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Dialectical behavior therapy for borderline personality disorder: theoretical and empirical foundations

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Dialectical behavior therapy (DBT) is a cognitive-behavioral psychotherapy developed by Linehan for parasuicidal patients with a diagnosis of borderline personality disorder (BPD). DBT is based on a biosocial theory that views BPD as primarily a dysfunction of the emotion regulation system. The treatment is organized around a hierarchy of behavioral goals that vary in different modes of therapy. In two randomized trials, DBT has shown superiority in reducing parasuicide, medical risk of parasuicides, number of hospital days, dropout from treatment and anger while improving social adjustment. Most gains were maintained through a 1-year follow-up. In one process study testing DBT theory, dialectical techniques balancing acceptance and change were more effective than pure change or acceptance techniques in reducing suicidal behavior.

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The problems of patients with a DSM-III-R diagnosis of borderline personality disorder (BPD) (1) seem all the more severe because many of their behaviors such as suicide attempts and frequent hospitalizations appear to undermine their level of coping and social relationships, and thus maintain their emotional distress. These behaviors also include actions that interfere with ongoing treatment such as dropping out of therapy and conduct that reduces a therapist's motivation to treat. The BPD diagnosis thus has come to carry the implication of a self-perpetuating disorder due to the behavioral consequences for both the patient and those attempting to provide treatment or other aid. Some 10 years ago, Linehan and her colleagues (2) began developing a cognitive-behavioral treatment to target this repertory of dysfunctional behaviors in borderline patients. Today, this approach is known as dialectical behavior therapy (DBT) (3, 4), and its application is being tried in various treatment settings in the United States. The aim of this article is to give a brief overview of the theory that has both guided and developed with DBT, outline the treatment, and summarize the empirical support for its theory and efficacy.

Theory

DBT is based on a biosocial theory of personality functioning. Its major premise is that BPD is primarily a systemic dysfunction of the emotion regulation system (5) that stems from biological irregularities in conjunction with certain types of environments and their interactions over time. Characteristics associated with BPD are seen as sequelae of, and thus secondary to, this fundamental emotion dysregulation. In its biosocial view, DBT is perhaps closest to the personality theory of Millon (6, 7), though DBT does not advance an independent definition of BPD. Instead, it has organized a number of behavioral patterns that are associated with a subset of borderline individuals – those with histories of repeated attempts to kill, injure or mutilate themselves.

In DBT theory, BPD characteristics are linked to systemic emotion dysregulation in a number of ways. Some characteristics such as self-mutilation and suicidal behavior in general function to reduce painful emotions that cannot otherwise be regulated or tolerated (8, 9). These intentional self-injurious behaviors and suicide attempts (i.e., parasuicidal behaviors) are maintained because they

compensate for faulty emotion regulation. The compensation appears at times to involve actual direct relief from emotional distress and may also elicit needed environmental changes or communicate distress in a way that validates the seriousness of the individual's difficulties. Other BPD characteristics such as aggressive and hostile behavior represent expressive behaviors and action urges that are linked or loosely hard-wired to specific affects such as anger that as a whole cannot be regulated by the individual. In contrast, patterns such as dichotomous thinking and cognitive irregularities are linked more directly to the intensity of emotions that cannot be modulated. In this sense, Linehan views emotions as complex response systems consisting of biochemical, phenomenological, facial and muscular expressive, cognitive and action responses. An inability to control or modulate any part constitutes emotion dysregulation. Finally, other BPD characteristics such as an inability to maintain stable relationships are viewed as both the cause and a natural byproduct of an emotionally dysregulated interpersonal style.

In applying this theory of emotion dysregulation to a patient's experiences, a DBT therapist will employ a transactional or dialectical account. This use of a dialectical view is employed frequently in both DBT theory and the therapy. One intentional effect is to force a holistic, systemic approach to behavior, a view that is centered neither on the individual nor on the environment but instead on both and their ongoing transaction. This has a variety of consequences. A dialectical view of therapy constantly raises the question of what is being left out of the treatment. It leads to a stance of simultaneously using seemingly incompatible themes such as acceptance and change as well as focusing upon synthesis. It is also incompatible with the assignment of blame. Thus DBT as a theory and therapy favors the most nonpejorative of explanations for behavior.

Treatment

DBT is a manualized treatment program (2–4, 10) that includes a variety of components designed to address the postulated emotional dysregulation of BPD patients. In outpatient treatment, the 4 treatment modes include weekly individual psychotherapy, skills training, consultation/supervision meetings for therapists and telephone consultation as needed between patient and individual psychotherapist. The skills deficits of the patient are addressed most directly in psychoeducational behavioral skills training. The agenda of skills training sessions is determined by the behavioral skills to be taught. In contrast, the session agenda of individual therapy is determined by the maladaptive behavior of the week in a specified order of priority as described below. Motivational issues, that is, factors interfering with or inhibiting adaptive skillful behavior or reinforcing maladaptive, unskillful behavior, are addressed most directly in individual psychotherapy. Motivational issues of the therapists, that is, factors interfering with the application of effective treatment or reinforcing ineffective treatment techniques, are addressed most directly in consultation/supervision team meetings of all DBT therapists. The agenda for team meetings is determined by the problems in treatment as observed by the therapist(s).

Individual DBT applies directive, problem-oriented techniques that are drawn primarily from behavior therapy and balances these with supportive techniques such as reflection, empathy, and acceptance, and techniques drawn from Eastern psychologies, particularly Zen. In addition, dialectical strategies including balancing acceptance with change, alternating validation with problem-solving, and using paradox and metaphor, are used extensively. In hierarchical order, individual DBT targets the reduction of suicidal, therapy-interfering and quality-of-life-interfering behaviors, and replaces these behaviors with skillful behaviors that are learned in the skills training component of the treatment. A very detailed description of the moment-to-moment chain of environmental and behavioral events preceding a problematic response is elicited, and alternative, more skillful responses the individual could have made are explored. Behavioral deficits as well as factors interfering with more adaptive responses are examined and remedial procedures are applied as necessary. Both between (via phone consultations) and during sessions, the therapist actively reinforces adaptive behaviors, especially as they occur within the therapeutic relationship, and withholds reinforcement or provides aversive consequences for behaviors targeted for change. The emphasis is on teaching patients how to manage emotional trauma rather than reducing or taking them out of crises.

Treatment strategies in skills training include a broad range of skill acquisition and strengthening procedures such as modeling, didactic instruction, behavioral rehearsal, feedback, coaching and homework assignments. Skills training sessions are highly structured and consist of homework review, new material presentation and a wind-down period. DBT behavioral skills were selected for their theoretical relevance to BPD (3, 4) and include: 1) mindfulness skills (observing, describing, spontaneous participating, focusing awareness, thinking nonjudgmentally and focusing on being effective); 2) interpersonal skills for conflict situ-

ations that are aimed at enhancing effectiveness in obtaining objectives while simultaneously maintaining or enhancing relationships and self-respect; 3) distress tolerance skills developed specifically for this population; and 4) emotion regulation skills that integrate behavioral and experiential techniques for changing and/or modulating emotions.

The consultation/supervision team meetings are weekly. Therapists take turns presenting problem cases, and team members assist the therapist in analyzing the case at hand, apply DBT acceptance and change strategies to the therapist as needed and act as consultants in treatment planning. Information about progress in other treatment modes is also exchanged. The therapeutic discourse in these meetings is guided by a set of guidelines that all therapists agree to abide by before joining the team.

Finally, patient and therapist telephone consultation between sessions is an important mode of DBT. A major aim of this is to teach the patient to ask appropriately for help before problems escalate to overwhelming proportions. Common tendencies of borderline patients are to either be indirect (e.g., asking a friend to tell the therapist) or to demand help in a way that alienates help providers. Telephone contacts provide an opportunity to teach the patient more effective methods of getting help as well as to reinforce action earlier in the chain of crisis events before problems become unmanageable. Another important aim of telephone contact is to encourage and guide the use of skillful coping in environments most relevant to the patient, and thereby further both adaptive coping and the generalization of skills beyond the immediate therapy environment.

These introductory sections have been limited to the flavor rather than specifics of DBT. In contrast, the following sections address very specific elements of the theory and treatment in conjunction with current empirical support

Empirical support

To date, 3 studies have looked at the effectiveness and mechanisms of DBT. Two of these investigations (3, 11) were outcome studies conducted by Linehan et al. and employed random assignment of subjects to treatment conditions. These investigations thus have the distinction of being the first and so far only studies of the effectiveness of a psychosocial treatment for BPD to employ this standard methodology. The remaining investigation was a process study conducted by Shearin & Linehan (12) to test hypotheses of how DBT was postulated to work. The results of the main outcome study are presented first and followed with details of the process study. We conclude with the second outcome study that looked at group treatment by itself.

Study 1

The aim of this first study was to determine whether DBT when offered as a total treatment program is effective at addressing the primary targets of treatment. Although DBT can be offered in an open-ended manner, in this research program, the treatment was offered for 1 year. A test of the efficacy of the treatment would therefore need to show, at a minimum, changes over the year in the highest priority targets of parasuicidal behavior and therapy-interfering behavior.

Method. In the first study (11), 44 female subjects were randomized between individual plus group DBT treatment and treatment as usual (TAU) in the community (22 in each condition). To be admitted to the study, subjects had to meet selection criteria of: DSM-III criteria for BPD and a score of 7 (out of 10) on the Diagnostic Interview for Borderline patients (13); at least 2 incidents of parasuicide in the past 5 years with one during the past 8 weeks; absence of DSM-III criteria for schizophrenia, bipolar disorder, current substance dependence or mental retardation; age range of 18–45; and agreement to study conditions, including termination of other individual psychotherapy if assigned to the DBT condition.

Subjects were randomly assigned to a treatment condition after being matched on the lifetime number of parasuicides and psychiatric hospitalizations, age and clinical prognosis (good if not a subthreshold diagnosis of schizophrenia or current substance dependence; poor otherwise). For the TAU condition, subjects were given alternative therapy referrals when assigned to the control condition. By the time of the pretreatment assessment, 13 TAU subjects were in individual psychotherapy and 9 were not.

Over the 1 year of treatment, subjects were assessed at pretreatment and at 4, 8 and 12 months posttreatment. Subjects were assessed on number of parasuicidal acts and episodes (indistinguishable acts), medical risk of parasuicide, and the types and amounts of professional mental health and medical treatment including inpatient psychiatric care. Subjects were also assessed on mood and adjustment using questionnaire and observer rating measures with subjects in the second of 2 waves treated (22 subjects) receiving a much larger number of measures. Subjects were subsequently contacted at 6 and 12 months posttreatment (14) as a naturalistic follow-up.

Results and discussion. Compared with TAU subjects, subjects receiving DBT engaged in fewer parasuicidal acts (Fig. 1) during each 4-month time period (Mann-Whitney one-tailed U-test: $z=2.36$, $P<0.01$, $z=1.62$, $P=0.05$, and $z=1.98$, $P<0.05$ for months 0–4, 4–8, and 8–12 respectively) as well as for the year as a whole ($z=2.69$, $P<0.01$). Furthermore, the medical risk of parasuicide was lower for DBT subjects (medical risk mean = 9.21) than for TAU (medical risk mean = 17.86) ($t=1.70$, df = 28.01, $P<0.05$, with separate variance estimates). Thus for its primary target of parasuicidal behavior, DBT compared with TAU was effective in reducing both the number of parasuicidal acts and the medical risk for the parasuicides that occurred (11). When the subjects were contacted for follow-up at 6 and 12 months posttreatment, DBT remained superior to TAU at the 6 month assessment on both number of parasuicides and parasuicides requiring medical treatment, but the 2 groups were not different 12 months posttreatment (14). A 1-year DBT treatment for this chronic population appears to be more helpful than standard treatments but does not result in open-ended gains.

DBT was superior to TAU in the number of subjects who started treatment after the referral (100% for DBT versus 73% for controls, $z=2.75$, $P<0.003$) and who remained with the same therapist for the year (83.3% for DBT, 42.0% for controls, $z=3.59$, $P<0.001$). Thus, DBT both attracted subjects to treatment and retained them better than treatment as usual in the community. A confound with these effects is that DBT subjects did not have to pay for their treatment. There was no difference, however, in cost of therapy or payment method between the TAU subjects who dropped out and those who did not (15). In general, all of these subjects depended on referrals to therapists with openings for low-fee patients. In other studies (16), a problem with the therapist was the main dropout reason and cost was not cited as a factor. Thus, it is reasonable to believe that these effects were due to the characteristics of DBT and its emphasis in addressing behaviors that interfere with therapy rather than simply economic consequences.

Subjects receiving DBT had fewer days of inpatient psychiatric hospitalization than controls over the year of treatment ($z=1.70$, $P<0.05$). There were no differences in the first 6 posttreatment months, but at 12 months posttreatment, DBT subjects again had fewer inpatient psychiatric days than controls ($z=1.74$, $P<0.05$). Thus, DBT was a consistent factor in shorter hospitalizations both during treatment and in the follow-up period. Psychiatric hospitalizations are addressed at 2 levels of the treatment hierarchy in DBT. They are considered treatment-interfering when they cause a patient to miss scheduled outpatient sessions. They are also addressed as interfering with the quality of

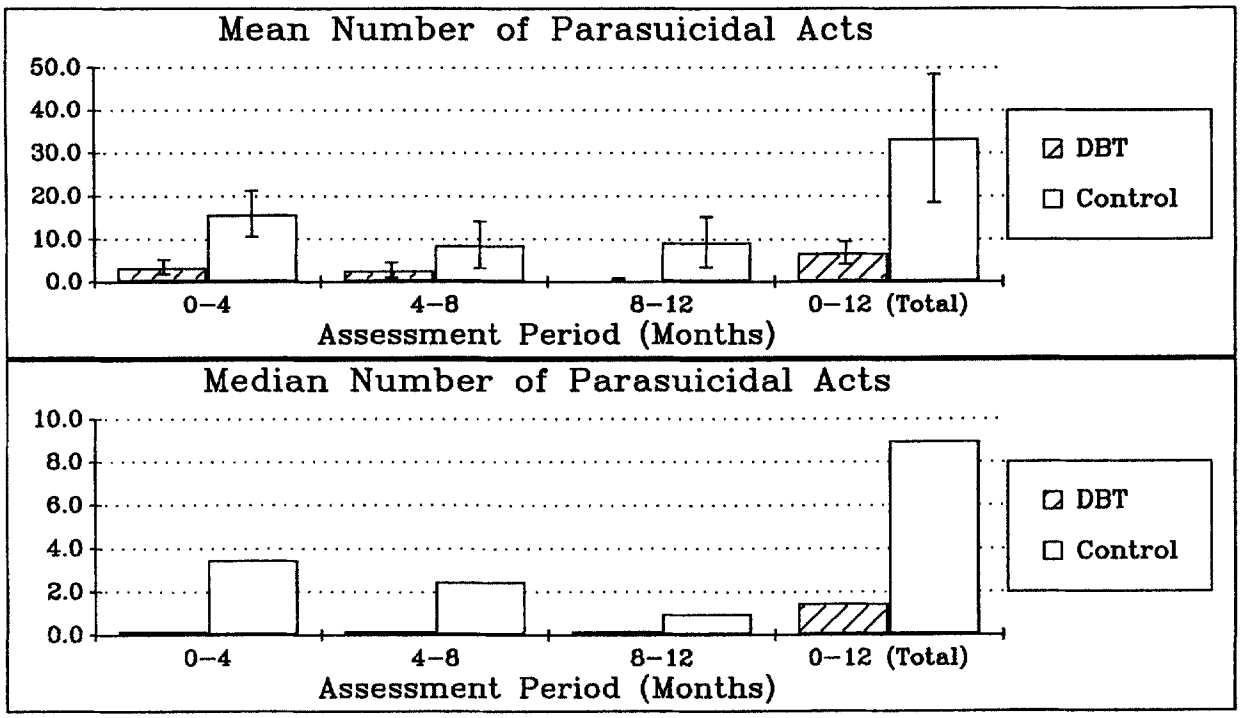

Fig. 1. Mean and median numbers of parasuicidal acts. DBT = dialectical behavior therapy. Error bars for means represent ± one standard error.

life due to disruptive effects on a patient's financial, employment, and social functioning.

Finally, on questionnaire measures of depression, hopelessness, reasons for living and suicide ideation, there were no differences. Approximately one half of the subjects, however, received a larger number of questionnaires and were also rated by interviewers blind to treatment condition. Compared with TAU subjects, this smaller group of DBT subjects after 12 months of treatment had significantly better scores on measures of general adjustment (GAS), global social adjustment, interpersonal relations with friends, employment, overall work performance, financial adjustment, household duties, anger, anxious rumination, emotional regulation and interpersonal problem solving. These results were largely maintained over the one-year follow-up (14). The improvement on these measures, however, still left the DBT subjects in the impaired range compared with normal samples. Thus while DBT did not affect depression and hopelessness, it did appear to improve life in a number of areas of functioning, but not enough to normalize functioning. These gains are consistent with the DBT emphasis that behavioral improvements (i.e., action tendencies associated with intense emotions) are necessary before significant phenomenological relief can be expected. Subjects appear to have become more adept at tolerating their distressing situations and at functioning while emotionally distressed.

Thus, this trial of DBT showed effectiveness for its main targets of parasuicidal behavior and therapy interfering behavior. Additionally, based on questionnaire and interview measures, it also was effective for the third target on the hierarchy, quality of life interfering behaviors.

Study 2

The next investigation was a small process study that was conducted to test the relationship of therapeutic strategies prescribed by DBT to week-by-week changes in patient behavior. We were encouraged by the results of the preceding study and wanted to test the relationship of elements of the treatment to changes in suicidal behavior. Although a number of hypotheses were tested (12), the following presents just the two most important ones.

The first hypothesis related to the "dialectical" adjective in DBT. This adjective highlights a key assumption in DBT theory – that successful treatment involves a synthesis of opposites, or dialectics, to achieve new behavioral patterns and improve coping (17). Although there are many other dialectics, the most basic is that of acceptance and change. As an example of this, the DBT therapist is constantly balancing his or her emphasis upon techniques and requests for patient change with emphasis upon acceptance, by both the patient and therapist, of the patient's current condition and the state of the therapeutic relationship. The therapy is thus designed to both move the patient towards desired changes while at the same time validate the patient's perceptions and understanding of her situation. The greater emphasis upon acceptance and validation to balance change techniques is a key difference between DBT and the usual practice of behavior therapy.

As a test of this dialectical hypothesis, we predicted that when patients rated therapists to be simultaneously controlling, nurturing and giving autonomy, suicidal behavior would decrease in the following week. Acceptance was represented by giving autonomy whereas change was embodied in techniques providing control and nurturing. Patient ratings were used for the independent variable, since previous research has shown far greater consistency across studies for patient as compared with observer ratings (18).

In DBT theory, we have attributed some of the drop-out rate and lack of progress experienced in the treatment of borderline patients to the effect of negative feelings that the therapist tends to accumulate in working with a very difficult patient. Thus, much effort is devoted to maintaining the well-being of the therapist, and in particular, to increasing the degree of positive feelings that the therapist has for the patient. An example is the DBT emphasis upon the therapist employing the least pejorative of theories consistent with the evidence in explaining the patient's behavior. Compared with approaches that theoretically emphasize the patient's hostility to others including therapists (19), a DBT therapist would be expected to see patients as being friendlier towards the therapist.

To relate this nonpejorative conceptualization to patient behavior, we predicted that increases in therapist ratings of patients' warm feelings toward the therapists would be followed by decreases in suicidal behavior. This is a necessary but clearly not sufficient condition to demonstrate that the more DBT supervision can aid therapists to think that their patients actually like them, the more effective the therapists will be in targeting and reducing suicidal behavior. This may also affect the dropout rate, since problems with therapists are the most common reason given for dropping out (16), but we did not directly measure intent to drop out.

Method. The subjects consisted of 4 patient-therapist dyads who were followed for the first 31 weeks

of DBT treatment. The patients met the same criteria for entry as described above in the first outcome study. The patients received a standard DBT treatment of weekly individual and group sessions supervised by Linehan as in the outcome study, but with the change that the therapists were graduate psychology and nursing students rather than predominantly practicing therapists as before.

The hypotheses described were worded in terms of patient and therapist ratings of each other and patient suicidal behavior. Patient and therapist ratings were measured weekly with the short form of Benjamin's Structural Analysis of Social Behavior (SASB) INTREX ratings (20). This instrument is a self-report measure that has good psychometric properties for measuring affiliation (hostile versus friendly) and interdependence (autonomy versus control), and is beginning to be used frequently in psychotherapy research (21, 22).

The dependent variable of suicidal behavior was operationalized as patient parasuicidal urges and amount of patient ideation about suicide, since the low base rate of parasuicide made it very difficult to predict (2 of the 4 patients did not have any during the 31 weeks of the study). These variables were recorded daily by the patient on the diary card that the therapist collected weekly as a standard part of DBT treatment. Any parasuicide was also recorded on this card and used as a dependent variable where possible. Thus, although the diary card was self-report, it was routinely scrutinized and validated by the therapist.

The timing of these measurements was important in determining the conclusions that could be drawn. In testing the hypotheses, the behavior that was related to a given week's perceptions was always taken from the diary card that was completed in the following week. Thus, perception measurements for hypotheses 1 and 2 always preceded the self-harm urges and suicidal ideation in time. For all hypotheses, time series analyses (23, 24) were used to test these associations on a week-by-week basis over the 31–week period of data collection.

Results and discussion. The dialectical hypothesis was tested by using SASB ratings of concurrent therapist control and giving of autonomy to predict the suicidal behavior variables (measured 1 week later than the SASB ratings). A combined test of the time series results across the four dyads indicated that the dialectical hypothesis was supported overall ($\chi^2(8)=25.68$, $P<0.001$). Thus, increased patient ratings that the therapist was instructing, controlling, and providing autonomy were associated with decreased suicidal behavior in the following week for the patients as a whole. Concurrent therapist control and provision of autonomy was consistently a better predictor of suicidal behavior than either therapist control or autonomy by itself. Thus, the combined use of acceptance and change techniques was more effective in reducing suicidal behavior than either change techniques alone as is common in traditional behavior therapy or acceptance alone.

The nonpejorative hypothesis was tested by using SASB ratings of therapist understanding and warmth to predict the suicidal behavior variables (measured one week later than the SASB ratings). A combined test of the results across the four dyads indicated that the hypothesis was supported overall ($\chi^2(8)=17.26$, $P<0.05$). Thus, increased therapist ratings that the patient liked the therapist were followed by decreased suicidal behavior in the following week for the patients as a whole. Therapist ratings of themselves and patient ratings also supported this hypothesis.

What this study suggests is that the dialectical emphasis in DBT may be an important factor in the reduction of suicidal behavior. The use of acceptance techniques on the one hand may help borderline patients feel accepted and validated and to tolerate their pain without having to use behaviors that inhibit progress, while the simultaneous change techniques on the other hand serve to move the patient towards long-term solutions to their distress. Inherent in this result and in DBT theory is that treatment of BPD patients is a delicate balancing act with major risks at each pole. With too much acceptance, the patient has no guide to improved functioning; with too much change, the patient feels invalidated and rejects treatment.

The nonpejorative emphasis likewise appears generally related to suicidal behavior. Whether it functions by increasing acceptance and thus facilitating change as above or increasing the motivation of the therapist or both are interesting questions that need addressing in subsequent studies. While it seems plausibly related to dropout rate, that too needs direct measurement.

Study 3

Since a very visible difference between DBT and many other treatments for BPD is the use of skills training, it has been tempting for some to equate DBT to skills training. The second outcome study (3) addressed the question of whether DBT skills training without individual DBT treatment was also effective. Eleven subjects were randomly assigned to a DBT skills group, whereas 8 subjects were assigned to a no-treatment control condition. All subjects were already receiving individual treatment in the community. The selection criteria and

the matching prior to assignment were the same as the first study described above.

The results indicated that after 1 year, there were no differences between groups on any variable. Furthermore, the group means did not suggest that the failure to find differences was a result of the small group sizes. Without addressing the effectiveness of skills training as a part of the regular DBT package, these results suggest that adding a DBT skills group to some other type of therapy is unlikely to have therapeutic benefit.

Conclusions

These investigations of DBT effectiveness share the deficiency that replication in other environments by other investigators is needed to clarify the generalizability of the results. Furthermore, the process study clearly needs a much large sample size in its replication to strengthen its conclusions. Nonetheless, these problems should not obscure the importance that this was the first controlled trial of a psychosocial treatment with random assignment to demonstrate any effectiveness in the treatment of borderline personality disorder, and in particular, to reduce parasuicidal behavior. As such, it deserves further investigation to clarify and extend the basis of its effect rather than the endless second-guessing and theorizing by opposing points of view that have historically characterized psychosocial treatments in this area. The consistency of the process study findings with DBT theory was a small step toward further investigation, and its methodology should be integrated into future outcome studies to improve their interpretability.

A larger step towards further investigation was recently made with successful replication of specific treatment findings by Barley et al. at Highland Hospital in North Carolina (25). In this study of inpatient treatment, DBT was superior to the hospital's standard treatment in reducing parasuicidal behavior. Furthermore, group skills training without individual DBT treatment was not effective. These results replicate the principal findings of the studies conducted by Linehan. Although the Highland Hospital study lacked random assignment of subjects, its key strengths that support the findings above include independent investigators and an extension of DBT to the inpatient environment.

In sum, the combination of the above studies and the Highland Hospital replication is quite encouraging in terms of the effectiveness of DBT for its principal treatment targets. Taken together, they provide a benchmark from which to measure future treatment improvements. Despite this solid beginning, the results so far indicate that however effective this 1-year treatment may be, it clearly is not enough to relieve the suffering of this population. The development and demonstration of effective treatment for borderline personality disorder has barely begun.

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