotaped interviews that were made by first-generation raters and later viewed by second- and third-generation raters.

Good to excellent levels of interrater and test-retest reliability were achieved at baseline for both Axis I and II disorders (Zanarini & Frankenburg, 2001). For Axis I disorders, interrater kappas ranged from .69 to 1.0, with a median of .88; test-retest kappas ranged from .42 to 1.0, with a median of .76. For Axis II disorders, interrater kappas ranged from .54 to .94, with a median of .85; test-retest kappas ranged from .47 to 1.0, with a median of .87.

As mentioned above, both conjoint patient interviews and videotapes from previous periods were used to maintain high levels of interrater reliability and prevent rater drift throughout the years of follow-up. In terms of the conjoint interviews, Axis I kappas ranged from .71 to 1.0 (median = .93) and Axis II kappas ranged from .69 to .93 (median = .87). For videotaped interviews from earlier follow-up periods, Axis I kappas ranged from .71 to 1.0 (median=.84) and Axis II kappas ranged from .41 to 1.0 (median = 1.0).

We not only assessed the reliability of the DSM-III-R diagnosis of BPD in these four substudies (which was consistently found to be greater than

.85 and thus, in the excellent range). We also assessed the reliability of the DIB-R diagnosis of BPD and it too was found to be excellent in each of these four reliability substudies (Zanarini, Frankenburg, & Vujanovic, 2002). In addition, we examined the reliability of the 22 symptoms of BPD assessed by the DIB-R. Excellent kappas were found in each of the three interrater reliability substudies for the vast majority (18 or more) of borderline symptoms assessed by the DIB-R. Test-retest reliability for these symptoms was somewhat lower but still very good (i.e., a third of the BPD symptoms assessed had a kappa in the excellent range and the remaining two-thirds had a kappa in the fair to good range [.57–.73; median = .67]). In addition, all five dimensional measures of borderline psychopathology (affect section score, cognition section score, impulse action pattern section score, interpersonal relationship section score, and DIB-R total score) had ICCs (intraclass correlation coefficients) in the excellent range for all four reliability substudies.

Convergent Validity of Psychosocial Functioning

About one-third of the borderline patients and Axis II comparison subjects (N = 108) were randomly selected during the 4-year wave to have an informant (typically a close friend or family member) interviewed concerning their psychosocial functioning using a modified version of the BFI-R (Zanarini, Frankenburg, Hennen, Reich, & Silk, 2005b). High levels of convergent validity were found. More specifically, a rho value of .92 was found for vocational variables, .83 for relationship variables, and .59 for variables assessing leisure time activities.

BASELINE FINDINGS

Most of this sample of borderline patients reported coming from troubled backgrounds. Over 90% reported some type of abuse in childhood and over 90% reported some type of neglect before the age of 18 (Zanarini et al., 1997). In terms of abuse, 62% reported a childhood history of sexual abuse and 86% reported a childhood history of verbal, emotional, and/or physical abuse. Most of those reporting a childhood history of sexual abuse reported being severely sexually abused (i.e., over 75% reported abuse that was ongoing and/or involved penetration) (Zanarini et al., 2002). In addition, the severity of childhood sexual abuse, other forms of abuse, and neglect were all significantly correlated to both severity of borderline psychopathology and severity of psychosocial impairment.

High percentages of borderline patients also reported being abused and neglected by caretakers of both genders (Zanarini et al., 2000). More specifically, over 50% reported a childhood history of biparental abuse and over 70% reported a childhood history of biparental neglect. In addition, the combination of female caretaker neglect and male caretaker abuse was

found to be a risk factor for childhood sexual abuse by a noncaretaker for women with BPD.

Borderline patients were also significantly more likely to remember childhood difficulties with separation than Axis II comparison subjects (Reich & Zanarini, 2001). In addition, they were significantly more likely to report more mood reactivity and poorer frustration tolerance in childhood than Axis II comparison subjects.

It was also found that adult experiences of violence were common among borderline patients (Zanarini et al., 1999). More specifically, 46% of the borderline patients in the study reported being the victim of some type of adult violence. In terms of specific forms of violence, 33% reported having had a physically abusive partner, 31% reported that they had been raped, and 19% reported having both been physically assaulted and raped. Both childhood sexual abuse and emotional withdrawal by a caretaker were found to be risk factors for adult experiences of physical and/or sexual violence reported by women with BPD.

As noted above, family history of psychiatric disorder was also studied in this sample (Zanarini, Frankenburg, Yong et al., 2004). It was found that the first-degree relatives of borderline patients had a heightened prevalence of DSM-III-R and DSM-IV BPD. It was also found that they had a heightened prevalence of the symptoms of BPD, particularly inappropriate anger, affective instability, paranoia/dissociation, general impulsivity, and intense, unstable relationships. Not surprisingly, the symptoms of BPD were substantially more common among these relatives than BPD itself.

Both Axis I and II disorders were found to be common among these borderline patients (Zanarini, Frankenburg, Dubo et al., 1998a). The most common lifetime Axis I disorders were unipolar mood disorders and anxiety disorders, particularly PTSD, panic disorder, and social phobia. Substance use disorders and eating disorders, particularly eating disorder NOS, were also common (Marino & Zanarini, 2001). In terms of Axis II disorders, paranoid PD, avoidant PD, dependent PD, and self-defeating PD were most common (Zanarini, Frankenburg, Dubo et al., 1998b).

The subsyndromal phenomenology of BPD was also studied at baseline. It was found that the subjective pain of borderline patients (i.e., dysphoric affective and cognitive states) was both more pervasive and more multifaceted than previously recognized (Zanarini et al., 1998). For example, 75% of borderline patients reported feeling damaged beyond repair up to 90% of the time.

Dissociation was found to be heterogeneous in severity, with about a third of borderline patients reporting "normal" levels of dissociation, about 40% reporting moderate levels of dissociation, and about a quarter reporting high levels of dissociation typically associated with PTSD or dissociative identity disorder (DID) (Zanarini, Ruser, Frankenburg, & Hennen, 2000). It was also found that borderline patients had elevated levels of absorption and amnesia as well as depersonalization. In addition, childhood sexual

abuse, inconsistent treatment by a caretaker, witnessing sexual violence as a child, and an adult rape history were found to be significant predictors of the level of dissociation (Zanarini, Ruser, Frankenburg, Hennen, & Gunderson, 2000) as measured by the Dissociative Experiences Scale (DES; Bernstein & Putnam, 1986).

By the time of their index admission, a high percentage of borderline patients had a history of psychiatric treatment (Zanarini et al., 2001). Over three-quarters had been in individual therapy, had previous psychiatric hospitalizations, and had been on standing medications. In addition, more than 50% had participated in self-help groups. About 35% to 45% had been in group therapy, couples/family therapy, day treatment, and residential treatment. Only ECT was rare among borderline patients (<10%).

Course of Borderline Psychopathology: Remissions and Recurrences of BPD

Remission was defined as no longer meeting either of our study criteria sets for BPD (DIB-R and DSM-III-R) during at least one 2-year follow-up period. Recurrence was defined as meeting both criteria sets for BPD during at least one 2-year follow-up period after meeting study criteria for a remission in a previous follow-up period.

About one-third of our borderline patients (34.6%) met criteria for a remission of BPD at 2-year follow-up, about half (49.4%) at 4 years, about two-thirds (68.6%) at 6 years, and about three-quarters (73.5%) over the course of the entire 6 years of follow-up (Zanarini, Frankenburg, Hennen, & Silk, 2003). In terms of time-to-remission, 47.0% (95) of the 202 borderline patients who experienced a remission of their BPD first remitted by 2-year follow-up, 26.7% (54) first remitted by 4-year follow-up, and 26.3% (53) first remitted by 6-year follow-up.

Slightly fewer than 6% of the borderline patients in the MSAD met criteria for a recurrence of their BPD after experiencing a remission in the previous follow-up period(s). Of these 12 patients, six experienced their first recurrence at 4-year follow-up and another six had their first recurrence at 6-year follow-up. In terms of completed suicide, only 11 borderline patients (3.8%) took their own lives; five during the first follow-up period, four during the second, and two during the third. In addition, no Axis II comparison subject was found to meet study criteria for BPD at any time during the course of 6 years of follow-up.

Taken together, these results suggest that the course of BPD is very different than that of mood disorders. While major depression (Mueller et al., 1999; Solomon et al., 1997) and bipolar disorder (Coryell et al., 1995; Tohen et al., 2000) are relatively quick to remit, recurrences are common. In contrast, BPD is relatively slow to remit but recurrences are rare.

This finding of a slow progression toward health also differs from the DSM definition of a personality disorder as a pattern of maladaptive functioning that is stable over time. This definition has led many clinicians and

theoreticians to believe that BPD is a chronic condition with little chance of true symptomatic improvement. Our findings suggest that BPD is relatively stable over time compared to mood disorders, for example, but mutable over more sustained periods of time.

Subsyndromal Phenomenology of BPD

Three important findings concerning the subsyndromal phenomenology of BPD have also emerged over the first 6 years of follow-up (Zanarini, Frankenburg et al., 2003). First, all of the 24 symptom areas that we studied declined significantly over time for all subjects considered together (borderline patients and Axis II comparison subjects) but remained significantly more common among borderline patients than those with other forms of Axis II pathology. (Twenty-two of these symptoms are from the DIB-R and two are DSM-III-R criteria not assessed by the DIB-R—mood lability and serious identity disturbance.)

Second, we have found that different sectors of borderline psychopathology resolve at different rates. Affective symptoms are the most stable, impulsive symptoms resolve the most rapidly, and cognitive and interpersonal symptoms occupy an intermediate position.

The third and perhaps most important finding concerning the subsyndromal phenomenology of BPD is that some of the symptoms of BPD seem to be acute in nature and others seem to be temperamental in nature. Acute symptoms, which are akin to the positive symptoms of schizophrenia, resolve relatively quickly, are the best markers for the disorder (Zanarini et al. 1990), and are often the immediate reason for needing costly forms of treatment, such as psychiatric hospitalizations. Temperamental symptoms, which are akin to the negative symptoms of schizophrenia, resolve more slowly, are not specific to BPD, and are closely associated with ongoing psychosocial impairment.

This finding has allowed us to develop what we term a “complex” model of borderline psychopathology. In this view or model, borderline patients are born with a vulnerable or “hyperbolic” temperament (Zanarini, 1997; Zanarini, 2000; Zanarini & Frankenburg, 1994). After some type of “kindling” event or experience, BPD symptoms develop. Some of these symptoms are acute in nature (e.g., self-mutilation, help-seeking suicide threats or attempts, quasi-psychotic thought, demandingness or entitlement) and other symptoms are temperamental in nature (e.g., chronic feelings of anger, paranoid ideation, episodic general impulsivity, profound abandonment concerns).

Examples of the two types of symptoms that comprise this “complex” model of borderline psychopathology are detailed in Figure 1.

As can be seen, 95% of borderline patients reported a pattern of chronically feeling intensely angry during the 2 years prior to their index admission. This figure had declined to 79% during the fifth to sixth years after their index admission. Over time, the prevalence of this symptom declined

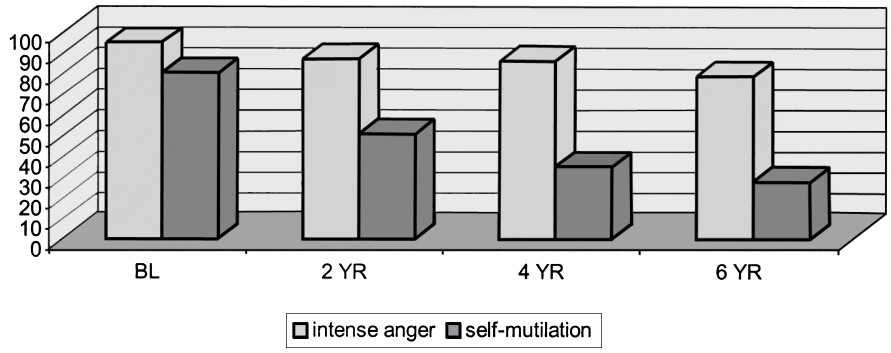

FIGURE 1. Rates of self-mutilation and intense anger over time.

by 17%. In contrast, 81% of the borderline patients reported a pattern of deliberately mutilating themselves physically during the 2 years prior to their index admission but by the time of their 6-year follow-up, only 28% reported a pattern of deliberately physically harming themselves. Over time, the prevalence of this symptom declined by 65%.

Other acute symptoms, as noted above, seem to be suicide threats and attempts, quasi-psychotic thought, and demandingness/entitlement. These symptoms span three of the four sectors of borderline psychopathology: cognition (quasi-psychotic thought), impulsivity (self-mutilation, help-seeking suicide efforts), and interpersonal relationships (being demanding or entitled). Only affective symptoms did not seem acute in nature, or looked at another way, all affective symptoms seem to be temperamental in nature.

However, it is not yet entirely clear which of the 24 symptoms of BPD being followed in this study are acute in nature and which are temperamental in nature. Self-mutilation and intense anger seem to stand out as examples of acute and temperamental symptoms of BPD. However even here, it is not clear what the future may bring. It is possible that intense anger may decline more sharply over further waves of follow-up. In contrast, there might be an upsurge in self-harm as time progresses and more borderline patients find themselves overwhelmed by the increasing pressures of a more complicated adult life.

It is important to note that 6-year MSAD findings concerning the symptomatic course of BPD have recently been confirmed by the 2-year results of another NIMH-funded study of the course of BPD (and three other Axis II disorders)—the Collaborative Longitudinal Personality Disorders Study (CLPS). The MSAD finding that symptomatic improvement is common was recently confirmed (Shea et al., 2002; Grilo et al., 2004) as was our finding of two types of borderline symptoms (McGlashan et al., 2005). In this study, acute symptoms are called symptomatic behaviors and temperamental symptoms are called traits.

Psychosocial Functioning Over Time

The psychosocial functioning of borderline patients, while improving over time, was found to be significantly more impaired than that of Axis II comparison subjects (Zanarini et al., in press-b). In terms of specific realms of functioning, borderline patients and Axis II comparison subjects functioned about the same socially and in their meaningful use of leisure time. However, their vocational functioning was more impaired. More specifically, they were significantly less likely to perform well at work or school than Axis II comparison subjects. They were also significantly less likely to work or go to school in a sustained manner. In addition, they were about three times more likely to be receiving disability payments.

We also found that the symptomatic status of borderline patients seems to have a strong impact on their psychosocial functioning. While the social and vocational functioning of ever-remitted borderline patients improved steadily over time, that of never-remitted borderline patients was relatively steady at a low level in most areas. In terms of overall functioning, over 40% of ever-remitted borderline patients had a Global Assessment of Functioning (GAF) in the good range by the time of the 6-year follow-up, and over 65% had attained or maintained good overall psychosocial functioning (which, unlike the GAF, does not assess an admixture of symptoms and psychosocial impairment). In contrast, no non-remitted borderline patient had a good GAF at 6-year follow-up and only about a quarter had attained or maintained good psychosocial functioning.

The reasons for these differences between ever-remitted and never-remitted borderline patients are unclear. It may be that the greater severity of BPD symptoms among the never-remitted borderline patients seriously impeded their psychosocial functioning. Alternatively, it may be that never-remitted and ever-remitted borderline patients may be different in other, perhaps more fundamental, ways as well. In any case, it is important to note that the psychosocial functioning of remitted patients continued to improve as time progressed, suggesting that they were somewhat belatedly achieving the milestones of young adulthood and not simply returning to a prodromal level of functioning.

Course of Co-occurring Axis I and II Disorders

We found that a high percentage of borderline patients continue to suffer from episodes of Axis I disorders over time (Zanarini, Frankenburg, Hennen, Reich, & Silk, 2004). Even by the time of the third wave of follow-up, 75% of borderline patients met criteria for a mood disorder, 60% for an anxiety disorder, 34% for an eating disorder, and 19% for a substance use disorder. We also found that the ongoing prevalence of Axis I disorders was strongly influenced by remission status from BPD. More specifically, the percentage of remitted borderline patients who met criteria for various axis I disorders decreased over time, while the rates of all types of disor-

ders studied remained relatively constant over time for nonremitted borderline patients, except for substance use disorders, which declined from a baseline high of 64% to 41% by the time of the 6-year follow-up. In addition, we found that the absence of a substance use disorder was a stronger predictor of remission from BPD than the absence of any other type of disorder; looked at another way, substance use disorders were the disorders that most interfered with remission from BPD. This finding runs counter to clinical lore, which suggests that BPD is most affected by the course of mood disorders or PTSD. However, this finding makes clinical sense as abusing alcohol and/or drugs could easily lead to greater impairment in all four core sectors of borderline psychopathology: more intense feelings of depression and anger, heightened distrust, increased impulsivity, and even more turbulent relationships.

In terms of Axis II disorders, most co-occurring personality disorders declined significantly over time (Zanarini, Frankenburg, Vujanovic et al., 2004). This substantial decline was noted in many cases for both remitted and nonremitted borderline patients. The three exceptions were avoidant, dependent, and self-defeating personality disorders—which remained common among nonremitted borderline patients. Even by the fifth to sixth year after their index admission, 59% of nonremitted borderline patients met criteria for avoidant personality disorder, 45% for dependent personality disorder, and 27% for self-defeating personality disorder. This contrasts with 16%, 8%, and 1%, respectively, for remitted borderline patients. We also found that the absence of avoidant, dependent, and self-defeating personality disorders significantly reduced a borderline patient's time-to-remission or, looked at another way, significantly improved a borderline patient's chances of remitting.

It might be that for nonremitted borderline patients these co-occurring disorders represent enduring aspects of their temperament, while for remitted borderline patients they were symptomatic manifestations secondary to their BPD. If so, once their borderline psychopathology was significantly diminished, their fear of embarrassment and rejection, dependency, and masochism may have also declined in severity. In other words, there may be subtypes of borderline patients and those most likely to remit in the short to midterm may be less temperamentally impaired than those whose borderline psychopathology remains relatively constant.

Psychiatric Treatment Over Time

Three main findings concerning psychiatric treatment have emerged from this study (Zanarini, Frankenburg, Hennen, & Silk, 2004). The first of these findings is that only a declining minority of borderline patients used more intensive forms of treatment during each of the 2-year follow-up periods (i.e., psychiatric hospitalization, residential care, and/or day treatment). At baseline, for example, 79% of borderline patients had a history

of prior hospitalization, 60% had been hospitalized multiple times, and an equal percentage had been hospitalized for 30 days or more. By the time of the 6-year follow-up, only 33% of borderline patients had been hospitalized for psychiatric reasons, only 23% had been hospitalized two or more times, and only 19% had spent a month or more in inpatient care. A similar pattern of declining participation was found for both day treatment and residential care (e.g., the percentage of borderline patients in day and/or residential treatment decreased over time from 55% at baseline to 22% 5 to 6 years after their index admission).

The second major finding concerning psychiatric treatment is that at least 70% of borderline patients were in psychotherapy and/or taking standing medications during all three follow-up periods. As a corollary, most of the borderline patients who participated in these two outpatient modalities did so in a sustained manner.

The third main finding is that high rates of intensive polypharmacy were reported by borderline patients in all three follow-up waves. More specifically, 40% of these patients reported taking three or more concurrent standing medications during each follow-up period, 20% reported taking four or more, and 10% reported taking five or more. This trend, which is commonly found in the treatment of many psychiatric disorders, has developed despite the fact that there is no empirical evidence of the effectiveness of polypharmacy in the treatment of BPD. In fact, the only controlled trial of polypharmacy in BPD found that olanzapine alone was as effective as the olanzapine-fluoxetine combination (Zanarini, Frankenburg, & Parachini, 2004). Perhaps most importantly, these high rates of polypharmacy are related to the high rates of obesity found in borderline patients at the 6-year follow-up period (about 30% had a body mass index of 30 or higher).

Medical Conditions, Health-related Lifestyle Choices, and Costly Forms of Medical Treatment

Remitted borderline patients were found to be significantly less likely than nonremitted borderline patients to have a history of a “syndrome-like” condition (i.e., chronic fatigue, fibromyalgia, or temporomandibular joint syndrome) (Frankenburg & Zanarini, 2004). They were also found to be significantly less likely to have a history of one or more of the following chronic medical conditions: obesity, osteoarthritis, diabetes, hypertension, back pain, and urinary incontinence. In addition, they were found to be significantly less likely to report pack per day smoking, daily consumption of alcohol, lack of regular exercise, daily use of sleep medications, and sustained use of pain medications. Finally, remitted borderline patients were significantly less likely than nonremitted borderline patients to have had at least one medically-related emergency room visit and/or medical hospitalization. In sum, the failure to remit from BPD seems to be associated

with a heightened risk of suffering from poorly understood medical syndromes and chronic physical conditions, making poor health-related lifestyle choices, and using costly forms of medical services.

Abuse Over Time and Sexual Relationship Difficulties

All types of adult abusive experiences were reported by a decreasing percentage of borderline patients over time (Zanarini, Frankenburg, Hennen, Reich, & Silk, 2005a). However, the rates of abusive experiences reported by borderline patients remained relatively high and significantly higher than the rates found for Axis II comparison subjects. About 45% of borderline patients reported being verbally and/or emotionally abused during the third follow-up wave, 15% reported being physically and/or sexually abused, and 57% reported some type of abuse. This contrasts with 35% of Axis II comparison subjects reporting verbal and/or emotional abuse during the fifth to sixth years after their index admission, 3% reporting physical abuse and/or sexual abuse, and 35% reporting some type of abuse.

Sexual relationship difficulties (i.e., becoming symptomatic as a result of consenting sex and/or avoiding sex for fear of becoming symptomatic) were found to be both common among borderline patients and significantly more common among them than among axis II comparison subjects (Zanarini, Parachini et al., 2003). More specifically, we found that 61% of borderline patients reported some type of sexual relationship difficulty versus only 19% of Axis II comparison subjects. Sexual relationship difficulties were also found to be common among both male and female borderline patients but significantly more common among women than men with BPD. More specifically, we found that 65% of female borderline patients and 43% of male borderline patients reported difficulties in this area of functioning. Not surprisingly, both a reported childhood history of sexual abuse and an adult history of rape were significantly associated with an adult pattern of sexual relationship difficulties, even after controlling for gender. This set of findings, while new, is not surprising. One would expect that sexual trauma, whether in childhood and/or adulthood, would predispose many people to avoiding consensual sexual experiences for fear that such experiences would make them seriously symptomatic and/or that they would become seriously symptomatic as a result of such consenting sexual experiences. Equally importantly, our findings concerning sexual relationship difficulties suggest an apparently unrecognized reason for the stormy relationships with partners or spouses that characterize the personal lives of many borderline patients.

DIMENSIONAL VERSUS CATEGORICAL MODEL OF BPD

Although the Five-Factor Model (FFM) has been advocated as an alternative to the construct of borderline personality disorder, others argue that this diagnosis carries essential information that is not well captured by

the FFM. This study examined antecedent, concurrent, and predictive markers of construct validity in a sample of 362 personality-disordered patients (Morey & Zanarini, 2000). The results indicated that neuroticism best distinguished borderline and nonborderline patients, while the FFM as a whole captured a sizable proportion of the variance in the borderline diagnosis. The results also indicated that these residual elements did appear to represent theoretically viable aspects of the disorder. While the strongest relationships appeared to be related to concurrent symptomatology, a history of childhood abuse and family history of mood and substance use disorders were also found to be related to this residual. Interestingly, the BPD residual was found to be only weakly related to 2-year outcome with an even smaller relationship identified with 4-year outcome. One interpretation of this result may lie in the distinction between a disorder (in this case, borderline personality disorder) and a trait (in this case, neuroticism). BPD may represent a disorder that waxes and wanes in severity over time, while neuroticism reflects a putatively stable trait configuration. In this model, the trait could be expected to provide better estimates of outcome over a longer time span, while manifestations of the disorder would still yield meaningful predictions, but only within specific sectors, such as BPD symptomatic severity, over the follow-up waves.

CONCLUSIONS

BPD seems to have a better prognosis than previously recognized. Remissions are common and recurrences are rare. In addition, remitted borderline patients show slow but steady improvement in psychosocial functioning over time. Suicide is also far more rare than anticipated.

We have also described a "complex" model of borderline psychopathology involving both acute and temperamental symptoms. We believe that if only the acute symptoms of BPD identified by this study were to define the disorder, or at least that some of these symptoms were required to be diagnosed with BPD, it would be recognized that BPD is a relatively slow to resolve disorder and not a chronic one. Improvement and even resolution of symptoms would be expected for most patients.

Alternatively, focusing on what we have termed the temperamental symptoms of BPD, because they are more stable than what we have termed acute symptoms, would perhaps be to unnecessarily pathologize those with certain inborn temperamental traits that are not in themselves indicative of being psychiatrically ill. Clinicians do not say, for example, that someone is still suffering from a major depressive episode once the symptoms of the mood disorder have lifted or resolved, even if psychosocial impairment or comorbidity remains. Rather, it is recognized that mood disorders are illnesses that people have and not dimensions of who they are. This is not to say that there are not underlying neurobiological dimensions involved in major depression. However, these vulnerabilities are not the signs and symptoms that patients subjectively experience and clinicians recognize and treat.

The temperamental or residual aspects of BPD are important because they interfere with psychosocial functioning and cause subjective suffering. However, would people without the acute symptoms of BPD be seen as having a major psychiatric disorder or as being temperamentally vulnerable but not psychiatrically ill? Further waves of prospectively gathered data in the MSAD will help to answer this question, which has important implications for the development of the DSM-V criteria set for BPD. Ultimately, with care and patience, the essential nature of BPD will reveal itself.

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