

## Cognitive-Behavioral Treatment of Chronically Parasuicidal Borderline Patients

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• A randomized clinical trial was conducted to evaluate the effectiveness of a cognitive-behavioral therapy, ie, dialectical behavior therapy, for the treatment of chronically parasuicidal women who met criteria for borderline personality disorder. The treatment lasted 1 year, with assessment every 4 months. The control condition was "treatment as usual" in the community. At most assessment points and during the entire year, the subjects who received dialectical behavior therapy had fewer incidences of parasuicide and less medically severe parasuicides, were more likely to stay in individual therapy, and had fewer inpatient psychiatric days. There were no between-group differences on measures of depression, hopelessness, suicide ideation, or reasons for living although scores on all four measures decreased throughout the year.

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Approximately 11% of all psychiatric outpatients and 19% of psychiatric inpatients meet criteria for borderline personality disorder (BPD).<sup>1,2</sup> It is commonly assumed that psychosocial treatment in some form is necessary for these patients, even when potentially effective pharmacotherapy is instituted.<sup>3,4</sup> We have not located, however, any controlled, randomized treatment outcome studies that evaluated the effectiveness of psychosocial treatment of BPD. Results of uncontrolled longitudinal studies generally suggest a pessimistic prognosis.<sup>5</sup> This article describes the first controlled trial of the efficacy of a psychosocial treatment intervention with randomization to treatment and control groups.

Parasuicidal behavior (any intentional, acute self-injurious behavior with or without suicidal intent, including both suicide attempts and self-mutilative behaviors) is particularly prevalent among individuals who meet criteria for BPD.<sup>6,7</sup> The suicide rate among borderline patients who parasuicide is double that of nonparasuiciding pa-

tients with BPD.<sup>8</sup> Although a number of brief studies have suggested that psychosocial interventions might effectively reduce parasuicidal behavior,<sup>9</sup> none have focused specifically on parasuicidal patients who meet criteria for BPD. Other studies, however, have suggested that treatments that are effective on patients without concomitant personality disorders are not as effective when applied to similar patients with personality disorders.<sup>10,11</sup>

One of us (M.M.L.)<sup>12-14</sup> has developed a behaviorally oriented outpatient psychotherapy called dialectical behavior therapy (DBT), which is designed specifically for chronically parasuicidal individuals with conditions diagnosed as BPD. Treatment goals are hierarchically ordered by importance as follows: (1) reduction of parasuicide and life-threatening behaviors, (2) reduction of behaviors that interfere with the process of therapy, and (3) reduction of behaviors that seriously interfere with the quality of life. Both parasuicidal<sup>15</sup> and borderline<sup>16</sup> patients are notorious for early therapy attrition, which is an obvious example of therapy-interfering behavior. Extended or repeated hospitalizations, common among patients with BPD,<sup>8</sup> are examples of behavior interfering with the quality of life. In addition to a reduction in parasuicide, lower attrition rates and decreased frequency and duration of psychiatric hospitalizations are therefore measures of treatment success.

Both parasuicide and BPD are more prevalent among women.<sup>16,17</sup> To decrease heterogeneity in our sample, we included only women in the study. Because the experimental treatment lasted 1 year, selection of an appropriate control group posed a difficult dilemma. A no-treatment control group is unethical and impractical for suicidal people, and no reference psychotherapy with empirically demonstrated efficacy exists to use as a comparison treatment. A solution was to compare DBT with "treatment as usual" in the community, a procedure recommended by Teasdale et al.<sup>18</sup> Such a group allowed a naturalistic, 1-year follow-up of the progress of parasuicidal patients with BPD in the community after an index parasuicide episode.

### SUBJECTS AND METHODS

#### Subjects

Subjects were clinically referred and gave voluntary written informed consent. Potential subjects were screened with a clinical interview plus three semistructured interviews with the use

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of the Diagnostic Interview for Borderlines,<sup>19</sup> the Schizophrenia and Substance Abuse subsections of the National Institute of Mental Health Diagnostic Interview Schedule,<sup>20</sup> and the Parasuicide History Interview (PHI).<sup>21</sup> Subjects who met the following selection criteria were admitted to the study: (1) scored at least 7, out of a maximum score of 10 on the Diagnostic Interview for Borderlines and met DSM-III criteria for BPD; (2) had at least two incidents of parasuicide in the last 5 years, with one during the last 8 weeks; (3) did not meet DSM-III criteria for schizophrenia, bipolar disorder, substance dependence, or mental retardation; (4) were between the ages of 18 and 45 years; and (5) agreed to the study conditions, including termination from other individual psychotherapy if assigned to DBT. Subjects were matched on the number of lifetime parasuicides and psychiatric hospitalizations, age, and good vs poor clinical prognosis (with a subthreshold diagnosis on schizophrenia or substance dependence constituting poor prognosis) and randomly assigned to a treatment condition. Ten subjects dropped out of the study during the pretreatment assessment (subjects assigned to DBT = 5, control subjects = 5); seven subjects were dropped following pretreatment assessment for refusal or inability to meet study conditions (subjects assigned to DBT = 3, control subjects = 4). Two subjects who were assigned to DBT quit the study with four or fewer DBT sessions and were dropped from all analyses other than treatment maintenance analyses. Thus, major analyses were conducted for 22 subjects who were assigned to DBT and 22 control subjects.

### Treatments

**DBT.**—Dialectical behavior therapy is a manualized treatment that combines treatment strategies from behavioral, cognitive, and supportive psychotherapies and was administered according to the treatment manual.<sup>22</sup> It includes concomitant, weekly individual and group therapy that is conducted for 1 year. Individual DBT applies directive, problem-oriented techniques (including behavioral skill training, contingency management, cognitive modification, and exposure to emotional cues) that are balanced with supportive techniques, such as reflection, empathy, and acceptance. Behavioral goals in DBT are prioritized according to importance. The problem focus of each individual DBT session is jointly determined by this hierarchy and the patient's behavior in each targeted area since the last session. For example, if parasuicide acts or high-risk suicide threats occurred since the previous session, the first task of the session is to apply problem-solving strategies to that specific behavior pattern. An exhaustive description of the moment-to-moment chain of environmental and behavioral events that preceded the suicidal behavior is elicited, alternate solutions that the individual could have used are explored, behavioral deficits as well as factors that interfere with more adaptive solutions are examined, and remedial procedures are applied as necessary. If no parasuicidal behavior occurred, but behavior that interferes with therapy, such as noncompliance, occurred, then that behavior is the focus, and so on. Both between and during sessions, the therapist actively teaches and reinforces adaptive behaviors, especially as they occur within the therapeutic relationship, and the therapist consistently withholds reinforcement for behaviors that are targeted for change. The emphasis is on teaching patients how to manage emotional trauma rather than reducing or taking them out of crises. Individual therapy was scheduled for weekly 1-hour sessions, starting within 1 week of pretreatment. Telephone contact with the individual therapist between sessions is part of DBT procedures. Individual therapists were five psychologists (including M.M.L., A.S., and D.A.), one postinternship clinical psychology graduate student, and one psychiatrist.

Group therapy met once each week for 2½ hours and followed a psychoeducational format. Behavioral skills in three main areas were taught as follows: (1) interpersonal skills, (2) distress tolerance/reality acceptance skills, and (3) emotion regulation skills. Group therapists did not accept telephone calls from patients, and patient crises were referred to the individual therapist.

The group therapy was carried out by cotherapy teams of experienced graduate psychology students, therapists with master's level training, and clinical psychologists.

Subjects consented before beginning the study to taper off psychotropic medications. Once in the study, however, failure to terminate or resuming use of these medications was not cause for termination from the treatment study. This strategy was adopted because, in pilot work, every subject lied about drug use to avoid being terminated from therapy. Dialectical behavior therapy was supervised by the senior author (M.M.L.) who trained all therapists, listened to audiotapes at regular intervals, and conducted weekly individual and group supervision.

**Control: Treatment as Usual.**—When assigned to the control condition, all subjects were given alternative therapy referrals, usually by the original referral source, from which they could choose. At the pretreatment assessment, 13 subjects were in ongoing individual psychotherapy, and nine were not in psychotherapy. The amount and types of treatment that control subjects received during the study are described in the "Results" section.

### Assessment

**Timing.**—Assessment points were pretreatment and at 4, 8, and 12 months (ie, posttreatment). Pretreatment assessment followed project acceptance. For patients who received DBT, the 4-, 8-, and 12-month assessment appointments were timed from the beginning of group therapy. Subjects started individual therapy up to 2 months before the first group session. Posttreatment assessments were scheduled to follow termination of treatment. Timing of control subjects' 4-, 8-, and 12-month assessments was determined by yoking each control subject with the next nearest patient who was assigned to DBT to enter the program. Assessments were scheduled for the same time period as their yoked partners. Average days between assessment points did not differ significantly between conditions.

**Measures.**—(1) The PHI<sup>21</sup> obtained information about all parasuicide behavior during a specified time period. A PHI interview was completed for each parasuicide episode. An episode on the PHI can be either an individual parasuicide act or a cluster of acts, where a cluster consists of acts that occur too repetitively or close in time to be distinguished from each other in any way other than by count. The absolute number of parasuicide acts scored by the PHI is estimated by adding the acts within each cluster to the number of single acts. For example, cutting one's self every night for a week might count as one episode that consists of seven acts. A suicide attempt was any episode that the subject considered a serious attempt to die. A medical risk score, based on PHI factor analytical studies, was calculated for each episode by summing method lethality (0 through 5), physical condition (0 through 4), and medical treatment (0 through 5). Reliabilities for number of acts, medical treatment, medical condition, and method lethality were checked on more than 50% of subjects against therapist records (for patients receiving DBT), medical records, and observer and physician/nurse ratings, and these ranged from a low of 76% agreement on number of parasuicide acts between PHI scores and therapist notes to a high of  $r = .94$  between PHI and physician/nurse ratings of method lethality. (2) The Treatment History Interview<sup>23</sup> obtained information on types and amount of professional mental health and medical treatment and psychiatric inpatient care that the individual received during the target period. (3) The self-report form of the Scale for Suicide Ideators<sup>24</sup> measured current suicide ideation. (4) The Beck Depression Inventory<sup>25</sup> measured depression. (5) The Beck Hopelessness Scale<sup>26</sup> measured generalized hopelessness. (6) The Reasons for Living Inventory, Survival and Coping Scale,<sup>27</sup> measured positive expectancies about the consequences of living vs killing oneself and the importance of such beliefs in resisting suicide.

Screening and assessment interviews were administered by a team of 13 research assessors. Every effort was made to keep the assessors blind about treatment condition.

Number of Parasuicidal Acts, by Condition and Time*				
Assessment Period	Descriptive Statistic	Condition		z
		DBT	Control	
Pre-4 mo	Median (IQR)	0.00 (4.50)	3.50 (22.00)	2.36†
	Median ± SD	3.50 ± 7.88	15.91 ± 25.02	...
	n	22	22	...
4-8 mo	Median (IQR)	0.00 (2.00)	2.50 (4.25)	1.62‡
	Mean ± SD	2.82 ± 8.13	8.73 ± 25.48	...
	n	22	22	...
8-12 mo	Median (IQR)	0.00 (1.00)	1.00 (4.00)	1.98‡
	Mean ± SD	0.55 ± 0.94	9.33 ± 26.95	...
	n	20	21	...
Year total	Median (IQR)	1.50 (9.25)	9.00 (43.50)	2.69†
	Mean ± SD	6.82 ± 12.35	33.54 ± 69.97	...
	n§	22	22	...

\*DBT indicates dialectical behavior therapy; IQR, inner quartile range.

† $P < .01$ , one-tailed test.

‡ $P < .05$ , one-tailed test.

§For year total, data to end point were used for subjects who were not in study at the 8- to 12-month period.

## RESULTS

Due to outliers and failures to meet parametric assumptions, statistical comparisons, except where noted, used the Mann-Whitney *U* test and, where appropriate, binomial tests. We used planned comparisons (one-tailed tests) when clear a priori predictions had been made.

No significant pretreatment between-group differences appeared on lifetime parasuicides, psychiatric hospitalizations, Diagnostic Interview for Borderlines scores, depression, hopelessness, suicide ideation, reasons for living, age, employment, or marital status.

### Goal 1: Parasuicide

During each time period, as well as summing throughout the entire year, control subjects engaged in more parasuicide acts than subjects who received DBT (Table). As can be seen in Fig 1, the likelihood of any parasuicide was higher for control subjects during the pretreatment to 4-month and 8- to 12-month periods. These results are maintained when likelihood is analyzed for the year as a whole (subjects assigned to DBT=63.6%, control subjects=95.5%,  $z=2.26$ ,  $P<.005$ ). Excluding subjects with no parasuicide during the year (subjects assigned to DBT=7, control subject=1), control subjects tended to have more individual parasuicide acts ( $z=1.25$ ,  $P<.10$ ) but not more episodes. Medical risk scores, however, when summed over episodes for the year, were significantly higher for control subjects (mean=17.86, SD=20.94,  $n=21$ ) than for subjects who were assigned to DBT (mean=9.21, SD=8.22,  $n=14$ ) ( $t=1.70$ ,  $df=28.01$ ,  $P<.05$ , by separate estimates of variance). This difference can be accounted for by more medically treated parasuicide episodes among control subjects (control subjects: mean=1.76, SD=2.66; subjects assigned to DBT: mean=0.64, SD=1.15 [ $t=1.70$ ,  $df=29.24$ ,  $P<.05$ , by separate estimates of variance]). Comparing risk for just those control subjects ( $n=10$ ) and subjects assigned to DBT ( $n=5$ ) who obtained medical treatment for a parasuicide, the difference in medical risk was maintained (control subjects: mean=32.30, SD=22.00; subjects assigned to DBT: mean=15.00, SD=5.66 [ $t=2.34$ ,  $df=11.1$ ,  $P<.02$ , by separate estimates of variance]).

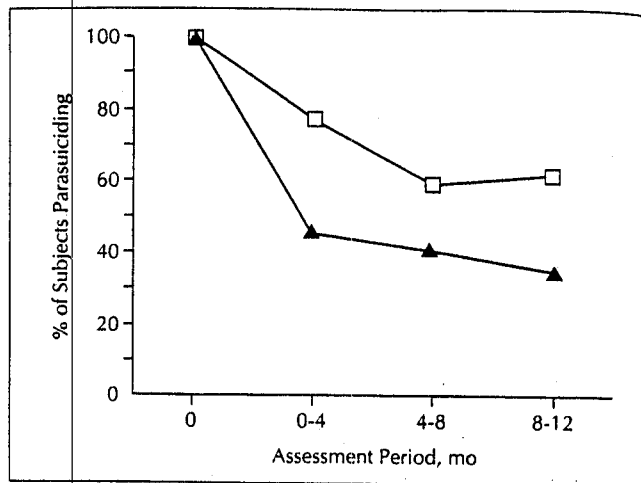


Fig 1.—Percentage of subjects with parasuicide, by condition. Months 0 to 4 indicated significant difference between subjects (triangles) who received dialectical behavior therapy and control subjects (squares) ( $z=2.7$ ,  $P<.05$ ); months 8 to 12, significant difference between subjects who received dialectical behavior therapy and control subjects ( $z=1.74$ ,  $P<.05$ ).

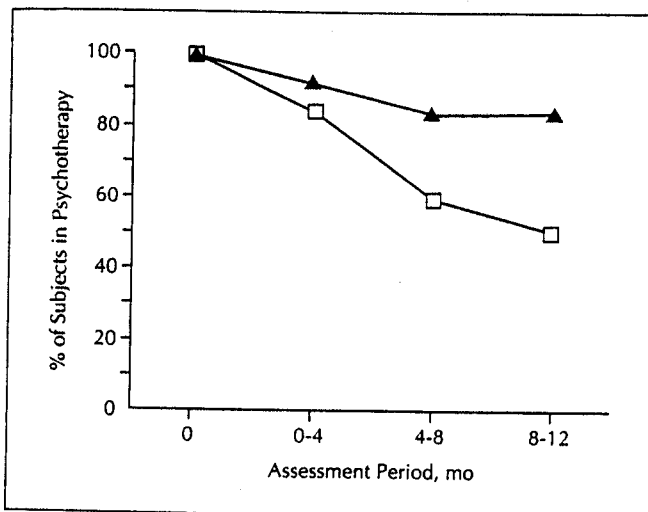
### Goal 2: Maintenance in Therapy

Dialectical behavior therapy-referred patients were significantly more likely to start individual therapy than were control subjects, all of whom were referred for treatment (100% and 73% for subjects assigned to DBT and control subjects, respectively,  $z=2.75$ ,  $P<.003$ ). This difference was maintained when one patient who was assigned to DBT and who did not return for a second session was counted as a nonstarter ( $z=2.18$ ,  $P<.01$ ). In the control group, four subjects continued with previous individual therapists, and 12 began with new therapists. Significantly more subjects who were receiving DBT than control subjects maintained therapy with the same therapist for the entire year (83.3% and 42.0% for subjects assigned to DBT and control subjects, respectively,  $z=3.59$ ,  $P<.001$ ). Comparing subjects who were assigned to DBT with only those control subjects who started the year with a new therapist, subjects who were receiving DBT stayed in individual psychotherapy longer, with significant differences emerging by the 8-month point (Fig 2).

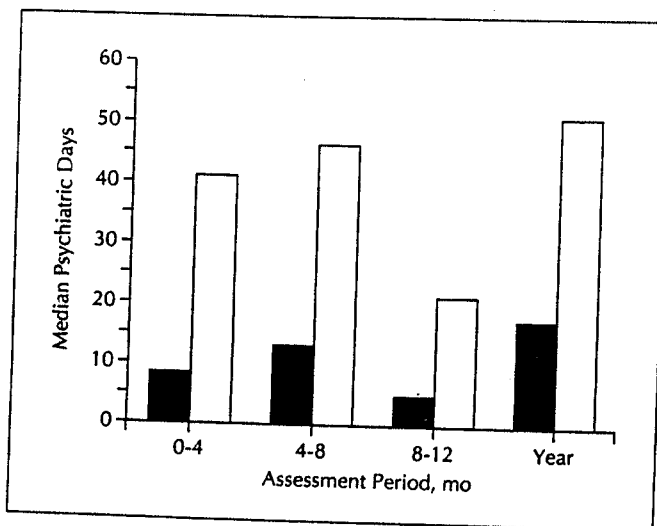
### Goal 3: Psychiatric Inpatient Treatment

As can be seen in Fig 3, control subjects had significantly more psychiatric days per person hospitalized than patients who were receiving DBT. Control subjects also tended to have a higher number of admissions per person (subjects assigned to DBT: median=0, inter-quartile range [IQR]=1; control subjects: median=1, IQR=4 [ $z=1.47$ ,  $P<.07$ ]). The likelihood of at least one psychiatric inpatient admission during the year (36% and 55% for subjects assigned to DBT and control subjects, respectively) was not significantly different for the two groups. No between-group differences appeared at any point in the number of subjects who received some type of pharmacotherapy.

Summing throughout the year, subjects who were assigned to DBT reported more group ( $z=5.51$ ,  $P<.001$ ) and individual ( $z=2.00$ ,  $P<.01$ ) therapy hours per week, and the control group reported more day treatment hours per week ( $z=1.83$ ,  $P<.05$ ). To examine the relationship between the number of individual and group therapy hours to parasuicidal behavior, independent of treatment condition, a regression analysis was performed with the number of parasuicide events as the dependent variable, the treatment condition forced into the equation first, and the number of individual and group therapy hours as the independent variables. No significant relationships were found. To determine whether DBT had any advantage over the stable individual therapy received by some control subjects, we compared the 20 subjects who were assigned to DBT and nine con-



**Fig 2.**—Percentage of subjects in individual psychotherapy, for those subjects beginning with a new therapist at pretreatment, by condition. Months 4 to 8 indicate significant difference between subjects who received dialectical behavior therapy (triangles) and control subjects (squares) ( $z = 1.63, P < .05$ ); months 8 to 12, significant difference between subjects who received dialectical behavior therapy and control subjects ( $z = 2.11, P < .01$ ). Note that two subjects who were assigned to dialectical behavior therapy and who were out of therapy also stopped assessments. It is possible that they entered some other individual therapy. To be conservative, they are counted as not in individual therapy.



**Fig 3.**—Median psychiatric days for hospitalized subjects, by condition. Months 0 to 4 indicate significant difference between subjects who received dialectical behavior therapy (shaded bars) and control subjects (open bars) ( $z = 2.54, P < .005$ ); months 8 to 12, trend between subjects who received dialectical behavior therapy and control subjects ( $z = 1.49, P < .10$ ); and year, significant difference between subjects who received dialectical behavior therapy and control subjects ( $z = 1.70, P < .05$ ). The number of hospitalized subjects who received dialectical behavior therapy were as follows: 0 to 4 months ( $n = 6$ ), 4 to 8 months ( $n = 5$ ), 8 to 12 months ( $n = 3$ ), and year ( $n = 8$ ). The number of hospitalized control subjects were as follows: 0 to 4 months ( $n = 9$ ), 4 to 8 months ( $n = 7$ ), 8 to 12 months ( $n = 7$ ), and year ( $n = 12$ ).

control subjects with stable individual therapy for the year. The subjects who were receiving DBT still reported fewer parasuicide acts per person (subjects assigned to DBT: median = 2.5, IQR = 9.75; control subjects: median = 13.0, IQR = 54.5 [ $z = 2.40, P < .01$ ]) and had fewer psychiatric hospital days per person hos-

pitalized (subjects assigned to DBT: median = 17.0, IQR = 37.75; control subjects: median = 80.0, IQR = 122.25 [ $z = 1.69, P < .05$ ]). Differences in medical risk were not significant.

### Questionnaire Data

To limit undue decreases in sample size due to missing or incomplete data, multivariate statistics were not employed. We conducted separate 2 (DBT, control)  $\times$  3 (4-, 8-, and 12-month points) repeated measures analyses of covariance, with pretreatment scores covaried, on depression, hopelessness, reasons for living, and suicide ideation measures. There were no significant main or interaction effects on questionnaire measures. Two-way (condition, time) repeated measures analyses on each measure separately, examining pretreatment to 12-month change, suggested a linear main effect for time ( $F[1, 31] = 8.24, P < .005, F[1, 32] = 5.72, P < .05, F[1, 32] = 10.04, P < .005$ , and  $F[1, 32] = 6.63, P < .05$ , for depression, hopelessness, reasons for living, and suicide ideation, respectively), but no main or interaction effects for treatment.

### COMMENT

In this comparison of DBT with treatment as usual in the community, three major results appeared. First, we found a significant reduction in the frequency and medical risk of parasuicide behavior among patients who received DBT compared with that for control subjects. Subjects who received DBT had a median of 1.5 parasuicide acts per year compared with nine acts per year for control subjects. Second, DBT effectively retained patients in therapy. The 1-year attrition rate was only four (16.7%) of 24 patients, one of whom committed suicide. Control subjects who started with new therapists had an attrition rate of 50%. Third, days of inpatient psychiatric hospitalization were fewer for subjects who received DBT than for control subjects. Patients who received DBT had an average 8.46 inpatient days per year compared with 38.86 days for control subjects. Finally, these treatment effects occurred despite the fact that DBT was not differentially effective in improving patients' depression, hopelessness, suicide ideation, or reasons for living.

The absence of significant pretreatment differences between subjects who received DBT and control subjects on any measures, together with the random assignment to condition, rules out interpretations of our results based on known preexisting differences. Although this study clearly demonstrates a treatment effect, we cannot, at this point, say exactly what it is about the treatment condition that produced the effect. Simply receiving stable psychotherapy is insufficient since control subjects in stable, individual psychotherapy repeated parasuicide and had more inpatient psychiatric days per hospitalized subject than subjects who received DBT. The effectiveness of DBT might be due to differences in the conduct of the individual therapy, the addition of group behavioral skills training in DBT (a factor that clearly differentiated the experimental groups), or a combination of the individual therapy with the skills training.

Examination of parasuicide frequencies and inpatient psychiatric days during the three time periods suggests that major treatment gains occurred in the first 4 months but were consolidated and somewhat enhanced as treatment progressed. In the last 4 months of treatment, almost twice as many control subjects (61.9%) as subjects who received DBT (35%) engaged in any parasuicide. The absence of a difference in the proportion of parasuicides that were suicide attempts parallels the lack of between-group

differences in depression, hopelessness, suicide ideation, and reasons for living. These findings suggest that the reductions in parasuicidal behavior among subjects who received DBT was not mediated by changes in depression, hopelessness, suicide ideation, or reasons for living.

The attrition rate in DBT is low for a 1-year treatment. Waldinger and Gunderson<sup>28</sup> found that of 78 borderline patients, only one half continued beyond 6 months. Exactly what contributed to our low attrition rate remains uncertain. Several factors may be involved. First, behaviors that are related to stopping therapy prematurely are clear instances of therapy-interfering behavior and, thus, would be put on the therapy session agenda, second in importance only to suicidal behaviors. The emphasis of DBT on developing a strong, supportive relationship during the early stage of therapy and the emphasis on a collaborative endeavor were designed to keep the patient in therapy. In addition, we very clearly defined what constituted *missed sessions* (up to three in a row) and what constituted *dropping out* (four missed individual or group sessions in a row). Thus, patients who missed 1, 2, or 3 sessions in a row knew that they could return, while those who missed a fourth session knew unequivocally that they could not. This policy likely prevented the "drift-out-of-therapy" phenomena.

Patients who received DBT, when hospitalized on a psychiatric unit, remained in the hospital fewer days than control patients. They also tended to have fewer psychiatric hospital admissions during the 1-year treatment period. These differences were not due simply to having a stable outpatient therapist since the difference was maintained when subjects without stable individual therapy were excluded from the analyses.

There are a number of limitations in the current study. The sample was a relatively homogeneous group of severely dysfunctional, chronically parasuicidal borderline women. It remains unclear if our results would generalize to less severely dysfunctional borderline individuals, if DBT is suitable for nonsuicidal patients, or if the treatment would prove to be effective for males. We do not know whether the treatment gains in DBT are maintained after the 1-year therapy, but are currently analyzing follow-up data to answer this question. Nor can we speculate on the effectiveness of DBT with less experienced therapists. Further research is needed to address these issues. Our study had relatively few subjects. The statistical significance of our results, despite small *n*'s, however, suggests a powerful effect of the treatment, at least with respect to its primary targets, ie, parasuicidal behaviors, treatment retention, and psychiatric hospitalizations.

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