

Dialectical Behavior Therapy for Depressed Older Adults

A Randomized Pilot Study

*Thomas R. Lynch, Ph.D., Jennifer Q. Morse, Ph.D.
Tamar Mendelson, M.A., Clive J. Robins, Ph.D.*

Objective: Although there is evidence for the efficacy of antidepressants and for some individual and group psychotherapy interventions for depressed older adults, a significant number of these do not respond to treatment. Authors assessed the benefits of augmenting medication with group psychotherapy. **Methods:** They randomly assigned 34 (largely chronically) depressed individuals age 60 and older to receive 28 weeks of antidepressant medication plus clinical management, either alone (MED) or with the addition of dialectical behavior therapy skills-training and scheduled telephone coaching sessions (MED + DBT). **Results:** Only MED + DBT showed significant decreases on mean self-rated depression scores, and both treatment groups demonstrated significant and roughly equivalent decreases on interviewer-rated depression scores. However, on interviewer-rated depression, 71% of MED + DBT patients were in remission at post-treatment, in contrast to 47% of MED patients. At a 6-month follow-up, 75% of MED + DBT patients were in remission, compared with only 31% of MED patients, a significant difference. Only patients receiving MED + DBT showed significant improvements from pre- to post-treatment on dependency and adaptive coping that are proposed to create vulnerability to depression. **Conclusion:** Results from this pilot study suggest that DBT skills training and telephone coaching may offer promise to effectively augment the effects of antidepressant medication in depressed older adults. (Am J Geriatr Psychiatry 2003; 11:33-45)

Late-life depression is a serious mental health problem. Recent epidemiological research estimates that the prevalence of clinically significant depression ranges from 3% to 10% among community-dwelling older adults.¹⁻³ Research has shown that older adults with depressive symptoms have significantly greater

health services use and are more likely to perceive their own health as poor than are older adults without depressive symptoms.⁴ Furthermore, late-life depression is often associated with increased risk for disability⁵ as well as significant impairments in functioning. For instance, older persons with chronic depression have

Received May 14, 2002; revised August 23, 2002; accepted September 6, 2002. From the Duke University Department of Psychiatry and Behavioral Sciences (TRL,CJR) and the Duke University Department of Psychology: Social and Health Sciences (JQM, TM). Address correspondence to Thomas R. Lynch, Department of Psychiatry and Behavioral Sciences, Duke University Medical Center, Box 3022, Durham, NC 27704. e-mail: lynch011@mc.duke.edu

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been found to have a greater decline in self-reported physical functioning over 3 years and, in the oldest old, a greater decline has been found in observed physical functioning over 3 years.⁶ Also, suicide rates are higher among elderly persons than any other age-group.⁷ Despite the need for effective mental health interventions with elderly patients, they are an underserved population.^{8,9} Furthermore, other data indicate that only 10% of elderly persons in need of psychiatric intervention actually receive it.¹⁰ In order to address these difficulties, it is imperative that we develop interventions that effectively target the specific needs and challenges presented by depressed older adults.

Treatments for Depression in Older Adults

Cognitive, behavioral, interpersonal, and psychodynamic treatments have all been shown to have significant effects on rates of remission and reductions in depressive symptoms in depressed elderly patients,¹¹⁻¹⁴ and interpersonal therapy, either alone or in combination with nortriptyline, has been found to reduce recurrence rates.¹⁵

Group therapy has also been found to be effective and may offer advantages for many elderly patients; it is generally less expensive than individual treatment, and the social network provided by group therapy may provide therapeutic benefits to elderly patients experiencing a loss of interpersonal relationships through the death of friends and spouses. Our review of the literature found six published reports on controlled studies of group treatments for non-cognitively impaired elderly patients with depression. Perrotta and Meacham¹⁶ reported that group reminiscence therapy was no more effective than a waiting-list control condition. In contrast, self-management therapy and education groups were both superior to a waiting-list control condition.¹⁷ In comparisons with medications, one nonrandomized controlled study found that cognitive-behavioral (CBT) and psychodynamic group therapies were both more effective than placebo pill but less effective than tricyclics¹⁸ and that, although the cognitive-behavioral and psychodynamic groups were equivalent on most measures of depression and anxiety, the CBT group had lower post-treatment scores on one depression measure.¹⁹ A randomized controlled study found that cognitive therapy with or without alprazolam (an anxiolytic) was more effective than alprazolam alone.²⁰ Also, the addition of behavioral group therapy to standard

hospital care (which presumably included medication) led to higher remission rates among inpatients than standard care alone.²¹ In summary, certain group therapy interventions, particularly cognitive-behavioral groups, appear promising for use with depressed older adults.

Somatic treatments have also frequently been used with elderly patients. In a recent metaanalysis of comparative studies of antidepressant use in patients over the age of 60, 58% of study patients showed a 50% reduction in symptoms in response to serotonin reuptake inhibitors, and 63% responded similarly to tricyclics, compared with 27% of patients with similar responses to placebo.²² Researchers stress that antidepressant treatment in older adults must consider both efficacy and safety, given the higher rates of physical illness, possible drug interactions from multiple medications, and danger of side effects in older adults.²²⁻²⁴

Augmentation Strategies

Although there is evidence for the efficacy of antidepressant medications and for some individual and group psychotherapy interventions for depressed older adults, a significant number of depressed elderly patients do not respond to treatment. For example, within 1 year of discontinuing antidepressant treatment, approximately 60% of adult and geriatric samples have been shown to experience a depressive relapse.^{25,26} Also, 10% to 30% of depressed adults taking an antidepressant are partially or totally resistant to the treatment.²⁷ Similar results have been reported in studies examining psychotherapy alone. For example, in Thompson et al.'s¹³ study of depressed elderly patients, 30% were judged to be treatment nonresponders.

It is possible that the combination of psychotherapy and medication may be more effective than either one alone for many depressed elderly patients, as has been found for chronic depression in adults generally by Keller et al.²⁸ In a recent randomized trial, Thompson et al.¹⁴ examined the efficacy of desipramine-alone vs. cognitive behavioral therapy-alone (CBT) vs. a combination of the two in 102 depressed older adult patients. All treatments resulted in significant improvement. However, in most analyses, patients in the combined group showed greater improvement than those in the desipramine-alone group.

Although the Thompson et al.¹⁴ study examined the effects of a combined medication/individual psycho-

therapy approach, we know of no randomized studies to date examining the efficacy for depressed older adults of augmenting antidepressant medication with a group therapy intervention. That is the purpose of the present study.

Dialectical Behavior Therapy

Lynch²⁹ proposed that dialectical behavior therapy (DBT)^{30,31} might offer advantages for treating late-life depression. DBT was originally developed and shown effective for treatment of chronically suicidal or self-injurious women with borderline personality disorder.³²⁻³⁵ However, the coping skills that are an essential element of the treatment can be conceptualized as skills useful for managing life, independent of diagnosis. Lynch²⁹ modified standard DBT for use with depressed older adults and outlined skills hypothesized to be particularly relevant in treating this population, including acceptance of elements of life that cannot be changed (radical acceptance), increased awareness without judgment (mindfulness), attentional control (mindfulness), better tolerance of pain (distress tolerance), acting opposite to depressive urges (opposite action), and increased interpersonal effectiveness (see Lynch²⁹ for greater detail).

The central difference between standard DBT and DBT for depressed elderly patients concerns the targets of treatment: DBT for depressed elderly patients includes a focus on behaviors functionally related to depression, as well as rigid maladaptive coping styles that may serve as vulnerability factors for depression maintenance and recurrence. Based on the dialectical perspective of DBT, the therapy teaches clients to achieve balance on several "poles" of cognitive, affective, and behavioral functioning ("dialectical dilemmas"), such that rigid or extreme stances are relaxed in favor of more flexible and adaptive responses. Poles adapted for depression in older adults relate to styles of trying to solve problems, accepting reality, relating to others, and maintaining a sense of self.²⁹ Consequently, for this study, we predicted that DBT would influence personality and coping styles that may increase vulnerability to future depressive episodes (e.g., interpersonal reactivity³⁶ and/or emotional ambivalence³⁷).

The Current Study

The current study reports the results of a pilot investigation undertaken to empirically evaluate the effi-

cacy of a modification of DBT in treating late-life depression. Patients were not selected on the basis of treatment-resistance or personality disorder dysfunction. Instead, the goal of this initial study was to examine the efficacy of DBT skills training plus scheduled telephone coaching for depression in general among elderly patients. We chose to include half-hour scheduled telephone coaching to preserve the suggested modes of DBT, reduce the intensity of the intervention from the standard DBT practice of weekly hour-long individual therapy, reduce the burden of travel, and minimize dependency on the therapist. We refer to this as telephone coaching rather than therapy because the term "coaching" more accurately reflects the content of the contact (i.e., an emphasis on application of skills learned in group).

Thirty-four depressed individuals age 60 and over were randomly assigned to receive 28 weeks of standard medication management, either alone or in combination with a DBT group skills class and telephone coaching. Assessments at pre-treatment, post-treatment, and 6-month follow-up included both clinician and patient ratings of depressive symptoms. We expected both treatment groups to show improvements in depressive symptoms over time and hypothesized that the addition of DBT would lead to a greater mean improvement and a greater proportion of asymptomatic patients. We also assessed several secondary outcome measures that may be relevant for risk of relapse. We hypothesized that patients in DBT also would show more change on these measures than those receiving medication only.

METHODS

Participants

Participants were enrolled in the Clinical Research Center (CRC) for the Study of Depression in Late Life at the Duke University Medical Center. To be eligible for the study, participants were required to meet criteria for a current episode of unipolar major depressive disorder, according to the Duke Depression Evaluation Schedule (DDES³⁸) and be at least 60 years old. Participants were also required to score 18 or more on the 17-item Hamilton Rating Scale for Depression (Ham-D³⁹) or score 19 or more on the Beck Depression Inventory (BDI⁴⁰), forgo any other form of psychotherapy during the course of the study, and take antidepressant medi-

cation as prescribed by their study psychiatrist. Exclusion criteria included a diagnosis of bipolar disorder, psychotic symptoms, signs of cognitive impairment indicated by a Mini-Mental State Exam (MMSE⁴¹) score of less than 25, or current ECT treatment.

Specifically, 95 potential participants were screened before randomization. Of these, 13 were unable to participate because of transportation difficulties or living too far away, 7 could not participate because of time constraints, 6 refused because they desired individual psychotherapy, 3 were excluded for medical complications, 4 were excluded for a diagnosis of bipolar disorder, 6 were excluded because of current ECT treatment, 5 required a more intense level of treatment (e.g., hospitalization), 7 had low depressive severity ratings, 6 refused participation without giving a particular reason, and 2 were excluded because their study psychiatrist decided that they would not be appropriate subjects for antidepressant medication.

Thirty-six individuals met criteria and began the study (see Table 1). One was excluded after being diagnosed with bipolar disorder and was referred to other treatment. A second was excluded because she dropped out of the DBT skills-training class and failed to complete assessments. This left a final sample of 34 (17 in each condition). All participants were living independently and met criteria for DSM-IV major depres-

sive disorder. Of the 34 participants, 29 (81%) reported at least one episode previous to the current one. Nineteen of these reported between 2 and 25 episodes (mean: 8; standard deviation [SD]: 8), and the other 10 reported more episodes than they could remember. Mean reported age at onset of depressive episodes was 36 (SD: 19), with a range of 7 to 70. Reported age at onset was before age 30 for 13 participants (38%), between ages 30 and 49 for 12 participants (36%), and age 50 or older for 9 participants (26%).

With respect to medical difficulties, 10 participants (29%) had cardiac conditions; 7 (21%) had vascular conditions; 3 (9%) had respiratory conditions; 8 (24%) had conditions related to the eye, ear, nose, throat, or larynx; 5 (15%) had conditions related to the upper GI tract; 5 (15%) had conditions related to the lower GI tract; 1 (3%) had a kidney condition; 8 (24%) had genitourinary conditions; 15 (44%) had musculo-skeletal-integumentary conditions; 1 (6%) had a neurological condition; and 11 (32%) had conditions related to endocrine-metabolic functioning.

Evaluation and Assignment Procedure

Potential participants were given a diagnostic evaluation with the DDES,³⁸ a composite instrument that includes the Diagnostic Interview Schedule⁴² and several depression-rating scales. The DDES provides for diagnoses of DSM-III and DSM-III-R disorders, including major depressive disorder and its subtypes; generalized anxiety, panic, or somatization disorder; and alcohol abuse/dependence. DSM-IV diagnoses were assigned in a consensus diagnostic conference that included a board-certified or board-eligible psychiatrist, using the Longitudinal, Expert, and All Available Data (LEAD) standard⁴³ and informed by screening data, the DDES, and any other available clinical data.

After meeting inclusion criteria, participants were assigned either to medication-only (MED) or to medication-plus modified dialectical behavior therapy (MED + DBT). Because DBT included a skills-training group, the first block ($n = 9$) of potential participants was assigned to MED + DBT in order to ensure a sufficient number of group members. After that, the next four potential participants were assigned to MED-only. The remaining participants were assigned randomly to treatment condition by coin toss.

Diagnostic interviews were completed at pre-treatment only. All other assessments were obtained at

TABLE 1. Demographics of total sample

Demographic Variable	Sample Value
Age range, years	60-80 (mean: 66; SD: 5)
Gender (female, <i>n</i>)	29 (85%)
Education, years	7-20 (mean: 14; SD: 3)
Household income	
\$20,001-\$30,000	29%
\$40,001-\$50,000	29%
Marital status	
Married	41% ($n = 14$)
Widowed	15% ($n = 5$)
Separated/Divorced	41% ($n = 14$)
Never married	3% ($n = 1$)
Ethnicity	
Caucasian	85% ($n = 29$)
Hispanic American	6% ($n = 2$)
African American	9% ($n = 3$)
Previous depressive episodes	
None	15% (5)
2-25	55% (19)
More than can remember	30% (10)

Note: SD: standard deviation.

pre-treatment, post-treatment (28 weeks), and at a 6-month-follow-up. Research assistants who were not associated with the participant's treatment completed all post-treatment and follow-up semistructured interviews, and participants were paid \$25 each for the last two assessments.

Medication and Clinical Management

Medication and clinical management followed the usual standards of treatment provided to participants in the CRC. This typically included medication-management visits with a board-certified psychiatrist scheduled approximately every 13 weeks throughout the study. Appointments were scheduled more frequently if the study psychiatrist determined that depressive symptoms required more monitoring or needed to manage untoward medication side effects. Prescribing psychiatrists were not otherwise involved in this study. After completion of the study, a psychiatrist who had not been involved in the treatment or research reviewed the antidepressants, dosages, and durations of treatment for all participants. In his judgment, all participants had been maintained at a reasonable clinical dosage and duration with one exception. This individual remained at a lower dose of medication because the study psychiatrist had observed that she was responding adequately to the lower dosage, and attempts to raise the dosage resulted in her experiencing uncomfortable side effects. Indeed, post-hoc examination of depression scores showed clinically significant improvement over time with this participant.

All participants were required to be on a physician choice of antidepressant medication during the acute phase. Some participants were prescribed more than one antidepressant. Among the 17 patients in the MED-only condition, 10 (59%) were prescribed a selective serotonin reuptake inhibitor (SSRI), five (29%) were prescribed a tricyclic, and 12 (71%) were prescribed other antidepressants, such as bupropion or venlafaxine. Among patients in the MED+DBT group, the corresponding figures were 14 (82%) prescribed an SSRI; three (18%), a tricyclic; and 10 (59%) another antidepressant. Participants were also on a number of other medications. These included 11 prescribed anxiolytics, 1 prescribed pain medications, and 18 prescribed medications for medical conditions.

Also, when possible, participants' use of antidepressants for the 6 months included in follow-up was

classified as adequate or inadequate in terms of dosage for therapeutic effect according to standards by Nemeroff and Schatzberg.⁴⁴ In the MED group, six of the individuals maintained an adequate prescription; two maintained adequate prescriptions for some portion of the 6 months and then discontinued medication; one maintained an inadequate prescription level; three were not currently prescribed medications; and there was no information on five others. In the MED+DBT group, six of the participants maintained an adequate prescription, one maintained an adequate prescription and then discontinued medications, one discontinued medications and then returned to an adequate prescription after 4 months, one was not prescribed medications during this time, and there was no information on the remaining eight participants.

Dialectical Behavior Therapy

The modification of DBT consisted of a weekly skills-training group plus weekly half-hour individual therapist telephone contact. Each group session lasted 2 hours, with an open enrollment. Four group sessions focused on education about depression, teaching core mindfulness concepts and practices, and encouraging participants to develop a daily mindfulness practice. After this, each session began with 10 minutes of mindfulness practice and discussion. Two sessions were spent teaching distress-tolerance skills that participants could use to tolerate suicidal ideation; strong negative emotions; distressing memories; and stressful situations, rather than engaging in impulsive or other harmful behaviors. Three sessions focused on emotion-regulation skills, including how to identify and label emotions, understand their functions, determine when to accept an emotion and when to attempt to change it, and strategies for changing emotions. Five sessions taught interpersonal effectiveness skills aimed at helping participants make requests or say no to requests from others while maintaining or improving their relationships and self-respect. This 14-week sequence was then repeated, so that each topic was covered twice during the 28 weeks. DBT participants were asked to complete daily diary cards monitoring depressive symptoms, other clinical information, and weekly homework assignments. Each participant had an individual DBT therapist who scheduled a 30-minute telephone contact once per week. Planned telephone sessions focused on reviewing diary cards and problem-solving around difficulties

in applying skills. Participants were also allowed to telephone their therapist if in crisis or if in need of skills-coaching during distressing times.

After the 28-week skills class, participants continued to receive 30-minute telephone coaching sessions, but at a reduced frequency of once every 2 weeks for 3 months and then once per month for the next 3 months. The focus of these sessions was on reinforcing skill maintenance and promoting skill use, with the intention of preventing depressive relapse.

DBT Therapists

Four women and two men served as individual DBT therapists or DBT group co-leaders for this study. The therapists included two clinical psychology doctoral students (JM and TM), one M.A.-level therapist, two clinical psychology interns, and one licensed Ph.D. clinical psychologist (TL). Clinician experience with DBT ranged from 6 months to more than 5 years at the start of the study. The therapists were trained in DBT by the first and last authors (TL and CR), both of whom had attended intensive training in DBT, consisting of 10 days of instruction by Linehan and her associates and 6 months of home study and practice, and had been rated as adherent in a previous DBT outcome study.³² All DBT group and individual sessions were audiotaped and reviewed during supervision by the first author.

Measures

Depression and hopelessness. We utilized validated and frequently used measures of depressive symptoms. Scores on the 17-item Ham-D³⁹ were obtained from interviews administered by two psychology doctoral students and five undergraduate research assistants who had previously received at least 10 hours of training. The raters were not completely unaware of condition assignment. Both doctoral-level students were aware of condition assignment and, although efforts were made to keep research assistants unaware of condition assignment, this was, at times, not feasible. The use of training, collaborative self-report data through the BDI, and a number of independent raters were all taken as precautions to minimize possible biasing of outcome assessment through expectancy effects. Furthermore, the raters who also served as therapists in the study did not assess patients with whom they had direct therapeutic contact. Each rater's scores on a series of training tapes

were compared with the scores of the first author, who is a licensed clinical psychologist with considerable experience with the Ham-D. The Pearson product-moment correlation coefficient was calculated between the total scores assigned independently by each rater and by the first author. The scores were then transformed to z-scores, averaged, and then back-transformed. The average correlation was 0.92. Coefficient alpha for the Ham-D in this sample was 0.86.

Self-report of depression symptoms was obtained with the BDI,⁴⁰ for which Gallagher et al.⁴⁵ reported a test-retest correlation of 0.90 and a coefficient alpha of 0.91 in an elderly sample. The internal consistency of the BDI was 0.83 in the current sample.

Hopelessness was assessed with the Beck Hopelessness Scale (BHS⁴⁶). The BHS is a 20-item True-False self-report questionnaire that measures negative expectations about the future. The internal consistency of the BHS was 0.93 in a sample of hospitalized inpatients who had made a recent suicide attempt, and correlations with clinical ratings and other tests measuring negative attitudes about the future are also high (in a general-practice sample, r was 0.74; in a sample of suicide attempters, r was 0.62). In the present study, the internal consistency was 0.61.

Emotional ambivalence. Although the primary focus of this study was on outcomes related to depression, we also were interested in improving behaviors, beliefs, and attitudes theoretically related to maintaining depression or increasing vulnerability to depressive relapse. These included ambivalence over emotional expression and attempted suppression of unwanted thoughts.

Ambivalence over expression of emotions was measured with the Ambivalence Over Emotional Expressiveness Questionnaire (AEQ⁴⁷). These authors have described ambivalence over expression of emotions as conflict between style of emotional expression and motivation for emotional expression. Thus, ambivalence over emotional expression can range from wanting to express but not being able to through expressing and later regretting this. The self-report questionnaire contains 28 items rated on 5-point Likert scales. Items measure attempts to inhibit emotional expression and rumination about unwanted expression of emotion. The authors report 6-week test-retest reliability of 0.78 and internal reliability of 0.89. In the present sample, the alpha coefficient was 0.88.

A pattern of suppression of unwanted thoughts was measured with the White Bear Suppression Inventory (WBSI⁴⁸). This self-report questionnaire contains 15 items rated on 5-point Likert scales. Wegner and Zanna⁴⁸ reported internal reliability of 0.89 and a 12-week test-retest correlation of 0.80. Scores correlate with frequencies of intrusive thinking in thought-suppression experiments.⁴⁹ In the present sample, the internal consistency of the WBSI was 0.91.

Coping styles. Coping styles were measured with the Coping Styles Questionnaire (CSQ⁵⁰), a 60-item self-report measure. Monat and Lazarus⁵¹ have defined coping as “an individual’s efforts to master demands (conditions of harm, threat, or challenge) that are appraised (or perceived) as exceeding or taxing his or her resources (p 5).” Respondents rate their frequencies of various coping behaviors as Always, Often, Sometimes, or Never. The scales of the CSQ are Rational Coping, Detached Coping, Emotional Coping, and Avoidant Coping. We reverse-coded Emotional and Avoidant Coping so that high scores reflected more adaptive coping for all subscales. The authors reported 3-month test-retest correlations of 0.80, 0.79, 0.77, and 0.70, and internal consistency estimates of 0.85, 0.90, 0.74, and 0.69 for Rational, Detached, Emotional, and Avoidant Coping scales, respectively. In the present sample, the internal consistencies were 0.88, 0.85, 0.77, and 0.79, respectively, and the internal consistency of overall adaptive coping (the sum of all items) was 0.78.

Sociotropy and autonomy. These personality variables, which have been shown to predict increases in depressive symptoms or relapse to depression after personality-congruent stressors,³⁶ were assessed with the Personal Style Inventory (PSI⁵²). Sociotropy has been defined as a personality style in which an individual is characterized by concerns over interpersonal relationships and a strong need for close relationships.⁵³ Autonomy, conversely, has been described as a high need for independence and achievement.⁵⁴ This self-report questionnaire contains 48 items rated on 6-point Likert scales. Both the Sociotropy Scale (24 items) and the Autonomy Scale (24 items) have good internal consistency and construct validity in both student and depressed clinical samples.^{52,55} In the present sample, the alpha coefficients for sociotropy and autonomy were 0.84 and 0.83, respectively.

RESULTS

Rationale for Analyses

Repeated-measures ANOVAs were performed for each dependent variable to examine the effects of group, time, and the interaction of group with time. Separate ANOVAs examined changes from pre- to post-treatment and from post-treatment to follow-up. To control for the probability of making a Type I error, we used a modified Bonferroni correction (i.e., eight comparisons for each group). Consequently, p values for within-group analyses were considered significant if they were ≤ 0.006 . Also, many of the analyses reported are exploratory analyses examining the post-hoc analyses of differences in group means without significant time \times group interaction effects. Because of the small sample size and low power associated with a pilot study, these results are reported without the significant interaction and will be used to guide future research. It is recognized, however, that a significant group \times time interaction effect is one of the primary analyses of interest. For all analyses, data were considered valid for each participant only if 10% or fewer of the items for a particular summary score were missing. As a result, *n* varies somewhat across measures. For cases with missing data up to 10% on a scale, the mean of that participant’s other item scores on that scale was substituted for the missing items.

Preliminary Analyses

Five participants in the MED condition failed to complete the self-report measures at pre-treatment and were therefore also not assessed on these measures at post-treatment or follow-up. However, we were able to obtain Ham-D interview ratings on these participants. The frequency of missing data was significantly higher in the MED group than in MED + DBT at pre-treatment ($\chi^2_{(1)} = 5.86$; $p = 0.02$), which was likely related to less contact with the MED group on the part of investigators. However, there were no significant differences between groups in missing data at post-treatment ($\chi^2_{(1)} = 3.29$; $p = 0.07$), and there were no missing data for the follow-up assessment.

Table 2 presents the means and SDs of the primary and secondary outcome measures for each group at pre- and post-treatment. Because neither group showed significant change in mean score on any variable from post-

treatment to follow-up, we do not present the follow-up scores in a table. In order to determine whether randomization succeeded in distributing participants evenly, we compared the treatment groups on all outcome measures at pre-treatment. The two groups did not differ on the BDI ($t_{[23]} = 2.02$; $p = 0.06$) or Ham-D ($t_{[30]} = -1.50$; $p = 0.14$), or on any of the secondary outcome measures (all $ps > 0.10$).

Changes in Depression

As shown in Table 2, ANOVAs revealed significant decreases in Ham-D scores for both groups from pre- to post-treatment. Both groups maintained these improvements at follow-up but did not show further decreases in Ham-D scores (MED: $F_{[1,15]} = 0.00$, NS; MED + DBT: $F_{[1,14]} = 1.07$, NS). Table 2 shows that the MED + DBT group also showed significantly decreased BDI scores from pre- to post-treatment, whereas this change was not significant for MED-only. MED + DBT maintained its initial improvement at follow-up, and neither group showed further decreases in BDI scores (MED: $F_{[1,9]} = 0.16$, NS; MED + DBT: $F_{[1,14]} = 0.49$, NS). The group \times time interactions for Ham-D and BDI were not significant for pre- to post-treatment or for post-treatment to follow-up.

We used the reliable change index (RC⁵⁶) to determine whether an individual's depression severity scores changed reliably. RC equals the absolute magnitude of

change divided by the standard error of the difference between the two test scores. The standard errors of measurement required to calculate the standard error of difference were computed using standard deviations of the pretest scores for all participants and reliability estimates (coefficient alphas) of 0.86 for the BDI⁵⁷ and 0.90 for the Ham-D.⁵⁸ The numbers of participants who reliably improved, reliably deteriorated, or did not significantly change from pre-treatment to post-treatment on the BDI and Ham-D are reported in Table 3. For BDI scores, we found that five MED + DBT patients (36%) improved reliably between pre-treatment and post-treatment. In contrast, four MED patients (40%) improved reliably. On the Ham-D, 14 MED + DBT patients (88%) improved reliably, and 13 MED-only patients (87%) improved reliably.

Reliable change indices were also calculated from post-treatment to the 6-month follow-up. With respect to BDI scores, we found that three MED + DBT patients (20%) improved reliably between post-treatment and follow-up, whereas 11 (73%) remained the same, and one (7%) deteriorated. In contrast, one MED patient (11%) improved reliably, and the remaining nine (89%) did not change reliably. On the Ham-D, one MED + DBT patient improved reliably (7%), whereas 13 (87%) stayed the same, and 1 (7%) experienced a worsening of depressive symptoms. For the MED group, one patient (7%) improved reliably on the Ham-D, whereas 14 (93%) remained the same.

TABLE 2. Changes in outcome measures from pre- to post-treatment, by condition

	Group	n	Pre-Treatment	Post-Treatment	$F_{[df]}$ Pre-Post
Hamilton Rating Scale for Depression (Ham-D)	MED	16	19.06 (4.22)	7.77 (4.61)	45.75 _{[1,15]**}
	DBT	15	20.94 (3.60)	6.90 (8.67)	36.22 _{[1,14]**}
Beck Depression Inventory (BDI)	MED	9	24.66 (7.34)	16.86 (11.4)	7.92 _{[1,8]*}
	DBT	14	18.68 (7.56)	12.93 (9.38)	14.78 _{[1,13]**}
Beck Hopelessness Scale (BHS)	MED	11	10.00 (7.15)	8.00 (6.26)	3.04 _[1,10]
	DBT	14	6.48 (5.30)	5.39 (5.32)	7.62 _{[1,13]*}
Ambivalence over emotional expression	MED	11	96.46 (13.67)	89.05 (19.22)	3.02 _[1,10]
	DBT	14	87.02 (21.81)	77.35 (19.47)	4.58 _{[1,13]*}
Thought suppression	MED	12	46.56 (12.72)	45.75 (11.33)	0.14 _[1,11]
	DBT	14	48.50 (14.09)	45.21 (8.94)	1.57 _[1,13]
Total Coping	MED	11	352.18 (88.79)	373.03 (90.37)	1.41 _[1,10]
	DBT	14	332.64 (54.93)	377.61 (74.25)	11.89 _{[1,13]**}
Sociotropy	MED	11	95.45 (14.57)	90.65 (13.23)	2.39 _[1,10]
	DBT	14	93.02 (19.09)	82.24 (20.21)	25.05 _{[1,13]**}
Autonomy	MED	11	87.18 (15.79)	82.64 (16.38)	1.40 _[1,10]
	DBT	13	87.16 (14.43)	80.81 (17.22)	5.72 _{[1,12]*}

Note: Values are mean (standard deviation), unless otherwise indicated. MED: antidepressant medication plus clinical management; DBT: dialectical behavior therapy skills-training and scheduled telephone coaching sessions.

* $p < 0.05$.

** $p < 0.006$ (modified Bonferroni correction; eight comparisons within each group).

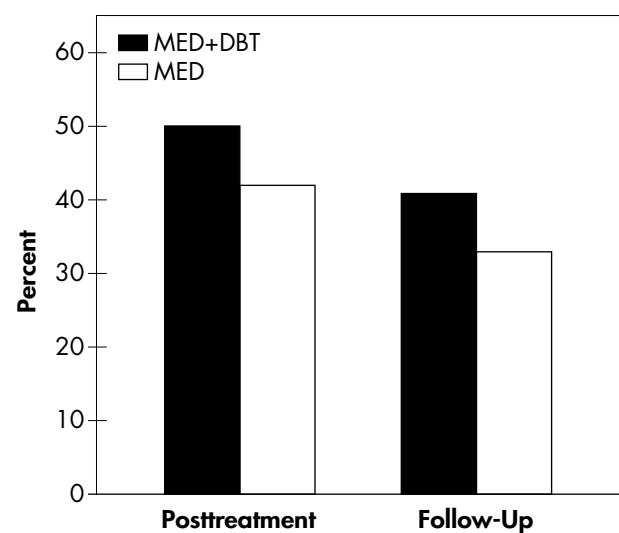
Remission Rates

For both the post-treatment and 6-month follow-up assessments, we identified participants in each condition who were in remission according to one of two criteria: a BDI score ≤ 9 ⁵⁷ or a Ham-D score ≤ 7 .⁵⁹ Figure 1 shows remission rates, using the BDI criterion, for each group at post-treatment and follow-up. At post-treatment, 50% of the MED + DBT patients were in remission, as compared with 42% of the MED patients. At the 6-month follow-up, 41% of MED + DBT patients and 33% of MED patients reliably improved and were in remission according to the BDI criterion. Figure 2 shows remission rates for each group at post-treatment and follow-up, applying the Ham-D criterion. At post-treatment, 71% of the MED + DBT group and 47% of the MED group were in remission. At 6-month follow-up, the percentage increased to 75% among MED + DBT patients and decreased to 31% among MED patients. There was a significant difference in the proportion of DBT + MED participants in remission (by the Ham-D criterion) at follow-up when compared with the MED-only participants ($\chi^2_{(1)} = 6.15$; $n = 32$; $p = 0.01$).

Other Outcomes

Table 2 shows that the MED + DBT group demonstrated a nonsignificant, yet noticeable, decrease in

FIGURE 1. Beck Depression Inventory (BDI): percent in remission

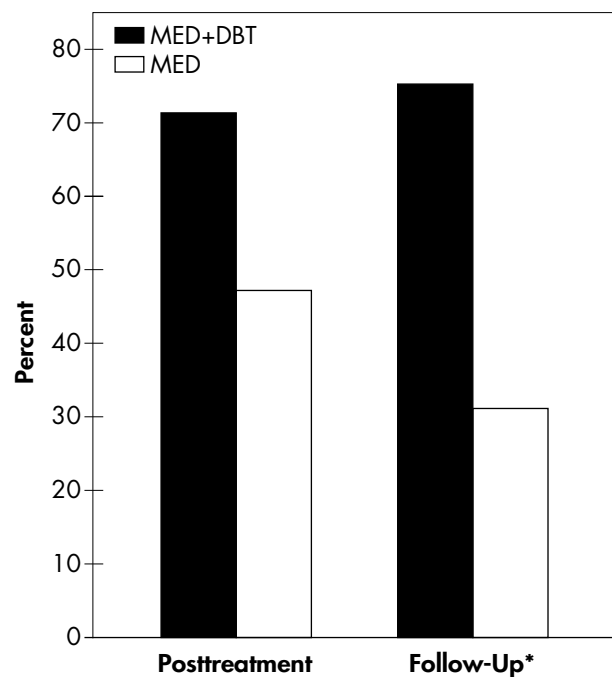


Note: Remission was defined as BDI ≤ 9 . MED: medication-only; MED + DBT: medication plus dialectical behavior therapy.

hopelessness from pre- to post-treatment. However, the group \times time interaction was not significant. Neither group changed in hopelessness from post-treatment to follow-up (MED: $F_{(1,10)} = 0.83$, NS; MED + DBT: $F_{(1,13)} = 0.00$, NS). A post-hoc, independent-samples *t*-test was conducted to evaluate group differences in suicidal ideation at post-treatment. The suicidal ideation items from the Ham-D and the BDI were *z*-score transformed and then combined. This analysis indicated that there was no significant difference between groups in suicidal ideation at post-treatment ($t_{(24)} = -0.17$; NS).

Also shown in Table 2, the MED + DBT group showed significant decreases from pre- to post-treatment in total coping and sociotropy, but none of the group \times time interactions were significant. The MED + DBT group showed nearly-significant reductions in pre- to post-treatment ambivalence regarding emotional expression and autonomy (see Table 2). Neither group changed significantly on thought-suppression, and there were no significant changes in either group from post-treatment to follow-up on any of these variables.

FIGURE 2. Hamilton Rating Scale for Depression (Ham-D): percent in remission



Note: Remission was defined as Ham-D ≤ 7 . MED: medication-only; MED + DBT: medication plus dialectical behavior therapy. * $p < 0.05$.

DISCUSSION

Depression researchers have increasingly recommended a combined medication and psychotherapy approach as a preferred treatment strategy.^{2,28} The results from this pilot study provide promise for the usefulness of a group DBT skills-training intervention as an effective augmentation strategy for antidepressant medication. At follow-up, the MED + DBT group had a significantly greater number of patients who were in remission than patients on MED alone. Also, only the MED + DBT group showed significant improvements on self-rated depression scores, adaptive coping, and sociotropy.

This is the first randomized, controlled trial of DBT adapted for treating depressed elderly patients and, to our knowledge, the first randomized trial using a medication plus group psychotherapy augmentation strategy for older adults. Interestingly, the majority of participants reported an average of more than eight previous episodes of depression in their lives. Thus, the sample could be considered relatively chronic in nature. MED + DBT was compared with MED-only for two reasons. First, for ethical reasons, it is important to provide an active treatment for moderately-to-severely depressed patients. Second, it is important to compare the experimental treatment with the treatment that would otherwise normally be received. The present study is also the only known randomized trial using group DBT skills-training paired with scheduled telephone coaching as the intervention. Linehan³⁰ reported unpublished results from a randomized trial with chronically parasuicidal borderline women, suggesting that adding group DBT skills-training to non-DBT individual therapy was no more effective than non-DBT individual therapy alone and less effective than individual plus group DBT treatment. In contrast, the present study suggests that

a group DBT skills-training intervention, with scheduled telephone coaching, may have usefulness for treatment of depressed elderly patients who are receiving antidepressant medication.

As predicted, both groups showed significant reductions in depressive symptom ratings over time, albeit the MED-only group did not show significant changes on self-rated depression scores. Approximately 50%-70% of depressed patients can be expected to demonstrate a response to an adequate trial of antidepressant medication,⁶⁰ and the rate of MED-only participants in this study who were in remission at post-treatment, by interview-rated depression criteria (50%), essentially corresponded with this. When comparing remission rates between MED-only and MED + DBT, the number of patients in remission at post-treatment was similar using the BDI. However, at follow-up, BDI remission rates favored the MED + DBT condition, and these differences were more pronounced when using the Ham-D. At post-treatment, the MED + DBT patients had a 16% remission rate advantage over MED-only patients, by use of Ham-D criteria. This difference widened to a significant 44% advantage for MED + DBT at follow-up, supporting the contention by Reynolds and Kupfer² that combined psychotherapy and medication treatment may be the optimal strategy in preserving recovery among older adults. This is particularly interesting, given the finding that many of the participants were relatively chronically depressed and had experienced numerous previous depressive episodes. Thus, it is possible that the quality of the remission in the MED + DBT group is different from that in the MED-only condition, given the differences in rates at post-treatment and follow-up. It is likely that the skills learned by participants in the MED + DBT condition were effective in maintaining treatment gains and protecting even these chronically depressed participants from recurrences.

TABLE 3. Patients showing statistically reliable change at post-treatment on two measures of depression

Measure	MED + DBT			MED		
	W	S	I	W	S	I
BDI, %	7	57	36	0	60	40
(frequency)	(1)	(8)	(5)	(0)	(6)	(4)
Ham-D, %	6	6	88	0	13	87
(frequency)	(1)	(1)	(14)	(0)	(2)	(13)

Note: BDI: Beck Depression Inventory; Ham-D: Hamilton Rating Scale for Depression; MED: antidepressant medication plus clinical management; DBT: dialectical behavior therapy skills-training and scheduled telephone coaching sessions. W: worse; S: same; I: improved. Percent values, by group, in each row should sum to 100%.

MED + DBT also showed significant improvements on the personality style of sociotropy. This suggests that, over time, patients in DBT appear to become less concerned about being liked and about hurting others' feelings, are better able to say "no" to other people's requests, are less apologetic, and feel less responsible for other people's problems compared with patients receiving medication only. Patients in DBT also showed a nonsignificant decrease in autonomy, which suggests movements toward being less self-critical and having greater willingness to accept help from others. These personality characteristics are hypothesized to create a vulnerability to depression in response to stressors affecting interpersonal relationships or sense of autonomy. Reductions in the severity of these maladaptive personality styles could buffer later encounters with situational stress, consequently reducing the likelihood of depressive relapse.

We also examined measures of avoidance and emotional ambivalence that have been shown in previous studies to be associated with depression.³⁷ MED + DBT participants showed significant improvements in adaptive coping after stressful events, and these changes were maintained at the 6-month follow-up. Improvements in total coping reflect feeling less overpowered, being more likely to seek social support, being less likely to take frustrations out on others, feeling more independent of stressful circumstances, and working out plans to deal with the stressful event—behaviors closely associated with DBT mindfulness, emotion regulation, interpersonal effectiveness, and distress-tolerance skills.

MED + DBT also showed nearly significant improvements in hopeless thoughts, whereas MED-only did not. This parallels the findings of Koons et al.³² that DBT significantly improved hopelessness in a borderline personality-disordered sample. Hopelessness has consistently been reported to be associated with the development of suicidal ideation and behavior (see, for example, Brown et al.⁶¹), and patients whose hopelessness does not significantly change with psychiatric treatment may be more likely to commit suicide.⁶² Elderly patients take their lives more frequently than those in any other age-group,⁷ and, among depressed elderly patients who responded to medication and/or interpersonal psychotherapy (IPT), hopelessness remained significantly higher in the subgroup who had a history of suicide attempts than among non-attempters.⁶³ Finding interventions that impact hopeless thinking will likely prove particularly useful for reducing this risk.

This study combined group with weekly half-hour scheduled telephone contact. Telephone therapy for older adults may have particular relevance, especially in mitigating transportation issues for frail or medically compromised patients, reducing dependency, and lowering the costs of therapy. Our findings suggest that psychotherapy interventions for depressed older adults may not always require in-person contact. Also, there were a large number of participants who were separated/divorced or widowed. Group interventions, alone or combined with telephone contact, may be helpful for isolated older adults. Future studies should examine these issues further.

The major limitation of the study is its small sample size, 17 participants in each condition, which limited our statistical power to demonstrate significant treatment-group differences. As a result, exploratory analyses comparing group means were reported without the associated significant group \times time interaction effect. This reduces the ability to interpret these data clearly. It also limits our ability to generalize from our sample, with the present results being influenced by individual participants to a much greater degree than is optimal. Also, there were a large number of women in this study, which limits generalizability to men.

A second limitation is that the treatments were significantly different with regard to the amount of time spent with patients. We do not know whether the superior results for the MED + DBT patients are due to something about DBT specifically or whether similar results would be obtained with any psychotherapy, or indeed any interpersonal contact in a clinical setting.

Finally, adherence ratings were not obtained, and the majority of therapists in this study were learning DBT as they were treating the patients and had not attended a standard intensive training. This last point, however, may actually lend support to the current findings. The fact that changes in depression scores were generated with such novice therapists may suggest that the effects of an MED + DBT condition would be even stronger with therapists more experienced in this treatment modality. These limitations reflect the pilot nature of this study and need to be addressed in larger-scale studies.

In conclusion, this study demonstrates that a group DBT skills-training intervention can be adapted and used successfully with depressed elderly patients. Despite its small sample size, this study also showed that DBT augmented the effects of antidepressant medica-

tion on rates of remission at follow-up and resulted in improvements on measures of personality and coping that were not found with medication alone.

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