Suicidal and Self-injurious Behavior in Personality Disorder: Controversies and Treatment Directions

Jessica Gerson, PhD, and Barbara Stanley, PhD

Address
New York State Psychiatric Institute, Department of Neuroscience, 1051 Riverside Drive, New York, NY 10032, USA.
E-mail: bhs2@columbia.edu

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Contrary to common clinical perceptions, individuals with personality disorders attempt and commit suicide at nearly the same rate as individuals with major depression. In particular, those with borderline personality disorder are at high risk for suicidal behavior and nonsuicidal self-injury. Yet there is significant controversy surrounding the diagnosis of borderline personality disorder in terms of its existence, its definition and symptom structure, its *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV) axis location, and its importance as a contributing factor to suicidality and nonsuicidal self-injury. Furthermore, both suicidal and nonsuicidal self-harm is prominent in borderline personality disorder. There is often confusion between suicidal and nonsuicidal self-injury with one sometimes mistaken for the other. Nonsuicidal self-injury is sometimes met with hospitalization, because it is viewed as life threatening. Alternately, the potential lethality of suicidal behavior is underestimated, because it occurs in the context of multiple low lethality self-harm behaviors. It is possible to view these behaviors as distinct yet on a spectrum in borderline personality-disordered patients. With respect to treatment of self-injury in personality disorders, some recent pharmacotherapy trials have been conducted, though efficacy is often unclear. Findings with respect to psychotherapy, particularly dialectical behavior therapy, a form of cognitive behavioral treatment, are promising.

Introduction

The purpose of this paper is to examine controversies and trends in conceptualizing, understanding, and treating suicidal and nonsuicidal self-injury in the context of personality disorder. Borderline personality disorder is the personality disorder in which these behaviors occur most often. Zanarini *et al.* [1], found that although patients with other personality disorders may have impulsive patterns, 70.8% of patients with borderline personality disorder had specifically mutilated themselves or made suicide attempts compared with only 17.5% of patients with other personality disorders. Hampton [2] noted that 20% of inpatients and 10% of outpatients were generally diagnosed with borderline personality disorder, and that approximately 9% of such patients eventually commit suicide [3]. Feldman [4] stated that self-cutting, the most commonly reported type of self-injury, occurs most often in personality-disordered patients, particularly those with borderline personality disorder. They occur to a lesser extent in antisocial personality disorder. However, most individuals with antisocial personality disorder who also self-injure are likely to carry an additional personality disorder diagnosis of borderline personality disorder, and most discussions of personality disorder and self-injury focus on borderline personality disorder. Therefore, this paper will confine itself to a discussion of self-injury in borderline personality disorder.

Understanding and treating individuals who have a combination of personality disorders, suicidality, and self-injurious behavior presents one of the most confusing and problematic challenges to clinicians. The difficulty in understanding self-harm in personality disorders derives from several sources. First, borderline personality disorder is a relatively recently conceptualized disorder, and studies that were conducted on suicidality and self-injury more than a decade ago typically did not consider the relevance of borderline personality disorder. Therefore, the number of studies on self-harm in borderline personality disorder is limited. Secondly, the authors' conceptualizations of suicidality are embedded in the diagnostic context of depression. A preponderance of research on suicidal behavior has been conducted with individuals who have major depression or bipolar disorder. Furthermore, the authors have developed knowledge of suicide risk factors and an understanding of the phenomenology of suicidal behavior from these populations. The applicability of these risk factors and phenomenology to suicidal behavior in the context of borderline personality disorder is unknown.

Third, treatment trials in depression, anxiety, schizophrenia, as well as personality disorders, have routinely excluded individuals who are actively suicidal or who have

a history of recent suicide attempts. The stated purpose of this exclusion was to minimize risk to high-risk individuals. However, this has resulted in a state of affairs where there was very little direct knowledge, *ie,* randomized controlled clinical trials, of what is effective in any suicidal population. This paper summarizes and integrates current controversies and findings, emphasizing primarily diagnosis and treatment.

Diagnostic Issues

Diagnosing borderline personality disorder, suicidality, and self-injurious behavior has been fraught with a considerable degree of controversy, in a number of ways. Differing etiologic explanations and understandings of risk factors, including comorbidity, have contributed to difficulties in both making diagnoses and predicting dangerousness of behavior.

There are three primary controversies with respect to the diagnostic label of borderline personality disorder. 1) Is the name appropriately descriptive of the disorder; 2) is the disorder, in fact, a separate diagnostic entity and what symptoms constitute the diagnosis; and 3) is the disorder truly a personality disorder or is it more accurate to consider it an axis I disorder on a spectrum with bipolar disorders.

With respect to its name, not only is there a sense that the term *borderline* does not necessarily capture the phenomena involved, but the term has, at times, both frightened and mystified patients and carries a great deal of stigma. Being given the diagnosis of borderline personality disorder, patients will often ask, "borderline to what?" In asking patients what the name of the diagnosis sounds like to them, they often report that it seems that it seems to mean that they have only a "borderline" or partial personality. In other words, they feel the term means "almost a personality." Aronson [5], who called borderline personality disorder a "semantic mess," attributed what he saw as conceptual confusion over the term to several factors, including the fact that psychoanalytic writers originally used it in a very particular way, that there are ambiguities about each of the major uses of it, that its different meanings lie on very different, irreconcilable levels of discourse, and that it is often used as a label of denigration and obfuscation. Aronson posited that the term might have some value if used only in terms of a specific psychodynamic meaning. Dahl [6], who cited methodologic in addition to semantic difficulties related to this diagnosis, similarly noted that *borderline* uniquely falls between the classical categories, without belonging to any of them. One of these categories was a system in which all features must be present for a diagnosis to be made, such as the type found in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM); the other category was described as a system in which some typical features need to be present, *eg,* borderline schizophrenia. Dahl also summarizes a variety of classification systems and notes their sometimes-dramatic distinctions.

Others have observed that the diagnosis often appears to be made in an unpredictable fashion. Tyrer [7] attributed this to the heterogeneity of the symptoms, calling borderline personality disorder a "motley diagnosis in need of reform." Davis *et al.* [8] found that clinicians often diagnose personality disorders using a weighting model, meaning that they weighed certain criteria more heavily than others, rather than a polythetic model, which involved only looking at the number of criteria met [9], the model on which the DSM is based. Cloninger [10•], who cited his theory that personality-disordered patients tend to be low on certain character traits as measured by the Temperament and Character Inventory (TCI) [11], postulated that it would be more helpful clinically to be aware of specific dimensions of patients with borderline personality disorder, *eg,* novelty seeking, harm avoidance, and reward dependence, and their relationship with other syndromes such as eating disorders and substance abuse, than to attempt to subtype them.

Another issue that has arisen with regard to the diagnosis of borderline personality disorder is whether it should continue to be considered as axis II diagnosis or is more appropriately an axis I diagnosis. At the heart of this issue is what distinguishes an axis I diagnosis from a personality disorder diagnosis. A hallmark of a personality disorder is that the symptoms are ego-syntonic while symptoms of an axis I disorder are experienced as ego-dystonic. One argument for considering borderline personality disorder an axis I disorder is that patients diagnosed with this disorder are often in great distress about their symptoms and want to change, which is an indication that the symptoms are ego-dystonic. Other personality disorders, such as obsessive-compulsive or antisocial personality disorder, do not tend to experience their symptoms in the same way. This may, in fact, account for why individuals with borderline personality disorder frequently seek treatment. Interestingly, multiple personality disorder was transformed to dissociative identity disorder despite the fact that Pope *et al*. [12] pointed out that there was little consensus regarding the diagnostic status or validity of the term.

Furthermore, others have noted that trauma appears to play an important role in the etiology of borderline personality disorder. Kjellander *et al.* [13••], who cited Gunderson and Sabo [14], suggested that the disorder may best be considered an anxiety disorder and a variant of post-traumatic stress disorder.

Still others speculated that borderline personality disorder might reside on a spectrum with bipolar disorders. Atre-Vaidya and Hussain [15], for instance, posited that borderline personality disorder and bipolar mood-disordered patients would be very similar in terms of Cloninger's [10•] personality dimensions; they found, however, that though similar in some respects, the former were higher than the latter on harm avoidance and impulsivity. Biologically oriented theorists supported this point of view; Herpetz *et al.* [16], for instance, found that

patients who had personality disorder with impulsivity (including borderline personality disorder) had poor affect regulation and hence affective instability. Coid [17] found that, in psychopathic women with a diagnosis of borderline personality disorder, there was "an affective disorder in its own right" characterized by severity, debilitation, and behavioral problems. Others have drawn attention to mixed mood states, *eg*, Levitt *et al*. [18] found that cyclothymia occured more frequently in borderline personality disorder than in other personality disorders.

Conceptualizing Suicidal Behavior and Other Forms of Self-harm

In addition to the confusion about the diagnosis of borderline personality disorder, there is a lack of clarity and agreement about the definition of suicidal behavior and its distinctiveness from nonsuicidal self-injury. This lack of clarity and confusion applies both generally and more specifically to suicidal behavior in the context of personality disorder. The following three issues are important here: the use and misuse of the term parasuicide; the distinction between suicidal and non-suicidal self-injury; and differences in the phenomenology of suicidal behavior when it occurs in the context of personality disorder.

One of the first mentions of the term parasuicide appeared in Kreitman and Philip's [19] letter, in which they write, "it appears that what is required is a term for an event in which the patient *simulates* or *mimics* suicide, in that he is the immediate agent of an act which is actually or potentially physically harmful to himself. Yet the 'attempted suicide' patient is not usually addressing himself to the task of self-destruction, and rarely can his behavior be construed in any simply sense as oriented primarily toward death°." [19]. Diekstra [20], citing Bancroft *et al.* [21], noted that several motives can be attributed to parasuicidal acts, including death, interruption of consciousness, and appeal to others, and Bongar [22] referred to this behavior as any self-injurious act that does not result in death. Therefore, both suicide attempts and nonsuicidal self-harm were subsumed under the term *parasuicidal behavior*. This term purposely omits intent from its definition because intent can be unclear. Welch [23], who cited Platt [24] and Linehan [25], stated, "attempted suicide and deliberate self-harm that is not suicidal in nature are very different behaviors°. Intent is difficult to evaluate and has therefore been left out of major research on parasuicide, although some promising results suggest that it can be reliably assessed." Serious overdoses, superficial cutting, burning, and attempts at hanging are all considered parasuicide. Many clinicians and researchers improperly use this phrase to refer only to nonsuicidal self-injury (*ie*, self-mutilation), and so there is a great deal of confusion when someone refers to a behavior as parasuicidal. However, the fact that the term *parasuicide* groups all forms of self-harm together can lead to a misunderstanding of the differences in function and danger of suicidal and nonsuicidal self-injury and, consequently, result in suboptimal treatment. More particularly, nonsuicidal self-harm almost never results in death, and only occasionally in serious injury, such as nerve damage. Yet, because there can be tissue damage, patients are often hospitalized on a psychiatric unit in the same way that they would be for a frank suicide attempt. Interestingly, patients often report feeling more emotionally regulated and less upset following an episode of nonsuicidal self-injury. In other words, although the self-injury is borne out of a sense of distress, it has served its function, and the patient's emotional state is improved. Hospitalization at this point, if the patient is not suicidal, seems to be unnecessary.

With regard to the distinction between suicidal and nonsuicidal self-injury, there are important differences. Suicidal behavior is usually defined as a self-destructive behavior with the intent to die. Thus, there must be both an act and intent to die for a behavior to be considered suicidal. Barber *et al.* [26] recently described a new classification of suicidal behavior called *aborted suicide attempts*, defined as events in which someone on the verge of committing suicide has a sudden change of mind and hence incurs no injury, *eg*, holding a gun briefly to one's head. This is a useful addition to the author's classification system, because there was no way to capture this serious threat other than describing it as suicide ideation with a plan of action.

Nonsuicidal self-harm, on the other hand, generally implies self-destructive behavior with no intent to die, and is often seen as being precipitated by distress, often interpersonal in nature, or as an expression of frustration and anger with oneself. It has been given a number of terms, over which there exists some confusion in the field. Feldman [4] defined self-mutilation as intentionally damaging a part of the body apparently without a conscious attempt to die; also noted is the fact that such acts often correlate with risk factors for violent suicide, and that they can result in further interpersonal isolation, and permanent physical damage, *eg*, brain damage. It usually involves feelings of distraction and absorption in the act, anger, numbing, and tension reduction and relief, followed by a sense of affect regulation and self-deprecation. According to Feldman [4], the act often has a ritualistic aspect to it, which adds to the distracting aspect of the behavior. By attending to the self-harm act, individuals are drawn away from intolerable upsetting emotions and thoughts. Linehan [27] posited that self-injury helped patients to regulate their emotions, an area with which they have tremendous difficulty. The act, itself, tends to restore a sense of emotional equilibrium and reduce an internal state of turmoil and tension.

One striking aspect of self-mutilation in borderline personality-disordered patients that has received some attention is the fact that physical pain is sometimes absent, or, conversely, may be experienced and indeed welcomed, as a

validation of psychological pain or a means to reverse a sense of deadness. Patients sometimes report that inflicting physical pain on themselves gives a reason for their experience of an intense sense of internal pain. Kemperman *et al.* [28] suggested that there is a relationship between dissociation and a dysfunctional opioid or serotonin system; Van der Kolk *et al.* [29] observed that patients who self-mutilate feel better and more alive, as opposed to discomfort. Bohus *et al.* [30] found that borderline personality-disordered patients who denied feeling pain during self-mutilation had a higher threshold for pain even while relaxed, a tendency that may have been enhanced under stress, and that was likely due to underlying biologic factors.

Psychoanalytically oriented theorists tend to see self-harm as representing an internal conflict. Menninger [31], for example, believed that self-mutilation satisfies various sexual or aggressive, self-punishing needs, functioning as a compromise formation against suicide, and hence "a victory, even though sometimes a costly one, of the life instinct over the death instinct." Gunderson [32] viewed self-harm as an attempt to reestablish contact with a lost object and to create an illusion of control over new objects.

Interestingly, it has been reported that individuals who self-injure rarely believed that the intent of their behavior was to control the external environment. Almost always, the intent is to alter their internal experience. Yet, the behavior is viewed, by clinicians and individuals in relationships with self-injurers, as manipulative and controlling. It could be that this perception is correct and that self-injurers are unaware of all of their motivations. Alternatively, a more likely explanation is that the intent and the effect of the behavior are quite distinct. The self-injurer may not have any desire to manipulate the environment, but the environment may be quite affected and reactive to the behavior. Although this phenomenon is referred to as secondary gain, it may not be experienced by the patients as a positive, as the word "gain" connotes, and may be more appropriately termed a "secondary effect."

The third issue with respect to suicidality in personality is whether there is a phenomenology distinct from the way in which the authors have conceived of suicidality in the context of depression. In traditional conceptualizations developed from suicidality seen as an aspect of major depression, suicidal behavior is usually understood to be a response to a deep sense of despair and desire for death, which, if unsuccessful, typically results in a persistence of depression. Vegetative signs are prominent and the suicidal feelings subside when the major depression is successfully treated with antidepressants, psychotherapy, or their combination. In contrast, suicidality in the context of borderline personality disorder seems to be more episodic, transient in nature, and to function as a regulator of emotional state. Individuals with borderline personality disorder often report that there is a build-up of suicidal feelings, which, when acted on, do not result in a deepening of a depressed mood. Instead, patients often feel better, because the act itself served as a release and brought about a sense of emotional restitution. This is quite different from the experience of individuals with major depression who make suicide attempts.

Risk factors for suicidal behavior in borderline personality show some differences, as well as similarities with individuals who are suicidal in the context of major depression. More specifically documented risk factors for completion of suicide among borderline personality disorder patients include prior hospitalization, lack of employment, early loss, and being young [33], past attempts [34], as well as the following, which were cited by Hampton [2]: higher education [35], comorbid alcoholism [36], having been hospitalized within the past five years [37], and comorbid antisocial personality disorder [38]. Gunderson [32], cited by Kjellander *et al.* [13], found that 75% of all borderline personality disorder patients have made at least one suicide attempt, and that 78% engage in self-destructive behavior [39]. Barber *et al.* [26], however, posited that one cannot predict subsequent attempts from aborted attempts, because sometimes these two behaviors occur in the opposite order.

Ryle and Golynkina [40] state that the course of borderline personality disorder might be affected by the intensity and duration of abuse and deprivation in early life, socioeconomic disadvantages, severity of diagnosis, comorbidity, and genetic loadings. Brodsky *et al.* [41], finding that dissociation in borderline personality disorder patients is correlated with self-mutilation independently of abuse, depression, and use of treatment, understand the association between the two as an attempt to address numbness, self/object disturbances related to early trauma, or a biologic predisposition.

Studies of comorbidity produced unclear results. Arguments for a strong relationship between borderline personality disorder, depression, and suicidality include Pope *et al.* [42] findings that a large number of borderline personality disorder patients also display a major affective disorder. Results from Haw *et al.* [43] indicated that in patients who self-harm, comorbidity of psychiatric and personality disorders occurs at a rate of 44.1%. Friedman *et al.* [44] found that depressed borderline personality disorder patients attempted suicide more often than depressed patients with other axis II diagnoses, and made more serious attempts than the latter or depressed-only patients. Kelly *et al.* [45] found that patients with borderline personality disorder alone, or borderline personality disorder plus major depression, are more likely to attempt suicide than patients with major depression alone, and that having better social adjustment is associated with a decreased likelihood of making suicide attempts.

Corbitt *et al.* [46], found that axis II, especially borderline personality disorder, along with axis I, was associated with more suicidality, and that patients who attempted suicide had cluster B personality traits even if they did not fully meet diagnostic criteria. Soloff *et al.* [47], whose

findings showed an unclear outcome, found that patients who were comorbid reported the most depression and hopelessness, made more attempts and planned them out more carefully. Considering the findings of Foster *et al.* [48], which indicated that patients with comorbidity are six times more likely to commit suicide than patients with only psychiatric disorders, this is quite significant. Persson *et al.* [49], advocated that one look at axis IV and V when attempting to predict suicide attempts, and that patients who are comorbid on axis I and II (especially those with borderline personality disorder) were not only more likely to attempt suicide, but also tended to have more impaired adaptive functioning.

Interestingly, in contrast, Hampton [2] stated that the completion of suicide in borderline personality disordered patients was often unrelated to a comorbid mood disorder [33], and to degree of suicidal ideation [50]. Similarly, Heikkinen *et al.* [51] found that personality disorder patients who had died from suicide, while having had multiple stressful life events compared with other patients (particularly interpersonal or financial), were not higher on axis I, and that type of personality disorder was not very relevant.

Biologic findings that pointed to relationships among impulsivity and suicidality supported the notion that suicidality and self-mutilation may occur on a spectrum, as mentioned earlier. Oquendo and Mann [52••], for example, summarized recent findings on the biology of impulsivity and suicidality from animal, drug challenge, platelet, cerebrospinal fluid, and genetic and human brain imaging studies in humans, particularly those with borderline personality disorder. They observed that, in general, impulsive aggression was associated with lower levels of serotonin, and that the role of noradrenergic functioning was unclear. Although self-injurious behavior involves lower 5-HT (serotonin) and abnormal dopamine (DA), suicidal behaviors involve lower 5-HT and enhanced DA and norepinephrine (NE). Similarly, New *et al.* [53] suggested that personality-disordered patients who self-mutilated had blunted prolactin and cortisal responses, which led them to believe that serotonin dysfunction might be strongly related to self-directed aggression, in general, rather than to suicidality alone.

It is crucial to recognize that even if the borderline personality disorder patients attempt suicide for reasons similar to why they self-mutilate, death may be the accidental and unfortunate result. Kjellander *et al.* [13] pointed out that having the diagnosis of borderline personality disorder was a risk factor in and of itself for completion of suicide. They noted that, because patients with borderline personality disorder tried to kill themselves so often, clinicians often underestimated their intent to die, and that borderline personality disorder patients who parasuicide were twice as likely to commit suicide than others [54]. Stanley *et al.* [55•] found that suicide attempters with cluster B personality disorders who self-mutilated were more depressed, anxious, and impulsive, die just as frequently, and are often unaware of the lethality of their attempts, and tend to have suffered more abuse (a risk factor in and of itself for suicide), than patients with cluster B personality disorders who do not self-mutilate. Making matters worse, Antikainen *et al.* [56] described how even if borderline personality disorder patients were getting better in some ways in outpatient treatment, *eg,* they improved in terms of personal relationships, and had a reduction in some symptoms, their parasuicidality was very resistant to change.

Treatment of Suicidal Behavior and Self-injury in the Context of Borderline Personality Disorder

Most clinicians will say that they find borderline personality disorder patients who are self-injurious and suicidal to be amongst the most difficult patients to treat. Wildgoose *et al.* [57•] described how patients with this diagnosis presented to mental health services with increasing frequency [58] and were difficult to treat well [42]. Effective treatment places a direct focus on the self-destructive behavior, as does Linehan [27], in dialectical behavior therapy. Others focus on the personality disorder, with the hope that related self-destructive behavior remits as a result.

Treatment trials often fall along biologic versus psychologic lines, yet the two are often used in conjunction. Questions have been raised, however, to the efficacy of medication in general with this population. Although there is clearly a biologic component, shown further by the fact that some authors have suggested that borderline personality disorder is genetic [59], the results of pharmacologic interventions have been inconclusive. In terms of psychologic interventions, although the efficacy of a number of models has been proven, Ryle [60] noted that few treatment outcomes exist, due to several factors, including the prevailing belief that psychotherapy must be long and intensive, the unwillingness of practitioners to treat these patients, or patients dropping out early.

Most biologic treatments have focused on borderline personality disorder, yet, in addition, these treatments target symptoms of self-harm and suicidality; different classes and types are often used for different aspects of the behavior [61••]. Sadness and affective instability tend to be addressed with antidepressants, *eg,* tricyclic antidepressants (TCAs), monoamine oxidase inhibitors (MAOIs), and selective serotonin reuptake inhibitors (SSRIs) (the latter particularly for irritability). These all have side effects [62], as cited by Pinto and Akiskal [63]. Fluoxetine has been shown to lead to a decrease in symptoms [64]; an MAOI (tranylcypromine) was effective in treating atypical depressions, and an anticonvulsant (carbamazepine) helped with behavioral control (yet interestingly without affecting mood), in borderline personality-disordered patients [54]. Pinto and Akiskal [65] pointed out that amitryptiline was actually shown to make impulse control worse, which was similar to TCA-induced hypomania in

borderline personality disorder patients [66]. They found the use of SSRIs not particularly helpful, in that the excitement produced might reflect an underlying bipolarity. Venlafaxine, a new SSRI that has concomitant noradrenergic reuptake properties, has shown some promise in treating this population [67].

Psychosis tends to be addressed with neuroleptics, which have sometimes proven helpful, *eg,* Goldberg *et al.* [68] found that thiothixene was effective for particular symptoms of borderline personality disorder, such as phobic anxiety, and haloperidol [62]; the latter was cited by Hollander *et al.* [61]. Schulz *et al.* [69] found that patients with borderline personality disorder participating in an open-label trial of olanzapine got better, particularly in terms of psychosis, depression, interpersonal sensitivity, and anger. Pinto and Akiskal [63] noted that progress was made in averting suicide with the depot neuroleptic flupenthixol [70]. Hough [71] noted, in a letter, that two patients he treated with low doses of olanzapine, an atypical neuroleptic that combines antipsychotic, antidepressant, and mood stabilization properties, responded well. Unfortunately, patients often complain of side effects from this class of medications.

Mood stabilizers, another type of medication often used to treat borderline personality disorder, tend to target impulsivity and affective instability; their outcome is somewhat unclear. Lithium, for example, reduced impulsive aggressive behavior as measured by a reduction in infractions while on the medication in one study [72], yet in another appeared to do the opposite [73]. Carbamazepine and valproate have reduced impulsivity in post-traumatic stress disorder patients or behavioral dyscontrol syndrome [74], and divalproex sodium has been helpful, as well [75], as cited by Hollander *et al.* [61]. Soloff *et al.* [76] noted that some extremely modest changes were found in the areas of depression and hostility with phenelzine and haloperidol. In their finding that borderline personality disorder patients who are affectively labile yet do not have an axis I disorder respond well to lamotrigine, these authors suggested that this disorder might be treated more as a bipolar than a unipolar depressive variant [77], as cited by Pinto and Akiskal [63]. They also posited that underlying aspects of bipolar disorder such as lack of sense of self and interpersonal hostility, in addition to external behavior, may be treated biologically.

In other categories, benzodiazepines, used occasionally, have been problematic, because they have led to increased behavioral problems and suicidality [54]. Roth *et al.* [78] conducted an open-label trial and showed some efficacy with naloxone in treating self-mutilation. This is a long-acting opiate antagonist that can block and, therefore, perhaps dissipate the rewards of enhanced endogenous opioids, thereby increasing pain [79]. Their approach was guided by findings discussed earlier that many patients with self-injurious behavior report little or no pain during self-injury, and a subsequent improvement of dysphoric mood, as well as the possibility that this phenomenon may be due to both increased endogenous opioid levels in the central nervous system and elevated plasma met-enkephalin levels.

One class of psychologic intervention has been cognitive-behavioral, of which there are a few models. Beck *et al.* [80], who noted that the combination of maladaptive beliefs, dichotomous thinking, and a weak sense of identity in patients with borderline personality disorder was particularly problematic, focused on improving skills at controlling emotions, establishing a clearer sense of identity, and challenging cognitive distortions. Wildgoose *et al.* [57], who stated that personality fragmentation may be a form of three levels of dissociation [81] associated with early trauma, conducted a study of the efficacy of cognitive analytic therapy (CAT) [60] with borderline personality disorder patients. They describe this form of therapy as being time-limited and based on both object-relational and cognitive-behavioral theory and techniques, the aim of which is to provide an understanding of dissociation's relationship to a fragmented sense of self. The authors found that two patients who achieved significant gains across all measures had significant changes in their levels of dissociation. They suggested that changes in dissociation per se might be the key to positive outcome, as well opposed to changes in personality fragmentation only.

An increasingly well-known form of cognitive-behavioral therapy is dialectical behavior therapy (DBT), developed by Marsha Linehan [27] specifically for borderline personality disorder. A dialectic between acceptance and change, a focus on skill acquisition and skill generalization, and a consultation-team meeting characterized this method. Patients received both individual and group treatment on an outpatient basis. Linehan *et al.* [82] found that DBT was superior to the control group in terms of parasuicidal acts, time hospitalized, and premature termination. Hampton [2] advocated that nurses use DBT as well, citing reports by Linehan *et al.* [83] that the type of general training is somewhat irrelevant in terms of the efficacy of conducting this kind of work.

The question of whether or not hospitalization is effective at all in borderline personality disorder has received a fair amount of attention. Rosenbluth [84] discussed how some theorists, *eg,* Kernberg [85], found the regression that accompanies hospitalization effective, although others have criticized this aspect. Rosenbluth [84] felt that few critics have set out to examine the whole course of the illness and what happens post-hospitalization, and that findings have been inconclusive. Recently Bohus *et al.* [86•], however, found that a DBT-related treatment they developed for inpatients had resulted in a decrease in self-injurious behavior, depression, anger, and dissociation 1 year later. Simpson *et al.* [87], who cited Barley *et al.* [88], discussed how patients on inpatient units receiving DBT therapy, as opposed to depth therapy, reduced their parasuicidal acts, and that when such therapy was given in conjunction with a goal-oriented mode of treatment, it resulted in patients' caregivers feeling more enabled

to cope (citing Silk *et al.* [89]). The authors described how a short stay in their program necessitated limited and quick skills training, and that although the individual therapist aimed for quick attachment and detachment, some behaviors were targeted through the milieu.

Bateman and Fonagy [90•], who are psychoanalytically oriented theorists, found that 18 weeks of psychodynamic group treatment, which integrates psychoanalytic technique with structure and limit-setting in a partial hospitalization program, led to improvement. Similarly, Wilberg *et al.* [91] described how a model of initial day treatment plus outpatient long-term analytically-oriented group therapy focusing on symptom reduction, therapeutic alliance, acting out, and psychologic-mindedness benefited patients with borderline personality disorder.

In other psychoanalytic camps, a controversy existed between those espousing an approach that involved focusing on the negative features of the transference, *eg,* Kernberg [92], and an approach where the focus was on empathy and support, *eg,* Adler [93]. Schaffer [94] recognized the difficulty in maintaining a balance between these two models in part due to countertransferential reactions, and recommended paying attention to the strengths of the borderline patient. Gainer and Torem [95] proposed that, for patients who are dissociative, ego-state therapy can be effective. Citing Watkins and Watkins' [96] description of ego states as systems of behavior and experience that are united by a common principle, but separated from each other by permeable boundaries and through the process of dissociation, they posited that self-injurious behavior is the result of conflict among dissociated ego states. The authors encouraged patients who dissociate or self-harm to develop "center cores," defined as the parts of themselves that think rationally and logically, and which may involve an internalization of the therapist, and to then specifically address each type of self-injurious behavior, and to identify the ego state in which it occurs.

In terms of addressing self-mutilation more specifically, Feldman [4], in his comprehensive review of a variety of treatments, described the importance of maintaining a balance between making sure the patient is safe and not encouraging over-dependence on hospitalization. Burnham and Giovacchini [97], as cited by Feldman, advocated an interpersonal model in which therapists confront patients with the effect they have on others. Some theorists advocated family therapy, and others advocated group therapy. Nelson and Grunebaum [98], as cited by Feldman, reported that individuals who cut themselves, who had done well in treatment, reported an increased ability to express feelings and to use behavioral alternatives. Feldman stressed the importance of setting realistic and flexible goals with patients, and addressed the role of countertransference, particularly on inpatient units, including the reluctance to take the acts seriously, seeing the patients as manipulative (as mentioned earlier), admiration, splitting, fantasies of saving, and sadism.

Conclusions

This paper addressed contemporary conceptual and treatment issues that come into play in understanding suicidal and self-injuring behavior in the context of borderline personality disorder. Diagnostic issues and the phenomenology of self-injurious behavior are important to consider. Treatment approaches should include pharmacologic interventions, psychotherapy, and a combination of the two.

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