Original Article

Application of behavioral activation treatment for depression in cancer patients

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Objectives: Major depression and anxiety disorders are common psychiatric disorders among cancer patients and are associated with psychosocial impairment and decreased quality of life. Depressed and anxious cancer patients could also be prone to some what more rapid progression of cancer symptoms, increased mortality, more metastasis and pain, and increased medical utilization. Although some researched have explored psychological interventions with cancer patients, outcome studies investigating the benefits of behavior therapy among cancer patients with well diagnosed depression and anxiety disorders are new. So the aim of this study was to introduce a new psychotherapy for depression and anxiety in cancer patients.

Method: Behavioral activation (BA) is a structured, brief psychosocial approach that aims to alleviate depression and anxiety and prevent future relapse by focusing directly on behavior change. The treatment aims to increase activation systematically in ways that help cancer patients to experience greater contact with sources of reward in their lives and to solve life problems. The treatment procedures focus directly on activation, and on processes that inhibit activation, such as escape and avoidance behaviors and ruminative thinking of cancer patients, to increase experiences that are pleasurable or productive and improve their life context.

Results: Results of various studies have shown the effectiveness of BA on reducing depression and anxiety and increasing quality of life in patients with cancer. Researchers also report strong treatment integrity, good patient compliance, excellent patient satisfaction with the BA protocol, and significant pre–post treatment gains across measures assessing depression, quality of life, and medical outcomes.

Conclusion: We believe that BA is an important new treatment for depression and anxiety in cancer patients for two main reasons. First, its efficacy is supported by recent empirical researches; second, it is based on simple and easily grasped underlying principles and utilizes a small set of straightforward procedures. BA may represent a practical primary care treatment that may remedy problems associated with cancer.

Keywords: behavioral activation, depression, cancer.

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Introduction

Major depression is the most common psychiatric disorder among cancer patients and it may be associated with decreased quality of life, significant deterioration in recreational and physical activities, relationship difficulties, sleep problems, more rapidly progressing cancer symptoms, and more metastasis and pain in comparison to non-depressed cancer patients. Among cancer patients, major depression is the most common psychiatric disorder, with prevalence rates ranging from 13-50% (1). Functional impairment among depressed cancer patients is extensive, including exacerbation of medical illness, impact on physical health, and increased anxiety and substance use. Significant deterioration also is observed in quality of life, including recreational activities, social life, family relationships, self-care skills, physical activities, and sleep (2). Depressed cancer patients may also experience decreased immune system functioning, a more rapid progression of cancer symptoms, more metastasis and pain, and possibly increased mortality relative to non-depressed

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patients. Economic issues also are consequential in that depression in cancer patients is associated with more medical services, more frequent hospital and primary care visits, and higher cost to the system. Given the impact of depression, the role of developing and evaluating psychosocial interventions for depressed cancer patients has been highlighted as a pressing need (3).

As a potentially very practical solution, cognitive-behavioral therapies that emphasize behavioral activation (4, 5) may be useful interventions for medical care settings and cancer patients. First, behavior activation therapy is time limited and less complicated than many other depression interventions. Second, behavioral activation engenders healthy non-depressed behavior through guided behavioral scheduling, problem-solving, and avoidance reduction strategies. Particularly relevant to cancer patients, considering limitations in overt behavior and increased problems and daily hassles often reported by cancer patients, this intervention may be optimal in bringing about behavior change and corresponding reduction in depressive affect. Behavioral activation also involves increasing "control" over one's life (and overt behavior), an attribute that may be useful in restoring the loss of control often experienced by cancer patients. Indeed, behavior activation addresses essential components of cancer treatment that include enhancing social support, emotional expression, reordering of life priorities, stress management, avoidance reduction, and issues of symptom control and health education (6). For example, through structured activation approaches, the quality of social support is assessed on an ideographic basis as it pertains to intimate, peer, and familial relationships. Gradual exposure to social situations, development of assertiveness and social skills, and social anxiety reduction strategies are used to increase response contingent positive (social) reinforcement and decrease negative affects. Through incorporating behavioral activation strategies that include self-hypnosis, mindfulness exercises, and relaxation practice, cancer-related symptoms that include pain, nausea, and vomiting also can be addressed (7).

In a pioneering mechanism of change study, behavioral activation was deemed as effective as a full cognitive behavior therapy intervention in reducing depressive symptoms (8). Following this study, behavioral activation approaches have been effectively used with depressed patients in a community mental health center (9), an inpatient psychiatric facility (7), as a supplemental intervention for patients with co-existent Axis I (10) and Axis II disorders (11), as well as in individual and group therapy formats. In perhaps the most compelling study to date that incorporated a randomized placebo-controlled design, the comprehensive behavioral activation protocol (5) was comparable to antidepressant medication, and both interventions were superior to cognitive therapy in treating depressed patients (7).

BATD is a behavioral treatment based on the concept of matching theory. According to matching theory, BATD is based on the idea that behavior is maintained by its consequences and that human behavior is conceptualized as *choice* behavior. In this context, choice implies the notion that the different contingencies of reinforcement for alternatives in one's environment make one behavior more likely to occur than an alternative behavior. Accordingly, the consequences for a particular behavior are considered in relation to consequences for all other possible instances of behavior.

Major depression seems to be most common psychiatric disorder among cancer patients, with prevalence rates ranging from 13% to 56% (1). Relative to no depressed cancer patients, depressed cancer patients exhibit greater decline in the quality of recreational activities, relationships, self-care skills, physical activities, and sleep (12). Depressed cancer patients also experience a more rapid progression of cancer symptoms, increased mortality, more metastasis and pain, and increased medical utilization (13,3). Thus, the need to explore effective psychosocial and pharmacological interventions for depressed cancer patients has been highlighted as a pressing need (3). Psychological interventions for cancer patients have included psychoeducation, supportive therapy, cognitive therapy, relaxation training, problem-solving and social skills training, biofeedback, and hypnosis (14). The majority of studies assessing the efficacy of these interventions among cancer patients yield positive effects in reducing symptoms of depression, anxiety, and pain (15, 16, and 17).

The brief behavioral activation treatment for depression (BATD) is a relatively uncomplicated, time-efficient, and cost-effective method for treating depression. Because of these features, BATD may represent a practical intervention within managed care–driven, psychiatric hospitals. Based on basic behavioral theory and empirical evidence supporting activation strategies, has designed a treatment to increase systematically exposure to positive activities and thereby help to alleviate depressive

affect. This article represents a review that extends research on this treatment into the context of an inpatient psychiatric unit.

Researchers suggest that behavioral interventions for depression (i.e., behavioral activation) may be sufficient for the alleviation of overt depressive symptoms, modification of maladaptive cognitions, and improvement of life functioning (8). This philosophy has resulted in the recent development of behavioral activation treatment paradigms that focus on modifying environmental contingencies for the purpose of alleviating depressive affect (18, 4, 5). Initial reports support efficacy of these interventions within outpatient settings (8, 9) and as an adjunct to pharmacotherapy (7).

This article was designed to further explore the utility of a behavioral activation intervention within the context of an inpatient psychiatric hospital. Traditionally, a variety of group and individual therapeutic approaches have been used to treat depression within this setting. Although many of these approaches have demonstrated efficacy, the time-intensive nature of these treatments is inconsistent with the decreased length of hospitalization mandated by managed care organizations. Problematically, this situation may result in less impact on depressive symptoms and global functioning at discharge and in increased risk for future hospitalization. Considering emerging time and resource limitations together with the contention that behavioral therapies are the psychosocial treatment of choice for most mental disorders treated in psychiatric hospitals (4), we suggest the importance of improving the quality and efficiency of brief behavioral interventions within this context.

Based on research suggesting the utility of treating depression with behavioral activation treatments that increase activity and associated positive consequences (e.g., Jacobson & Gortner, 2000), our behavioral activation treatment for depression (BATD) (18) has potential value for patients admitted to an inpatient psychiatric ward for several reasons. First, the time-efficient and cost-effective nature of BATD provides distinct advantages within the context of inpatient psychiatric care hospitals. Second, the manualized approach of BATD allows for ease of implementation, including the absence of difficult skills for therapists to acquire. Finally, this protocol easily is tailoreds to the ideographic needs of patients, allowing for patient and practitioner to collaborate in identifying individualized target behaviors, goals, and rewards that serve to reinforce nondepressive or healthy behavior.

Method

In the past decade, there has been renewed interest in the feasibility and efficacy of purely behavioral treatments for clinical depression. Emphasizing the functional aspects of depressive and nondepressive behavior, these treatments focus on the concept of behavioral activation, which guides implementation of procedures aimed at increasing patient activity and access to reinforcement. Although researchers have provided positive preliminary support for behavioral activation-based interventions, many fundamental issues concerning strategies, principles, and change processes involved in behavioral activation have yet to be addressed.

Both BA and BATD have firm roots in traditional behavioral theory and therapy (19) and include attention to the functional analysis of behavior, a deemphasize on attempts to directly modify maladaptive cognitions and schemata, and strategies for addressing avoidance through an emotional acceptance and behavioral change paradigm.

Both BA and BATD researchers would suggest that affective change in activation treatments is directly attributable to relative increases in reinforcement for healthy versus depressive behavior.(compare BA and BATD). BATD, which is comprehensively presented elsewhere (18,4,9), is based on the premise that increased activity (i.e., activation) and the resulting contact with positive consequences is sufficient for the reduction of depressive symptoms and the subsequent increase of positive thoughts and feelings. Initial sessions consist of assessing the function of depressed behavior, information gathering, establishment of patient rapport, strategies for reducing reinforcement for depressed behavior, and introduction of the treatment rationale. Next, an activity hierarchy is constructed in which up to 15 activities are rated ranging from *easiest* to *most difficult* to accomplish. Using a master activity log and behavioral checkout to monitor progress (similar to the master log but kept in the presence of the patient to enhance accountability and compliance), the patient moves through the hierarchy in a systematic fashion, progressing from the easiest through the most difficult behaviors. At the start of each session, the behavioral checkout form is examined and discussed, with the following daily goals being established as a function of patient success or difficulty. Master-level clinicians who had extensive training and experience with cognitive-behavioral interventions provided BATD. Through weekly supervision meetings, a licensed

psychologist with extensive knowledge of BATD principles and procedures ensured adherence to the treatment protocol.

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, researchers have 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 subclinical cases toward clinically depressed patients, a population more difficult to treat. Second, the majority of outcome data involve referral methods or the practice of psychotherapy outside of the primary care setting (15,16). These practices limit the generalizability of findings to primary care settings in which cancer patients typically receive treatment. 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 (20). Novel behavioral activation approaches may be a feasible remedy for these limitations (18,4,5). 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 promotes healthy behavior through guided activity, and considering limitations in overt behavior often characteristic of cancer patients (12), 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 (6). Preliminary data support the utility of our Brief Behavioral Activation Treatment for Depression (BATD) among depressed patients in a community mental health center (9) and an inpatient psychiatric facility (7) and as a supplemental intervention for patients with coexistent Axis I (10) and Axis II disorders (11). Data also indicate that a more extensive form of behavioral activation (5) may be comparable to cognitive therapy and Paroxetine, with the psychosocial interventions associated with longer term gains and reduced medical costs (21,8). Although several principles and procedures are common to behavioral interventions for depression, BATD represents a conceptually and practically distinct alternative from traditional (19) and contemporary approaches (5). These differences have been highlighted extensively elsewhere (7), though in general, BATD is unique in that it is briefer (nine sessions) and focuses exclusively on activation based intervention 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 (22), a process differing substantially from other activation methods (19, 5). 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.

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 (19). 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 (23), Within the BATD model (2), the process of increasing response-contingent reinforcement follows the basic behavioral principles of extinction, shaping, fading, and in vivo exposure (23). 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 reinforces 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 minutes, in this study, all sessions were approximately 1 hour in duration.

At its core, BATD is based on the premise that systematically increased activity is a necessary precursor toward the reduction of parasuicidal, suicidal, and self-harm behavior. This philosophy is consistent with data demonstrating that increasing activity (i.e., response-contingent reinforcement) and establishing reasons for living function to increase resiliency and ward against depressive symptoms in general (8,7,9) and suicidal behavior specifically (18).

To address this gap in the literature, we designed the Brief Behavioral Activation Treatment for Depression (BATD,9), which provides clinicians with a powerful behavioral intervention to treat depression in a succinct and parsimonious package. Although the principles and processes underlying BATD are focused on behavioral activation, cognitive and emotional processes are not ignored. Moreover, although not directly targeted for change, these cognitive aspects of depression are presumed to become more adaptive following behavioral activation procedures, and are assessed frequently across sessions as an index of treatment efficacy. Finally, we do not deny the potential effects of resulting covert changes; we merely assert that activation should be the direct target for change in a cycle that may lead to the long-term remission of depression.

Among the advantages of this protocol is its ease of implementation, including the absence of difficult skills for therapists to acquire. Additionally, this protocol easily is tailored to the individual needs of a particular patient. Within this structure, patients and practitioners collaborate to identify individualized target behaviors, goals, and rewards that serve to reinforce non-depressive or healthy behavior. Finally, considering the restrictions being imposed by health maintenance organizations, the time-efficient and cost-effective nature of BATD makes it a viable treatment option.

We developed BATD to specifically target contextual factors that affect behavior, using the matching law as a guiding principle. According to the matching law, the proportion of behavior allocated to one alternative relative to a second possible alternative is equal to the proportion of obtained reinforcers on the first alternative relative to the second alternative. Applied to clinical depression, the matching law suggests that the relative frequency of depressed behavior compared to nondepressed (i.e., healthy) behavior is proportional to the relative value of reinforcement provided for depressed behavior compared to nondepressed behavior. In other words, depression persists because (a) the reinforcement available for nondepressed behavior is low or nonexistent or (b) depressed behavior produces a relatively high rate of reinforcement. Based on this philosophy, the behavioral activation treatment for depression is designed to increase exposure to the positive consequences of healthy behavior; thereby increasing the likely reoccurrence of such behavior and necessarily reducing the likelihood of future depressed behavior (see Lejuez et al., in press for a more detailed discussion of the matching law

conceptualization of depression).

The following is an example of how the treatment rationale might be introduced to the patient: You may not presently feel as though you are able to get much done or that you are always tired and lack motivation. You also may be waiting to feel better or think more positively before you become more active and start participating in activities that once brought you pleasure. As you know, however, getting yourself to feel better is not an easy thing to do. Therefore, we'd like you to try something different. The idea of the treatment we are about to begin is that your thoughts and feelings are affected by your interactions with others and your overall quality of life. So, we believe that for you to have more positive thoughts and to feel better, you must first become more active and put yourself into more positive situations. Although this will be quite difficult right now, it will become easier as more and more positive experiences occur. The treatment requires you to work hard, and I understand that you may be questioning your ability to make changes at this time in your life, but I will help you through this process, and we will work at a pace at which you feel comfortable. The practitioner should initially provide a highly structured environment and be fairly directive and supportive. Over the course of treatment, and determined on an ideographic basis, guidance should gradually be faded. Throughout treatment, and particularly in the initial stages, the practitioner also should provide appropriate social reinforcement for treatment compliance and goal attainment. Treatment generally consists of approximately 10 to 12 sessions. In earlier sessions that include an explanation of the treatment rationale, attaining environmental support, and activity and goal selection, sessions may take as long as 1 hour (Units 1-3). Over time, as the patient becomes more skilled at monitoring, sessions may be reduced to between 15 to 30 minutes. Depending on the progress of therapy and patient comfort with the protocol, less frequent and even shorter sessions, as well as telephone contact, may be utilized. Following the introduction of the treatment rationale, patients should be guided in the collection of baseline activity level and depressive symptom severity (Unit 4). As a final step in the preparation for the treatment protocol, patients should be directed toward the identification of contextual factors that may be influencing the occurrence of depressed behavior. This process likely will focus on the identification of reinforcers for depressed and nondepressed behavior, with special attention to the behavior of friends and family. Once these basic steps have been engaged, activities can be selected and placed within the framework described above (Unit 5). Finally, weekly assessment, planning, and adjustment are used to ensure that the treatment proceeds successfully (Unit 6).

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