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Contemporary behavioral activation treatments for depression: Procedures, principles, and progress

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Abstract

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. In this paper, we compare and contrast contemporary behavioral activation interventions, explore strategies and process of change issues, clarify the basic behavioral principles underlying activation strategies, and outline questions that need to be addressed to improve outcomes and better understand the potential significance of behavioral activation as it pertains to the future of behavior therapy for depression.

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1. Introduction

Over the past decade, there has been increasing interest in behavioral activation as a comprehensive treatment for clinical depression. Behavioral activation may be defined as a therapeutic process that emphasizes structured attempts at engendering increases in overt behaviors that are likely to bring the patient into contact with reinforcing environmental contingencies and produce corresponding improvements in thoughts, mood, and overall quality of life. Although initial outcome studies have generally supported the efficacy of behavioral activation interventions, this program of research is very much in its infancy, with many fundamental questions surrounding the principles and procedures of the behavioral activation approach remaining unanswered. Unexplored issues that need to be addressed include how divergent behavioral activation interventions appear to be producing similar positive outcomes, related questions surrounding the process of change, and conceptual imprecision regarding the basic behavioral principles underlying behavioral activation interventions. In addressing these issues, our objective is to establish a more comprehensive understanding of the behavioral activation approach to treating depression and further stimulate discussion and research essential to improving the implementation and success of activation-based interventions.

2. Historical context

The basic conceptual foundation for behavioral activation can be traced back to the original behavioral models of depression that implicated decreases in response-contingent reinforcement for nondepressive behavior as the causal factor in eliciting depressive affect (Ferster, 1973; Lewinsohn, 1974; Lewinsohn & Graf, 1973; for a detailed historical account of the roots of behavioral activation, see Jacobson, Martell, & Dimidjian, 2001; Martell, Addis, & Jacobson, 2001). Skinner (1953) initially proposed that depression was associated with an interruption of established sequences of healthy behavior that had been positively reinforced by the social environment. In subsequent expansions of this model, reduction of positively reinforced healthy behavior was attributed to a decrease in the number and range of reinforcing stimuli available to an individual for such behavior and/or a lack of skill in obtaining reinforcement (Lewinsohn, 1974) or to an increased frequency of punishment (Lewinsohn, Antonuccio, Breckenridge, & Teri, 1984).

A functional analytic view would suggest that continued engagement of depressed behavior must result from some combination of reinforcement for depressed behavior and a lack of reinforcement or even punishment of more healthy alternative behavior (Ferster, 1973; cf. Kanfer & Grimm, 1977; Kazdin, 1977). Although depressed affect and behavior initially may be maintained through positive reinforcement, depressed behavior ultimately may lead to aversive social consequences in the form of negative responses from significant others (Coyne, 1976). In a paradoxical “deviation-amplifying” process involving an attempt to regain lost social support, the depressed individual’s symptomatic behavior may actually increase following these negative consequences. Based on these etiological models, conven-

tional behavioral therapy for depression was aimed at increasing access to pleasant events and positive reinforcers as well as decreasing the intensity and frequency of aversive events and consequences (Lewinsohn & Graf, 1973; Lewinsohn, Sullivan, & Grosscup, 1980; Sanchez, Lewinsohn, & Larson, 1980). In these pioneering efforts to examine efficacy of behavioral activation strategies, Lewinsohn et al. demonstrated that through daily monitoring of pleasant/unpleasant events and corresponding mood states as well as behavioral interventions that included activity scheduling, social skills development, and time management training, depressive symptoms often were alleviated. Importantly, these early studies documented the potential efficacy of activation-based approaches in multiple contexts, including individual, group, family, and marital therapy (Brown & Lewinsohn, 1984; Lewinsohn & Atwood, 1969; Lewinsohn & Shaffer, 1971; Lewinsohn & Shaw, 1969; Zeiss, Lewinsohn, & Munoz, 1979). A separate study by Brown and Lewinsohn (1984) found that the efficacy of individual, group, and minimal contact (telephone) conditions was superior to a delayed contact control condition. Fundamental behavioral activation strategies (i.e., pleasant event scheduling) also were as effective in treating depressed outpatients as cognitive and interpersonal skills training approaches (Zeiss et al., 1979).

With increased interest in cognitive theory in the latter quarter of the twentieth century, interventions based exclusively on operant and respondent principles, once thought adequate, were viewed as insufficient, and the absence of direct cognitive manipulations was widely regarded as a limitation of behavioral treatment. This changing zeitgeist was reflected in the increasing popularity of cognitive therapy and culminated in the inclusion of this treatment (and exclusion of behavioral therapy) in the Treatment of Depression Collaborative Research Program (TDCRP; Elkin et al., 1989) funded by the National Institute of Mental Health. Yet, the distinction among interventions for depression considered purely “cognitive” or “behavioral” has become blurred because of their significant conceptual and technical overlap (Hollon, 2001). Indeed, cognitive strategies have been integrated into more traditional behavioral approaches (Fuchs & Rehm, 1977; Rehm, 1977; Lewinsohn et al., 1980, Lewinsohn et al., 1984; Lewinsohn & Clarke, 1999; Lewinsohn, Munoz, Youngren, & Zeiss, 1986) and vice versa (Beck, Rush, Shaw, & Emery, 1979).

Despite the documented efficacy of cognitive and cognitive–behavioral therapies (Dobson, 1989; Elkin et al., 1989; Shea et al., 1992), several recent findings along with evolving socioeconomic and professional developments raise the question as to whether “purely” behavioral approaches to treating clinical depression were abandoned too hastily. For example, managed care organizations have established the need to develop and utilize psychosocial interventions that are both time limited and empirically validated (Peak & Barusch, 1999), which are features typifying the behavioral model. Second, empirical data from carefully conducted clinical studies demonstrate that cognitive change may be just as likely to occur using environment-based manipulations or cognitive interventions (Jacobson et al., 1996; Jacobson & Gortner, 2000; Simons, Garfield, & Murphy, 1984; Zeiss et al., 1979). Consistent with the notion that comprehensive cognitive–behavioral interventions may be unnecessary to induce clinically significant improvement in depressive symptoms, Rehm et al. (1981) demonstrated in an early dismantling study that components of self-control therapy may be as effective as the comprehensive treatment package. Third,

therapeutic benefits of cognitive–behavioral treatment packages for depression most often occur in the initial sessions of the treatment course, a period in which behavioral components often are more prominent (Hollon, Shelton, & Davis, 1993; Otto, Pava, & Sprich-Buckminster, 1996). In response to these issues, research programs have evolved to evaluate the feasibility, effectiveness, and efficacy of purely behavioral interventions for depression.

3. Returning to basic behavioral principles

The revitalization of behavioral approaches to treating depression has been most evident in the development of two new interventions: *behavioral activation* (BA; Martell et al., 2001) and the *brief behavioral activation treatment for depression* (BATD; Lejuez, Hopko, & Hopko, 2001, 2002). Although these two treatment protocols utilize somewhat different strategies, both approaches are based on extensions of traditional behavioral models of the etiology and treatment of depression. As Ferster (1973) proposed, depressive behavior (e.g., passivity, negative affect) strengthens as a result of environmental contingencies that function to decrease the rate of “healthy” responses within one’s behavioral repertoire and increases avoidance of aversive stimuli. Accordingly, conventional behavioral therapy consisted of strategies designed to modify the environment to heighten the patient’s ability to access reinforcing events and activities. These strategies included teaching relaxation skills, increasing pleasant events, social and problem-solving skill training, contingency management, and the incorporation of verbal–cognitive methods such as cognitive restructuring and self-instructional training (Antonuccio, Ward, & Tearnan, 1991; Hersen, Bellack, Himmelhock, & Thase, 1984; Lewinsohn et al., 1986; Nezu, Nezu, & Perri, 1989).

Using the definition provided in Introduction, with the exception of verbal–cognitive techniques, one could argue that all these strategies fall under the rubric of BA (see Processes of change section for further discussion of this issue). In view of the vast body of literature examining the principles, processes, and outcomes of these strategies (Beckham & Leber, 1995; Gotlib & Hammen, 2002; Hersen et al., 1984; Lewinsohn, Gotlib, & Hautzinger, 1998; McClanahan, Antonuccio, & Lewinsohn, in press; McGinn, 2000), our focus will be on the somewhat neglected BA and BATD methods.

Although both contemporary activation approaches are consistent with the original etiological formulation and general treatment approach, these newer protocols entail important advancements over early behavioral approaches with respect to case conceptualization and choice of intervention components. First, current activation approaches are more idiographic, giving more attention to the unique environmental contingencies maintaining an individual’s depressed behavior (Jacobson et al., 2001; Lejuez et al., 2001). A related development involves a movement from targeting pleasant events alone (Lewinsohn & Graf, 1973) to understanding the *functional* aspects of behavior change (Martell et al., 2001). Rather than indiscriminately increasing an individual’s contact with events that are presumed to be pleasant or rewarding, this functional analytic approach involves a detailed assessment of contingencies maintaining depressive behavior, idiographic assessment of patients’ specific needs and goals, and the subsequent targeting of behavior that, based on results of functional

analyses, is likely to improve the patient's quality of life. Further, in contrast to an a priori nomothetic assumption of what is pleasant, the appropriateness of any particular behavioral change is determined by ongoing assessment based on whether the frequency and/or duration of that behavior increases over time and leads to a corresponding reduction in depressive symptoms.

Third, activation approaches are unique from traditional behavior therapy in that they have adopted a balanced acceptance–change model that is gaining support in many areas of psychopathology (Hayes, Strosahl, & Wilson, 1999). Based on this paradigm, activation partially involves teaching patients to formulate and accomplish behavioral goals irrespective of certain aversive thoughts and mood states they may experience. This clear focus on action makes it unnecessary to attempt to control and change such thoughts and mood states directly. Presenting overt behavior change as the active focus of treatment contradicts preconceived core ideas of many patients and indeed our culture. Specifically, the treatment rationale provided to patients is that changes in patterns of overt behavior over time are likely to coincide with changes in thoughts and mood, in most instances following rather than preceding behavior change. Differing from the Hayes et al. (1999) perspective that the literality of verbal behavior should be broken prior to behaving independently of mood, neither the BA nor BATD approaches require that this intermediate step be completed (Martell et al., 2001). Nonetheless, such changes may occur naturally over time as the benefits of activation begin to occur. What activation approaches regard as central for treatment success is moving the patient from an avoidance- to active-based lifestyle.

Finally, behavior activation models acknowledge that there continues to be significant controversy surrounding cause–effect relations among biological, cognitive, and behavioral components involved in the etiology and maintenance of clinical depression (Eifert, Beach, & Wilson, 1998; Free & Oei, 1989; Maes & Meltzer, 1995; Martell et al., 2001; Plaud, 2001). As with other pathogenic models of depression, the importance of cognition in the genesis and maintenance of depression is acknowledged in activation-based approaches, but cognitions are not regarded as proximal causes of overt behavior to be targeted directly for change. Thus, BA procedures address cognitions and emotions indirectly by bringing the individual into contact with more positive consequences for overt behavior. In doing so, BA addresses the environmental constituent of depressive affect, a component deemed more external, observable, measurable, and capable of being controlled.

4. Procedures and outcome

4.1. Behavioral activation treatment

Based on pioneering work suggesting that BA is the active ingredient in the cognitive–behavioral treatment for depression, Jacobson et al. (2001) developed the first BA protocol that focuses on the functional aspects of depressive behavior. The focus of BA is on the evolving transactions between the person and environment over time and the identification of environmental triggers and ineffective coping responses involved in the etiology and

maintenance of depressive affect (Martell et al., 2001). Much like traditional behavioral therapy, this approach conceptualizes depressed behavior (e.g., inactivity, withdrawal) as a coping strategy to avoid environmental circumstances that provide low levels of positive reinforcement or high levels of aversive control (Jacobson et al., 2001). *Behavioral avoidance* is central to the BA treatment model. Within the context of a collaborative patient–therapist relationship, the initial treatment objective is to increase a patient’s awareness of how an internal or external event (triggers) results in a negative emotional (response) that may effectively establish a recurrent avoidance pattern (i.e., TRAP; trigger, response, avoidance-pattern). Once patient and clinician establish recognition of this pattern, the principal objective becomes one of helping the patient to reengage in various healthy behaviors through the development of alternative coping strategies (i.e., TRAC; trigger, response, alternative coping).

Along with increased patient awareness and progression from a TRAP to a TRAC based philosophy, the primary therapeutic technique of BA involves teaching patients to take ACTION. To reduce escape and avoidance behavior, patients are taught to assess the function of their behavior and then to make an informed choice as to whether to continue escaping and avoiding or instead engage in behavior that may improve their mood, integrate such behavior into their lifestyle, and never give up. Additional treatment strategies are used to facilitate action and development of active coping including rating mastery and pleasure of activities, assigning activities to increase mastery and pleasure, mental rehearsal of assigned activities, role-playing behavioral assignments, therapist modeling, periodic distraction from problems or unpleasant events, mindfulness training or relaxation, self-reinforcement, and skills training (e.g., sleep hygiene, assertiveness, communication, problem solving) (Martell et al., 2001; University of Washington, 1999). Treatment duration typically is 20–24 sessions.

Data from an initial outcome study comparing a comprehensive cognitive–behavioral program for depression with the BA component alone suggested that BA may be just as effective as the comprehensive intervention in terms of both overall treatment outcome and, more specifically, the alteration of negative thinking and dysfunctional attributional styles (Jacobson et al., 1996). Predictor analyses indicated that positive outcome of BA was associated with pretreatment expectancies and inversely related to “reason giving,” that is, the tendency to offer multiple explanations with respect to the etiology and maintenance of depression (Addis & Jacobson, 1996). Importantly, at 24-month follow-up, BA alone and the comprehensive cognitive–behavioral treatment were equally effective in preventing relapse (Gortner, Gollan, Dobson, & Jacobson, 1998). Lower levels of BA at posttreatment were associated with higher relapse (Gollan, 2001). Continuing with this research program, a large clinical trial presently is being conducted to explore the relative efficacy of BA, cognitive therapy, and pharmacotherapy (i.e., paroxetine), with preliminary outcome data indicating comparable efficacy of the three interventions (Martell et al., 2001).

4.2. Behavioral activation treatment for depression

In an independent research program, we developed BATD based on behavioral matching theory (Lejuez et al., 2001, 2002). Applied to depression, matching theory suggests that time

and effort allocated to exhibiting depressed relative to nondepressed (or healthy) behavior is directly proportional to the relative value of reinforcement obtained for depressed versus nondepressed behavior (Herrnstein, 1970; McDowell, 1982). When the value (e.g., accessibility, duration, immediacy) of reinforcers for depressed behavior is increased through environmental change (e.g., increased accessibility to social attention, increased opportunity to escape aversive tasks), the relative value of reinforcers for healthy behavior decreases, increasing the likelihood of depressive behavior. Similarly, when the value of reinforcers for healthy behavior is decreased through environmental change (e.g., decreased availability of peers), the relative value of reinforcers for depressed behavior is simultaneously increased. Applied specifically to treatment, the BATD model predicts that increased contact with reinforcers for healthy behavior (or reduced contact with reinforcers for depressed behavior) would have the effect of decreasing depressed behavior and increasing healthy behavior.

Based on this paradigm, BATD is conducted over an 8- to 15-session protocol. Initial sessions consist of assessing the function of depressed behavior, efforts to weaken access to positive reinforcement (e.g., sympathy) and negative reinforcement (e.g., escape from responsibilities) for depressed behavior, establishing patient rapport, and introducing the treatment rationale. A systematic activation approach then is initiated to increase the frequency and subsequent reinforcement of healthy behavior. Patients begin with a weekly self-monitoring exercise that serves as a baseline assessment of daily activities, orients patients to the quality and quantity of their activities, and generates ideas about activities to target during treatment. The emphasis then shifts to identifying behavioral goals within major life areas that include relationships, education, employment, hobbies and recreational activities, physical/health issues, spirituality, and anxiety-eliciting situations (Hayes et al., 1999). Such goal setting has long been considered an important component in the behavioral treatment of depression (Rehm, 1977). Subsequent to goal selection, an activity hierarchy is constructed in which 15 activities are rated ranging from “easiest” to “most difficult” to accomplish. Using a master activity log (therapist) and weekly behavioral checkouts (patient) to monitor progress, the patient progressively moves through the hierarchy. For each activity, the therapist and patient collaboratively determine what the *weekly* and *final* goals will be in terms of the frequency and duration of activity per week. At the start of each session, the behavioral checkout is examined and discussed, with goals for the following week established as a function of patient success or difficulty with goals for the prior week. Patients identify weekly rewards as incentive for completing the behavioral checkout that they self-administer if their goals are met.

Preliminary outcome data for BATD have been promising. In a series of case studies within a community mental health setting, BATD was associated with sizeable changes in BDI-II scores in adults with moderate depression (Lejuez et al., 2001). We also have used BATD successfully to treat coexistent anxiety and depressive symptoms (Hopko, Lejuez, & Hopko, *in press*) and as an adjunct to pharmacotherapy (Hopko, Lejuez, McNeil, & Hopko, 1999). Perhaps the most compelling support for BATD was provided in a recently completed randomized controlled trial within an inpatient mental health facility (Hopko, Lejuez, LePage, McNeil, & Hopko, *in press*). In this study, BATD was compared with supportive psychotherapy provided within the hospital. Data strongly supported the relative efficacy of BATD,

with significantly greater pre- to posttreatment reduction in depressive symptoms and a large effect size reflecting the clinical significance of the treatment ($d=.73$; Cohen, 1988). Ongoing research projects into the efficacy and effectiveness of BATD involve a clinical trial in a primary care context examining cancer patients with depression, its use as an adjunct to standard smoking cessation treatment, and its utility among patients at high risk for committing suicide (Hopko, Sanchez, Hopko, Dvir, & Lejuez, in press).

5. Strategies and processes of change

Both BA and BATD have firm roots in traditional behavioral theory and therapy (Ferster, 1973; Lewinsohn, 1974) and include attention to the functional analysis of behavior, a de-emphasis on attempts to directly modify maladaptive cognitions and schemata, and strategies for addressing avoidance through an emotional acceptance and behavioral change paradigm. The BA method is unique in that it developed from a contemporary contextualistic theory (Hayes, Hayes, Reese, & Sarbin, 1993; Hayes et al., 1999) and was supported by the empirical finding that the behavioral component of cognitive-behavioral therapy might predominantly account for observed therapeutic effects (Jacobson et al., 1996). The establishment of BATD was inspired via matching law theory (Herrnstein, 1970) and theoretical discussions as to exactly what constituted the *behavioral* component of cognitive-behavioral therapy. Based on the research findings described earlier, and differing from the multimodal model of BA, we continue to question whether inclusion of procedures beyond systematic behavior activation are necessary to engender positive treatment outcome among depressed patients.

5.1. Strategies of change

In the BA model, the principal strategies of change involve teaching patients to identify avoidance patterns, teaching a functional analytic style of understanding behavior, and reliance on secondary strategies such as guided activity to foster enduring changes in overt behavior. In contrast, and consistent with early activation-based behavior therapy (Lewinsohn et al., 1980, 1984), the BATD model does not focus significantly on assisting patients with functional analytic interpretations of behavior. Precise functional analyses are difficult for even highly trained clinicians (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996) and depressed individuals are typically unmotivated to engage in such demanding tasks. Consequently, functional analytic strategies in BATD are secondary to the primary overt activation component. Second, the BA treatment consists of many strategies not incorporated within BATD, such as mental rehearsal, periodic distraction, mindfulness training, and skill-training procedures. Alternatively, BATD is based on the premise that systematic activation toward positive activities and situations will allow patients to develop skills in the natural environment, enhance generalizability of treatment gains beyond the clinic, and maximize maintenance of gains over time. Of course, at the patient's request or upon therapist observation of behavioral deficits, additional in-session skill-training strategies can be added

to the BATD protocol. In our experiences, however, the need for such additional components is rare with most depressed patients. That said, we acknowledge that whether a multimodal strategy is superior to a pure activation-based approach must be answered empirically.

Apart from these obvious differences, there are treatment components that appear similar in both approaches yet may be quite distinct. For example, activities in the graded task assignments (or guided activity) of BA are designed based on current activity level, likelihood of success, and importance of activities in meeting life goals. The structure of this process is quite open and the therapist has significant flexibility in assigning activities, assessing life goals, and determining whether (or when) the remaining treatment components are to be implemented (cf. University of Washington, 1999). With BATD, following an initial assessment of activity level and environmental contingencies likely to facilitate behavior change, a goal assessment is conducted in a structured yet idiographic manner (Lejuez, Hopko, & Hopko, 2001). Based on a model forwarded by Hayes et al. (1999), an activity hierarchy then is systematically constructed with reference to the goal assessment, followed by systematic movement through the hierarchy. The course of therapy is held relatively constant across all patients. Although the therapist sets the context for treatment, the patient is encouraged to take a primary role in facilitating goal selection, participating in overt behavior change, and maintaining a behavioral checkout.

In comparing the two approaches, a clinician who desires a greater range of intervention strategies and increased freedom might prefer the BA method, whereas therapists desiring greater structure and decreased interest in strategies beyond the direct scope of activation might indicate a preference for BATD. This is not to suggest, however, that BA cannot be organized more systematically or that BATD cannot be used flexibly. We merely assert that such efforts are less easily accomplished within the framework of the particular approaches and therefore likely would require greater practical and conceptual skill on the part of the therapist.

5.2. Processes of change

Given that positive outcome data are available from both activation approaches, questions arise regarding the process of change. 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. Yet, the use of treatment strategies beyond guided activation makes it unclear which treatment components account for the greatest outcome variance. For example, BA includes skill development procedures that raise the issue of whether alternate change mechanisms might account for the changes observed. These mechanisms include those associated with more efficient problem-solving ability (D’Zurilla & Nezu, 2001), or enhanced assertiveness, communication, and social skills (Klerman, Weissman, Rounsaville, & Chevron, 1984; McCullough, 2000). Also, how much do mindfulness training, mental rehearsal, and therapist modeling contribute to treatment outcome relative to guided activity? Is teaching patients the TRAC, TRAP, and ACTION models critical to treatment success? Similar concerns may be raised with regard to BATD. For example, what impact does behavioral contracting have on treatment outcome? How

necessary is it to base the activity hierarchy on a life area assessment? Is it necessary to address all life domains or would transfer effects be evident by targeting fewer (or the most important) areas? There also are components common to the BA and BATD approaches that may moderate outcome and prove difficult to measure and control, such as the nature and quality of the therapeutic relationship. These questions all require further empirical attention.

Most importantly, neither BA nor BATD researchers have defined the concept of *behavior activation* with sufficient precision. This deficiency has direct implications for understanding mechanism of change issues. For example, if a more microanalytical conceptualization of BA is used, such as the BATD premise of equating BA with an exclusive focus on systematic increases in exposure to reinforcing activities, then the component analysis of cognitive–behavior therapy that Jacobson et al. set out to accomplish is far from complete. Just as the argument has been made that the cognitive components of cognitive–behavior therapy may be unnecessary (Jacobson & Gortner, 2000), dismantling of activation protocols also may reveal superfluous treatment strategies. Taken together, we are only in the initial stages of understanding the process of BA, with some confusion even regarding the most basic issue of what does (and does not) constitute it. To answer these fundamental questions, we need to examine more precisely the nature of behavior amenable to activation and the basic behavioral principles that make activation effective.

5.3. Behavior amenable to activation

When discussing the process of BA, we should distinguish between nondepressive or healthy behaviors we are seeking to activate and the depressive behaviors we are attempting to ameliorate. Nondepressive behavior is defined as overt behavior that is directed toward improving one's quality of life and functioning and is directed toward the attainment of some objective or reward. Nondepressive behavior is incompatible with depressive behavior. Depressed behavior may occur as a function of some reward via positive (e.g., sympathy from friend or family member) or negative reinforcement (escape from responsibility), or in response to decreased availability of reinforcers for healthy behavior. In contrast with healthy behavior, however, depressive behavior generally is not related to improvements in one's functioning or quality of life. Depressive behavior generally refers to responses associated with major depressive disorder (DSM-IV; American Psychiatric Association, 1994).

Behaviorists tend to conceptualize depressive behavior from a contextual perspective, which (a) considers behavior as a function of the environmental contingencies that shape and maintain its occurrence, and (b) encourages the identification of environment–behavior relations that may be measured objectively and reliably (cf. Zuriff, 1986). For example, lethargic and passive behavior associated with anhedonia as well as suicidal behavior largely is understood with reference to operant principles. Although these forms of behavior primarily occur as a function of environmental context, they also are considered “choice” behaviors insofar as the person has some degree of control over whether situations are approached or avoided. Social withdrawal and substance abuse associated with depressive behavior may well be considered in the same category. Neurovegetative symptoms such as decreased eating and sleeping, on the other hand, though still a function of environmental

contingencies, are perhaps more biologically based responses and less directly controllable (Benca, Obermeyer, Thisted, & Gillin, 1992). Yet, even in this example, “choice” (in a stochastic rather than mentalistic sense) plays a certain role in whether one eats or decides to go to sleep or awaken. Finally, symptoms such as negative cognitions and psychomotor agitation/retardation primarily are viewed as private (nonobservable) responses to environmental stimuli that are less controllable, difficult to manipulate therapeutically, and, in the latter case, biologically based.

From an activation perspective, patients and therapists target behavior that is more within the realm of patient control and where the environmental context can be manipulated (Hayes et al., 1999). Private events (thoughts, feelings) do not fall in this category and are more difficult to observe and measure. Such behavior is not ignored and is expected to alleviate following overt behavior change. For example, although cognitions are not targeted directly in BA strategies, covert change has been directly implicated as a transfer effect of activation (Jacobson et al., 1996; Simons et al., 1984). There also are data to suggest that exercise (e.g., jogging) may serve an antidepressant function, though further research is necessary to support this hypothesis (Bodin & Hartig, 2003; Lawlor & Hopker, 2001; Lox, Martin, & Petruzzello, 2003).

6. Fundamental principles of BA

In suggesting that BA requires changes in overt behavior to engender more positive affect, the question arises as to how this process relates to basic behavioral principles. Simply put, BA strategies generally are based on both simple and more complex principles of reinforcement and punishment. The most pertinent strategies that are derived from these principles and used in BA treatments are extinction, fading, and shaping.

6.1. Extinction

Both activation protocols utilize functional analytic strategies to identify positive and negative reinforcers that maintain or strengthen depressive behavior. These reinforcers subsequently are targeted for reduction or outright elimination using the principle of extinction (Ferster, 1973; Lewinsohn, 1974). The procedures most relevant to this principle in the BA protocol are those that attempt to extinguish avoidance behavior deemed central for maintaining depressive affect. BA therapists move toward extinguishing escape and avoidance patterns by first examining the consequences and function of depressed behavior. Patients are led to recognize that depressed behavior (i.e., lethargy, passivity) may be a function of trying to avoid aversive situations. Although in the short-term these behaviors minimize contact with aversive environments, in the long-term they exacerbate the depressive episode. Based on this understanding, BA therapists work toward extinguishing depressed behavior by providing alternate sources of environmental reinforcement via the facilitation of approach behavior. Over time, this extinction process increases the value of reinforcers for approach relative to avoidance behavior.

Within the BATD protocol, a behavioral contracting component uses the extinction principle to address the behavior of family and friends who may be maintaining depressed behavior via positive or negative reinforcement. Depressive behavior is targeted through having the family member and/or friend and patient complete a contract that outlines the specific behavior that significant others should cease rewarding. For example, “I, Jean Smith, will attempt to avoid engaging in the following: staying in bed until 12:00 p.m. each day of the weekend. If I do stay in bed until 12:00 p.m., then my husband John agrees to avoid rewarding this by not bringing me breakfast and not doing the dishes.” In line with the principle of *differential reinforcement of incompatible responding* (DRI), reinforcement is then redirected to healthy behavior that precludes engaging in depressed (incompatible) behavior, with such contingencies clearly outlined. For example, “Instead, I will try to engage in the following healthy behavior: forcing myself to get out of bed and visit a friend. If I succeed, then John agrees to reward this by making time to join me at my friend’s house next Saturday.” This strategy arranges for the extinction of depressive behavior while simultaneously rewarding healthier behavior, a process that according to matching theory should result in relative increases in rates of healthy behavior (Lejuez et al., 2001).

6.2. *Fading*

In addition to the use of extinction and DRI strategies, BA relies heavily on the principle of fading. It is not assumed that the patient lacks the ability to engage in activities in their repertoire but, instead, that the patient is likely to benefit from the support of the structure provided by an activation approach until the strength of these responses is such that the structure can be “faded out.” For example, the BATD protocol includes a “fading out” of the requirement for monitoring a specific behavior after it has occurred at the target frequency and duration (i.e., mastery). In addition to allowing for a focus on behavior for which mastery has yet to be established, the removal of structure regarding mastered behaviors also is likely to increase the generalizability of gains after the formal treatment has ended. The fading out of structure also is evident in the BA protocol. As patients become more skilled in understanding the contextual perspective and maintaining contingencies of depressed behavior, therapists may decrease verbal prompts to view behavior from a functional analytic model and work toward fading in various approach behaviors via the incorporation of secondary treatment strategies.

When patients fail to increase rates of approach behavior in either the BA or BATD protocol, therapist and patient must reevaluate activation assignments to assess obstacles that may include “punishing” experiences that deter healthy behavior, as well as inaccessibility and/or lack of skill in obtaining reinforcement. Activation assignments are modified based on functional analyses of these behavioral problems, and the revised goal structure is not faded out until mastery has been achieved. Over the course of therapy, with continued reference to identified life goals, this ongoing fading process reestablishes healthier patterns of behavior. Such behavior will become increasingly under the control of reinforcement in the natural environment as life goals are approached and achieved. As the patient proceeds through treatment and begins to have more positive experiences, punishing experiences should

become less salient and less frequent. In case of problems, such as decreased patient compliance with the treatment protocol or problems allocating time and effort toward activity engagement, therapists may be required to periodically “fade in” prompts, structure, and functional analytic approaches to encourage follow-through or determine the factors related to time inadequacy.

6.3. *Shaping*

Many practitioners may be tempted to conceptualize the guided activity (BA) or systematic engagement in activity components (BATD) as representing a *shaping* procedure. Yet, shaping generally is not considered an integral component of BA treatments because it implies that the focus is on successive approximations of behavior that is not already present in the behavioral repertoire. A major premise in both activation models is that healthy behavior generally is already present in the patient’s behavioral repertoire but that such behavior currently is either not emitted or occurs at a low frequency or duration due to prior extinction or inadequate reinforcement.

Nonetheless, there are certain instances in which activation protocols may include elements of shaping. If treatment is focused on achieving longer term goals that require more intermediary behavior, such behavior is of secondary importance and not the unit of analysis but instead part of successive approximations toward the longer term (life) goal. For example, the activity hierarchy of a patient who has identified that he has a desire to rock climb might include behavior such as hiking in the woods, reading a book on rock climbing, enrolling in a rock climbing class, climbing a small and fabricated gymnasium apparatus, and then moving toward climbing increasingly steeper rock faces. After beginning with easier tasks that are likely to be completed and reinforced, progressively more difficult tasks are targeted for activation and preceding approximations of the rock-climbing behavior are extinguished. Of course, effective completion of this activation component necessitates that the patient is experiencing contingencies of reinforcement while rock climbing.

Although activation can ultimately be used to target particular long-term goals as one approaches the later stage of treatment, our experience suggests that a focus on more fundamental behavior, at least at the onset of treatment, places less pressure on the patient and is more likely to produce the type of immediate reinforcement needed to break patterns of depressive behavior.

6.4. *BA versus exposure*

Extinction, DRI, fading, and shaping are important components of the process of BA. In contrast, the process of BA should be differentiated from that of *in vivo* exposure. Exposing individuals to aversive conditioned stimuli while preventing an avoidance response is an application of the principle of extinction within a classical conditioning framework. Without experiencing the anticipated traumatic event, over time, anxious responding in the presence of the conditioned stimuli is likely to extinguish. Although exposure strategies are not

fundamental to the activation process, avoidance behaviors characteristic of depressed individuals may partially be a function of the aversive nature of situations or individuals. To the extent that avoidance behavior occurs to minimize anxiety elicited by these contexts, the therapeutic effects of guided activity (or activation) and graduated systematic exposure might be functionally similar.

Exploration of the relevance of BA in treating anxiety is worthy of further investigation because of the interrelatedness of anxiety and depressive conditions (Mineka, Watson, & Clark, 1998), the potential transfer effects of treating one condition on the other (Gelernter et al., 1991; Stanley et al., *in press*), and the increasing interest in refining treatments for patients with mixed anxiety-depressive disorder presentations (Barlow & Campbell, 2000). For instance, in a recent case study of an individual with dysthymia and panic disorder, we demonstrated marked reductions in depressive and anxiety symptoms and increased quality of life following 10 sessions of BATD (Hopko, Lejuez, & Hopko, *in press*). Lewinsohn et al. also have demonstrated how the incorporation of anxiety reduction methods may be useful in generating positive treatment outcome (Hops & Lewinsohn, 1995). More systematic research clearly is needed to examine how activation strategies may enhance treatment of patients with coexistent anxiety and depressive symptoms.

7. Directions for future research

Based on preliminary data, behavioral activation interventions show promise as parsimonious and potentially cost-effective means to treat clinical depression. The pioneering research outlined earlier is only a first step, with significant research and conceptual questions still to be addressed. First and foremost, the comprehensive activation protocols outlined earlier must undergo more rigorous empirical testing to evaluate their efficacy and effectiveness relative to other well-established, empirically validated psychosocial and pharmacological interventions for depression. Indeed, early results suggest that BA is as effective as cognitive therapy and pharmacotherapy in alleviating depressive symptoms (Jacobson et al., 1996; Martell et al., 2001). Although the efficacy of BATD relative to supportive psychotherapy has been demonstrated in a randomized trial (Hopko, Lejuez, Lepage, et al., *in press*), its utility compared with well-established interventions has not yet been examined. Studies presently are being designed to explore this question.

Second, the relatively uncomplicated and time-efficient administration of behavioral activation strategies may allow for “real world” effectiveness studies that may be conducted in primary care environments. A significant proportion of patients with clinical depression present to primary care settings, with many more individuals undiagnosed or misdiagnosed (McQuaid, Stein, Laffaye, & McCahill, 1999; Schuyler, 2000). Even among those individuals who are correctly diagnosed, quality of care for depression as reported by patients within primary care practices is moderate to low (Wells, Schoenbaum, Unutzer, Lagomasino, & Rubenstein, 1999). Accordingly, we need to focus on quality improvement with an emphasis on treatment efficacy and cost-effectiveness (Schoenbaum, Unutzer, Sherbourne, & Duan, 2001; Wells et al., 1999). Given the expertise and duration of time often required to conduct

mainstream psychosocial treatments for depression within primary care, the practicality of implementation has been criticized (Coyne, 2000). Behavioral activation strategies may help overcome these problems because they are brief and uncomplicated compared to other psychological interventions for depression. As they also are structured and well manualized, they could potentially be implemented by health care providers other than psychologists, including physicians, nurses, and social workers. Additionally, behavioral activation strategies may prove invaluable for patients with medical illness or physical disability who are experiencing lethargy and corresponding depressive affect. Researchers have indicated, for example, that clinical depression is the most common psychiatric disorder experienced by cancer patients, with as many as 50% of patients meeting diagnostic criteria (Stevens, Merikangas, & Merikangas, 1995).

Third, following completion of randomized controlled efficacy and effectiveness studies, activation researchers should focus on dismantling studies that better isolate the intervention component(s) most essential to engendering nondepressive (healthy) behavior. These studies also need to address the unresolved issues raised earlier regarding therapeutic strategies and processes of change. In view of the data presented herein, it is unclear as to whether more comprehensive behavioral activation strategies such as the 20–24 session BA protocol would achieve gains beyond those produced by the more streamlined BATD protocol which typically only requires 8–15 sessions of treatment. A direct comparison of these two interventions would resolve this issue and also move us closer to a more precise operational definition of behavioral activation.

Fourth, considering the comorbidity of major depression with other psychiatric problems such as anxiety disorders (Mineka et al., 1998) and alcohol abuse (Regier et al., 1990), behavioral activation researchers will need to focus on the potential transfer effects of treatment, perhaps modifying strategies to treat patients' presenting problems more comprehensively. Along these lines, we also need to identify potential patient-related variables associated with positive treatment outcome to make evaluations and recommendations as to which patients will be more or less likely to respond to behavioral activation interventions.

In closing, this is an exciting time for researchers and practitioners involved in the behavioral treatment of clinical depression. The development and application of behavioral activation strategies, along with favorable early outcome data, has renewed interest in behavioral treatment approaches once thought insufficient for treating clinical depression. Our objective has been to stimulate behavioral therapists to further explore theoretical, procedural, and effectual aspects of behavioral activation interventions by outlining the procedures comprising behavioral activation interventions, addressing process of change issues, specifying fundamental behavioral principles, and highlighting research questions central to establishing the efficacy and practicality of these treatments. As a result of addressing these questions, we will eventually be able to determine whether purely behavioral approaches to treating depression were abandoned prematurely, how best to develop and implement such treatments, and better evaluate the importance of behavioral activation procedures as they also may pertain to the future of behavior therapy for clinical problems beyond depression.

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