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Rates of Psychiatric Treatment Reported by Patients with Borderline Personality Disorder and Other Personality Disorders over 16 Years of Prospective Follow-up

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Abstract

Objective—The goal of this study was to delineate the course of 16 treatment modalities reported by 290 patients with borderline personality disorder and 72 with other axis II disorders over 16 years of prospective follow-up.

Methods—Treatment use was assessed at baseline and at eight two-year follow-up periods using a semistructured interview of proven reliability and validity.

Results—Patients with borderline personality disorder reported significantly higher rates of use of 12 of the 16 treatment modalities studied. Only individual therapy, intensive individual therapy, couples/family therapy, and ECT were used by roughly the same percentage of patients with borderline personality disorder and those with other axis II disorders. In addition, rates of participation in 13 treatment modalities declined significantly over the first eight years of follow-up for those in both treatment groups. However, the rates of participation in 15 of 16 treatment modalities did not decline significantly over the second eight years of follow-up for those in either study group

Conclusions—The results of this study suggest that rates of treatment use by patients with borderline personality disorder decline significantly over the short and midterm. They also suggest that these rates remain stable or fail to decline further over the longer term.

Clinical experience suggests that patients with borderline personality disorder are more likely to have a history of both outpatient and inpatient psychiatric treatment than patients with other psychiatric diagnoses. Five cross-sectional studies have confirmed this impression (1-5). Two of these studies have also followed their sample of borderline patients and comparison participants longitudinally. In a three-year prospective study from the Collaborative Longitudinal Personality Disorders Study, Bender et al. (6) found that patients with borderline personality disorder were significantly more likely than those with major depression and no serious axis II psychopathology to have been in individual therapy, taken psychotropic medication, had an emergency room visit, and been hospitalized for psychiatric reasons. In a six-year prospective study, Zanarini et al. (7) found that borderline patients who had been hospitalized at the start of this study—the McLean Study of Adult Development—were significantly more likely than those with other axis II disorders to have

participated in 11 of the 16 treatment modalities studied. These investigators also found that participation in 12 of the 16 treatment modalities studied declined significantly over time for those in both study groups.

Treatment utilization of this sample was also studied after 10 years of prospective follow-up (8). Only three modalities were studied: individual therapy, standing medication, and psychiatric hospitalization. It was found that over 40% of patients with borderline personality disorder did not use individual therapy or standing medications for at least one two-year follow-up period. However, over 60% of these patients resumed these treatments at a later time period. It was also found that over 80% of patients with borderline personality disorder were not rehospitalized during at least one two-year follow-up period. However, almost half of these patients were later hospitalized for psychiatric reasons.

The current study builds upon these earlier McLean Study of Adult Development studies in three important ways. First, it returns to the inclusive list of treatment modalities assessed in the first of these two longitudinal studies. Second, it adds an additional decade of prospective follow-up to the study of this inclusive list of 16 treatment modalities. Third, it assesses time trends encompassing the first and second eight years of follow-up separately—allowing us to determine the significance of short and midterm declines in use vs. further long-term declines in participation in the 16 treatment modalities studied.

Methods

As noted above, the current study is part of the McLean Study of Adult Development, a multifaceted longitudinal study of the course of borderline personality disorder. The methodology of this study, which was reviewed and approved by the McLean Hospital Institutional Review Board, has been described in detail elsewhere (9). Briefly, all subjects were initially inpatients at McLean Hospital in Belmont, Massachusetts. Each patient was screened to determine that he or she: was between the ages of 18-35; had a known or estimated IQ of 71 or higher; had no history or current symptomatology of schizophrenia, schizoaffective disorder, bipolar I disorder, or an organic condition that could cause serious psychiatric symptoms (e.g., lupus, MS); and was fluent in English.

After the study procedures were explained, written informed consent was obtained. Each patient then met with a masters-level interviewer blind to the patient's clinical diagnoses for a thorough treatment history as well as diagnostic assessment. Four semistructured interviews were administered: the Background Information Schedule, which assesses lifetime psychiatric treatment history (5); the Structured Clinical Interview for DSM-III-R Axis I Disorders (10); the Revised Diagnostic Interview for Borderlines (11), and the Diagnostic Interview for DSM-III-R Personality Disorders (12). The interrater reliability of the Background Information Schedule was carefully assessed in a sample of 45 personality-disordered patients and was found to be good-excellent (5). As a measure of validity, we compared self-report of treatment history according to this interview with the medical records of 15 patients who had received all of their psychiatric care at McLean Hospital. Convergent validity was also found to be good-excellent (5). In addition, the inter-rater and

test-retest reliability of all three diagnostic measures have been found to be good-excellent (13,14).

The psychiatric treatments used by study participants over the years of follow-up were assessed using the treatment section of the Revised Borderline Follow-up Interview (15)—the follow-up analog to the Background Information Schedule. This measure, as well as our diagnostic battery, was readministered every two years over 16 years of prospective follow-up by raters blind to previously collected information. 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 four interviews have also been found to be good-excellent (7,13,14).

The vast majority of our follow-up interviews were conducted within several months of the date of each participant's last interview. However, two participants who were unavailable for interview at 12 and 14-year waves of data collection provided six years of data at 16-year follow-up. A third participant who was unavailable for interview at 8, 10, 12, and 14-year waves of data collection provided 10 years of data at 16-year follow-up. All told, eight of 2881 interviews (or .3%) assessed a longer time period than our typical two years.

Statistical Analyses

Data on psychiatric treatment were assembled in panel format (i.e., multiple records per patient, with one record for each follow-up period for which data were available). Generalized estimating equations (GEE), appropriately accounting for repeated measures on the same patients, were used to fit loglinear regression models assessing the role of diagnostic group on the prevalence of treatment use over time. Specifically, these analyses modeled the log prevalence as a piecewise-linear function of time, with separate slopes for the change from baseline to 8 year follow-up and for the corresponding change from 8 to 16 year follow-up; the models also included the effect of diagnostic group. Preliminary tests of diagnostic group by time interactions were also conducted to assess whether the pattern of change in prevalence differed by diagnostic group. As there was no evidence of interaction, main effects of diagnostic group and time are reported; results of these analyses yielded an adjusted relative risk ratio (RRR) and 95% confidence interval (95%CI) for diagnostic group and the two time trends. Given the large number of comparisons for the 16 treatment modalities, we applied the Bonferroni correction for multiple comparisons to the analysis of each treatment modality, resulting in the following corrected alpha level: .0031 (.05/16).

Results

The sample and its diagnostic characteristics have been described before (9). Two hundred and ninety patients met both Revised Diagnostic Interview for Borderlines and DSM-III-R criteria for borderline personality disorder and 72 met DSM-III-R criteria for at least one nonborderline axis II disorder (and neither criteria set for borderline personality disorder). Of these 72 comparison participants, three (4%) met DSM-III-R criteria for an odd cluster personality disorder, 24 (33%) met DSM-III-R criteria for an anxious cluster personality disorder, 13 (18%) met DSM-III-R criteria for a nonborderline dramatic cluster personality

disorder, and 38 (53%) met DSM-III-R criteria for personality disorder not otherwise specified (which was operationally defined in the Revised Diagnostic Interview for Personality Disorders 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 also been reported before (9). Briefly, 279 (77%) of the participants were female and 315 (87%) were white. The average age of the participants was 27 years ($SD=6.3$), the mean socioeconomic status was 3.3 ($SD=1.5$) (where 1=highest and 5=lowest), 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, which has also been described before (16), 231/264 (88%) of surviving patients with borderline personality disorder (13 died by suicide and 13 died of other causes) were reinterviewed at all eight follow-up waves. A similar rate of participation was found for axis II comparison participants, with 58/70 (83%) of surviving patients in this study group (one died by suicide and one died of other causes) being reassessed at all eight follow-up waves.

Table 1 details the rates of outpatient treatments as well as more intensive treatments, such as psychiatric hospitalizations, reported by those in our study groups over 16 years of prospective follow-up. As can be seen, patients with borderline personality disorder were not significantly more likely to report being in individual therapy, intensive individual therapy, or couples/family therapy than those with other axis II disorders. However, they were significantly more likely to report being in group therapy and self-help groups. They were also significantly more likely to report taking any standing medication, all forms of polypharmacy studied (2-5 standing medications), and all forms of more intensive treatment studied except ECT (day treatment, residential treatment, psychiatric hospitalizations, multiple psychiatric hospitalizations, and hospitalizations lasting 30 days or more). During the first 8 years of follow-up (0-8 years), reported rates of all forms of treatment were found to decline significantly for those in both study groups except taking four or five or more concurrent medications and ECT. Conversely, during the last eight years of follow-up (8-16 years), reported rates of almost all forms of treatment remained relatively flat or stable over time for both study groups; the only exception was the rate of 30 days or more of psychiatric hospitalization, which continued to decline significantly for those in both study groups.

As these results are complicated, we present two examples from Table 1 so that they can be better understood. As noted above, the rates of reported individual therapy were not significantly different between the diagnostic groups over time. However, there was a significant decline in the rates during the first eight years of follow-up that was the same for those in both study groups; specifically, there was a 29% decline ($[1 - .71] \times 100\%$) in the rates from baseline to year eight in both groups. Thereafter, during years 8-16, there was no significant change in the rates in both groups. As also noted above, patients with borderline personality disorder reported significantly higher rates (2.3 times higher) of 30 days or more of psychiatric hospitalization than axis II comparison participants over time. However, the significant declines in the reported rates were the same for those in both diagnostic groups

$([1-.14] \times 100\% = 86\%$ decline in years 0-8, followed by $[1-.39] \times 100\% = 61\%$ decline in years 8-16.

Discussion

Three main findings have emerged from this study. The first is that patients with borderline personality disorder reported significantly higher rates of use of 12 of the 16 treatment modalities studied—all but individual therapy, intensive individual therapy, couples/family therapy, and ECT. Or looked at another way, all forms of pharmacotherapy and more intensive treatment studied (e.g., psychiatric hospitalizations, day treatment) were reported by a significantly higher percentage of patients with borderline personality disorder than those with other axis II disorders over time. This finding is consistent with our results at study entry (5) and over six years of prospective follow-up (7). It also highlights the consistent severity of borderline psychopathology compared to that of other personality disorders (17). In addition, it is consistent with the higher rates of co-occurring disorders reported by patients with borderline personality disorder than axis II comparison participants over time (18,19).

The second main finding is that rates of participation in 13 treatment modalities declined significantly over the first eight years of follow-up for those in both treatment groups. Only the rates of four or five concurrent medications and ECT remained stable over these eight years. This finding too is consistent with the results we found at six-year follow-up (7).

The third main finding is that the rates of participation in 15 of 16 treatment modalities did not continue to decline significantly over the second eight years of follow-up for those in either study group. Only the rate of hospitalizations of 30 days or more declined significantly from 8-16 years of follow-up for those in both study groups. This is a new finding and an important one with public health significance. It suggests that the cost of treating patients with borderline personality disorder declines in the short and midterms, but is relatively stable in the longer term. For example, 97% reported participating in individual therapy at study entry and this rate declined significantly to 73% at eight-year follow-up. However, this 73% only declined to 65% at 16-year follow-up. This same pattern was also found, for another example, with any standing medication. More specifically, 84% of patients with borderline personality disorder reporting taking a standing medication at study entry and this rate declined significantly to 71% over the first eight years of follow-up. However, this rate remained a steady 71% over the second eight years of follow-up. As a third example, 79% of patients with borderline personality disorder had a history of prior hospitalizations at baseline and the rate of hospitalizations declined significantly to 28% at eight-year follow-up. However, this 28% rate only declined to 24% by the time of the 16-year follow-up.

While the rates of these three major treatment modalities have substantially declined for patients with borderline personality disorder over time, the fact that they have barely declined in the second eight years of follow-up suggests that these may be chronic rates of treatment going forward. The good news in terms of cost is the relatively low rate of psychiatric hospitalizations at 16-year follow-up (24%). In a similar vein, only 15% of

patients with borderline personality disorder had multiple hospitalizations, while only 4% spent 30 days or more in a psychiatric inpatient unit.

However, the question remains if these rates will remain stable going forward or if there is anything clinicians or the health care system can do or would want to do to lower these rates further. It may be that these rates at 16-year follow-up of individual therapy (65%) and standing medication (71%) are helping patients with borderline personality disorder stay out of the hospital. And the rate of more costly forms of these outpatient modalities has also dropped. More specifically, the rate of intensive individual therapy dropped from 36% to 13%, and the rate of aggressive polypharmacy (three or more concurrent medications) dropped from 46% to 36%.

However, the relatively high percentages of patients who reported that they were using individual therapy and standing medications over the second eight years of follow-up is striking, particularly given the high rates of sustained remissions found over the 16 years of follow-up (16). For example, 99% of patients with borderline personality disorder reported a two-year remission, 95% reported a four-year remission, and 90% reported a six-year remission. It may be that these patients were dealing with residual symptoms of borderline personality disorder, particularly the less dramatic or temperamental symptoms (e.g., anxiety, abandonment concerns, undue dependency) that have been found to resolve more slowly than the acute symptoms of this disorder (e.g. self-harm, suicide attempts, quasi-psychotic thought) (17). It may also be that these patients were being treated for axis I disorders that had never remitted or recurred (18).

The main limitation of this study is that all of the patients with borderline personality disorder were severely ill inpatients at the time of study entry. The rates of treatment use might be substantially lower for those with borderline personality disorder who have never been hospitalized and/or never been in psychiatric treatment. This same limitation applies to axis II comparison participants as well. In addition, reported rates of many forms of more intensive treatments (e.g., residential treatment, 30 days or more of psychiatric hospitalization) were very low for axis II comparison subjects during the last eight years of follow-up; consequently, due to sparseness of data, extra caution is required when interpreting results from our regression analyses for these particular treatments.

It is worth noting that most study participants were treated in the community. Psychotherapy was mostly provided by hundreds of community-based psychologists and social workers located throughout the US. In addition, these therapies were mostly supportive in nature and almost none were empirically based (20-24). Medications were prescribed by psychiatrists in general practice or, increasingly, by primary care physicians.

Acknowledgments

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Table 1

Rates of Psychiatric Treatment Reported by Borderline Patients and Axis II Comparison Subjects over 16 Years of Prospective Follow-up

	BL		2 YR FU		4 YR FU		6 YR FU		8 YR FU		10 YR FU		12 YR FU		14 YR FU		16 YR FU		RRR Diagnosis Time (0-8) Time (8-16)	95%CI Diagnosis Time (0-8) Time (8-16)	P-value Diagnosis Time (0-8) Time (8-16)
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%			
Outpatient Psychosocial Treatments																					
Individual Therapy																					
BPD	279	97	257	93	211	78	197	75	186	73	181	73	167	68	154	65	149	65	1.06 .71 .91	99-1.14 .66-.76 .84-1.00	NS <0.001 NS
OPD	62	86	59	88	42	66	40	64	28	45	27	44	36	60	28	48	32	55			
Intensive Psychotherapy (>=2 sessions per wk)																					
BPD	105	36	102	37	63	23	42	16	44	17	40	16	33	14	33	14	30	13	1.78 .40 .86	1.13-2.78 .31-.51 .63-1.16	NS <0.001 NS
OPD	14	19	13	19	6	9	7	11	4	7	5	8	5	8	4	7	5	9			
Group Therapy																					
BPD	105	36	63	23	46	17	32	12	35	14	24	10	29	12	33	14	17	7	1.78 .29 1.06	1.23-2.59 .22-.39 .71-1.61	.002 <0.001 NS
OPD	13	18	4	6	4	6	4	6	2	3	0	0	3	5	3	5	6	10			
Couples/Family Therapy																					
BPD	112	39	53	19	30	11	22	8	25	10	19	8	19	8	17	7	12	5	1.23 .19 1.07	.87-1.73 .13-.27 .65-1.78	NS <0.001 NS
OPD	21	29	9	13	6	9	4	6	5	8	4	7	5	8	4	7	5	9			
Self-help Groups																					
BPD	148	51	80	29	68	25	54	21	41	16	36	15	36	15	35	15	34	15	1.86 .31 1.05	1.30-2.65 .24-.41 .77-1.43	.001 <0.001 NS
OPD	23	32	11	16	6	9	8	13	7	11	7	12	6	10	7	12	6	10			
Standing Medications																					
Any Standing Medication																					
BPD	244	84	237	86	204	76	187	71	180	71	179	72	183	75	172	72	165	71	1.29 .81 1.03	1.13-1.48 .75-.88 .95-1.11	<0.001 <0.001 NS
OPD	44	61	52	78	34	53	34	54	30	48	32	53	35	58	30	51	30	52			
Two or More Concurrent Medications																					
BPD	190	66	176	64	149	55	130	49	134	53	130	52	121	50	119	50	119	52	2.10 .75 1.05	1.60-2.76 .66-.84 .93-1.18	<0.001 <0.001 NS
OPD	18	25	28	42	16	25	12	19	10	16	17	28	17	28	16	27	19	33			
Three or More Concurrent Medications																					

	BL		2 YR FU		4 YR FU		6 YR FU		8 YR FU		10 YR FU		12 YR FU		14 YR FU		16 YR FU		RRR Diagnosis Time (0-8) Time (8-16)	95%CI Diagnosis Time (0-8) Time (8-16)	P-value Diagnosis Time (0-8) Time (8-16)
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%			
Four or More Concurrent Medications																					
BPD	83	29	62	23	58	22	46	17	55	22	53	21	43	18	51	21	43	19	4.65	2.54-8.51	<0.001
OPD	1	1	6	9	5	8	1	2	0	0	3	5	3	5	4	7	4	7	.72	.56-.93	NS
																			1.06	.82-1.38	NS
Five or More Concurrent Medications																					
BPD	52	18	32	12	27	10	25	10	25	10	26	10	19	8	19	8	16	7	8.37	2.89-24.2	<0.001
OPD	1	1	1	2	2	3	0	0	0	0	1	2	1	2	1	2	0	0	.58	.39-.85	NS
																			.81	.52-1.27	NS
More Intensive Treatments																					
Day Treatment																					
BPD	123	42	113	41	62	23	47	18	34	13	27	11	31	13	26	11	18	8	1.92	1.37-2.69	<0.001
OPD	14	19	20	30	5	8	4	6	2	3	1	2	3	5	2	3	1	2	.28	.22-.37	<0.001
																			.63	.43-.93	NS
Residential Treatment																					
BPD	107	37	78	28	32	12	26	10	25	10	12	5	16	7	13	6	10	4	3.94	2.25-6.91	<0.001
OPD	7	10	6	9	1	2	1	2	1	2	0	0	0	0	2	3	1	2	.19	.13-.27	<0.001
																			.74	.45-1.23	NS
Any Psychiatric Hospitalization																					
BPD	228	79	164	60	97	36	86	33	71	28	72	29	71	29	58	24	55	24	1.80	1.41-2.30	<0.001
OPD	36	50	15	22	9	14	9	14	7	11	2	3	7	12	3	5	5	9	.31	.26-.37	<0.001
																			.99	.80-1.21	NS
Multiple Hospitalizations																					
BPD	175	60	11	43	70	26	61	23	45	18	36	15	40	16	34	14	35	15	3.25	2.11-5.00	<0.001
OPD	15	21	7	11	5	8	2	3	3	5	0	0	5	8	1	2	2	4	.26	.20-.33	<0.001
																			.94	.70-1.27	NS
30 Days or More of Psychiatric Hospitalization																					
BPD	174	60	95	35	55	21	49	19	19	8	18	7	17	7	10	4	8	4	2.34	1.68-3.27	<0.001
OPD	21	29	9	13	2	3	2	3	2	3	0	0	1	2	0	0	0	0	.14	.11-.19	<0.001
																			.39	.22-.69	.001
ECT Treatment																					

	BL		2 YR FU		4 YR FU		6 YR FU		8 YR FU		10 YR FU		12 YR FU		14 YR FU		16 YR FU		RRR Diagnosis Time (0-8) Time (8-16)	95%CI Diagnosis Time (0-8) Time (8-16)	P-value Diagnosis Time (0-8) Time (8-16)
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%					
BPD	20	7	19	7	11	4	10	4	12	5	8	3	9	4	2	1	4	2	1.60	.81-3.15	NS
OPD	4	6	4	6	0	0	1	2	2	3	0	0	2	3	2	3	0	0	.54	.28-1.02	NS
																			.43	.20-.95	NS