



Published in final edited form as:

*Acta Psychiatr Scand.* 2008 March ; 117(3): . doi:10.1111/j.1600-0447.2008.01155.x.

## The 10-year Course of Physically Self-destructive Acts Reported by Borderline Patients and Axis II Comparison Subjects

Mary C. Zanarini, Ed.D., Frances R. Frankenburg, M.D., D. Bradford Reich, M.D., Garrett Fitzmaurice, Sc.D., Igor Weinberg, Ph.D., and John G. Gunderson, M.D.

Laboratory for the Study of Adult Development, McLean Hospital, Belmont, MA and the Department of Psychiatry, Harvard Medical School, Boston, MA, USA

### Abstract

**Objective**—The purpose of this paper was to determine the frequency and methods of two forms of physically self-destructive acts (i.e., self-mutilation and suicide attempts) reported by borderline patients and axis II comparison subjects over ten years of prospective follow-up.

**Methods**—290 borderline patients and 72 axis II comparison subjects were interviewed about their physically self-destructive acts during their index admission and at five contiguous two-year follow-up periods.

**Results**—It was found that a high percentage of borderline patients reported multiple acts and methods of each of these two forms of physically self-destructive behavior prior to their index admission. It was also found that the percentage of borderline patients reporting multiple acts and methods declined significantly over time. However, these acts remained significantly more common among borderline patients than axis II comparison subjects.

**Conclusions**—The course of self-mutilation and suicide attempts among borderline patients is initially more serious and ultimately more benign than previously recognized.

Self-mutilation and suicide attempts are among the most dramatic symptoms of borderline personality disorder (BPD). Clinical experience suggests that they are also one of the main reasons for psychiatric hospitalizations and other costly forms of treatment, such as day or residential programs. Numerous studies have found that these symptoms are common among borderline patients when assessed cross-sectionally (1-15). More specifically, cross-sectional rates of self-mutilation have ranged from 17-80% (median=53%) (1, 2, 6-8, 10, 12-15), while cross-sectional rates of suicide attempts have ranged from 46-92% (median=76%) (1-13). In contrast, very few longitudinal studies have assessed the prevalence of these troubling symptoms over time (5-7, 16, 17). The follow-up rate of self-mutilation in the only study to assess this outcome was 50% at five-year follow-up (7). However, follow-up rates of suicide attempts have ranged from 6-40% (median=24%) in post-baseline periods ranging from 2-14 years (5-7, 16, 17).

The current study is the first longitudinal study to assess the prevalence of these symptoms over 10 years of prospective follow-up in a large and well-defined sample of borderline patients and axis II comparison subjects. It is also the first study to assess the number of episodes/attempts within each time period and the methods used to self-mutilate or attempt suicide.

## Methods

All subjects were initially inpatients at McLean Hospital in Belmont, Massachusetts. Each patient was first screened to determine that he or she: 1) was between the ages of 18-35; 2) had a known or estimated IQ of 71 or higher; 3) had no history or current symptoms of schizophrenia, schizoaffective disorder, bipolar I disorder, or an organic condition that could cause psychiatric symptoms; and 4) was fluent in English.

After the study procedures were explained, written informed consent was obtained. As part of a larger study (18), each patient then met with a masters-level interviewer blind to the patient's clinical diagnoses for a thorough diagnostic assessment. Three semistructured diagnostic interviews were administered. These diagnostic interviews were: 1) the Structured Clinical Interview for DSM-III-R Axis I Disorders (SCID-I) (19), 2) the Revised Diagnostic Interview for Borderlines (DIB-R) (20), and 3) the Diagnostic Interview for DSM-III-R Personality Disorders (DIPD-R) (21). The inter-rater and test-retest reliability of all three of these measures have been found to be good-excellent (22, 23).

Past experiences of self-mutilation and suicide attempts were assessed using the Lifetime Self-Destructiveness Scale (LSDS) (24). This semistructured interview assesses the number of episodes of self-mutilation and the number of suicide attempts a subject engaged in before his or her index admission and the methods used. Self-mutilation was defined as any intentional self-inflicted injury without intent to die (e.g., punching or burning oneself). A suicide attempt was defined as any intentional non-lethal act that involves intent to die (e.g., overdosing or attempted hanging). The inter-rater and test-retest reliability of this measure has been found to be excellent (24).

At each of five follow-up waves, separated by 24 months, axis I and II psychopathology was reassessed via interview methods similar to the baseline procedures by staff members blind to baseline diagnoses. After informed consent was obtained, our diagnostic battery was readministered (with the SCID I focusing on the past two years and not, as at baseline, lifetime axis I psychopathology). The follow-up interrater reliability (within one generation of follow-up raters) and follow-up longitudinal reliability (from one generation of raters to the next) of these three measures have also been found to be good-excellent (22,23).

The Lifetime Self-destructiveness Scale: Follow-up Version (LSDS-FUV) was readministered at each follow-up wave. This semistructured interview is the follow-up analog to the LSDS and assesses the number of episodes of self-mutilation and number of suicide attempts and the methods used during each two-year follow-up period. Good-excellent follow-up interrater reliability (median kappa=1.0; median ICC=.73) and follow-up longitudinal reliability (median kappa=1.0; median ICC=.83) were achieved in the current study using separate samples of 48 and 36 subjects respectively.

Generalized estimating equations (GEE), with diagnosis and time as main effects, were used in longitudinal analyses of prevalence data. Tests of diagnosis by time interactions were conducted, and when significant are reported in the text. These analyses modeled the log prevalence and controlled for gender (which significantly distinguished the two study groups), yielding an adjusted relative risk ratio (RRR) and 95% confidence interval (95% CI) for diagnosis and time. Alpha was set at 0.05, two-tailed.

## Results

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). Of these 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, 18% met DSM-III-R criteria for a nonborderline dramatic cluster personality disorder, and 53% met DSM-III-R criteria for personality disorder not otherwise specified (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 DSM-III-R).

Baseline demographic data have been reported before (18). Briefly, 77.1% (N=279) of the subjects were female and 87% (N=315) were white. The average age of the subjects was 27 years (SD=6.3), the mean socioeconomic status was 3.3 (SD=1.5) (where 1=highest and 5=lowest) (25), and their mean GAF score was 39.8 (SD=7.8) (indicating major impairment in several areas, such as work or school, family relations, judgment, thinking, or mood).

In terms of continuing participation, 275 borderline patients were reinterviewed at two years, 269 at four years, 264 at six years, 255 at eight years, and 249 at ten years. In terms of axis II comparison subjects, 67 were reinterviewed at two years, 64 at four years, 63 at six years, 61 at eight years, and 60 at ten years. At the ten-year assessment, 41 borderline patients were no longer in the study: 12 had committed suicide, six died of other causes, 10 discontinued their participation, and 13 were lost to follow-up. By this time, 12 axis II subjects were no longer participating in the study: one had committed suicide, four discontinued their participation, and seven were lost to follow-up. All told, 90.1% (N=309) of surviving patients were reinterviewed at all five follow-up waves.

Table 1 details the prevalence of various aspects of the phenomenology of self-mutilation reported by borderline patients and axis II comparison subjects over 10 years of prospective follow-up. As can be seen, a significantly higher percentage of borderline patients than axis II comparison subjects reported each of these numbers of episodes and methods of self-mutilation over the 10 years of follow-up. In addition, the rates of each of the parameters of self-mutilation studied declined significantly over time for both study groups.

However as the relative risk ratios (RRRs) for diagnosis and time in the table contain more fine grained information, we believe that an example would be useful. As can be seen, almost 90% of borderline patients (and about a quarter of axis II comparison subjects) had a history of multiple episodes of self-mutilation at the time of their index admission. By the time of their 10-year follow-up, these prevalence rates had declined to about 13% and 2% respectively. The RRR of 4.12 for diagnosis indicates that borderline patients were about four times as likely to engage in multiple episodes of self-mutilation as axis II comparison subjects. The RRR of 0.11 for time indicates that the chance of engaging in multiple episodes of self-mutilation over the course of the study decreased by 89% (1-0.11) for both groups.

Only one interaction between diagnosis and time was found to be significant. As can be seen, 90% of borderline patients (and about a third of axis II comparison subjects) reported a history of self-mutilation at baseline. By the time of their 10-year follow-up, these prevalence rates had declined to 18% and 2%. The relative difference of 2.87 for diagnosis indicates that borderline patients were about three times more likely than axis II comparison subjects to have such a history at baseline. The relative difference of 0.01 for time indicates that the relative change from baseline to 10-year follow-up resulted in an approximately 99% (or  $[1 - 0.01] \times 100\%$ ) decline for axis II comparison subjects. In contrast, the significant interaction between diagnosis and time indicates that the relative decline from baseline to 10-year follow-up is approximately 85% (or  $[1 - 0.01 \times 0.1523] \times 100\%$ ) for borderline patients.

Of the 262 borderline patients with a lifetime history of self-mutilation, the mean age of their first episode was 15.8 (SD=7.3). The mean age of the 25 axis II comparison subjects with a history of self-mutilation was very similar (16.4 [SD=8.5] ( $t=0.36$ ,  $df=285$ ,  $p=0.72$ ).

Table 2 details the prevalence of various aspects of the phenomenology of suicide efforts reported by borderline patients and axis II comparison subjects over 10 years of prospective follow-up. As can be seen, borderline patients were at significantly greater risk for each of the numbers of episodes and methods of attempting suicide studied. As can also be seen, the risk of each of these parameters of suicide attempts declined significantly over time for subjects in both groups.

Of the 230 borderline patients with a lifetime history of attempting suicide, the mean age of their first attempt was 19.0 (SD=6.8). The mean age of the 35 axis II comparison subjects with a history of attempting suicide was slightly but significantly older (23.9 [SD=9.8] ( $t=3.75$ ,  $df=263$ ,  $p<001$ ).

Table 3 details the prevalence of four patterns of physically self-damaging acts over time. As can be seen, the two study groups reported strikingly different patterns of physically self-destructive acts at baseline. More specifically, almost three-quarters of borderline patients had a history of both self-mutilation and attempting suicide by the time of their index admission, about 17% had a history of self-mutilation but not suicide attempts, about 6% had a history of suicide attempts but not self-mutilation, and about 4% had neither engaged in self-mutilation nor made a suicide attempt. In contrast, a third of axis II comparison subjects had never engaged in physically self-destructive behavior, about a third had attempted suicide but not engaged in self-mutilation, about 18% had engaged in self-mutilation but not attempted suicide, and about 17% had engaged in both forms of physically self-destructive behavior. Over time, borderline patients were found to be at significantly greater risk for having a pattern of engaging in both self-mutilation and suicide attempts. They were also at significantly greater risk for engaging in only self-mutilation (but not suicide attempts alone) and at significantly lower risk for engaging in no form of physically self-destructive behavior. For both groups of subjects, the risk of engaging in no form of physically self-destructive behavior increased significantly over time, while the risk of the other three patterns declined significantly over time.

## Discussion

Three main findings have emerged from this study. The first is that most borderline patients reported a pattern of physically self-destructive acts prior to their index admission. More specifically, 90% reported a baseline history of self-mutilation and 79% reported a baseline history of suicide attempts. In addition, the majority of borderline patients had engaged in multiple episodes of self-mutilation (89%) and had made multiple suicide attempts (60%). Our results pertaining to rates of lifetime suicide attempts (1-13) and multiple suicide attempts (1, 9) are consistent with the results of earlier studies. However, the rate of lifetime self-mutilation found in the current study is higher than the rates found in earlier studies (1, 2, 6-8, 10, 12-15). The rate of multiple episodes of self-mutilation is also higher than the rate found in one (2) of the two earlier studies (1, 2) that assessed the frequency of self-mutilation. Finally, it should be noted that the mean age of first self-mutilation and first suicide attempt reported by borderline patients is younger than the mean ages reported in the two earlier studies that assessed age of onset (1, 11).

The reason or reasons for these differences are unclear. It may be that the use of a semistructured interview which specifically inquires about an extensive list of methods (and number of episodes) of self-mutilation led to a higher percentage of borderline patients

reporting a history of self-mutilation (and multiple episodes of self-mutilation) than studies that used less detailed and comprehensive methods of assessing the prevalence of self-mutilation. It may also be that the careful assessment of age of onset found in the LSDB led to a younger age of onset for episodes of self-mutilation and suicide attempts.

The second main finding is that borderline patients as a group reported a lifetime history of using a range of methods of mutilating themselves and attempting suicide. The most common methods of self-mutilation reported by borderline patients were cutting themselves, punching themselves, punching walls, and head banging. In terms of suicide attempts, the most common methods reported were overdosing and cutting themselves. All told, about 72% of borderline patients reported having a lifetime history of using multiple methods of self-mutilation and about 31% reported having a lifetime history of using multiple methods of attempting suicide.

The third main finding is that the prevalence of the various parameters of self-mutilation and suicide attempts reported by borderline patients declined significantly over time; five earlier follow-up studies also finding declining rates of self-mutilation (7) and/or suicide attempts (5-7, 16, 17). However, the various parameters of these two forms of self-harming behavior remained significantly more common among borderline patients than axis II comparison subjects. During the ninth and tenth years post index admission, less than 18% of borderline patients reported engaging in self-mutilation and less than 13% reported two or more episodes. Only cutting remained relatively common (about 14%). In terms of suicide attempts, less than 13% of borderline patients reported making a suicide attempt and less than 5% reported two or more attempts. Only overdosing remained relatively common (about 8%). All told, about three-quarters of borderline patients reported neither mutilating themselves nor attempting suicide during the fifth follow-up period. This stands in sharp contrast to the 75% of borderline patients who had a history of deliberately physically self-destructive acts at baseline.

The reason for this dramatic decline in physically self-destructive acts among borderline patients is unclear. It might be due, at least in part, to treatment. We have previously found that a high percentage of borderline patients (and axis II comparison subjects) remain in outpatient psychotherapy and pharmacotherapy over the first six years of follow-up (26). More recently, we have found that 70% of borderline patients (and over 45% of axis II comparison subjects) were in therapy and taking standing medications during the eight and 10-year follow-up periods as well. However, it should be noted that less than 5% of these patients was ever in a form of psychotherapy with proven efficacy for treating these self-destructive acts and no medication has been proven to be particularly effective in decreasing these symptoms (27). This decline might also be due, at least in part, to maturation. In this view, borderline patients may have found more direct ways of expressing their pain and despair as they have grown older, they may be in less pain as time has progressed, or some combination of the two.

Whatever the reasons for this decline over time, it is clear that the rate of completed suicide among borderline patients (N=12, 4.1%) is substantially lower than the 9-10% found in earlier follow-back studies of the long-term course of BPD (12, 28). The reasons for this low rate of completed suicide too are unclear. It might be that the borderline patients in the study are receiving treatments more suited to their problems. It might also be that they are receiving less intensive but more long-term treatments. In any case, it is clear that the rates of suicide attempts reported by borderline patients are far higher than the rate of completed suicide. Some have taken this to mean that clinicians do not always have to hospitalize borderline patients who are acutely suicidal (29). Alternatively, it might be that brief

inpatient stays have helped many borderline patients successfully weather intense periods of suicidal ideation and emotional desperation.

This study has a number of limitations. The first is that all subjects were initially inpatients. It may well be that borderline patients who have never been hospitalized have less extensive histories of self-mutilation and suicide attempts. The second is that the subjects provided all of the information pertaining to self-destructive acts. Whether they were accurate historians, were exaggerating their histories, or minimizing them is unknown. The third is that the majority of the sample was in treatment and thus, the results may not generalize to untreated subjects.

Taken together, the results of this study suggest that borderline patients have a history of physically self-destructive acts that is more serious than previously known. They also suggest that the course of these physically self-destructive acts is more benign than previously recognized.

## Acknowledgments

Supported by NIMH grants MH47588 and MH62169.

## References

1. Dubo ED, Zanarini MC, Lewis RE, Williams AA. Childhood antecedents of self-destructiveness in borderline personality disorder. *Can J Psychiatry*. 1997; 42:63–69. [PubMed: 9040926]
2. Dulit RA, Fyer MR, Leon AC, Brodsky BS, Frances AJ. Clinical correlates of self-mutilation in borderline personality disorder. *Am J Psychiatry*. 1994; 152:1305–1311. [PubMed: 8067485]
3. Friedman RC, Aronoff MS, Clarkin JF, Corn F, Hurt SW. History of suicidal behavior in depressed borderline inpatients. *Am J Psychiatry*. 1983; 140:1023–1026. [PubMed: 6869585]
4. Fyer MR, Frances AJ, Sullivan T, Hurt SW, Clarkin J. Suicide attempts in patients with borderline personality disorder. *Am J Psychiatry*. 1988; 145:737–739. [PubMed: 3369563]
5. Mehlum L, Friis S, Vaglum P, Karterud S. The longitudinal pattern of suicidal behaviour in borderline personality disorder: a prospective follow-up study. *Acta Psychiatr Scand*. 1994; 90:124–130. [PubMed: 7976458]
6. Plakun EM. Narcissistic personality disorder. A validity study and comparison to borderline personality disorder. *Psychiatr Clin North Am*. 1989; 12:603–620. [PubMed: 2798199]
7. Sabo AN, Gunderson JG, Najavits LM, Chauncey D, Kisiel C. Changes in self-destructiveness of borderline patients in psychotherapy: a prospective follow-up study. *Nerv Ment Dis*. 1995; 183:370–376.
8. Shearer SL, Peters CP, Quayman MS, Wadman BE. Intent and lethality of suicide attempts among female borderline inpatients. *Am J Psychiatry*. 1988; 145:1424–1427. [PubMed: 3189601]
9. Soloff PH, Lis JA, Kelly T, Cornelius J, Ulrich R. Risk factors for suicidal behavior in borderline personality disorder. *Am J Psychiatry*. 1994; 151:1316–1323. [PubMed: 8067487]
10. Soloff PH, Lis JA, Kelly T, Cornelius J, Ulrich R. Self-mutilation and suicidal behavior in borderline personality disorder. *J Personal Disord*. 1994; 8:257–267.
11. Soloff PH, Lynch KG, Kelly TM, Malone KM, Mann JJ. Characteristics of suicide attempts of patients with major depressive episode and borderline personality disorder; a comparative study. *Am J Psychiatry*. 2000; 157:601–608. [PubMed: 10739420]
12. Stone, MH. *The Fate of Borderline Patients*. New York: Guilford Press; 1990.
13. Zanarini MC, Gunderson JG, Frankenburg FR, Chauncey DL. Discriminating borderline personality disorder from other Axis II disorders. *Am J Psychiatry*. 1990; 147:161–167. [PubMed: 2301653]
14. Zweig-Frank H, Paris J, Guzder J. Psychological risk factors for dissociation and self-mutilation in female patients with borderline personality disorder. *Can J Psychiatry*. 1994; 39:259–264. [PubMed: 8044740]

15. Zweig-Frank H, Paris J, Guzder J. Psychological risk factors and self-mutilation in male patients with BPD. *Can J Psychiatry*. 1994; 39:266–268. [PubMed: 8044741]
16. Antikainen R, Hintikka J, Lehtonen J, Koponen H, Arstila A. A prospective three-year follow-up study of borderline personality disorder inpatients. *Acta Psychiatr Scand*. 1995; 92:327–335. [PubMed: 8619336]
17. Yen S, Shea MT, Sanislow CA, Grilo CM, Skodol AE, Gunderson JG, McGlashan TH, Zanarini MC, Morey LC. Borderline personality disorder criteria associated with prospectively observed suicidal behavior. *Am J Psychiatry*. 2004; 161:1296–1298. [PubMed: 15229066]
18. Zanarini MC, Frankenburg FR, Hennen J, Silk KR. The longitudinal course of borderline psychopathology: 6-year prospective follow-up of the phenomenology of borderline personality disorder. *Am J Psychiatry*. 2003; 160:274–283. [PubMed: 12562573]
19. Spitzer RL, Williams JB, Gibbon M, First MB. Structured Clinical Interview for DSM-III-R (SCID). I: history, rationale, and description. *Arch Gen Psychiatry*. 1992; 49:624–629. [PubMed: 1637252]
20. Zanarini MC, Gunderson JG, Frankenburg FR, Chauncey DL. The Revised Diagnostic Interview for Borderlines: discriminating BPD from other Axis II disorders. *J Personal Disord*. 1989; 3:10–18.
21. Zanarini MC, Frankenburg FR, Chauncey DL, Gunderson JG. The Diagnostic Interview for Personality Disorders: inter-rater and test-retest reliability. *Compr Psychiatry*. 1987; 28:467–480. [PubMed: 3691072]
22. Zanarini MC, Frankenburg FR, Vujanovic AA. The inter-rater and test-retest reliability of the Revised Diagnostic Interview for Borderlines (DIB-R). *J Personal Disord*. 2002; 16:270–276.
23. Zanarini MC, Frankenburg FR. Attainment and maintenance of reliability of axis I and II disorders over the course of a longitudinal study. *Compr Psychiatry*. 2001; 42:369–374. [PubMed: 11559863]
24. Zanarini MC, Frankenburg FR, Ridolfi ME, Jager-Hyman S, Hennen J, Gunderson JG. Reported childhood onset of self-mutilation among borderline patients. *J Personal Disord*. 2006; 20:9–15.
25. Hollingshead, AB. Two factor index of social position. New Haven, CT: Yale University; 1957.
26. Zanarini MC, Frankenburg FR, Hennen J, Silk KR. Mental health service utilization of borderline patients and axis II comparison subjects followed prospectively for six years. *J Clin Psychiatry*. 2004; 65:28–36. [PubMed: 14744165]
27. Zanarini MC. Update on pharmacotherapy of borderline personality disorder. *Current Psychiatry Reports*. 2004; 6:55–70.
28. Paris J, Zweig-Frank H. A 27-year follow-up of patients with borderline personality disorder. *Compr Psychiatry*. 2001; 42:482–487. [PubMed: 11704940]
29. Paris J. Is hospitalization useful for suicidal patients with borderline personality disorder. *J Personal Dis*. 2004; 18:240–247.

### Significant Outcomes

- At baseline, over 70% of borderline patients reported a lifetime history of multiple episodes and methods of self-mutilation, 60% reported multiple suicide attempts, and over 30% reported multiple methods of attempting suicide.
- By the time of the fifth follow-up, less than 15% of borderline patients reported multiple acts or methods of either form of physically self-destructive behavior.
- Frequent self-mutilation and suicide attempts were uncommon at baseline and basically nonexistent by the time of the fifth follow-up period among axis II comparison subjects.



### Limitations

- The subjects provided all of the information pertaining to self-destructive acts.
- All subjects were initially inpatients and thus, the results of this study may not apply to less seriously ill outpatients.
- The majority of the sample was in treatment and thus, the results may not generalize to untreated subjects.

**Table 1**  
Phenomenology of Self-mutilation of Borderline Patients and Axis II Comparison Subjects Followed Prospectively for Ten Years

	Borderline Patients (%/N)										Axis II Comparison Subjects (%/N)										RRR Diagnosis Time Interaction	95%CI Diagnosis Time
	BL (N=290)	2 Yr FU (N=275)	4 Yr FU (N=269)	6 Yr FU (N=264)	8 Yr FU (N=255)	10 Yr FU (N=251)	BL (N=72)	2 Yr FU (N=67)	4 Yr FU (N=64)	6 Yr FU (N=63)	8 Yr FU (N=61)	10 Yr FU (N=60)										
Any Self-mutilation	90.3 (262)	50.9 (140)	35.3 (95)	28.4 (75)	22.4 (57)	17.5 (44)	34.7 (25)	13.4 (9)	3.1 (2)	1.6 (1)	3.3 (2)	1.7 (1)	2.87	1.93-4.26								
Number of Episodes																						
2 or More	88.6 (257)	46.2 (127)	32.0 (86)	25.8 (68)	18.0 (46)	12.9 (32)	26.4 (19)	9.0 (6)	1.6 (1)	1.6 (1)	3.3 (2)	1.7 (1)	4.12	2.80-6.07								
5 or More	78.6 (228)	39.3 (108)	26.0 (70)	20.1 (53)	12.6 (32)	9.2 (23)	20.8 (15)	1.5 (1)	1.6 (1)	1.6 (1)	1.6 (1)	0.0 (0)	5.21	3.41-7.96								
10 or More	68.6 (199)	33.1 (91)	17.8 (48)	14.8 (39)	11.4 (29)	6.4 (16)	11.1 (8)	1.5 (1)	0.0 (0)	1.6 (1)	1.6 (1)	0.0 (0)	8.41	4.54-15.59								
25 or More	51.2 (149)	20.4 (56)	13.0 (35)	7.6 (20)	8.6 (22)	2.4 (6)	4.2 (3)	1.5 (1)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	13.47	5.13-35.36								
50 or More	39.3 (114)	14.9 (41)	10.0 (27)	5.7 (15)	6.3 (16)	2.0 (5)	4.2 (3)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.05	0.03-0.09								
Methods of Self-mutilation																						
Cutting	60.3 (175)	33.5 (92)	23.8 (64)	18.9 (50)	16.5 (42)	13.9 (35)	8.3 (6)	3.0 (2)	0.0 (0)	0.0 (0)	1.6 (1)	0.0 (0)	8.95	3.99-20.09								
Burning	27.2 (79)	13.1 (36)	10.0 (27)	7.6 (20)	3.9 (10)	4.4 (11)	2.8 (2)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	12.57	3.15-50.13								
Punching Self	42.1 (122)	14.2 (39)	8.9 (24)	6.8 (18)	3.6 (9)	1.2 (3)	11.1 (8)	3.0 (2)	1.6 (1)	1.6 (1)	1.6 (1)	1.7 (1)	0.12	0.07-0.21								
													4.68	2.53-8.66								

	Borderline Patients (%/N)							Axis II Comparison Subjects (%/N)							RRR Diagnosis Time Interaction	95%CI Diagnosis Time		
	BL (N=290)	2 Yr FU (N=275)	4 Yr FU (N=269)	6 Yr FU (N=264)	8 Yr FU (N=255)	10 Yr FU (N=251)	BL (N=72)	2 Yr FU (N=67)	4 Yr FU (N=64)	6 Yr FU (N=63)	8 Yr FU (N=61)	10 Yr FU (N=60)						
Hitting Walls	58.3 (169)	27.6 (76)	15.6 (42)	8.0 (21)	4.3 (11)	2.8 (7)	23.6 (17)	7.5 (5)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)				2.90	1.90-4.42	
Putting Hand through Windows	24.8 (72)	5.1 (14)	1.5 (4)	1.1 (3)	0.4 (1)	0.4 (1)	2.8 (2)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)				11.73	2.94-46.76	
Head Banging	47.2 (137)	22.9 (63)	14.5 (39)	7.2 (19)	3.5 (9)	1.2 (3)	12.5 (9)	1.5 (1)	1.6 (1)	1.6 (1)	0.0 (0)	0.0 (0)				4.57	2.46-8.46	
Other Forms of Self-mutilation	13.1 (38)	10.9 (30)	10.0 (27)	6.4 (17)	5.9 (15)	2.4 (6)	2.8 (2)	0.0 (0)	1.6 (1)	1.6 (1)	0.0 (0)	0.0 (0)				8.25	2.61-26.14	
Multiple Methods	71.7 (208)	34.9 (96)	22.7 (61)	16.3 (43)	9.4 (24)	5.6 (14)	16.7 (12)	1.5 (1)	1.6 (1)	1.6 (1)	0.0 (0)	0.0 (0)				0.26	0.15-0.45	
																	6.91	3.97-12.04
																	0.07	0.05-0.10

All p-values for diagnosis and time &lt;0.001;p-value for interaction term for any self-mutilation 0.014

**Table 2**  
Phenomenology of Suicide Attempts of Borderline Patients and Axis II Comparison Subjects Followed Prospectively for Ten Years

	Borderline Patients (%/N)										Axis II Comparison Subjects (%/N)										95% CI Diagnosis Time
	BL (N=290)	2 Yr FU (N=275)	4 Yr FU (N=269)	6 Yr FU (N=264)	8 Yr FU (N=255)	10 Yr FU (N=251)	BL (N=72)	2 Yr FU (N=67)	4 Yr FU (N=64)	6 Yr FU (N=63)	8 Yr FU (N=61)	10 Yr FU (N=60)	RRR Diagnosis Time								
Any Suicide Attempt	79.3 (230)	34.2 (94)	20.1 (54)	16.7 (44)	14.1 (36)	12.8 (32)	48.6 (35)	4.5 (3)	3.1 (2)	1.6 (1)	3.3 (2)	3.3 (2)	2.13	1.63-2.77							
Number of Attempts													0.08	0.05-0.11							
2 or More	60.0 (174)	17.8 (49)	10.4 (28)	7.2 (19)	6.7 (17)	4.8 (12)	16.7 (12)	3 (2)	1.6 (1)	0.0 (0)	3.3 (2)	0.0 (0)	4.07	2.39-6.93							
5 or More	32.1 (93)	6.2 (17)	1.9 (5)	1.5 (4)	1.2 (3)	0.8 (2)	2.8 (2)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	13.22	3.32-52.63							
Methods of Attempting Suicide													0.00	0.00-0.02							
Overdosing	52.1 (151)	27.6 (76)	14.5 (39)	13.6 (36)	9.8 (25)	7.6 (19)	25.0 (18)	3.0 (2)	1.6 (1)	1.6 (1)	3.3 (2)	1.7 (1)	2.80	1.90-4.13							
Cutting	20.7 (60)	4.7 (13)	3.7 (10)	1.9 (5)	2.4 (6)	2.8 (7)	11.1 (8)	0.0 (0)	1.6 (1)	0.0 (0)	1.6 (1)	1.7 (1)	2.45	1.30-4.63							
Hanging	7.6 (22)	3.6 (10)	2.2 (6)	1.9 (5)	0.8 (2)	1.2 (3)	2.8 (2)	1.5 (1)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.05	0.02-0.13							
Walking into traffic	7.6 (22)	1.1 (3)	0.7 (2)	0.0 (0)	0.0 (0)	0.0 (0)	1.4 (1)	1.5 (1)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	3.12	0.42-23.43							
Suffocation	4.8 (14)	2.6 (7)	0.4 (1)	1.1 (3)	0.8 (2)	0.8 (2)	2.8 (2)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	2.86	0.73-11.27							
Other Methods of Attempting Suicide	19.7 (57)	8.7 (24)	4.5 (12)	1.5 (4)	3.1 (8)	2.4 (6)	6.9 (5)	1.5 (1)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	3.69	1.49-9.15							
													0.06	0.03-0.13							

	Borderline Patients (%/N)						Axis II Comparison Subjects (%/N)						RRR Diagnosis Time	95% CI Diagnosis Time
	BL (N=290)	2 Yr FU (N=275)	4 Yr FU (N=269)	6 Yr FU (N=264)	8 Yr FU (N=255)	10 Yr FU (N=251)	BL (N=72)	2 Yr FU (N=67)	4 Yr FU (N=64)	6 Yr FU (N=63)	8 Yr FU (N=61)	10 Yr FU (N=60)		
Multiple Methods	30.7 (89)	12.0 (33)	4.8 (13)	3.0 (8)	2.4 (6)	1.6 (4)	6.9 (5)	1.5 (1)	0.0 (0)	0.0 (0)	1.6 (1)	0.0 (0)	6.56	2.65-16.24
													0.02	0.01-0.04

All p-values for time <0.001. P-values for diagnosis <0.001 except for cutting (0.006), hanging (0.023), walking into traffic (NS), suffocation (NS), and other methods of attempting suicide (0.002).

**Table 3**  
 Different Patterns of Physically Self-destructive Acts of Borderline Patients and Axis II Comparison Subjects Followed Prospectively for Ten Years

	Borderline Patients (%/N)										Axis II Comparison Subjects (%/N)									
	BL (N=290)	2 Yr FU (N=275)	4 Yr FU (N=269)	6 Yr FU (N=264)	8 Yr FU (N=255)	10 Yr FU (N=249)	BL (N=72)	2 Yr FU (N=67)	4 Yr FU (N=64)	6 Yr FU (N=63)	8 Yr FU (N=61)	10 Yr FU (N=60)	RRR Diagnosis Time	95% CI Diagnosis Time						
Both Self-mutilation and Suicide Attempts	73.5 (213)	24.4 (67)	16.0 (43)	11.0 (29)	7.1 (18)	6.8 (17)	16.7 (12)	1.5 (1)	0.0 (0)	0.0 (0)	1.6 (1)	0.0 (0)	5.57	3.36-9.23						
Only Self-mutilation	16.9 (49)	26.6 (73)	19.3 (52)	17.4 (46)	15.3 (39)	10.8 (27)	18.1 (13)	11.9 (8)	1.6 (1)	1.6 (1)	1.6 (1)	1.7 (1)	2.29	1.47-3.59						
Only Suicide Attempts	5.9 (17)	9.8 (27)	4.1 (11)	5.7 (15)	7.1 (18)	6.0 (15)	31.9 (23)	3.0 (2)	1.6 (1)	1.6 (1)	1.6 (1)	3.3 (2)	0.45	0.37-0.74						
Neither Self-mutilation nor Suicide Attempts	3.8 (11)	39.3 (108)	60.1 (163)	65.9 (174)	70.6 (180)	76.3 (190)	33.3 (24)	83.6 (56)	93.8 (60)	96.8 (61)	95.1 (58)	95.0 (57)	0.85	0.78-0.93						
													2.44	2.21-2.69						

Diagnosis is not significant for only suicide attempts. All other p-values <0.001.