

The Brief Behavioral Activation Treatment for Depression

– A psychiatric pilot study

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In the present study, *the Brief Behavioral Activation Treatment for Depression* (BATD) (Lejuez, Hopko & Hopko, 2001; 2003) was implemented to evaluate its effect on unipolar depression in eight adults. The preliminary results indicate that BATD was successful as there were statistically and clinically significant reductions in self-reported symptoms of depression and in general level of dysfunction. Furthermore, an improvement was found among the participants in overall quality of life. These initial positive results make future evaluations of the intervention interesting. Finally, the limits of the study and suggestions for further research directions are discussed.

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Over the past decade there has been increasing interest in behavioural activation as a stand-alone treatment for clinical depression. Behavioural activation may be defined as a therapeutic process that aims to increase or modify overt behaviours likely to bring the patient into contact with reinforcing environmental contingencies and produce corresponding improvements in thoughts, mood and overall quality of life (Hopko, Lejuez, Ruggiero & Eifert, 2003).

Background

Behavioural therapy for depression originated in the early 1970s with C.B. Ferster's theory on depression (Ferster, 1973) and Peter Lewinsohn and colleagues' implementations of the theory (Lewinsohn, 1974; Lewinsohn & Graf, 1973). According to Ferster's theory, depression is a result of lowered levels of reinforcement of non-depressive (healthy) behaviour – a process caused by a complete or partial lack of reinforcement in a person's life, an inability to attain reinforcement and/or an increased frequency of punishment. Depressive behaviours such as passivity or lethargy are assumed to be maintained by positive

reinforcement (e.g. sympathy) and/or negative reinforcement (e.g. avoidance of responsibility). Consequently, in accordance with the theory, depressive behaviour will develop from a combination of reinforcement of depressive behaviour and low levels, or a lack of, positive reinforcement or even from punishment of healthy, alternative behaviour (Ferster, 1973).

Based on Ferster's theory of depression, the early behavioural treatments for depression were aimed at increasing access to pleasurable activities and subsequent consequences, as well as decreasing the intensity and frequency of aversive activities and consequences (Lewinsohn & Graf, 1973; Lewinsohn, Sullivan & Grosscup, 1980; Sanchez, Lewinsohn & Larson, 1980). Early studies found a potential benefit of treatments based on behavioural activation in different contexts, including individual, group, family and couples therapy (Brown & Lewinsohn, 1984; Lewinsohn & Atwood, 1969; Lewinsohn & Shaffer, 1971; Lewinsohn & Shaw, 1969; Zeiss, Lewinsohn & Munoz, 1979). Brown and Lewinsohn (1984) found that the effect of individual therapy, group therapy and minimal therapeutic contact (by phone) was superior when compared to a wait-listed control group. Zeiss et al. (1979) found that core behavioural activation strategies ("pleasant event scheduling") were just as effective as cognitive and interpersonal interventions in the treatment of depression among polyclinic clients.

As a result of the increasing interest in cognitive theory in the 1970s, 80s and 90s, interventions based exclusively on operant and respondent principles were assumed to be insufficient, and the absence of direct cognitive manipulations was widely regarded as a limitation of the behavioural treatments. This change was reflected in the increasing popularity of cognitive treatment and culminated in the inclusion of this treatment (and exclusion of behavioural treatment) in the "Treatment of Depression Collaborative Research Program" financed by the National Institute of Mental Health (TDCRP; Elkin et al., 1989).

Despite the documented efficacy of cognitive and cognitive-behavioural therapies for depression (Dobson, 1989; Elkin et al., 1989; Shea et al., 1992), several recent findings as well as socioeconomic aspects raise the question of whether "purely" behavioural approaches to treating clinical depression were abandoned too hastily. First, pressure from managed care organizations to develop and implement psychosocial interventions that are time-limited, cost-effective and empirically validated (core aspects of behavioural treatment) has increased in recent years (Hopko et al., 2003). Secondly, empirical data from carefully conducted clinical studies and meta-analyses demonstrate that cognitive change may be just as likely to occur using environmentally-based manipulations or cognitive interventions (Cuijpers, van Straten & Warmerdam, 2007; Dimidjian et al., 2006; Jacobson et al., 1996; Jacobson & Gortner, 2000; Simons et al., 1984; Zeiss et

al., 1979). Thirdly, therapeutic benefits of CBT packages for depression most often occur in the initial sessions of the treatment course, a period in which behavioural components are often more prominent (Hollon, Shelton & Davis, 1993; Otto, Pava & Sprich-Buckminster, 1996). In response to these issues, research programmes have evolved to evaluate the feasibility, effectiveness and efficacy of purely behavioural interventions for depression.

Returning to basic behavioural principles

The revitalization of behavioural approaches to treating depression has been most evident in the development of two new interventions: *behavioural activation* (BA) (Martell, Addis & Jacobson, 2001) and the *brief behavioural activation treatment for depression* (BATD) (Lejuez, Hopko & Hopko, 2001, 2002). These current treatments use somewhat different strategies but are both extensions of Ferster's (1973) learning theory in terms of aetiology and treatment of depression. Even though the treatments are based on Ferster's theory, they both carry potential benefits compared to the early behavioural treatment methods. By placing a larger emphasis on the unique contingencies that maintain a person's depressive behaviours they are considered to be more *idiographic* in nature (Jacobson, Martell & Dimidjian 2001; Lejuez et al., 2001). This development is a shift from focusing solely on what most people would regard as pleasurable activities (Lewinsohn & Graf, 1973), to focusing on the *functional* aspects of behaviour 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 analytical approach involves a detailed assessment of contingencies maintaining depressive behaviours, idiographic assessment of clients' specific needs and goals. It subsequently targets behaviour that, based on results of functional analyses, is likely to improve the client's quality of life (Hopko et al., 2003).

Furthermore, contemporary behavioural activation approaches differ from traditional behaviour therapy in that they have adopted the acceptance-change model, which is gaining support in several areas of psychopathology (Hayes, Strosahl & Wilson, 1999). Based on this paradigm, activation partially involves teaching patients to formulate and accomplish behavioural goals regardless 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.

The Brief Behavioural Activation Treatment for Depression (BATD)

Following the pioneering work of Jacobson and colleagues (Gortner, Gollan, Dobson & Jacobson, 1998; Jacobson, Dobson, Truax & Addis, 1996), Lejuez and colleagues developed BATD with the objectives of establishing a briefer and less complicated method of behavioural activation (Lejuez, Hopko & Hopko, 2001, 2003). The developers imply that the method is time- and cost-effective since the manualised approach allows for ease of implementation, including the absence of difficult skills for therapists to acquire (Hopko, Lejuez, LePage, Hopko & McNeil, 2003).

In addition to being based on Ferster's theory on depression, BATD also has roots in the concept of matching theory (Herrnstein, 1970). In line with this theory, BATD is based on the idea that behaviour is maintained by its consequences (operant control mechanisms), which means that consequences of a particular behaviour are considered in relation to consequences for all other possible instances of behaviour, making one behaviour more likely to occur than an alternative behaviour.

Applied to psychopathology, all behaviour is categorized as either "healthy" or "unhealthy". Healthy behaviour is defined as overt behaviours that are directed toward improving one's quality of life and/or functioning and are aimed at the attainment of some goal, objective or reward. Healthy behaviour is directly incompatible with unhealthy behaviour. Similarly to healthy behaviours, unhealthy behaviour may be a function of some reward via positive (e.g., sympathy of friend or family member) or negative reinforcement (avoidance of responsibility), but unhealthy behaviours serve to impact one's functioning or quality of life negatively.

The preliminary research findings for BATD are promising. In a series of case studies, BATD was associated with sizeable changes in BDI-II scores in adults with moderate depression (Lejuez et al., 2001). Additionally, BATD has successfully been implemented to treat co-occurring anxiety and depression symptomatology (Hopko, Lejuez & Hopko, 2004) and as an adjunct to pharmacotherapy (Hopko, Lejuez, McNeil & Hopko, 1999). Perhaps the most compelling support for BATD so far was provided in a randomized controlled research study published in 2003. In this study BATD was compared with supportive psychotherapy for depressed inpatients. Data strongly supported the relative efficacy of BATD with significantly greater pre- to post-treatment reduction in depressive symptoms and a large effect size reflecting the clinical significance of the treatment (Hopko, Lejuez, LePage, Hopko & McNeil, 2003). Furthermore, BATD has successfully been implemented for clients with a co-occurring cancer and depression diagnosis upon which significant improvements, regarding level of depression and quality of life, were

maintained. The improvements were combined with large effect sizes that were sustained at the three-month follow-up (Hopko, Bell, Armento, Hunt, & Lejuez, 2005). Presently, a controlled study evaluating the effect of BATD, a more comprehensive CBT intervention and "treatment as usual" is being planned (Hopko et al., 2005).

Aim of the Study

To conduct a pilot study evaluating the treatment results of BATD for unipolar depression in adults.

METHOD

Participants

The participants were eight depressed individuals (seven of them females). The severity of the depression was indicated by their BDI-II -and SCL-90 scores (see Table 2). Their ages ranged between 19 and 51 years. The mean age for the females was 36.9 years ($s=10.54$ years). The male was 38 years old. The participants had either contacted the clinic on their own or had a referral from a physician. The clinical depression diagnoses, based on ICD-10 (WHO, 1993), are shown in Table 1.

Table 1. Number and mean age for different diagnoses

Diagnoses	Number	Mean age
Mild depressive episode	2	25
Moderate depressive episode	4	45
Moderate depressive episode, recurrent	1	29
Depressive episode, not otherwise specified	1	38

One of the participants was also diagnosed with burnout syndrome, another with burnout syndrome and panic disorder, and a third with generalized anxiety disorder.

Instruments

To measure the presence and severity of depressive symptoms, as well as any changes in the depression, *Beck Depression Inventory – Second Edition* (BDI-II) (Beck, Steer & Brown, 1996) was administered. BDI-II is a self-reporting rating scale with 21 items.

To measure a general level of mental dysfunction, the *Symptom Checklist-90* (SCL-90) (Degoritas, 1994) was administered. The checklist is used to determine how a person has felt, mentally and physically, during the most recent week. Its 90 questions are categorized into nine diagnostic subscales except for seven questions (Supplemental scale) that do not fit in any subscale. The subscales are the following: "Somatic symptoms", "Obsessive thoughts", "Interpersonal sensitivity", "Depression", "Anxiety", "Aggressiveness", "Phobic anxiety", "Paranoid delusions", "Psychotics", and "Supplemental scale". Subjective degree of quality of life was determined by participants rating their quality of life on a 7-point Likert scale, from "very low" to "very high".

Procedure

After permission had been obtained, the American manual was translated into Swedish. Before completion of the translation, the manual was scrutinized by three individuals with special skills and knowledge of behaviourally oriented psychotherapies. During the translation phase, all affected personnel at the clinic were informed of the study, verbally and in writing. At the same time, affected physicians at the local primary healthcare facilities in the city of Värnamo and surrounding areas were informed of the study as well.

As part of the initial clinical evaluation, informed consent material was provided to all participants, verbally and in writing. The consent material explained the goals of the study, stated that participation was voluntary and confidential, and informed participants that they had the right to stop participating at any time during the study. Furthermore, the participants were informed that exclusion from the study would involve routine treatment at the psychiatric clinic in Värnamo. In the initial clinical evaluation, conducted by the author, the BDI-II, SCL-90 and rating of subjective quality of life were administered.

The inclusion criteria consisted of: (a) Unipolar depression based on ICD-10 (WHO, 1995) (b) Minimum age of 18 (c) Ability to read. The exclusion criteria were the following: (a) Ongoing treatment for depression (b) Other psychiatric disorder requiring immediate treatment (c) Mental retardation/Organic pathology.

Once the participants had been determined to meet the criteria and given their consent to participate, the treatment, provided by the author, began. BDI-II was administered in each session. The SCL-90 and rating scale of subjective quality of life were also administered in the final session.

Intervention

The intervention was conducted in accordance with the *Brief Behavioral Activation Treatment for Depression* (BATD) manual (Lejuez et al., 2001; 2003; Freij, 2005), once a week in an individual format.

Treatment components of BATD

- BATD typically can be completed in eight to fifteen sessions. Initial sessions consist of assessing the function of depressed behaviour, efforts to weaken access to positive reinforcement (e.g. sympathy from relatives) and negative reinforcement (e.g. avoidance of responsibility) of depressive behaviour, establishing client rapport and introducing the treatment rationale.
- A systematic activation approach is then initiated to increase the frequency and subsequent reinforcement of healthy behaviour. Clients begin with a weekly self-monitoring exercise that serves as a baseline assessment of daily activities, orients clients to the quality and quantity of their activities and generates ideas about activities to target during treatment.
- The emphasis then shifts to identifying behavioural goals within major life areas that include relationships, education, employment, hobbies and recreational activities, physical/health issues, spirituality and anxiety-eliciting situations.
- 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 and weekly behavioural checkouts to monitor progress, the client moves progressively through the hierarchy. For each activity, the therapist and client determine mutually what the *weekly* and *final* goals will be in terms of frequency and duration of activity per week. At the start of each session, the behavioural checkout is examined and discussed, with goals for the following week established as a function of client success or difficulty with goals for the prior week. Clients identify weekly rewards as incentives for completing the behavioural checkout that they self-administer if their goals are met.

Data Processing

A dependent t-test was used to determine whether differences existed between pre-treatment and post-treatment ratings of severity of depression, general level of dysfunction, and subjective quality of life. Tests of normality were conducted on all variables by using Kolmogorov-Smirnov and Shapiro-Wilk. None of the

variables were statistically significant from the normal frequency of distribution ($p < 0.05$). The analyses were done in SPSS 14.2 (SPSS, 2004). Cohen's d (Cohen, 1977) was used to determine the effect sizes within the control group. The analyses were based on the standard deviation. According to Cohen, effect sizes of 0.2, 0.5 and 0.8 are defined as small, medium and large, respectively. These cut-offs are applied to inter-group effect sizes and are consequently discussed when it comes to intra-group effect sizes.

RESULTS

All participants completed the treatment. The average number of sessions was 13 (a maximum of 18, a minimum of 9). As shown in Table 2, there were significant improvements in severity of depression, general dysfunctional level and subjective quality of life. There were large effect sizes on all evaluation components, which indicates that the improvements were clinically significant as well.

Table 2. Outcome data for eight psychiatric clients treated with brief behavioural activation treatment for depression

Measure	Pre-Tx	Post-Tx	p	Effect size (d)
BDI-II	30,88 (6,64)	13,25 (6,58)	< .001	2,67
SCL-90	135,13 (39,12)	79,63 (56,36)	< .01	1,16
Quality of life	2,75 (1,20)	4,63 (1,16)	< .01	1,59

Note. Effect size estimate (d) calculated as $(\text{mean}_{\text{pre}} - \text{mean}_{\text{post}}) / \text{standard deviation}_{\text{pooled}}$. Standard deviations appear in parentheses. Tx = treatment. BDI-II = Beck Depression Inventory – Second Edition; SCL-90 = Symptom Checklist-90.

In Figure 1 group variables illustrate the improvement of the clients. Figure 2 shows that the improvement concerns all ten variables used in the study.

Discussion

The preliminary results suggest that BATD was successful as it resulted in statistically and clinically significant reductions in reported symptoms of depression and in general levels of dysfunction, as well as an improvement in overall quality of life. It appears that the reduction is more pronounced in the beginning of the treatment. A possible explanation is that the participants felt understood by their treatment provider, instilling them with hope of improvement. The improvement was sustained through treatment when the participants mainly worked on putting their activity hierarchies in practice. The improvements in the

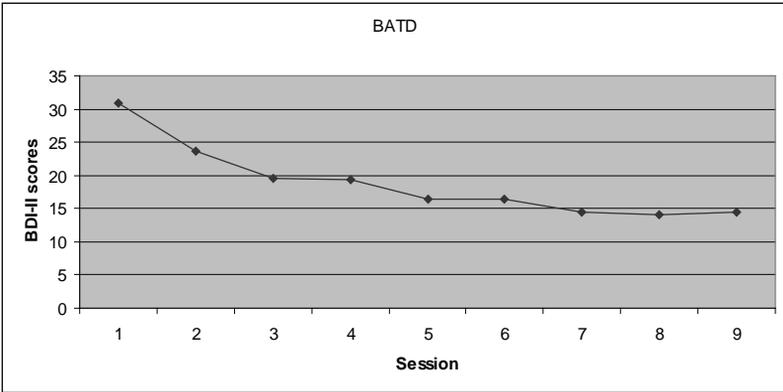


Figure 1. Changes in BDI-II scores for the group during sessions 1-9.

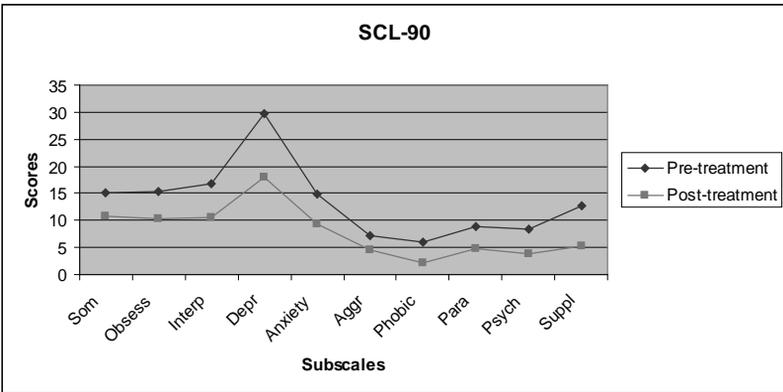


Figure 2. SCL-90 scores for the group pre- and post-treatment.

severity of depression and subjective quality of life confirmed the developers' findings (Hopko et al., 2005; Hopko et al., 2003; Lejuez et al., 2001). It is the author's intent to follow up the results.

Despite the fact that no structured evaluations of the participants' impressions of the treatment were administered, the results suggest that the treatment was well received as all participants completed it.

The study has some limitations. The independent group was small and there was no control group, as the present study is a pilot study for an upcoming study in the area of primary care. The goal for the upcoming study is to compare BATD with empirically validated interventions, enabling an evaluation of the

relative effect of BATD. Furthermore, the interventions and ratings were provided by the same persons. No systematic measurement of treatment adherence was conducted. However, this will be done in the upcoming study. Despite the limitations of the study, the preliminary results support the efficacy of BATD as a treatment intervention for patients with mild to moderate depression. Future studies that expand these results and examine the clinical effectiveness of BATD with carefully designed controlled trials could determine whether or not BATD is a cost-effective treatment option that improves the quality of life for patients diagnosed with depression.

This is an exciting time for behavioural treatment-oriented researchers and treatment providers. The development and application of behavioural activation strategies, combined with promising research findings, have opened the door to a renewed interest in different behavioural treatment perspectives, ones that were once considered to be insufficient to treat clinical depression. Research is now indicating that “pure” behavioural interventions for depression were abandoned too hastily.

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