

## BEHAVIOR THERAPY FOR DEPRESSED CANCER PATIENTS IN PRIMARY CARE

D. R. HOPKO

*University of Tennessee*

M. E. A. ARMENTO AND  
M. K. HUNT

*University of Tennessee*

J. L. BELL

*University of Tennessee Medical Center*

C. W. LEJUEZ

*University of Maryland*

*Major depression is a common psychiatric disorder among cancer patients and is associated with psychosocial impairment and decreased quality of life. Although some research has explored psychological interventions with cancer patients, outcome studies investigating the benefits of behavior therapy among cancer patients with well diagnosed depression are nonexistent. The present study was a preliminary clinical trial (n = 6) used to assess the effectiveness of a Brief Behavioral Activation Treatment for Depression (BATD) among depressed cancer patients in primary care. Results revealed strong treatment integrity, good patient compliance, excellent patient satisfaction with the BATD protocol, and significant pre-post treatment gains across measures assessing depression, quality of life, and medical outcomes. These gains were associated with strong effect sizes and were maintained at 3-month follow*

*up. BATD may represent a practical primary care treatment that may remedy problems associated with traditional psychosocial interventions. Study limitations and future research directions are discussed.*

Major depression is the most common psychiatric disorder among cancer patients, with prevalence rates ranging from 13% to 56% (Croyle & Rowland, 2003). Relative to nondepressed cancer patients, depressed cancer patients exhibit greater decline in the quality of recreational activities, relationships, self-care skills, physical activities, and sleep (Parker, Baile, DeMoor, & Cohen, 2003). Depressed cancer patients also experience a more rapid progression of cancer symptoms, increased mortality, more metastasis and pain, and increased medical utilization (Ciaramella & Poli, 2001; Spiegel, Bloom, Kraemer, & Gottheil, 1989; Spiegel & Giese-Davis, 2003). Thus, the need to explore effective psychosocial and pharmacological interventions for depressed cancer patients has been highlighted as a pressing need (Spiegel & Giese-Davis, 2003).

Psychological interventions for cancer patients have included psychoeducation, supportive therapy, cognitive therapy, relaxation training, problem-solving and social skills training, biofeedback, and hypnosis (Andersen, 1992; Baum & Andersen, 2001). The majority of studies assessing the efficacy of these interventions among cancer patients yield positive effects in reducing symptoms of depression, anxiety, and pain (Antoni et al., 2001; Goodwin et al., 2001; Moorey, Greer, Bliss, & Law, 1998; Trijsburg, van Knippenberg, & Rijpma, 1992). Although the literature is equivocal, data also imply that life

---

D. R. Hopko, M. E. A. Armento, and M. K. Hunt, Department of Psychology, University of Tennessee; J. L. Bell, Cancer Institute, University of Tennessee Medical Center; C. W. Lejuez, Department of Psychology, University of Maryland.

This research supported by National Institute of Mental Health Grant R03 MH067569-01 awarded to D. R. Hopko.

Correspondence regarding this article should be addressed to D. R. Hopko, PhD, University of Tennessee, Department of Psychology, 307 Austin Peay Building, Knoxville, TN 37996-0900. E-mail: dhopko@utk.edu

expectancy may increase following supportive therapy, stress reduction, and problem-solving therapy (Goodwin et al., 2001; Spiegel & Giese-Davis, 2003).

Despite the movement toward exploring the utility of psychosocial interventions with depressed cancer patients, a number of methodological and practical limitations point to the necessity of further study. First, in none of the outcome studies referenced herein have researchers specifically targeted cancer patients with *well diagnosed depression* (e.g., via structured interviewing strategies). As such, we are uncertain whether positive effects of psychosocial interventions extend beyond nonclinical samples toward clinically depressed patients, a population more difficult to treat (McCullough, 2000). Second, the majority of outcome data involve referral methods or the practice of psychotherapy outside of the primary care environment (Antoni et al., 2001; Moorey et al., 1998). These practices limit the generalizability of findings to primary care settings in which cancer patients typically receive treatment (McQuaid, Stein, Laffaye, & McCahill, 1999). Third, outcome measures primarily have been limited to core symptoms of depression and anxiety. Only infrequently has attention been given to the important outcomes of functional status (quality of life, medical outcomes) and patient satisfaction. Fourth, interventions in prior clinical trials may not be optimal for primary care given the expertise and number of sessions generally required (Coyne & Kagee, 2001).

Novel behavioral activation approaches may be a feasible remedy for these limitations (Lejuez, Hopko, & Hopko, 2001, 2002; Martell, Addis, & Jacobson, 2001). First, behavior activation therapy generally is more time efficient and less complicated than many other depression interventions. Given their uncomplicated nature, implementation through primary care personnel also may be reasonable. Second, as behavior activation engenders healthy behavior through guided activity, and considering limitations in overt behavior often characteristic of cancer patients (Ciramella & Poli, 2001; Parker et al., 2003), behavior activation may be an optimal strategy to bring about behavioral and affective change. Indeed, behavior activation addresses essential components of cancer treatment that include social support, emotional expression, reordering of life priorities, stress management, avoidance reduction, and issues of symptom control and

health education (Fawzy, Fawzy, & Canada, 2001). Preliminary data support the utility of our Brief Behavioral Activation Treatment for Depression (BATD) among depressed patients in a community mental health center (Lejuez, Hopko, LePage, Hopko, & McNeil, 2001) and an inpatient psychiatric facility (Hopko, Lejuez, LePage, Hopko, & McNeil, 2003) and as a supplemental intervention for patients with coexistent Axis I (Hopko, Hopko, & Lejuez, 2004) and Axis II disorders (Hopko, Sanchez, Hopko, Dvir, & Lejuez, 2003). Data also indicate that a more extensive form of behavioral activation (Martell et al., 2001) may be comparable to cognitive therapy and Paroxetine, with the psychosocial interventions associated with longer term gains and reduced medical costs (Hollon, 2003; Jacobson, Dobson, Truax, & Addis, 1996).

Although several principles and procedures are common to behavioral interventions for depression, BATD represents a conceptually and practically distinct alternative from traditional (Lewinsohn, Munoz, Youngren, & Zeiss, 1986) and contemporary approaches (Martell et al., 2001). These differences have been highlighted extensively elsewhere (Hopko, Lejuez, Ruggiero, & Eifert, 2003), though in general, BATD is unique in that it is briefer (nine sessions) and focuses exclusively on activation-based interventions exempt from additional treatment components that include problem-solving techniques, cognitive strategies, and complex functional analytic methods. The BATD method also uses a structured and highly ideographic guided action approach that is based on a comprehensive assessment of life values as well as short- and long-term goals and objectives (Hayes, Strosahl, & Wilson, 1999), a process differing substantially from other activation methods (Lewinsohn et al., 1986; Martell et al., 2001). Given the potential utility of behavior activation interventions in primary care, this preliminary study was designed to assess the effectiveness of BATD with depressed cancer patients.

## Method

### *Participants*

Participants included 6 adults with a principal diagnosis of major depression who were being treated at the University of Tennessee Medical Center's Cancer Institute. Selection procedures

included administration of the Structured Clinical Interview for *DSM-IV* (SCID-I/P; First, Spitzer, Gibbon, & Williams, 1996), the Hamilton Rating Scale for Depression (HRSD; Hamilton, 1960), and various self-report instruments outlined below. Advanced undergraduate research assistants and graduate students conducted psychological assessments and were supervised by the principal investigator (D. R. Hopko) in the context of audiotape review and discussion, resulting in a consensus diagnosis. Individuals were included only if the principal (and primary) consensus diagnosis was major depression with moderate severity (i.e., a 4 on a 0 [*no depressive symptoms*] to 8 [*very severe symptoms*] scale). Participants were included only if they were not presently (8 weeks or less prior to assessment) taking an antidepressant or anti-anxiety medication ( $n = 2$ ), or if they were taking one of these medications, had been stabilized at a consistent dosage for 8 weeks.

Screening occurred over a 6-month period, during which 16 individuals completed the comprehensive assessment. Of these patients, 9 were included (7 patients were not diagnosed with depression) and 6 individuals completed the BATD protocol. Three patients were lost to attrition, 2 were lost prior to treatment as a result of cancer metastasis, and 1 was lost after the third therapy session (relocation). The final sample was entirely female and Caucasian (mean age = 46.4 years;  $SD = 14.1$ ). Patients had an average education of 13.4 years ( $SD = 5.1$ ). Mean level of clinician-rated severity of major depression was 5.7 ( $SD = 1.1$ ), suggesting moderate depression. The following patients were included in the study:

*Debbie* was a 28-year-old, unemployed, single woman. She was diagnosed with breast cancer 9 months prior to the study. She was stabilized on Celexa and Trazadone at study entry and was diagnosed with major depression (severity = 7), posttraumatic stress disorder (PTSD; severity = 6), and borderline personality disorder (BPD; severity = 6).

*Sharon* was a 51-year-old, unemployed, married woman. She was diagnosed with lung cancer 21 months prior to the study. She was stabilized on Paroxetine and was diagnosed with depression (severity = 7), panic disorder (severity = 6), and specific phobia (severity = 5).

*Dayna* was a 39-year-old, married, homemaker/mother. She was diagnosed with breast cancer 38 months prior to the study. She was

stabilized on Fluoxetine at study entry and was diagnosed with major depression (severity = 5) and social phobia (severity = 4).

*Cathy* was a 60-year-old, unemployed, married woman. She was diagnosed with stomach cancer 44 months prior to the study. She was nonmedicated at study entry and was diagnosed with major depression (severity = 4).

*Winnie* was a 49-year-old, employed, divorced woman. She was diagnosed with breast cancer 24 months prior to the study. She was stabilized on Sertraline at study entry and was diagnosed with major depression (severity = 5).

*Pam* was a 66-year-old, retired, divorced woman. She was diagnosed with breast cancer 49 months prior to the study. She was nonmedicated at study entry and was diagnosed with major depression (severity = 6).

### Outcome Measures

The HRSD (Hamilton, 1960) is a 24-item semistructured interview designed to measure symptom severity in patients diagnosed with depression.

The *Beck Depression Inventory—II* (BDI—II; Beck, Steer, & Brown, 1996) is a 21-item self-report measure of depression with strong psychometric properties.

The *Center for Epidemiological Studies of Depression Scale* (CES—D; Radloff, 1977) is a 20-item self-report questionnaire of depressive symptoms that has adequate psychometric properties.

The *Beck Anxiety Inventory* (BAI; Beck & Steer, 1990) is a 21-item questionnaire designed specifically to distinguish cognitive and somatic symptoms of anxiety from those of depression.

The *Quality of Life Inventory* (QOLI; Frisch, 1994) is a 16-item instrument that evaluates quality of life across various domains of function (e.g., health, relationships, money), with total scores ranging from -6 to 6.

The *Medical Outcomes Study Short Form* (SF—36; Ware & Sherbourne, 1992) assesses health and functional status and includes eight subscales: physical functioning, role disability—physical problems, bodily pain, health perceptions, vitality, social functioning, role disability—emotional problems, and mental health.

Satisfaction with BATD was assessed with the *Client Satisfaction Questionnaire* (CSQ; Larsen, Attkisson, Hargreaves, & Nguyen, 1979).

### *BATD Intervention*

According to behavioral theory, depression persists because (a) reinforcement for nondepressed (healthy) behavior is low or nonexistent, (b) depressed behavior produces a relatively high rate of positive (e.g., sympathy from others) or negative (decrease in responsibilities or avoidance of undesirable situations) reinforcement, or (c) some combination of both (Lewinsohn, 1974). Behavioral activation is defined as a therapeutic process that emphasizes structured attempts to increase overt behaviors that bring patients into contact with reinforcing environmental contingencies and corresponding improvements in thoughts, mood, and overall quality of life (Hopko, Lejuez, Ruggiero, et al., 2003). Within the BATD model (see Lejuez et al., 2002, for the comprehensive protocol), the process of increasing response-contingent reinforcement follows the basic behavioral principles of extinction, shaping, fading, and in vivo exposure (Hopko, Lejuez, Ruggiero, et al., 2003). Initial sessions consist of assessing the function of depressed behavior, establishing patient rapport, and introducing of the treatment rationale. After efforts have been made to reduce reinforcement for depressed behavior, a systematic approach for increasing healthy behavior is initiated by increasing the value of reinforcers for such behavior and devaluing reinforcers for depressed behavior.

Within this model, systematically increased activity is a necessary precursor to the reduction of overt and covert depressed behavior. Patients begin by engaging in a weekly self-monitoring (or daily diary) exercise to examine already-occurring daily activities to provide a baseline measurement and to provide some ideas with regard to identifying potential activities to target during treatment. Following this monitoring, emphasis shifts to identifying a person's values and goals within a variety of life areas that include family, social, and intimate relationships, education, employment/career, hobbies/recreation, volunteer work/charity, physical/health issues, and spirituality. Following this exercise, an activity hierarchy is constructed in which 15 activities are rated on a scale ranging from "easiest to accomplish" to "most difficult to accomplish." Using a master activity log and behavioral checkout to monitor progress, the patient moves progressively through the hierarchy, from the easier behaviors to the more difficult behaviors. For each

activity, the therapist and patient collaboratively determine the final goal in terms of the frequency and duration of activity per week. These goals are recorded on the master activity log that is kept in the possession of the therapist. Weekly goals are recorded on a behavioral checkout form that the patient brings to therapy each week. At the start of each session, the behavioral checkout form is examined and discussed, with the following weekly goals established as a function of patient success or difficulty: Rewards are identified on a weekly basis as incentive for completing the behavioral checkout; treatment involves nine sessions that include psychoeducation, presentation of the treatment rationale, activity and goal selection, and behavioral activation. Although latter sessions (four through nine) generally may be reduced to 20–30 min, in this study, all sessions were approximately 1 hr in duration.

### *Therapy Implementation*

Therapists generally reported positive experiences in implementing BATD in a primary care setting. Logistical problems were few, and Cancer Institute personnel were collaborative in coordinating appointments and communicating with therapists. With regard to specific patients, the ideographic nature of BATD was highlighted in the differential emphasis on guided activity. For example, Debbie's treatment focused on graded exposure to social situations and health-related issues. These objectives were important given relational problems (reflected in her BPD diagnosis) and her obese body structure. For Sharon, the emphasis was more on creating environmental rewards that she could experience independent of a noncommitted and overly controlling husband (e.g., by means of engagement in recreational and church activities). Given her driving phobia, activity assignments also included graded exposure to driving situations. In the case of Pam, in addition to increasing exposure to rewarding social environments, given unresolved grief issues surrounding the recent death of her mother, activities were structured to confront this experience, decreasing avoidance and fostering acceptance (e.g., writing journal entries, visiting gravesites, arranging photographs). Insomnia problems also were addressed through activating sleep hygiene behaviors.

### Therapists and Treatment Integrity

Two clinical psychology graduate students served as therapists. Clinicians administering BATD differed from those conducting psychological assessments. BATD sessions were audiotaped for weekly supervision by the principal investigator (D. R. Hopko). In addition, 20% of these tapes were selected randomly for ratings of therapist competence and adherence by an independent evaluator with expertise in BATD (Sandra Hopko, MA). Ratings were made on a 9-point Likert scale ranging from 0 (*no adherence/competence*) to 8 (*complete adherence/competence*) on a session-by-session basis, with ratings for each session highlighting specific session objectives. Ratings indicated high therapist adherence ( $M = 7.4$ ;  $SD = 0.86$ ) and competence ( $M = 7.2$ ;  $SD = 0.98$ ) in administering BATD.

### Procedure

After the diagnostic screening described above, participants completed all self-report measures. If included in the study following the diagnostic staffing, participants completed the 9-week (one-on-one) BATD treatment. All psychological assessments and treatment sessions were conducted at the Cancer Institute. Posttreatment assessments were conducted after completion of BATD and at 3-month follow up.

## Results

### Patient Adherence

The structure of BATD allows for a unique and quantifiable index of patient adherence to treatment recommendations that is based on weekly behavioral checkout and master activity log data. Specifically, an adherence score was formulated for each patient by dividing the number of behavioral assignments completed by those assigned. For the entire sample, patients averaged 125.6 ( $SD = 73.3$ ) assigned activities over the duration of treatment, or about 20.9 behaviors per each of the six sessions during which behavioral assignments were provided. Patients completed an average of 98.3 ( $SD = 53.5$ ) of the assigned activities, resulting in an overall patient adherence score of 78%. Debbie and Winnie were entirely compliant with treatment (100%), with moderate compliance by Pam (78%) and some-

what lower compliance by Cathy (67%), Dayna (64%), and Sharon (55%).

### Treatment Outcome Data

All clinical variables were examined with repeated measures analyses of variance (pretreatment, posttreatment, 3-month follow up). Significant effects were followed by Tukey's honestly significant difference post hoc analyses ( $\alpha = .05$ ), and the clinical significance of pre-post differences was assessed using Cohen's  $d$  statistic, where effect sizes of 0.2, 0.5, and 0.8 are considered small, medium, and large, respectively. As reported in Table 1, significant main effects of assessment phase were evident across all outcome measures. Post hoc analyses revealed significant pre-post treatment improvement on measures of depression, quality of life, and medical outcomes, improvements that were clinically significant as indicated by moderate-to-large effect sizes ( $R = 0.5$ – $2.3$ ). Treatment gains were maintained at 3-month follow up, which is particularly noteworthy given follow-up data that revealed that only 1 participant received additional psychosocial treatment and no participants reported initiating pharmacotherapy. It is interesting that, with reference to the two outcome measures where pre-post treatment gains were nonsignificant (i.e., BAI [somatic anxiety] and SF-36 [bodily pain]), at 3-month follow up, significant changes from pretreatment were evident. In addition to notable patient improvement, patients were strongly satisfied with behavioral activation (CSQ:  $M = 31.5$  of a possible 32.0).

To further assess the clinical significance of patient change on a more ideographic basis, we used the reliable change index (RCI; Jacobson & Truax, 1991). Reliable change indices calculated for each measure indicated that all patients improved significantly on the CES-D and that 5 of the 6 patients improved on the BDI and HRSD (i.e., Debbie did not improve significantly on these measures). Although clinically significant change was evident across all depression measures, results were encouraging but less compelling on the remaining instruments. For example, only 50% of the patients reported increased quality of life (QOLI; Winnie, Cathy, and Pam), improved physical functioning (SF-36 [physical functioning]; Winnie, Cathy, and Debbie), and improved general mental health (SF-36 [mental health]; Winnie, Cathy, and Pam). Only 33% of

TABLE 1. Outcome Data for 6 Primary Care Patients Treated With Brief Behavioral Activation Treatment for Depression

Assessment measure	Pre-Tx	Post-Tx	3-mo FU	<i>F</i>	<i>p</i>	Effect size ( <i>d</i> )
CES-D	44.5 <sub>a</sub> (6.0)	19.5 <sub>b</sub> (13.9)	12.8 <sub>b</sub> (13.2)	20.8	< .01	2.3
BDI	38.8 <sub>a</sub> (9.0)	16.3 <sub>b</sub> (16.9)	11.0 <sub>b</sub> (13.6)	16.1	< .01	1.7
HRSD	25.3 <sub>a</sub> (9.5)	9.8 <sub>b</sub> (8.9)	7.0 <sub>b</sub> (8.4)	13.5	< .01	1.7
QOLI	-1.0 <sub>a</sub> (1.4)	1.2 <sub>b</sub> (2.3)	2.5 <sub>b</sub> (2.7)	6.4	< .05	1.3
SF-36						
Physical Functioning	35.0 <sub>a</sub> (16.4)	62.5 <sub>b</sub> (28.4)	73.3 <sub>b</sub> (33.0)	15.1	< .01	1.2
Mental Health	31.3 <sub>a</sub> (21.4)	60.7 <sub>b</sub> (25.5)	68.7 <sub>b</sub> (29.4)	12.0	< .01	1.2
Role-Emotional	11.1 <sub>a</sub> (27.2)	50.0 <sub>b</sub> (45.9)	66.7 <sub>b</sub> (51.6)	4.8	< .05	1.0
Role Physical	16.7 <sub>a</sub> (40.8)	58.3 <sub>b</sub> (46.5)	66.7 <sub>b</sub> (51.6)	4.1	< .05	0.9
General Health	27.5 <sub>a</sub> (20.4)	57.5 <sub>b</sub> (33.1)	60.0 <sub>b</sub> (31.3)	18.3	< .01	1.1
Bodily Pain	40.0 <sub>a</sub> (16.0)	52.3 <sub>ab</sub> (29.4)	68.3 <sub>b</sub> (28.6)	5.7	< .05	0.5
Vitality	10.8 <sub>a</sub> (6.6)	41.7 <sub>b</sub> (32.7)	54.2 <sub>b</sub> (26.3)	11.2	< .01	1.3
Social Functioning	22.9 <sub>a</sub> (26.7)	56.3 <sub>b</sub> (32.4)	72.9 <sub>b</sub> (30.0)	13.2	< .01	1.1
BAI	26.7 <sub>a</sub> (14.0)	20.2 <sub>ab</sub> (20.2)	12.3 <sub>b</sub> (13.9)	4.7	< .05	0.4
CSQ	—	31.5	—			

*Note.* Effect size estimate (*d*) calculated as  $(\text{mean}_{\text{pre}} - \text{mean}_{\text{post}}) / \text{standard deviation}_{\text{pooled}}$ . Means that do not share a common subscript differ at  $p < .05$ . Standard deviations appear in parentheses. Tx = treatment; FU = follow up; CES-D = Center for Epidemiological Studies of Depression Scale; BDI = Beck Depression Inventory; HRSD = Hamilton Rating Scale for Depression; QOLI = Quality of Life Inventory; SF-36 = Medical Outcomes Survey Short Form; BAI = Beck Anxiety Inventory; CSQ = Client Satisfaction Questionnaire.

the patients reported decreased somatic anxiety (BAI; Winnie and Pam).

## Discussion

Results provide positive preliminary support for the feasibility and effectiveness of administering BATD to depressed cancer patients in a primary care setting. This finding is provocative in that it is the first to document the utility of behavior therapy among cancer patients with well diagnosed depression using a breadth of outcome measures, and it is encouraging in that it complements recent data supporting activation procedures in outpatient and inpatient mental health settings (Jacobson et al., 1996; cf. Hopko, Lejuez, Ruggiero, et al., 2003). In addition to significant pre-post improvement across a variety of outcome measures and associated strong effect sizes, patient satisfaction for the BATD protocol was strong, clinicians reported minimal logistical and practical problems in administering the intervention in primary care, and networking and interacting with primary care staff (e.g., through participation in morning rounds) was facilitative and highly encouraged, attributing to the feasibility of administering BATD in this setting. Of note, treatment gains evident at posttreatment also were maintained at 3-month follow up. In the case of somatic anxiety and bodily pain, although pre-post treatment gains were nonsignificant, by

the follow-up assessment, these symptoms had improved to a clinically significant margin, suggesting that the positive effects of BATD may continue after termination of therapy. On a more ideographic level of analysis, although all but 1 patient (Debbie) exhibited significant reductions in depression symptoms across all measures, Winnie, Cathy, and Pam appeared to benefit most from treatment. For example, only these 3 patients had significant pre-post treatment gains in relation to improved quality of life, improved physical functioning, and/or decreased somatic anxiety. These results are intriguing for at least two reasons. First, these three patients also obtained the highest treatment compliance scores, suggesting that relative noncompliance with the BATD protocol for the remaining 3 patients may have limited treatment benefits. Second, the 3 patients who benefited most also were the only patients who were diagnosed with major depression but no other coexistent diagnoses. These data suggest that supplemental treatment strategies may be necessary for those with more complex clinical presentations, a hypothesis supported by our own research on BATD (Hopko, Sanchez, et al., 2003).

Given these positive outcome data, the limited time and training needed to implement BATD, and the potential ease of incorporating BATD into standard treatment for cancer patients, it

appears ideal for primary care settings in which managed care companies monitor the efficiency and cost effectiveness of interventions. Indeed, the BATD protocol may be more practical than traditional psychosocial interventions that require significant expertise to administer and a more lengthy duration of treatment. Although not examined in the present study, to further adapt to the primary care environment, it also might be reasonable to incorporate alternative treatment providers that might include oncologists, nurses, nurse practitioners, depression health specialists, and/or physician extenders. It also would seem reasonable to work toward developing an even more compact version of BATD that could be incorporated within the prototypical 15-min primary care session. Along these lines, administration of BATD via Internet resources also might be a reasonable treatment modality, the design of which already is underway.

Although data from the present study are promising, several limitations remain. First, the sample size was small, and no control group was included. As a move in this direction, a randomized controlled trial presently is underway, examining the relative efficacy of BATD, a more comprehensive cognitive-behavioral intervention, and the usual care provided in the primary care environment. Second, although data revealed maintenance of gains across a 3-month follow-up interval, longer-term follow up will be essential toward further evaluating whether BATD for depression positively impacts adjunctive cancer treatment and/or prolongs survival in cancer patients (Spiegel & Giese-Davis, 2003). Third, although pre-post treatment effect sizes were substantial, a more extensive patient sample will be necessary to replicate findings and assess generalizability as a function of various clinical and demographic variables. The sample also was too small to assess predictors of treatment outcome, such as the type, duration, and stage of cancer; psychiatric and medical comorbidity; chronicity and family history of depression; pretreatment ratings of anxiety, depression, optimism, and social support; treatment expectancy; previous psychotherapy and/or pharmacotherapy for depression; and patient adherence to treatment. Fourth, with consideration for frequent coexistent psychiatric disorders among depressed cancer patients (e.g., anxiety), supplementing BATD with efficacious anxiety intervention strategies (DeRubeis & Crits-Christoph, 1998) may prove even more

beneficial to cancer patients, a hypothesis presently being investigated.

Despite these limitations, preliminary findings support the effectiveness of BATD for depression among cancer patients in primary care. This finding is especially important given the lack of attention to treating clinically depressed cancer patients and the pressing need for treatments that are feasible and effective for such individuals. Future programmatic research that extends these results and stringently evaluates the clinical significance of BATD through well designed randomized controlled trials will establish whether the intervention is an efficacious, cost-effective, and easily administered primary care treatment that improves quality of life for depressed cancer patients.

## References

- ANDERSEN, B. L. (1992). Psychological interventions for cancer patients to enhance the quality of life. *Journal of Consulting and Clinical Psychology, 60*, 552-568.
- ANTONI, M. H., LEHMAN, J. M., KILBOURN, K. M., BOYERS, A. E., CULVER, J. L., ALFERI, S. M., et al. (2001). Cognitive-behavioral stress management intervention decreases the prevalence of depression and enhances benefit finding among women under treatment for early-stage breast cancer. *Health Psychology, 20*, 20-32.
- BAUM, A., & ANDERSEN, B. L. (2001). *Psychosocial interventions for cancer*. Washington, DC: American Psychological Association.
- BECK, A. T., & STEER, R. A. (1990). *Beck Anxiety Inventory: Manual*. San Antonio, TX: The Psychological Corporation.
- BECK, A. T., STEER, R. A., & BROWN, G. K. (1996). *Manual for Beck Depression Inventory-II*. San Antonio, TX: The Psychological Corporation.
- CIARAMELLA, A., & POLI, P. (2001). Assessment of depression among cancer patients: The role of pain, cancer type, and treatment. *Psycho-Oncology, 10*, 156-165.
- COYNE, J. C., & KAGEE, A. (2001). More may not be better in psychosocial interventions for cancer patients. *Health Psychology, 20*, 458.
- CROYLE, R. T., & ROWLAND, J. H. (2003). Mood disorders and cancer: A National Cancer Institute perspective. *Biological Psychiatry, 54*, 191-194.
- DERUBEIS, R. J., & CRITS-CHRISTOPH, P. (1998). Empirically supported individual and group psychological treatments for adult mental disorders. *Journal of Consulting and Clinical Psychology, 66*, 37-52.
- FAWZY, F. I., FAWZY, N. W., & CANADA, A. L. (2001). Psychoeducational intervention programs for patients with cancer. In A. Baum & B. L. Andersen (Eds.), *Psychosocial interventions for cancer* (pp. 235-267). Washington, DC: American Psychological Association.
- FIRST, M. B., SPITZER, R. L., GIBBON, M., & WILLIAMS, J. (1996). *Structured Clinical Interview for DSM-IV Axis I Disorders—Patient Edition (SCID-I/P, Version 2.0)*.

- New York: New York Psychiatric Institute, Biometrics Research Department.
- FRISCH, M. B. (1994). *Manual and treatment guide for the Quality of Life Inventory*. Minneapolis, MN: National Computer Systems, Inc.
- GOODWIN, P. J., LESZCZ, M., ENNIS, M., KOOPMANS, J., VINCENT, L., GUTHER, H., et al. (2001). The effect of group psychosocial support on survival in metastatic breast cancer. *New England Journal of Medicine*, *345*, 1719–1726.
- HAMILTON, M. (1960). A rating scale for depression. *Neurology, Neurosurgery and Psychiatry*, *23*, 56–61.
- HAYES, S. C., STROSAHL, K. D., & WILSON, K. G. (1999). *Acceptance and commitment therapy: An experiential approach to behavior change*. New York: Guilford Press.
- HOLLON, S. D. (2003, November). *Behavioral activation, cognitive therapy, and antidepressant medication in the treatment of major depression*. Symposium presented at the 37th Annual Convention of the Association for the Advancement of Behavior Therapy, Boston.
- HOPKO, D. R., HOPKO, S. D., & LEJUEZ, C. W. (2004). Behavioral activation as an intervention for co-existent depressive and anxiety symptoms. *Clinical Case Studies*, *3*, 37–48.
- HOPKO, D. R., LEJUEZ, C. W., LEPAGE, J., HOPKO, S. D., & MCNEIL, D. W. (2003). A brief behavioral activation treatment for depression: A randomized trial within an inpatient psychiatric hospital. *Behavior Modification*, *27*, 458–469.
- HOPKO, D. R., LEJUEZ, C. W., RUGGIERO, K. J., & EIFERT, G. H. (2003). Contemporary behavioral activation treatments for depression: Procedures, principles, progress. *Clinical Psychology Review*, *23*, 699–717.
- HOPKO, D. R., SANCHEZ, L., HOPKO, S. D., DVIR, S., & LEJUEZ, C. W. (2003). Behavioral activation and the prevention of suicide in patients with borderline personality disorder. *Journal of Personality Disorders*, *17*, 460–478.
- JACOBSON, N. S., DOBSON, K. S., TRUAX, P. A., & ADDIS, M. E. (1996). A component analysis of cognitive-behavioral treatment for depression. *Journal of Consulting and Clinical Psychology*, *64*, 295–304.
- JACOBSON, N. S., & TRUAX, P. A. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology*, *59*, 12–19.
- LARSEN, D. L., ATTKISSON, C. C., HARGREAVES, W. A., & NGUYEN, T. D. (1979). Assessment of client/patient satisfaction: Development of a general scale. *Evaluation and Program Planning*, *2*, 197–207.
- LEJUEZ, C. W., HOPKO, D. R., & HOPKO, S. D. (2001). A brief behavioral activation treatment for depression: Treatment manual. *Behavior Modification*, *25*, 255–286.
- LEJUEZ, C. W., HOPKO, D. R., & HOPKO, S. D. (2002). *The brief behavioral activation treatment for depression (BATD): A comprehensive patient guide*. Boston: Pearson Custom Publishing.
- LEJUEZ, C. W., HOPKO, D. R., LEPAGE, J., HOPKO, S. D., & MCNEIL, D. W. (2001). A brief behavioral activation treatment for depression. *Cognitive and Behavioral Practice*, *8*, 164–175.
- LEWINSOHN, P. M. (1974). A behavioral approach to depression. In R. M. Friedman & M. M. Katz (Eds.), *The psychology of depression: Contemporary theory and research* (pp. 157–178). New York: Wiley.
- LEWINSOHN, P. M., MUNOZ, R. F., YOUNGREN, M. A., & ZEISS, A. M. (1986). *Control your depression*. New York: Prentice Hall.
- MARTELL, C. R., ADDIS, M. E., & JACOBSON, N. S. (2001). *Depression in context: Strategies for guided action*. New York: Norton.
- MCCULLOUGH, J. P. (2000). *Treatment for chronic depression: Cognitive behavioral analysis system of psychotherapy*. New York: Guilford Press.
- MCQUAID, J. R., STEIN, M. B., LAFFAYE, C., & MCCAHILL, M. E. (1999). Depression in a primary care clinic: The prevalence and impact of an unrecognized disorder. *Journal of Affective Disorders*, *55*, 1–10.
- MOOREY, S., GREER, S., BLISS, J., & LAW, M. (1998). A comparison of adjuvant psychological therapy and supportive counseling in patients with cancer. *Psycho-Oncology*, *7*, 218–228.
- PARKER, P. A., BAILE, W. F., DEMOOR, C., & COHEN, L. (2003). Psychosocial and demographic predictors of quality of life in a large sample of cancer patients. *Psycho-Oncology*, *12*, 183–193.
- RADLOFF, L. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, *1*, 385–401.
- SPIEGEL, D., BLOOM, J. R., KRAEMER, H. C., & GOTTHEIL, E. (1989). Effect of psychosocial treatment on survival of patients with metastatic breast cancer. *Lancet*, *2*, 888–891.
- SPIEGEL, D., & GIESE-DAVIS, J. (2003). Depression and cancer: Mechanisms and disease progression. *Biological Psychiatry*, *54*, 269–282.
- TRUSBURG, R. W., VAN KNIPPENBERG, F. C. E., & RIJMA, S. E. (1992). Effects of psychological treatment on cancer patients: A critical review. *Psychosomatic Medicine*, *54*, 489–517.
- WARE, J. E., & SHERBOURNE, C. D. (1992). The MOS 36-Item Short-Form Health Survey (SF-36): I. Conceptual framework and item selection. *Medical Care*, *30*, 473–483.