Journal of Personality Disorders, 18(1), 73-89, 2004
© 2004 The Guilford Press

# DIALECTICAL BEHAVIOR THERAPY: CURRENT STATUS, RECENT DEVELOPMENTS, AND FUTURE DIRECTIONS

Clive J. Robins, PhD, and Alex L. Chapman, PhD

Dialectical behavior therapy (DBT) was developed as a treatment for parasuicidal women with borderline personality disorder and has been adapted for several other populations. This article describes standard DBT and several adaptations of it and reviews outcome studies with borderline patients in outpatient, inpatient, and crisis intervention settings, borderline patients with substance use disorders, suicidal adolescents, patients with eating disorders, inmates in correctional settings, depressed elders, and adults with attention-deficit/hyperactivity disorder. This treatment outcome review is followed by discussion of predictors of change in DBT, possible mechanisms of change, and current developments in theory, practice, and research.

Dialectical behavior therapy (DBT) was developed as a treatment for chronically parasuicidal women. The first description of the treatment in a peer-reviewed journal was in the first volume of this journal (Linehan, 1987) and subsequently it was described and illustrated in detail as a treatment for borderline personality disorder (BPD) in a pair of published manuals (Linehan, 1993a, b). The most fundamental dialectic addressed by the treatment is that of acceptance and change. The difficulties that Linehan encountered with a more purely change-oriented treatment led to attempts to balance and integrate her efforts to help the patient change with efforts to communicate acceptance of the patient as he or she is. The difficulties borderline patients commonly have in tolerating distress, and in accepting themselves and others, led to attempts to help them develop acceptance-oriented skills and change-oriented skills. Treatment strategies in DBT for helping patients to change draw primarily on standard behavioral and cognitive therapy procedures and on principles and findings from research on learning, emotions, social influence and persuasion, and other areas of psychology. Treatment strategies for helping the therapist to convey his or her acceptance of the patient draw primarily on client-centered and emotion-fo-

From the Department of Psychiatry and Behavioral Sciences (C.J.R., A.L.C.) and Department of Psychology (C.J.R.), Duke University.

Alexander L. Chapman is now at the Department of Psychology, University of Washington.

Address correspondence to Clive J. Robins, Department of Psychiatry and Behavioral Sciences, Box 3362, Duke University Medical Center, Durham, NC 27710; E-mail: robin026@nc.duke.edu

cused therapies. Treatment strategies for the patient (and therapist) to develop greater acceptance of self, of others, and of life in general draw primarily on Zen principles and practice (Robins, 2002). A dialectical stance informs and sustains the balance and integration of acceptance and change strategies.

DBT has been empirically evaluated in several randomized controlled trials (RCTs) as a treatment for women who meet criteria for BPD, both by Linehan and her colleagues and by others. Overall, the clinical outcome data support the efficacy of DBT as a treatment for women with BPD, warranting its designation as “empirically supported” by the clinical psychology division of the American Psychological Association. In fact, more than a decade after publication of the initial RCT (Linehan, Armstrong, Suarez, Allmon, & Heard, 1991), it remains to date the only outpatient psychotherapy with demonstrated efficacy for this population. It also has been adapted for and evaluated in several other populations, and increasingly is being disseminated to and practiced by front-line clinicians.

In this article, we first provide a brief descriptive overview of standard DBT, as developed for women with suicidal behavior or BPD, and review what is known about its efficacy with this population. Second, we describe several adaptations of DBT for patients with BPD, and review studies of their efficacy. Third, we describe adaptations of DBT for other disorders and behaviors and review studies of their efficacy. Within each section, we focus primarily on randomized trials, from which the strongest conclusions can be drawn, but we also discuss nonrandomized controlled trials and uncontrolled observational studies. Following this treatment outcome review, we discuss predictors of change, possible mechanisms of change, and recent developments and possible future directions in theory, practice, and research.

## STANDARD DBT FOR BPD

### DESCRIPTION

Core elements of DBT include (a) a biosocial theory of BPD; (b) a conceptual framework of stages of treatment; (c) a clear prioritizing of treatment targets within each stage; (d) delineation of the functions treatment for suicidal borderline individuals must serve; (c) different treatment modes that fulfill those functions; and (f) several sets of acceptance strategies, change strategies, and dialectical treatment strategies. We briefly describe each of these below. More detailed recent overviews of DBT include Robins, Ivanoff, and Linehan (2001) and Robins and Koons (2004).

*Biosocial Theory.* Linehan (1993a) has described a theory of the development and maintenance of BPD behaviors that incorporates both biological and social-environmental influences. The biological component is that BPD may involve a dysfunction of the emotion regulation system—parts of the central nervous system involved in the experience and regulation of emotions—possibly because of genetics, events during fetal development, or early life trauma. The environmental component is a pervasively invalidating environment, in which the patients’ behavior or reports of their thoughts

or feelings frequently are met with responses that suggest they are invalid, faulty, or inappropriate, or in which the ease of solving problems is oversimplified. Biologically based difficulties with emotion regulation and invalidation from the environment transact over time, each increasing the probability of the other, with emotion dysregulation becoming increasingly pervasive, and the individual developing patterns of self-invalidation, difficulty identifying emotions, and extreme (overly inhibited or overly intense) patterns of emotion expression and regulation.

*Stages of Treatment.* One of the difficulties clinicians face in helping persons with BPD is the number of domains in which they have problems. This difficulty is addressed in DBT in part by conceptualizing treatment as following a sequence of stages that are determined by the level of dysfunction, and by having a clear hierarchy for prioritizing treatment targets within each stage. Stage 1 treatment is for individuals who are demonstrating severe behavioral dyscontrol, such as self-injury, severe eating disorder or substance abuse, or repeated hospitalizations. The goal of Stage 1 treatment is for the individual to develop greater behavioral control and to stop these behaviors. The goal of Stage 2 treatment is to increase appropriate experiencing of emotions. Exposure-based strategies for treating posttraumatic stress disorder need to be conducted only when the patient has demonstrated reasonable stability regarding self-injury and other serious, potentially harmful behaviors (i.e., Stage 1 goals have been met). Stage 3 treatment goals are ordinary happiness and unhappiness and improved relationships and self-esteem. Stage 4 treatment moves away from amelioration of problems to promotion of an increased sense of connectedness, joy, or freedom. Most writing and research on DBT has focused on Stage 1 treatment.

*Treatment Targets.* Patients in Stage 1 treatment typically have multiple serious difficulties. The DBT therapist maintains a clear focus in each session by following a standard hierarchy of treatment target priorities: (a) decrease life-threatening and other self-injurious behaviors; (b) decrease treatment-interfering behaviors; (c) decrease serious quality-of-life-interfering behaviors; and (d) increase knowledge and performance of skilled behaviors. Treatment does not begin until the therapist and the patient have reached an agreement about the most important goals and methods of treatment. Linehan (1993a) suggests a number of therapeutic strategies for increasing patients' commitments to such goals and methods.

*Treatment Functions and Modes.* Dialectical behavior therapy proposes that comprehensive treatment for patients with BPD needs to address four functions. It needs to (a) help the patient develop new skills; (b) address motivational obstacles to skills use; (c) help the patient generalize what he or she learns to their daily lives; and (d) keep therapists motivated and skilled. In standard outpatient DBT, these four functions are addressed primarily through four different modes of treatment: group skills training, individual psychotherapy, telephone coaching between sessions when needed, and a therapist consultation team meeting, respectively. Skills are taught in four modules: mindfulness, distress tolerance, emotion regulation, and interpersonal effectiveness. Linehan found that it was extremely difficult for the therapist to focus on long-term skills acquisition in individual therapy because of the need simultaneously to respond to current crises, dysregulated

emotions, and recent instances of behavioral dyscontrol. Consequently, she separated these two treatment functions into different treatment modes.

*Treatment Strategies.* There are four primary sets of DBT strategies, each set including both more acceptance-oriented and more change-oriented strategies. Core strategies in DBT are validation (acceptance) and problem solving (change). Dialectical strategies present or highlight extreme positions that then tend to elicit their antithesis. Communication style strategies include a reciprocal style (acceptance) and an irreverent one (change). Case management strategies include (a) environmental intervention for the patient (acceptance); (b) being a consultant to the patient (change); and (c) making use of a consultation team (balancing both acceptance and change).

## RCTs

Three published RCTs have investigated the efficacy of DBT for treating women with BPD and a fourth recently has been completed. Linehan et al. (1991) randomized 44 women who were diagnosed with BPD and recently had engaged in parasuicidal behavior to 1 year of DBT or treatment as usual in the community (TAU). In comparison with TAU, DBT participants showed greater reductions in their frequency and medical severity of parasuicide, greater recudtions in their frequency and length of inpatient hospitalization, and better treatment retention (Linehan et al., 1991). They also demonstrated greater reductions in trait anger and improvements in global and social role functioning (Linehan, Tutek, Heard, & Armstrong, 1994). DBT patients generally maintained their treatment gains at 6- and 12-month follow-up assessments (Linehan, Heard, & Armstrong, 1993). Findings were somewhat weaker with regard to other variables assessed. Combining both conditions, patients improved in depression, hopelessness, suicidal ideation, and reasons for living, but these improvements were not significantly greater in DBT than in TAU.

A different group of investigators at Duke University conducted the next RCT on the efficacy of standard DBT for borderline patients (Koons et al., 2001). A total of 20 women veterans with BPD (40% with recent parasuicide) who were assigned to just 6 months of DBT had greater improvements in suicidal ideation, hopelessness, depression, and anger expression than those assigned to TAU. Also, only the DBT group demonstrated significant improvements in parasuicide rates, anger experienced, and dissociation. Anxiety symptoms did not improve in either condition. Because participants were not required to have recently engaged in parasuicide, there was a lower base rate of this behavior compared with Linehan et al. (1991), which, in combination with a small sample size, limited the ability to demonstrate between-group differences on parasuicide as Linehan et al. (1991) did. Conversely, Koons et al. (2001) demonstrated between-group differences on several variables not found to differ between groups in Linehan et al. (1991). This difference is consistent with the hierarchical arrangement of treatment targets in DBT. In a study in which all participants recently engaged in more than one incident of parasuicidal behavior, DBT therapists would be expected to target such behavior as the highest priority, so there would be less emphasis on quality-of-life issues. In the Koons et al. (2001) study, for the

participants who were less parasuicidal, therapists would be expected to focus more on quality-of-life issues, which may have led to greater improvements in depression, hopelessness, and suicidal ideation.

The third RCT of standard DBT was conducted in the Netherlands with 58 women participants with BPD (Verheul et al., 2003). A total of 53% of the participants also met criteria for a substance use disorder. The women were treated for 12 months. DBT patients had significantly greater decreases in total number of parasuicidal acts and in a sum of other impulse-control problem behaviors (e.g., substance misuse, binge eating, gambling, reckless driving). The superiority of DBT in reducing parasuicidal behaviors was significantly greater for patients with high levels of such behavior (14 to over 1000 lifetime) than for those with lower levels (0 to 14). Only 7% of DBT patients made a suicide attempt during the treatment year, compared with 26% of TAU patients, but this difference was not statistically significant. Neither treatment group changed significantly on substance use (van den Bosch, Verheul, Schippers, & van den Brink, 2002). A significantly higher proportion of DBT patients (63%) than TAU patients (23%) continued with the same therapist for the entire 12 months.

Demonstrations of efficacy by three independent groups of investigators help to support the generalizability of conclusions about DBT. However, it is possible that its superior effects in these three studies are related to weaknesses associated with the TAU condition. For instance, the training and supervision, treatment adherence monitoring, excitement about the development and testing of a relatively new treatment, or personal skills of the investigators who also were DBT therapists in at least two of the three studies, might have given DBT an advantage over TAU. Recently, Linehan's lab has completed a study of treatment for women with BPD and recent parasuicide that compared DBT to a more rigorous control condition, treatment by experts (TBE) who were not behavioral in orientation. Experts in treating BPD and suicidal behavior were identified by nominations from community mental health leaders. TBE therapists had the opportunity for regular supervision from a renowned psychoanalyst and participated in a consultation group. Preliminary findings from this study (Linehan et al., 2002a) indicate that patients in both conditions improved significantly, and the groups did not differ on overall rates of self-injury. When self-injury was divided into incidents in which there was some suicidal intent and those in which such intent was absent, the treatment groups did not differ in rates of nonsuicidal self-injury, but patients in DBT had a significantly lower frequency of suicide attempts generally and of serious suicide attempts in particular. They also had significantly lower rates of emergency room and inpatient services, and less than half the rate of treatment dropouts from their initially assigned therapist than patients in the TBE condition. The efficacy of DBT therefore seems unlikely to be due only to such factors as allegiance to the treatment model and ongoing consultation or supervision.

## UNCONTROLLED TRIALS

One of the first community mental health centers to develop a standard DBT program presented data on the first 14 BPD patients to complete their

12-month program (Mental Health Center of Greater Manchester, New Hampshire, 1998). In comparison with the previous year, they had a 77% decrease in number of hospital days, a 76% decrease in number of partial hospital days, a 56% decrease in crisis bed days, and an 80% decrease in emergency services use. As a result, despite a more than three-fold increase in scheduled outpatient visits, total treatment costs decreased by 58%.

Elwood, Comtois Holdcraft, and Simpson (2002) recently described changes reported by and observed in 20 patients over 12 months in a DBT program provided in a community mental health clinic. The treatment did not differ in substantial ways from standard DBT. However, the population treated was considerably broader, with fewer exclusion criteria than in the RCTs conducted by Linehan et al. (1991) and Koons et al. (2001). For example, although 95% of participants were given a clinical diagnosis of BPD, over one-third of them also were given a diagnosis of substance abuse or dependence, and some a diagnosis of bipolar disorder or schizoaffective disorder. All patients had histories of chronic suicidal behavior or multiple treatment failures, yet after 1 year of DBT, they showed significant reductions in the number and severity of medically treated parasuicides, and numbers of psychiatric-related emergency room visits, inpatient admissions and hospital days, compared with the previous year. Lack of a control group precludes firm conclusions about the program's efficacy, but these results do demonstrate the feasibility of a standard comprehensive DBT program in a community mental health center and suggest that it may have very beneficial outcomes.

## ADAPTATIONS OF DBT FOR BPD OR SUICIDAL BEHAVIOR

### COMMUNITY MENTAL HEALTH SETTING

Turner (2000) developed an adaptation of DBT for a community mental health center that did not include a skills-training group. Instead, skills-training was incorporated into the individual therapy sessions. Also, "psychodynamic techniques were incorporated to conceptualize patients' behavioral, emotional, and cognitive relationship schema" (p. 415), although Turner does not specify such techniques.

*RCT.* Turner (2000) compared this adaptation of DBT with a specific alternative treatment, client-centered therapy. Both treatments were provided in a community mental health center by the same four clinicians for 1 year to 24 patients, who were referred by emergency services following suicidal behavior and who met criteria for BPD. The clinicians had many years of experience providing client-centered, psychodynamic, or family systems treatments. Patients in both treatment groups demonstrated significant improvements in most domains assessed. However, the DBT-oriented treatment group had significantly greater improvements on almost all variables, including suicide attempts, other deliberate self-harm, inpatient days, suicidal ideation, impulsivity, anger, depression, and global mental health. There were no group differences on anxiety reduction, consistent with the findings of Koons et al. (2001).

## SUICIDAL ADOLESCENTS

Miller, Rathus, Linehan, Wetzler, and Leigh (1997) described an adaptation of DBT for treatment of suicidal adolescents. The primary modifications included: (a) shortening treatment to 12 weeks; (b) reducing the number of skills taught and simplifying the language on the skills-training handouts; (c) including parents or other caregivers in the skills-training group to help them coach the adolescent in skills use and to improve their own skills when interacting with the adolescents, reducing the amount of family dysfunction; and (d) including family members in some of the adolescent's individual therapy sessions when family issues were paramount. Individual therapy sessions occurred twice per week. Telephone consultation and a therapists' consultation team meeting occurred as in standard DBT treatment.

*Nonrandomized Controlled Trial.* Rathus and Miller (2002) reported the results of a nonrandomized but controlled trial of their adaptation of DBT. Adolescents referred to their clinic were assigned to DBT ($n = 29$) if they met at least three of the diagnostic criteria for BPD, based on a structured interview, and either had made a suicide attempt within the previous 16 weeks or had current suicidal ideation. Other referred adolescents ($n = 82$) were assigned to the TAU condition, which consisted of twice-weekly, supportive-psychodynamic individual therapy and weekly family therapy. Over the course of 12 weeks of treatment, the groups did not differ on suicide attempts, despite the DBT group having more severe symptoms and hospitalizations at pretreatment, and the DBT patients had a lower rate of treatment dropouts and fewer days of inpatient psychiatric care.

## BRIEF DBT-ORIENTED CRISIS INTERVENTION

In the United Kingdom, researchers have developed a very brief manual-assisted, cognitive-behavioral therapy (MACT) for treatment of patients who are at risk for deliberate self-harm (Evans et al., 1999). It includes bibliotherapy in the form of six booklets, which draw extensively on skills from Linehan's (1993b) manual, such as distress tolerance skills, as well as elements of DBT individual therapy, such as behavioral chain analyses of a recent episode of self-harm, and other more generic CBT skills, such as problem-solving techniques and self-monitoring of thoughts and feelings. These form the basis for work in two to six sessions of individual therapy.

*RCT.* Evans et al. (1999) reported a pilot test of the efficacy of this MACT program with 34 patients who presented to a mental health clinic following an episode of self-harm and who had at least one other such episode within the previous 12 months. Patients were randomly assigned to MACT ($n = 18$) or TAU ($n = 16$). In the MACT condition, booklets two through six were mailed to five patients who did not return for further appointments. The mean number of sessions was only 2.7. At a 6-month follow up, the percentages of patients with any self-harm were 56% in MACT and 71% in TAU, the frequency of self-harm in the MACT group was less than half that in the TAU group, and the average cost of care 46% less, but these differences were not statistically significant. The MACT group had a significantly greater reduc-

tion in depressive symptoms. This treatment certainly is not DBT *per se* but does indicate that even a very brief intervention that uses a key DBT treatment strategy (behavioral analysis) and teaches clients some DBT skills can have an important impact.

## INPATIENT DBT PROGRAMS FOR BPD

Inpatient implementations and adaptations of DBT began in the late 1980s, when lengths of stay typically were much longer than they are today, most notably at New York Hospital-Westchester/Cornell (Swenson, Sanderson, Dulit, & Linehan, 2001) and at Highlands Hospital in North Carolina (Barley et al., 1993). Current adaptations to shorter inpatient lengths of stay in the US typically have less comprehensive goals, instead focusing primarily on (a) behavioral and solution analyses of incidents that precipitated admission; (b) decreasing problematic behavior on the unit; and (c) teaching some subset of DBT skills, usually focusing on distress tolerance skills.

In Germany, where 80% of BPD patients receive inpatient treatment, with a mean of 66 days per year, Bohus and his colleagues (2000) have developed an intensive 3-month inpatient DBT program for BPD patients. The program involves three stages: (a) analysis of targeted Stage 1 behaviors; (b) DBT behavioral skill acquisition and contingency management of problematic behavior; and (c) preparation for discharge. Treatment components included, each week, 2 hours of individual therapy, 2 hours of skills training group, a 1-hour mindfulness group, and a treatment team consultation meeting, as well as a psychoeducation group about BPD, peer group meetings, and individual body-oriented therapy.

*Uncontrolled Trial.* Bohus et al. (2000) evaluated changes in behavior and self-reports of 24 parasuicidal borderline women in this program from pretreatment to 1 month after discharge. As a group, they experienced significant decreases in the frequency of parasuicidal behavior and in depression, anxiety, dissociation and global symptoms.

*Nonrandomized Controlled Trials.* Barley et al. (1993) reported the first investigation of an inpatient DBT program. Staff on only one of two similar units received training in DBT and that unit ran a DBT program with daily skills training and homework groups, individual therapy, and other components. Barley et al. compared patient data for 19 months before DBT training, the 10-month training and program development period, and 14 months of full implementation. The DBT unit experienced a significant decrease in frequency of parasuicide during the full implementation period. The comparison unit experienced no such changes.

Bohus et al. (in press) recently reported outcomes for 31 parasuicidal BPD patients in their 3-month inpatient DBT program and for 19 similar patients placed on a waiting list. A total of 12 of the 19 waiting list patients actually had admissions to a non-DBT inpatient unit during the study period, with a mean of 44 inpatient days, and 14 patients had some outpatient care. Patients who went through the inpatient program showed significant improvement on eight of nine variables studied from pretreatment to 1 month after discharge, whereas the waiting list patients did not change significantly on any variable. Approximately 50% of the inpatients showed clinically signifi-

cant improvement. The inpatient DBT program patients changed significantly more than the waiting list patients on seven variables: parasuicidal behaviors, depression, anxiety, interpersonal functioning, social adjustment, and global ratings of psychopathology. Differences on dissociation and anger were not significant.

### PARTIAL HOSPITAL PROGRAMS

Partial hospital and day-treatment programs can be important as a step down from, or alternative to, inpatient hospitalization for BPD patients. Such programs organized around DBT principles were pioneered by Swenson and colleagues at New York Hospital/Cornell and by Simpson and colleagues at Butler Hospital/Brown (Simpson et al., 1998). Although anecdotal observations suggest that these programs have been beneficial for many patients, no systematic outcome data have been presented to date.

## ADAPTATIONS OF DBT FOR SUBSTANCE ABUSING WOMEN WITH BPD

As we already mentioned, standard DBT was evaluated for women with BPD, more than half of whom had comorbid substance abuse, in an RCT. Verheul and colleagues (2003) found that although parasuicidal and other impulse-control behaviors improved more in DBT, substance use did not. Linehan and colleagues' initial experiences applying DBT with borderline women with substance abuse problems led them to make several adaptations of and additions to standard DBT. One change is to develop a set of attachment strategies designed to reduce treatment dropout and missed appointments by increasing the positive valence of the therapy and therapist and by providing greater outreach efforts to bring back "lost" patients. Second, replacement medication and tapering was provided for individuals with stimulant or opiate dependence. Third, because so many of these patients had serious difficulties with housing, finances, legal issues, and abusive relationships, they were assigned case managers. Fourth, patients were taught several new skills for developing structure in their lives, including skills for getting and maintaining work, for structuring free time, for developing adaptive social relationships, and for reducing drug-related cues in their environments.

### RCTs

Two RCTs have examined this adaptation of DBT. Linehan et al. (1999) randomly assigned 28 women who met criteria for BPD and for a substance use disorder to 1 year of DBT or TAU. Patients in DBT experienced greater reductions in drug use, as assessed by structured interviews and urinalyses, than did those in TAU. DBT patients also reported better social role adjustment and global social functioning at a 4-month follow up. DBT was not superior to TAU in terms of improvements in parasuicide or anger, but patients in both conditions improved significantly in these domains.

Linehan et al. (2002b) examined the efficacy of this modified DBT program for 23 heroin-dependent borderline women (52% were also cocaine dependent) and, in this study, compared it with a standardized alternative treatment, Comprehensive Validation Therapy with 12-step (CVT+12S). This treatment combined individual therapist use of only the acceptance-oriented strategies from DBT (e.g., validation, reciprocal communication style, and environmental intervention when requested) with participation in a 12-step program. All patients received opiate replacement medication. Both treatments significantly reduced drug use and there were no overall differences between treatments. However, CVT+12S patients showed a significant increase in drug use during the final 4 months of the program, whereas DBT patients did not. Interestingly, although the dropout rate in DBT was not particularly high for a substance abuse program (36%), there were no dropouts at all in CVT+12S. The sample sizes were small, and three of the four DBT dropouts were patients of the same therapist, so caution must be exercised in generalizing from these data. However, they do suggest that a treatment that focuses strongly on validation and supportive interventions may help retain heroin-dependent borderline individuals in treatment.

## ADAPTATIONS OF DBT FOR EATING DISORDERS

Two of the three main recognized types of eating disorder, binge eating disorder (BED) and bulimia, can be viewed as impulse control disorders, and indeed can fulfill one criterion for BPD. It therefore makes sense to consider the utility of a treatment that uses at least elements of DBT for such disorders.

### UNCONTROLLED TRIALS

A pilot study at Stanford by Telch, Agras, and Linehan (2000) examined a 20-session group-only DBT adaptation for patients with BED. Group treatment included not only skills training but also behavioral analyses, which would be a central feature of individual therapy in standard DBT. Of 11 women in their group treatment, none dropped out and 82% were abstinent from binge eating at the end of treatment.

### RCTs

Telch, Agras, and Linehan (2001) compared their group-based DBT adaptation with a wait list control condition for women with BED. DBT resulted in greater improvements in bingeing, body image and eating concerns, and anger. In fact, 89% of DBT participants were abstinent from binges at posttreatment, compared with 12.5% of control participants. Safer, Telch and Agras (2001) compared modified individual DBT that included skills-training and the usual DBT individual therapy functions with wait list. DBT patients demonstrated significantly greater decreases in their frequency of bingeing and purging. At posttreatment, 20% of wait list patients and 36% of DBT patients no longer met criteria for bulimia.

## ADAPTATIONS OF DBT FOR OTHER POPULATIONS AND SETTINGS

### ELDERLY DEPRESSED PATIENTS

Almost all applications and studies of DBT have been with patients with problems of emotion dysregulation or impulse-control difficulties. An exception is the work of Lynch, Morse, Mendelson, and Robins (2003) at Duke, who have developed and evaluated an adaptation of DBT for depressed elderly patients. The adaptation initially included a DBT skills-training group, abbreviated to 14 sessions instead of about 26, plus scheduled half-hour weekly telephone coaching and crisis call coaching as needed. There was no face-to-face individual therapy. Since completion of a pilot study of this adaptation, reviewed below, Lynch and colleagues are currently evaluating efficacy of a standard DBT program for treatment-resistant depression in the elderly.

*RCT.* Lynch et al. (2003) tested their adaptation of DBT by randomizing 34 depressed elderly patients to 28 weeks (two cycles of the skills group) of either medication only (MED) or medication plus modified DBT (MED+DBT). The treatment groups did not differ significantly on changes in interviewer-rated depression symptoms, although 71% of MED+DBT patients and only 47% of MED patients were in remission at posttreatment. Only the MED+DBT group changed significantly on a questionnaire measure of depression. At a 6-month follow up, significantly more MED+DBT patients (75%) than MED patients (31%) were in remission.

### ATTENTION-DEFICIT/HYPERACTIVITY DISORDER

Although the primary treatment for attention deficit/hyperactivity disorder (ADHD) is stimulant medication, patients with this disorder may benefit from developing coping skills. Hesslinger and colleagues (2002) in Germany have developed a 13-session weekly group skills-training program for adults with ADHD that is a brief adaptation of DBT skills-training. In addition to presentations and discussion about ADHD, its effects on relationships, neurobiology, depression, substance abuse, and medications, the group includes two sessions on mindfulness practice, two on impulsive behavior and distress tolerance skills, one on emotion regulation skills, and two on conducting behavioral analyses.

*Uncontrolled Trial.* Hesslinger et al. (2002) reported on 11 ADHD patients who received this group treatment and who had very little change in medications during the study. There were significant decreases in depression and ADHD symptoms, and significant improvements in neuropsychological tests of selective and split attention.

### COUPLES

Fruzzetti and Fruzzetti (2003) have described ways in which the presence of BPD characteristics in one or more members of a couple can impact relationship functioning, and they have described the development of a DBT-based treatment for such couples. Fruzzetti and Levensky (2000) have described the use of this treatment model in cases that involve domestic vio-

lence. No systematic data regarding the efficacy of DBT couple treatment have yet been presented.

### INMATES IN CORRECTIONAL SETTINGS

Researchers also have adapted DBT for use in correctional or forensic settings (McCann, Ball, & Ivanoff, 2000). DBT has been modified to include behavioral targets related to homicide and interpersonal violence, attention to the reinforcement of honest recording of maladaptive behaviors, testing skills acquisition with exams and role play quizzes, and emotional insensitivity of antisocial patients. No data have yet been published on the efficacy of such programs.

## PREDICTORS OF OUTCOMES OF DBT

Very little is known currently about predictors of DBT treatment outcome, perhaps in part because most of the outcome studies have been with relatively small samples that do not provide very much statistical power for identifying such predictors. Such predictors could include: (a) characteristics of the patient; (b) characteristics of the therapist; and (c) characteristics of the combination of patient and therapist, including their relationship.

### PATIENT CHARACTERISTICS

Bohus et al. (in press) looked at a number of patient characteristics, including age and employment status, past frequency of hospitalizations and suicide attempts, comorbid Axis I disorders, and severity of BPD, such as number of BPD criteria met and BPD dimensional score. None of these variables significantly predicted responder/nonresponder status of 31 patients in a 3-month inpatient DBT program. Linehan et al. (2002a) reported that, of all the patient and therapist variables they examined as predictors of outcome in their comparison of DBT with treatment by experts, the only significant predictor was patient age (older patients had better outcomes). Robins, Koons, Morse, and Lynch (1999) reported that, among patients in the RCT of Koons et al. (2001), controlling for pretreatment levels, post-treatment parasuicide frequency was predicted by (a) lifetime number of parasuicides, (b) the personality variables sociotropy and autonomy, and (c) ambivalence over expression of emotions. Higher post treatment levels of anger were predicted by pretreatment depression level. The number of BPD criteria still met at posttreatment also was predicted by pretreatment depression level, and interestingly was related to age in different ways in the two treatment conditions. Among patients in DBT, higher age was associated with greater reduction in number of BPD criteria met, whereas among patients in TAU, lower age was associated with better outcome on this variable. These results should be considered cautiously, as they are based on only 10 patients in each group and the effects of predictor variables were not evaluated controlling for other potential predictors.

### THERAPIST CHARACTERISTICS

Linehan et al. (1999) reported that borderline substance abusing women whose therapists consistently achieved high DBT adherence ratings had a significantly higher proportion of clean urinalyses at the end of the treatment year than women whose therapists did not achieve consistent adherence.

### THERAPIST-PATIENT RELATIONSHIP

In his comparison of an adaptation of DBT with client-centered therapy for suicidal borderline patients, Turner (2000) reported that patients' ratings of the helping alliance significantly predicted improvement, and had as strong an effect as the treatment group. The quality of the therapeutic alliance no doubt is an important determinant of outcomes in DBT as well as in other treatments, and indeed DBT places a high priority on treating problems in the relationship. However, Turner (2000) also reported that the two treatment conditions did not differ on the helping alliance ratings, so the group differences in outcome cannot be attributed to differences in the alliance.

## MECHANISMS OF CHANGE IN DBT

How does DBT work? Although the issue of mechanisms of change has been addressed to some extent in the writings of Linehan and others, studies have barely begun to address this issue. This question can be addressed from two perspectives: (a) To what extent are particular aspects of the treatment responsible for its effects? And (b) What changes in the patient mediate the effects of treatment on changes in symptoms and functioning?

### ASPECTS OF THE TREATMENT

One key tenet of DBT is that a combination of skills training and individual treatment is critical for success with severe, multiproblem patients, yet it is unknown to what extent each of these treatment modes is critical to its efficacy.

*Skills Training.* Many of the difficulties in BPD may be linked with deficits or disruptions in emotion regulation skills, which contribute to deficits and disruptions in interpersonal relations and skills, distress tolerance skills, and mindfulness skills. Teaching and rehearsing these skills would be expected to, among other things, help the patient develop greater capabilities to interact assertively, to regulate his or her emotions, to tolerate distress and inhibit behaviors that provide short-term relief from it but create long-term problems, to be more aware of his or her current internal states and external environment, and to be less judgmental. Developing such skills and having them reinforced by the environment would be expected to lead to a variety of positive mental health outcomes. Indeed, RCTs that have examined DBT skills training (enhanced with some tools and tasks usually part of individual therapy) have reported significant benefits for patients with BED (Telch et al., 2001) and for elderly depressed

patients (Lynch et al., 2003). However, such group-based treatment for borderline or suicidal patients could be far less effective. In fact, Linehan (1993a, p. 25) reported that 11 patients who received group DBT skills training in addition to non-DBT individual therapy had no better outcomes than 8 patients who received non-DBT individual therapy only. These data suggest that DBT individual therapy may be essential for suicidal or borderline patients to benefit sufficiently from group skills training (it is also possible that non-DBT individual therapy may have conflicted or otherwise compromised the efficacy of skills training). However, these are data from just one small sample study.

*Individual Therapy.* The strength of the individual psychotherapy might account for the efficacy of DBT. It includes many behavior therapy strategies found to be successful in treatments for other disorders. Also, the unique combination of acceptance and change interventions, dialectical and commitment strategies, and clear nonjudgmental assumptions about patients might constitute some critical active ingredients of individual DBT.

Although both skills training and individual treatment might be efficacious, it remains unclear as to whether either treatment mode is necessary or sufficient. Randomized treatment component analysis studies are needed. One such study currently being conducted in Linehan's lab compares standard DBT (including both skills training and individual therapy), DBT individual therapy with an "activities" group but no skills training, and DBT group skills training with individual case management but no individual therapy.

*Specific Treatment Strategies.* In addition to the effects of different treatment modes, it would be useful to know the importance of particular treatment strategies. In particular, it is largely unknown to what extent DBT change strategies, acceptance strategies, or the integration of both types of strategy are critical to its efficacy. Supporting the importance of the integration of acceptance and change, Shearin and Linehan (1992) reported that sessions in which DBT therapists were rated by their patient both as controlling and as fostering autonomy (a dialectical stance) were more highly associated with subsequent reductions in parasuicidal behavior or ideation than sessions in which therapists were rated only as controlling (pure change) or as fostering autonomy (pure acceptance). Results of the Linehan et al. (2002b) study comparing DBT with comprehensive validation/12-step also suggest that DBT acceptance interventions have some merit as treatments for drug addiction and in preventing dropout, (recognizing, though, that the 12-step program also provided some change strategies). Future studies might apply a dismantling design to examine whether acceptance or change interventions are necessary or sufficient for treatment efficacy.

## CHANGES IN THE PATIENT

In addition to examining the relative importance of a treatment's components, one can ask whether or not the treatment influences clinical outcomes because of its effect on patient characteristics specifically targeted by

that treatment. For example, does DBT lead to improvements in patients' emotion regulation and other skills and, if so, to what extent are these improvements responsible for the treatment gains reported in outcome studies? It has been found that, among parasuicidal BPD women in treatment (DBT or TAU), inappropriate interpersonal problem-solving strategies predicted subsequent parasuicidal behaviors (Kehrer & Linehan, 1996), but no research yet has investigated the effects of treatment on these or other skilled behaviors or on other patient characteristics. Several research groups are beginning to address these questions.

## CURRENT DEVELOPMENTS AND FUTURE DIRECTIONS

In addition to the developments in DBT described above, there are a number of other recent developments in theory, practice, and research.

### DISSEMINATION TO CLINICIANS

As awareness of the outcome research in DBT has grown, there has been a demand for training in the treatment. As such training becomes more widespread, it becomes important to evaluate its effects on therapists' behavior and on patient outcomes. Training research questions include how much training is required for beneficial effects, and do low levels of training improve outcomes or lead to greater problems? A couple of studies address these questions. In the Barley et al. (1993) study of inpatient DBT, there was no change in patient behaviors during the 10-month training phase, only during the full implementation phase. Trupin, Stewart, Beach, and Boesky (2002) developed a DBT program for incarcerated female juvenile offenders. Staff on one unit of a juvenile rehabilitative center received 80 hours of DBT training, staff on another unit received only 16 hours of training, and staff on a third unit received no training. Over the course of a 10-month intervention, there was a significant reduction in both youth behavior problems and punitive staff responses on the unit receiving the higher level of training, but no such reduction and even an increase in staff punitive responses on the unit with less training. These results highlight the need for further research on the issue of training in DBT.

### NEW TREATMENT DEVELOPMENTS

Clinicians using DBT with a variety of populations have translated the skills training manual for Spanish speakers and have adapted skills training handouts for developmentally disabled and deaf individuals, among others. Linehan currently is completing a comprehensive revision of the skills training manual, and books describing treatment manuals for applying DBT with adolescents and with couples and families are being developed. It is in the nature of a dialectical approach that the treatment can be expected to change over time in response to the accumulation of research data on the differential efficacy of treatment components and on the specific needs of new populations for whom the treatment may be adapted.

## REFERENCES


Barley, W. D., Buie, S. E., Peterson, E. W., Hollingsworth, A. S., Griva, M., Hickerson, S. C., et al. (1993). The development of an inpatient cognitive-behavioral treatment program for borderline personality disorder. *Journal of Personality Disorders, 7,* 232-240.

Bohus, M., Haaf, B., Simms, T., Limberger, M. F., Schmal, C., Unckel, C., et al. (in press). Effectiveness of inpatient dialectical behavior therapy for borderline personality disorder: A controlled trial. *Behaviour Research and Therapy.*

Bohus, M., Haaf, B., Stiglmayr, C., Pohl, U., Boehme, R., & Linehan, M. (2000). Evaluation of inpatient dialectical behavior therapy for borderline personality disorder - a prospective study. *Behaviour Research and Therapy, 38,* 875-887.

Elwood, L. M., Comtois, K. A., Holdcraft, L. C., & Simpson, T. L. (2002, November). *Effectiveness of dialectical behavior therapy in a community mental health center.* Paper presented at the annual meeting of the Association for Advancement of Behavior Therapy, Reno, NV.

Evans, K., Tyrer, P., Catalan, J., Schmidt, U., Davidson, K., Dent, J., et al. (1999). Manual-assisted cognitive-behavior therapy (MACT): A randomized controlled trial of a brief intervention with bibliotherapy in the treatment of recurrent deliberate self-harm. *Psychological Medicine, 29,* 19-25.

Fruzzetti, A. E., & Fruzzetti, A. R. (2003). Partners with borderline personality disorder: Dialectical behavior therapy with couples. In D. K. Snyder & M. A. Whisman (Eds.), *Treating difficult couples: Managing emotional, behavioral, and health problems in couple therapy.* New York: Guilford.

Fruzzetti, A. E., & Levensky, E. R. (2000). Dialectical behavior therapy for domestic violence: Rationale and procedures. *Cognitive and Behavioral Practice, 7,* 435-447.

Hesslinger, B., Tebartz van Elst, L., Nyberg, E., Dykierek, P., Richter, H., Berner, M., et al. (2002). Psychotherapy of attention deficit hyperactivity disorder in adults: A pilot study using a structured skills training program. *European Archives of Psychiatry and Clinical Neuroscience, 252,* 117-184.

Kehrer, C. A., & Linehan, M. M. (1996). Interpersonal and emotional problem-solving skills and parasuicide among women with borderline personality disorder. *Journal of Personality Disorders, 10,* 153-163.

Koons, C., Robins, C. J., Tweed, J. L., Lynch, T. R., Gonzelez, A. M., Morse, J. Q., et al. (2001). Efficacy of dialectical behavior therapy in women veterans with borderline personality disorder. *Behavior Therapy, 32,* 371-390.

Linehan, M. M. (1987). Dialectical behavior therapy: A cognitive-behavioral approach to parasuicide. *Journal of Personality Disorders, 1,* 328-333.

Linehan, M. M. (1993a). *Cognitive-behavioral treatment of borderline personality disorder.* New York: Guilford.

Linehan, M. M. (1993b). *Skills training manual for treating borderline personality disorder.* New York: Guilford.

Linehan, M. M., Armstrong, H. E., Suarez, A., Allmon, D., & Heard, H. L. (1991). Cognitive-behavioral treatment of chronically suicidal borderline patients. *Archives of General Psychiatry, 48,* 1060-1064.

Linehan, M. M., Comtois, K .A., Brown, M. Z., Reynolds, S. K., Welch, S. S., Sayrs, J., & Korslund, K. E. (2002a, November). DBT vs. non-behavioral treatment by experts in the community: Clinical outcomes at one year. In S. K. Reynolds (Chair), *The University of Washington treatment study for borderline personality disorder: DBT vs. nonbehavioral treatment by experts in the community.* Symposium conducted at the annual meeting of the Association for Advancement of Behavior Therapy, Reno, NV.

Linehan, M. M., Dimeff, L. A., Reynolds, S. K., Comtois, K. A., Welch, S. S., Heagerty, P., et al. (2002b). Dialectical behavior therapy versus comprehensive validation therapy plus 12-step for the treatment of opioid dependent women meeting criteria for borderline personality disorder. *Drug and Alcohol Dependence, 67,* 13-26.

Linehan, M. M., Schmidt, H. I., Dimeff, L. A., Craft, J. C., Kanter, J., & Comtois, K. A. (1999). Dialectical behavior therapy for patients with borderline personality disorder and drug-dependence. *American Journal on Addictions, 8,* 279-292.

Linehan, M. M., Tutek, D., Heard, H. L., & Armstrong, H. E. (1994). Interpersonal outcome of cognitive-behavioral treatment for chronically suicidal borderline patients. *American Journal of Psychiatry, 51,* 1771-1776.

Linehan, M. M., Heard, H. L., & Armstrong, H. E. (1993). Naturalistic follow-up of a behavioral treatment for chronically parasuicidal borderline patients. *Archives of General Psychiatry, 50,* 157-158.

Lynch, T. R., Morse, J. Q., Mendelson, T., & Robins, C. J. (2003). Dialectical behavior therapy for depressed older adults: A randomized pilot study. *American Journal of Geriatric Psychiatry, 11,* 33-45.

McCann, R. A., Ball, E. M., & Ivanoff, A. (2000). DBT with an inpatient forensic population: The CMHIP forensic model. *Cognitive and Behavioral Practice, 7,* 447-456.

Mental Health Center of Greater Manchester, New Hampshire. (1998). Integrating dialectical behavioral therapy into a community mental health program. *Psychiatric Services, 49,* 1338-1340.

Miller, A. L., Rathus, J. H., Linehan, M. M., Wetzler, S., & Leigh, E. (1997). Dialectical behavior therapy adapted for suicidal adolescents. *Journal of Practical Psychiatry and Behavioral Health, 3,* 78-86.

Rathus, J. H., & Miller, A. L. (2002). Dialectical behavior therapy adapted for suicidal adolescents. *Suicide and Life Threatening Behavior, 32,* 146-157.

Robins, C. J. (2002). Zen principles and mindfulness practice in dialectical behavior therapy. *Cognitive and Behavioral Practice, 9,* 50-57.

Robins, C. J., Ivanoff, A. M., & Linehan, M. M. (2001). Dialectical behavior therapy. In W. J. Livesley (Ed.), *Handbook of personality disorders: Theory, research, and treatment* (pp. 117-139). New York: Guilford.

Robins, C. J., & Koons, C. R. (2004). Dialectical behavior therapy for severe personality disorders. In J. J. Magnavita (Ed.), *Treating personality disorders: Theory, practice and research* (pp. 221-253). New York: Wiley.

Robins, C. J., Koons, C. R., Morse, J. Q., & Lynch, T. R. (1999, November). Predictors of outcome in treatment of borderline women veterans. In C. J. Robins (Chair), *Dialectical behavior therapy for multi-problem patients: Findings from controlled studies.* Symposium conducted at the annual meeting of the Association for Advancement of Behavior Therapy, Toronto, Canada.

Safer, D. L., Telch, C. F., & Agras, W. S. (2001). Dialectical behavior therapy for bulimia nervosa. *American Journal of Psychiatry, 158,* 632-634.

Shearin, E. N., & Linehan, M. M. (1992). Patient-therapist ratings and relationship to progress in dialectical behavior therapy for borderline personality disorder. *Behavior Therapy, 23,* 730-741.

Simpson, E. B., Pistorello, J., Begin, A., Costello, E., Levinson, H., Mulberry, S., et al. (1998). Use of dialectical behavior therapy in a partial hospital program for women with borderline personality disorder. *Psychiatric Services, 49,* 669-673.

Swenson, C. R., Sanderson, C., Dulit, R. A., & Linehan, M. M. (2001). The application of dialectical behavior therapy for patients with borderline personality disorder on inpatient units. *Psychiatric Quarterly, 72,* 307-324.

Telch, C. F., Agras, W. S., & Linehan, M. M. (2001). Dialectical behavior therapy for binge eating disorder. *Journal of Consulting and Clinical Psychology, 69,* 1061-1065.

Trupin, E. W., Stewart, D. G., Beach, B., & Boesky, L. (2002). Effectiveness of dialectical behaviour therapy program for incarcerated female juvenile offenders. *Child & Adolescent Mental Health, 7,* 121-127.

Turner, R. M. (2000). Naturalistic evaluation of dialectical behavior therapy-oriented treatment for borderline personality disorder. *Cognitive and Behavioral Practice, 7,* 413-419.

van den Bosch, L. M. C., Verheul, R., Schippers, G. M., & van den Brink, W. (2002). Dialectical behavior therapy of borderline patients with and without substance abuse problems: Implementation and long-term effects. *Addictive Behaviors, 27,* 911-923.

Verheul, R., van den Bosch, L. M. C., Koeter, M. W. J., de Ridder, M. A. J., Stijnen, T., & van den Brink, W. (2003). Dialectical behavior therapy for women with borderline personality disorder. *British Journal of Psychiatry, 182,* 135-140.