12-2000

Venture Behavioral Health Southwestern Michigan Treatment of Depression Collaborative Study: The Effectiveness of Behavioral Activation Group Therapy: An Initial Investigation

Jeffrey F. Porter
Western Michigan University

Follow this and additional works at: https://scholarworks.wmich.edu/dissertations
Part of the Applied Behavior Analysis Commons, and the Community Psychology Commons

Recommended Citation
https://scholarworks.wmich.edu/dissertations/1480

This Dissertation—Open Access is brought to you for free and open access by the Graduate College at ScholarWorks at WMU. It has been accepted for inclusion in Dissertations by an authorized administrator of ScholarWorks at WMU. For more information, please contact maira.bundza@wmich.edu.
VENTURE BEHAVIORAL HEALTH SOUTHWESTERN MICHIGAN TREATMENT OF DEPRESSION COLLABORATIVE STUDY: THE EFFECTIVENESS OF BEHAVIORAL ACTIVATION GROUP THERAPY: AN INITIAL INVESTIGATION

by

Jeffrey F. Porter

A Dissertation
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements for the
Degree of Doctor of Philosophy
Department of Psychology

Western Michigan University
Kalamazoo, Michigan
December 2000
A recent empirical study (Jacobson et al., 1996) suggested that the Behavioral Activation (BA) component of Beck’s Cognitive-Behavioral Therapy (CT) for depression (Beck, Rush, Shaw, & Emery, 1979) may be as effective a treatment for clinical depression as the full CT treatment. BA involves intervention choices that are fewer in number and more straightforward than those contained in CT, making BA a more efficient treatment than CT. The purpose of this study was to extend the research on BA by administering it as a group therapy and to evaluate this treatment in a natural setting. This was achieved by classifying 42 Community Mental Health (CMH) outpatients with Major Depressive Disorder as either Behavioral Activation Group Therapy (BAGT) subjects or wait-list subjects, dependent upon the latency from screening to treatment initiation. Eight BAGT-trained therapists administered the treatment weekly for 10 weeks at four Southwestern Michigan CMH agencies. A co-therapy model was utilized and group sizes ranged from 6 to 11 persons. Treatment subjects were assessed at pretreatment, posttreatment, and 3-month follow-up using the Beck Depression Inventory–Second Edition (BDI-II) (Beck, Steer, Ball, & Ranieri, 1996), the Revised Hamilton Rating Scale for Depression (RHRSD) (Warren, 1996), and the Structured Clinical Interview for DSM-IV (SCID) (First, Spitzer, Gibbon, & Williams, 1997). Wait-list subjects were assessed at
prewaiting period, postwaiting period (which also represented pretreatment for these subjects), posttreatment, and 3-month follow-up with the same outcome measures. Results failed to uncover a statistically significant difference between wait-list subjects and treatment subjects from pretreatment to posttreatment in this difficult to treat population. However, a statistically significant difference between wait-list subjects and treatment subjects from pretreatment to follow-up was observed. Additionally, subjects who completed BAGT, regardless of initial classification, experienced statistically significant reductions in depression scale scores after 10 weeks of treatment and this trend continued at 3-month follow-up. In light of the increased severity of the present sample compared to the Jacobson et al. (1996) sample, it is suggested that these findings support further investigation into BAGT as a treatment for clinical depression.
INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

Bell & Howell Information and Learning
300 North Zeeb Road, Ann Arbor, MI 48106-1346 USA
800-521-0600

UMI®

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
ACKNOWLEDGMENTS

Foremost, I would like to thank Dr. C. Richard Spates for his unbridled enthusiasm for this project and for his ceaseless commitment to my graduate training. Without his invaluable tutelage, I would not be where I am today.

I also would like to thank the members of my graduate committee, Dr. Malcolm Robertson, Dr. Galen Alessi, and Dr. Roberto Flachier, for supporting me throughout this two-year project.

I would like to thank Sean Smitham for his assistance in managing the study in my absence. He took on a difficult task and handled it like a seasoned veteran. I would like to thank my good friend and colleague, Patrick Mulick, for his assistance in brainstorming, revising, and finishing the final manuscript.

Lastly, and perhaps most importantly, I would like to thank my wife, Cari, for her unwavering support and encouragement that put the wind beneath my wings. The countless hours she spent talking about and listening to my ideas were invaluable, and her editing skills were second to none.

Jeffrey F. Porter
# TABLE OF CONTENTS

ACKNOWLEDGMENTS ................................................................................... ii

LIST OF TABLES ............................................................................................ v

LIST OF FIGURES ............................................................................................ vi

CHAPTER

I. INTRODUCTION .................................................................................. 1

II. REVIEW OF THE LITERATURE .......................................................... 10

III. METHOD ............................................................................................... 21
    Sample ............................................................................................... 21
    Therapists ........................................................................................... 23
    Treatment ........................................................................................... 23
    Outcome Measures ............................................................................. 28
    Procedure ........................................................................................... 31

IV. RESULTS ................................................................................................. 35
    Analysis Plan ....................................................................................... 35
    Preliminary Analyses ........................................................................... 36
    Primary Analyses ................................................................................. 40
    Intent to Treat Analysis ....................................................................... 44
    Allegiance Analysis ............................................................................. 44
    Post-hoc Analyses .............................................................................. 45
    Diagnostic Outcome ............................................................................ 48
    Client Satisfaction With Treatment .................................................... 49

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
# Table of Contents—Continued

## CHAPTER

- Client Report of Depression at Follow-up .......................................... 52

## V. DISCUSSION ............................................................................................ 53

- Main Outcomes ................................................................................... 53
- Secondary Outcomes ......................................................................... 60
- Social Validity ...................................................................................... 63
- Limitations of This Study ..................................................................... 64
- Conclusions and Future Directions ...................................................... 65

## APPENDICES

- A. Treatment Description Script ........................................................... 67
- B. Consent Form ........................................................................................... 69
- C. Demographic Questionnaire ............................................................... 72
- D. Beck Depression Inventory—Second Edition .................................... 75
- E. Revised Hamilton Rating Scale for Depression ................................. 77
- F. Master List .............................................................................................. 79
- G. Data Collection Form ........................................................................ 81
- H. Treatment Termination Questionnaire .............................................. 84
- I. Follow-up Questionnaire .................................................................. 86

- J. Western Michigan University Human Subjects
  Institutional Review Board Approval ......................................................... 88

## BIBLIOGRAPHY ................................................................................................ 90
LIST OF TABLES

1. Demographic Variables for Total Sample and by Condition ......................... 37
2. Pretreatment BDI-II and RHRSD Scores ...................................................... 40
3. Mean Prewait-list and Postwait-list BDI-II Scores for Wait-list Subjects and Mean Pretreatment, Posttreatment, and 3-Month Follow-up BDI-II Scores for Treatment Subjects ........................................... 41
4. Pretreatment, Posttreatment, and 3-Month Follow-up Means for BDI-II and RHRSD Scores for the Total Sample ......................................................... 43
5. Mean BDI-II and RHRSD Scores as a Function of Medication Status .............. 47
6. Number of Treatment Completers Meeting DSM-IV Criteria for Major Depressive Disorder at Pretreatment, Posttreatment, and Follow-up ............. 49
7. Subject Ratings of BAGT at Posttreatment and 3-Month Follow-up .............. 50
8. Pretreatment, Posttreatment, and Follow-up BDI-II and RHRSD Scores for Subjects in This Sample Compared to Subjects in the Jacobson et al. (1996) Sample ......................................................... 60
LIST OF FIGURES

1. Comparison of Pretreatment BDI-II and RHRSD Scores for Both Groups. ................................................................. 39

2. Prewait-list and Postwait-list Mean BDI-II Scores for the Wait-list Group and Pretreatment, Posttreatment, and 3-Month Follow-up Mean BDI-II Scores for the Treatment Group. ........................................... 41

3. Mean BDI-II and RHRSD Scores at Pretreatment, Posttreatment, and 3-Month Follow-up for Total Sample. ....................... 42

4. Mean RHRSD Scores as a Function of Medication Status. .................. 46

5. Mean BDI-II Scores as a Function of Medication Status. .............. 46

6. Percentage of Treatment Completers Meeting DSM-IV Criteria for Major Depressive Disorder at Screening, Posttreatment, and 3-Month Follow-up. ............................................................... 48

7. Mean BDI-II Scores for This Sample and for the Jacobson et al. (1996) Sample. ................................................................. 59

8. Mean RHRSD Scores for This Sample and for the Jacobson et al. (1996) Sample. ................................................................. 59
CHAPTER I

INTRODUCTION

In 1975, Peter Lewinsohn wrote, "Depression has been relatively neglected by behavior therapists" (p. 19). It seems that almost 25 years later, this statement still rings true. There are several possibilities why depression has not been a primary focus of behavior therapists; they all center around the notion that depressive behaviors are difficult to operationalize. First, it is easier to observe, describe, and manage behavioral excesses than behavioral deficits. And given that an extreme reduction or absence of particular behaviors marks depression, it can be challenging for the behavior therapist to identify behavioral targets for intervention. Second, the primary problem of depression is often described in terms of emotions or thoughts, which can be difficult to address behaviorally. Unlike anxiety, which involves clear avoidance behavior, depression often does not present as overtly to the behaviorist. Thus, it is often difficult to conceptualize the patient's problems behaviorally. Finally, depressed persons often have, as a primary symptom, a lack of energy and motivation to engage in any proactive behavior. Because the essence of behavior therapy involves the patient engaging in behaviors that will serve to alleviate her current condition, the absence of energy or motivation can seem an insurmountable obstacle to exacting behavior change in the patient. These challenges not withstanding, the following behavioral conceptualizations of depression have been offered.

B. F. Skinner (1953) attempted the first behavioral conceptualization of depression wherein he introduced the notion of depression as an extinction
phenomenon, a concept that has been central to all behavioral positions (Lewinsohn, 1975). He achieved this by explaining depression in terms of the functional relationships between the interruption of an established sequence of responses that have been positively reinforced by the social environment and the result of a weakening of behavior and loneliness. While this notion advanced our understanding of depression, it failed to provide an adequate framework within which to understand the complexity of the relationship between the individual and the environment.

Lewinsohn (1975) identified two options for operationally defining depression. One definition places the primary emphasis on the occurrence of specific behaviors and explains depression as "a low rate of social behavior, verbal expressions of guilt and personal inadequacy, sadness, etc." (Lewinsohn, 1975, p. 27). This strategy suggests that depressed patients can be defined in terms of specific behavioral deficits and behavioral excesses (Lewinsohn, 1975). A second option is to assume a common antecedent (e.g., low rate of positive reinforcement or learned helplessness) to be causally related to all depressions, even though the behavioral manifestations of depression differ from one case to the next (Lewinsohn, 1975). This strategy involves examining the functional relationships between environmental factors and behaviors in order to understand a person's depression. While both of these approaches are behavioral in nature, the second option provides a more scientific model within which to conceptualize the depressive condition. In other words, it allows for a theory or a hypothesis around which to organize what is known about the symptoms and causes of depression. This is the basis upon which predictions about the cure and prevention of depression can be made (Lewinsohn, 1975).
Ferster (1973) suggested that the essential characteristic of a depressed person is a reduced frequency of emission of positively reinforced behavior. He identified factors such as sudden environmental changes, punishment and aversive control and shifts in reinforcement contingencies as giving rise to depression. In other words, in response to one’s changing environment, a person may engage in fewer behaviors that produce reinforcers. As a result of the reduction in reinforcer availability, the person experiences symptoms of depression. Ferster (1973) also viewed failure to deal with, avoid, or escape from aversive social consequences as an antecedent to depression. Ferster differentiated between two types of responses to aversive situations: direct action, which can alter the aversive situation, and indirect activity (e.g., complaining), which simply acknowledges the aversive situation. He described the indirect behavior as passive inasmuch as it does very little to influence the aversive situation. The result of passive behavior is that the individual fails to act on her/his environment in a manner that effectively eliminates or reduces the aversive condition(s), thereby strengthening depressive symptomatology.

Lewinsohn, Weinstein, and Alper (1970) contributed an important concept to the understanding of depression. They suggested that a low rate of response-contingent positive reinforcement is responsible for parts of the depressive syndrome, such as the low rate of behavior. This low rate of response-contingent positive reinforcement is believed to evoke depressive behaviors, such as the feelings of dysphoria, fatigue, and other somatic symptoms. Furthermore, Lewinsohn et al. suggested that once the depressive symptoms develop, the social environment provides contingencies in the form of sympathy, interest, and concern, which strengthen and maintain the depressive behaviors (Lewinsohn et al, 1970). However, because most people in the depressed person’s environment find these depressive
behaviors aversive, they tend to avoid her as much as possible, thereby further
decreasing her/his rate of positive reinforcement and further worsening her/his
depression (Lewinsohn, 1975). This cycle makes treating depression difficult,
requiring modification of both the environment as well as the individual’s behavior to
produce change.

The total amount of response-contingent positive reinforcement is believed to
be a function of (a) the number of events that are reinforcing for the individual, (b)
the number of reinforcing events that can be provided by the environment, and (c) the
instrumental behavior of the individual (Lewinsohn, 1975). In other words, it is the
number of reinforcers available to the individual as well as the individual’s ability to
contact these reinforcers that determine the amount of response-contingent positive
reinforcement the individual receives, which affects the individual’s behavioral and
emotional state. Consequently, effective interventions for depression must consider
environmental as well as individual factors when targeting emotional and behavioral
changes.

The aforementioned behavioral principles offered to explain the development
and maintenance of depression have led to various behavioral treatments for
depression. Behavioral treatments have in common the goal of changing behavior
patterns in order to restore an adequate schedule of positive reinforcement for the
individual (Lewinsohn, 1975). Because of the diversity of symptoms and the complex
learning history exhibited by each depressed individual, no single intervention
strategy is useful with all patients. Therefore, a variety of intervention techniques,
which are derived from behavioral theory, has evolved and allows the behavior
therapist to select a combination of techniques which appear most suited for an
individual patient (Lewinsohn, 1975). In this way, behavior therapy can be adapted to a range of individuals with a variety of depressive presentations.

Interventions aimed at increasing the patient's activity level are common. For example, social reinforcement (Beck, 1970; Liberman & Raskin, 1971), token economies (Hersen, Eisler, Alford, & Agras, 1973), and activity schedules (since Lewinsohn et al., 1970) have been used to increase desirable behaviors in depressed patients. Activity schedules involve the patient keeping a daily record of pleasant activities that she performs. This technique is based on the finding that a strong positive correlation exists between engaging in pleasant activities and mood state (Lewinsohn & Graf, 1973; Lewinsohn & Libet, 1972). Interventions aimed at improving depressed patients' social skills (Lewinsohn et al., 1970) and assertiveness skills (Wolpe & Lazarus, 1966) have been used to better enable depressed individuals to contact reinforcers in their environment. The aforementioned interventions rest on the theory that the social environment holds an abundance of reinforcers, but without the proper skills, a person will be limited in her ability to access these reinforcers.

Furthermore, depressed individuals may experience social interactions as aversive and consequently avoid social situations, thereby preventing contact with reinforcers. As such, teaching the requisite skills greatly enhances a person's ability to come in contact with social reinforcers and also reduces the likelihood that a person will experience aversive social interactions. Behavior therapists are well suited to conduct this type of remedial skill training with depressed individuals.

Behavior therapy has much in common with cognitive therapy and consequently a brief review of cognitive theory and therapy of depression will follow. Beck (1963, 1964) was the first to suggest that not only are affective states associated with cognitions, but that cognitions are responsible for depressive affective
In other words, Beck argued that a thought occurs and a corresponding emotion follows. As such, if a person's interpretation of an experience is unpleasant, s/he will experience a corresponding unpleasant affective response. According to this conceptualization of depression, a person's depressed mood is a consequence of the individual's attitudes and beliefs (i.e., schema), which determine how the person interprets her experiences.

In a depressed individual, these cognitions tended to be characterized by themes of low self-esteem, self-blame, overwhelming responsibilities, hopelessness, helplessness, and desires to escape (Beck, 1963). Beck (1964) observed that the more central these schema were to an individual's existence, the more likely the schema were to be activated in a variety of situations during times of high stress. For example, for a nondepressed person, the belief that one is inadequate or ineffective may arise only in situations suggesting such a conclusion (e.g., losing a job), whereas in a depressed person, this belief may arise in a variety of situations not warranting such a conclusion (e.g., taking longer than expected to finish a task at work). This latter phenomenon, stimulus generalization, involves once neutral stimuli evoking a negative cognitive response under periods of high stress. The occurrence of these negative beliefs is therefore not contingent upon stimuli warranting such beliefs, but rather contingent upon high levels of stress. As such, the goal of cognitive therapy is to teach the patient to examine her own thoughts and to correct for errors in thinking when they occur (Beck, 1967). By avoiding such errors as overgeneralization, magnification, or arbitrary inference, the depressed person is less likely to experience depression (Beck, 1967, 1970; Beck, Rush, Shaw, & Emery, 1979).

The commonalties between cognitive and behavioral treatments for depression may not, at first glance, seem obvious. But upon closer comparison, it
seems clearer that the distinction between “cognitive” and “behavioral” formulations is in terms of one’s perspective rather than in terms of operations (Taylor & Marshall, 1977). First, in both cognitive and behavioral therapy, the interview is more structured and the therapist is more active compared in other psychotherapies (Beck, 1970). In contrast to the more traditional therapist roles of listening and reflecting, the behavior therapist and the cognitive therapist actively formulate the patient’s presenting problem(s) and take an active role in guiding the patient to make the desired changes in her overt behaviors or thoughts. For example, collaborative empiricism, wherein the therapist and the patient work together to gather evidence and to test theories about the patient’s problems, is central to behavioral and cognitive therapies.

Second, the therapeutic efforts of behavior therapists and cognitive therapists are focused on the overt symptom or behavior problem, such as a particular phobia or obsession (Beck, 1970). However, the target typically differs inasmuch as the behavior therapist focuses on the overt behavior (e.g., avoidance response), whereas the cognitive therapist focuses on the ideational content involved in the symptom (e.g., the irrational inferences) (Beck, 1970). Nonetheless, it is the conceptualization of symptom formation in terms of constructs that are accessible either to behavioral observation or introspection that links cognitive and behavior therapy in this respect (Beck, 1970).

A third commonality, which also is in contrast to psychoanalytic therapy, is that neither cognitive therapy nor behavior therapy draws substantially on recollections or reconstructions of the patient’s childhood experiences and early family relationships (Beck, 1970). The emphasis of both approaches is on current or recent experiences and how they relate to current functioning.
A final commonality between behavior therapy and cognitive therapy is the assumption that the patient has acquired maladaptive reaction patterns that can be "unlearned" without the absolute requirement that she obtain insight into the origin of the symptom (Beck, 1970). Through the use of behavioral principles, both overt behaviors and cognitions are targeted to produce a reduction in depressive symptomatology. Consequently, therapy tends to be change-focused rather insight-focused, which allows the therapist and the patient to evaluate therapy outcomes and make stronger decisions regarding treatment.

Due to the similarities between cognitive and behavior therapies, a convergence of the two approaches has occurred which has spawned what are typically described as "cognitive-behavioral" therapies (e.g., Beck's Cognitive Therapy). As the name implies, cognitive-behavioral therapies utilize both cognitive and behavioral principles to produce changes in overt behavior and covert cognitions. Typically, irrational beliefs and dysfunctional behaviors are the targets for change and interventions aimed at changing these maladaptive beliefs and behaviors are employed by the therapist. For example, a cognitive-behavioral therapist may instruct a patient who excessively criticizes herself to limit criticizing sessions to 60 seconds and allow no more than five sessions per hour. In this way, behavior change occurs and continued practice of this strategy strengthens the new behavior.

Cognitive-behavioral therapies have been largely successful in treating depression and therefore have been the focus of much empirical research (see reviews by Hollon, Shelton, & Loosen, 1991; Jacobson & Hollon, 1996). The following two chapters will include a review of the literature relevant to behavioral and cognitive-behavioral treatments for depression and a detailed description of the experimental methods utilized in this study. Additionally, empirical support for further research
into behavioral treatments for depression will be presented. Finally, the logic and rationale for this study will be explicated in terms of its place in a developing line of empirical research and in terms of its practical implications for contemporary psychology.
CHAPTER II

REVIEW OF THE LITERATURE

The clinical effectiveness of cognitive-behavioral treatments for depression has been well documented. Numerous studies have shown statistically significant reductions in depression scale scores following cognitive-behavioral treatments (Brown & Lewinsohn, 1984; Comas-Diaz, 1981; Covi & Lipman, 1987; Elkin et al., 1989; Fuchs & Rehm, 1977; Graff, Whitehead, & LeCompte, 1986; Jacobson et al., 1996; Kovacs, 1979; Lewinsohn, Clarke, Hops, & Andrews, 1990; Nezu & Perri, 1989; Peterson & Halstead, 1998; Rehm, Kaslow, & Rabin, 1987; Scott & Stradling, 1990; Shaw, 1976; Steuer et al., 1984; Zettle & Rains, 1989). Within this area of research, a number of variations on cognitive-behavioral therapy have been empirically evaluated.

Therapies described as “cognitive” or “cognitive-behavioral” by their investigators have been examined and found to be effective (Comas-Diaz, 1981; Covi & Lipman, 1987; Graff et al., 1986; Jacobson et al., 1996; Kovacs, 1979; Lewinsohn et al., 1990; Nezu, 1986; Nezu & Perri, 1989; Peterson & Halstead, 1998; Rush & Watkins, 1981; Scott & Stradling, 1990; Shaw, 1976; Steuer et al. 1984; Zettle & Rains, 1989). These therapies typically utilize both cognitive and behavioral interventions to assist the client in changing thoughts and behaviors. For example, Scott and Stradling (1990) compared depressed individuals receiving cognitive therapy in either a group or an individual format with depressed individuals on a waiting list. They found that individuals receiving cognitive therapy experienced a
reduction in Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) scores that was significantly greater than the reduction for those individuals on the waiting list, $F(1, 46) = 18.74, p = 0.0001$. The corresponding BDI scores were as follows: a mean reduction of 79% for subjects receiving group cognitive therapy, a mean reduction of 60% for subjects receiving individual cognitive therapy, and a mean reduction of 22% for subjects in the waiting list condition. Thus, in this depression study, subjects who received group cognitive therapy experienced the greatest reductions in depression scale scores, followed closely by subjects who received individual cognitive therapy. Subjects on the waiting list who did not receive cognitive therapy experienced the least improvement in depression scale scores.

Various studies have examined treatments for depression with a primary emphasis on behavioral principles and interventions and they have reported favorable results (Brown & Lewinsohn, 1984; Comas-Diaz, 1981; Fuchs & Rehm, 1977; Jacobson et al., 1996; Kovacs, 1979; Shaw, 1976). For example, Fuchs and Rehm (1977) evaluated the effectiveness of a self-control behavior therapy for depression in comparison to a nonspecific therapy and to a waiting list condition. The self-control therapy involved subjects learning to self-monitor and self-evaluate their behavior and to self-reinforce desirable behavior (Fuchs & Rehm, 1977). They found that a reduction in BDI scores was greatest for subjects in the self-control condition, $F(2, 25) = 6.41, p < .006$. Corresponding mean reductions in BDI scores among groups were as follows: self-control condition, 78%; nonspecific condition, 40%; and waiting list condition, 8%. Thus, while the passage of time produced only minimal (i.e., 8%) reductions in depressive symptomatology, participation in the self-control therapy produced, on average, a substantial (i.e., 78%) reduction in depressive...
symptomatology. These findings support the effectiveness of self-control therapy in treating depression.

Shaw (1976) compared the effects of behavior therapy to a waiting list in the treatment of depression. The behavior therapy group received treatment that included the use of activity schedules, verbal contracts, and behavior rehearsal techniques designed to teach communication and social reinforcement skills (Shaw, 1976). The study reported a mean BDI score for subjects in the behavior therapy group that was significantly lower after the 4-week treatment period than the mean BDI score for subjects in the waiting list group after the same amount of time ($t = 2.09, p < .05$), suggesting that behavior therapy was associated with a greater reduction in depression scale scores than the waiting list. This study further supports the efficacy of behavioral treatments for depression by demonstrating greater antidepressant effects from behavior therapy than from the waiting list.

Dobson (1989) conducted a meta-analysis of 28 studies employing cognitive therapy for depression (as described by Beck, Rush, et al., 1979), which yielded impressive results supporting the effectiveness of cognitive therapy. After analyzing 10 studies that compared cognitive therapy to either a no-treatment or a waiting list control group, a mean effect size of $-2.15$ was obtained, indicating that the average cognitive therapy subject did better than 98% of the control subjects (Dobson, 1989). Comparing cognitive therapy to pharmacotherapy, eight studies yielded a mean effect size of $-0.53$, indicating that cognitive therapy subjects fared better on outcome measures than 70% of drug therapy subjects (Dobson, 1989). The results of this meta-analysis strongly suggest that cognitive therapy is more effective for treating depression than no therapy at all. Furthermore, based on this meta-analysis, cognitive therapy appears to be at least as effective as drug treatment for treating depression.
given that subjects who receive cognitive therapy tend to achieve outcome measure scores as low as, or lower, than subjects receiving medication.

While the aforementioned studies suggest that cognitive-behavioral treatments for depression are effective, they do not provide a clear understanding of which components in the treatment packages are the active ingredients responsible for therapeutic change. In order to isolate the mechanisms of change that are either necessary or sufficient to produce the desired effects, an examination of cognitive-behavioral therapy and its components was performed with the goal of teasing apart the essential factors from the unessential factors. Jacobson and his colleagues (1996) conducted this dismantling study to dissect and examine Beck's Cognitive Therapy (CT) for depression (Beck, Rush, et al., 1979).

In the study, the efficacy of the strict behavioral component, referred to as Behavioral Activation (BA), the BA plus modification of automatic dysfunctional thoughts component (AT), and the full cognitive-behavioral treatment (CT) were compared. Subjects in each treatment condition received the prescribed treatment over the course of 16 weeks with a maximum of 24 sessions. Depression was measured before the onset of therapy, at the time of termination, and at 6-, 12-, 18-, and 24-month follow-ups using the Beck Depression Inventory and the Hamilton Rating Scale for Depression (HRSD; Hamilton, 1960), both of which measure depressive thoughts, behaviors, and emotions. Data analysis revealed no significant differences, $F(4, 252) = 1, p > .05$, between treatment conditions in terms of levels of depression at treatment termination (Jacobson et al., 1996). Furthermore, there were no significant differences between treatment conditions in terms of depression scale scores at the 6-month follow-up, $F(2, 132) < 1, p > .05$; the 12-month follow-up, $F(2, 136) < 1, p > .05$; the 18-month follow-up, $F(2, 133) < 1, p > .05$; or the 24-
month follow-up, $F(2, 128) > 1, p > .05$ (Gortner, Gollan, Dobson, & Jacobson, 1998).

As such, it was concluded that CT was no more effective than either of its components in treating depression (Jacobson et al., 1996). In other words, subjects who received BA alone improved as much as those who received additional interventions specifically aimed at modifying cognitive structures, underlying assumptions and core schema. Thus, it was suggested that Behavioral Activation alone may be a sufficient treatment for depression, producing antidepressant effects equivalent to those produced by cognitive therapy.

These findings have two potentially valuable implications for the understanding and treatment of depression. First, the findings suggest that interventions focused explicitly on altering thinking may not be necessary to alter depressive thoughts and beliefs. Instead, the exposure to naturally reinforcing contingencies may produce changes in thinking equally as effective as the expressly cognitive interventions (Jacobson et al., 1996). Second, because BA is a more parsimonious treatment than CT, BA may be more amenable to less costly alternatives to (individual) psychotherapy (Jacobson et al., 1996).

The Jacobson et al. (1996) study is of strong scientific value, particularly in light of the recent drive for empirical support for psychological treatments. The use of validation criteria to evaluate treatments has spawned scholarly writings concerning what the concept truly means and how it should be utilized by the scientific community. Borkovec and Castonguay (1998) state that therapy research, as an experimental science, is capable of establishing cause-and-effect relationships and nothing more. Furthermore, statements about empirical support for a therapy technique must be clearly made with reference to the only defensible conclusion: The
investigated therapy caused some improvement beyond chance and factors common to all therapeutic relationships or beyond such factors as the passage of time and repeated testing (Borkovec & Castonguay, 1998).

To achieve the goal of empirical support, research must be addressed at both a theoretical and a concrete level. At the theoretical level, this requires generating rival hypotheses, designing experiments that will rule out one or more of those rival hypotheses, conducting a clean experiment, and recycling these steps on hypotheses that remain unrejected (Borkovec & Castonguay, 1998). At the concrete level, this entails using dismantling, constructive, and parametric designs whose very processes lead to the identification of increasingly specific cause-and-effect relationships (Borkovec & Castonguay, 1998). Understanding depression and its treatment will come from research that preserves these ideals.

The Jacobson et al. (1996) study utilized a dismantling design, which produced results that provide a clearer understanding of the cause-and-effect relationships between cognitive therapy (and its components) and depression than has been reported. Thus, through the use of a design strategy with a primary goal of identifying causal factors contained in a treatment package, Jacobson et al. (1996) identified the BA component as an active ingredient in cognitive therapy, producing clinically significant antidepressant effects worthy of further experimental manipulation.

After achieving the primary goal of establishing that cognitive-behavioral treatments for depression are clinically effective, it is now appropriate to examine what could be referred to as "nonclinical" goals involved in the delivery of mental health services. With the recent emergence of managed health care, cost-effectiveness of treatment has become a heightened concern of both those providing and those
paying for mental health services. This issue is addressed nicely by Chambless and Hollon (1998) in their statement that "... all things being equal, those treatments that cost the least are likely to be preferred if there is no great difference in outcome" (p. 16). It appears that the time has come to uncover those treatments that are both clinically effective and economically efficient.

Under the control of managed care, many managed health-care programs contain a managed behavioral health-care component, or mental health and substance abuse is "carved out" to another company that specializes only in behavioral care. Despite the form of these programs, all emphasize brief and time-effective modes of mental health treatment (Budman, 1996). Among the time-effective modes of treatment, group therapy appears to be a promising option, both economically and clinically.

Economically, the use of time-limited and ongoing group therapy can meaningfully decrease the percentage of staff time devoted to nonemergent care, thereby creating significant savings (McKenzie, 1996). One approach to examining the efficiency of group psychotherapy is to assess the costs to the patient, the provider, and the third party payer and to compare the costs with corresponding costs of a similar treatment, such as individual psychotherapy. Toseland and Siporin (1986) reviewed the group therapy literature with this purpose in mind and identified 12 studies that included both group and individual therapy. Ten of the 12 investigators concluded that group therapy was more efficient than individual therapy (Toseland & Siporin, 1986).

Piper and Joyce (1986) compared the efficiency of short-term group therapy with short-term individual therapy, as determined by the amount of time required by patient and therapist. For both group and individual therapy, treatment consisted of
24 sessions over a 6-month period. Group therapy (consisting of eight patients) lasted 1.5 hours per session; individual therapy was provided in sessions that lasted 0.9 hours. From the therapist's perspective, short-term group therapy, which required 4.5 hours per patient, was more efficient than short-term individual therapy, which required 21.6 hours per patient, representing a time ratio of 1:5 (Piper & Joyce, 1986). In contrast, from the patient's perspective, short-term individual therapy, which required 21.6 hours, was more efficient than short-term group therapy, which required 36 hours, with a time ratio of approximately 1:2 (Piper & Joyce, 1986). These figures suggest that for the patient, group therapy requires almost twice the time commitment, whereas the therapist can treat about five times as many patients in group therapy as she can in individual therapy. Thus, for the therapist and the third party payer, short-term group psychotherapy appears to greatly reduce time demands and financial costs, while the patient endures longer time demands but potential decreases in costs.

Clinically, the primary question that is asked about group psychotherapy is whether it is as efficacious as individual therapy (Piper & Joyce, 1996). In a review of over 200 studies that included both group and individual therapy, the average effect size for group therapy was found to be 0.83 and the average effect size for individual therapy was nearly equivalent at 0.87 (Smith, Glass, & Miller, 1980). These effect sizes suggest that both individual therapy and group therapy produced significant changes in outcome measures. As such, this review provided answers of "yes" to both questions concerning the general efficacy of group psychotherapy (Piper & Joyce, 1996).

Piper and Joyce (1996) reviewed studies from 1983 through 1994 that involved the use of time-limited, short-term group therapy. Of the 50 studies that
included a time-limited group therapy versus control comparison, 48 provided evidence of significantly greater benefit for the therapy condition (Piper & Joyce, 1996). Of the six studies that included a time-limited group therapy versus an individual therapy comparison, only one provided evidence of superiority for the group therapy and only one provided evidence of superiority for the individual therapy (Piper & Joyce, 1996). Based on these findings, they concluded that there was clear evidence of clinical benefit for time-limited, short-term psychotherapy of different theoretical and technical orientations across a diverse range of patients, and of approximately equivalent effects for group and individual therapy (Piper & Joyce, 1996). Consequently, pursuit of group therapy treatments appears to be clinically indicated.

Combining this focus with a focus on depression provides a framework within which to evaluate group therapy’s effectiveness for treating depression. Various studies from the past two decades have provided support for cognitive-behavioral group treatments for depression (Brown & Lewinsohn, 1984; Comas-Diaz, 1981; Covi & Lipman, 1987; Free, Oei, & Sanders, 1991; Fuchs & Rehm, 1977; Graff et al., 1986; Lewinsohn et al., 1990; Nezu, 1986; Nezu & Perri, 1989; Peterson & Halstead, 1989; Rehm et al., 1987; Rush & Watkins, 1981; Scott & Stradling, 1990; Shaw, 1976; Steuer et al., 1984; Zettle & Rains, 1989).

Recently, Peterson and Halstead (1998) evaluated the effectiveness of a group cognitive-behavioral therapy for depressed persons in a community setting. They utilized Depression Management Group (DMG), a manualized treatment program oriented toward helping patients learn skills to reduce or eliminate depression (Peterson & Halstead, 1998). The treatment consisted of 2-hour sessions held weekly for 6 weeks, with groups ranging from 6 to 12 members. Session content focused on
increasing pleasurable activities, problem solving, identifying and understanding the effects of cognitive distortions, and disputing irrational cognitions. At termination of the 6-week program, there was a statistically significant reduction, $F(1, 274) = 108.74, p < .001$, in mean depression scale scores for all participants ($N = 138$) (Peterson & Halstead, 1998). Peterson and Halstead (1998) concluded that DMG therapy for depression was a clinically effective treatment approach when administered in a community setting. The results of the study provided support for the effectiveness of cognitive-behavioral group therapy with depressed individuals in community settings.

Brown and Lewinsohn (1984) evaluated the effectiveness of a group psychoeducational approach to treating depression with a commitment to a social learning theory of depression and to providing instruction in basic self-change skills. The authors reported a course of treatment, consisting of 12 sessions over an 8-week period, that produced statistically significant reductions in BDI scores compared to patients in the waiting-list condition, $F(1, 61) = 4.0, p < .05$. They concluded that the psychoeducational approach administered in a group format could be an effective treatment for depression (Brown & Lewinsohn, 1984). The aforementioned studies suggested that group cognitive-behavioral therapies could be effective in the treatment of depression.

The literature involving time-limited short-term psychotherapy suggests that it is a valuable alternative to individual psychotherapy, achieving nearly equivalent therapeutic outcomes as well as surpassing individual psychotherapy in terms of conservation of resources. Based on these data, there is evidence to support research oriented toward transforming BA into a time-limited short-term group psychotherapy treatment. If BA could be delivered in a group therapy format and achieve clinically
significant (Jacobson & Truax, 1991) effects in a similar amount of time to that which is required for BA individual therapy, then it is likely that BA group therapy will be a more cost-effective alternative than individual therapy for the treatment of depression.

With this supposition in mind, the experimental questions addressed by this study were:

1. Could Behavioral Activation Group Therapy (BAGT) be administered to be more clinically effective than a wait-list control condition for treating depression?

3. Could BAGT produce therapeutic effects similar to those produced by BA individual therapy? Consequently, the goals of this study were to administer Behavioral Activation Group Therapy (BAGT) to individuals in community settings suffering from clinical depression and to demonstrate the effectiveness of BAGT by obtaining significantly reduced BDI-II and RHRSD scores for BAGT subjects compared to waiting-list subjects.
CHAPTER III

METHOD

Sample

Forty-two adult patients seeking mental health services for unipolar depression at four Southwestern Michigan community mental health (CMH) agencies (Barry County, Berrien County, Calhoun County, and Van Buren County) qualified for inclusion in the study. These agencies primarily serve rural populations. Four subjects dropped out of the study before beginning treatment, while another 4 subjects began treatment but dropped out before completing the minimum number of required sessions. The remaining 34 subjects fulfilled the requirements of their study condition, thereby generating viable outcome data. Nine subjects participated at Van Buren County CMH, 12 subjects participated at Barry County CMH, 10 subjects participated at Calhoun County CMH, and 3 subjects participated at Berrien County CMH.

Subjects met criteria for Major Depressive Disorder (MDD) according to the *Diagnostic and Statistical Manual of Mental Disorders—Fourth Edition (DSM-IV)* (American Psychiatric Association, 1994). DSM-IV diagnoses were based on the Structured Clinical Interview for DSM-IV (SCID) (First, Spitzer, Gibbon, & Williams, 1997). Subjects scored at least 20 on the Beck Depression Inventory—Second Edition (BDI-II) (Beck, Steer, & Brown, 1996), and 14 or greater on the first 17 items of the Revised Hamilton Rating Scale for Depression (RHRSD)
(Warren, 1996). Doctoral students in a clinical psychology graduate program performed screening interviews. Training and supervision of the SCID and the RHRSD were provided by the author and included use of the SCID training videos and the RHRSD manual.

Exclusion criteria included a number of concurrent psychiatric disorders (i.e., bipolar or psychotic subtypes of depression, panic disorder, current alcohol or other substance abuse, past or present schizophrenia or schizophreniform disorder, organic brain syndrome, and mental retardation). The comorbid presence of a personality disorder(s) did not influence decisions regarding participation in the study. Suicide status was assessed; however, no subjects were excluded from the study due to their suicide status. Once treatment began, suicide status was assessed on an ongoing basis by the treating clinician(s) using the BDI-II. No subjects were removed from the study based on these ongoing assessments.

After qualifying for the study, participants were required to wait from 1 to 45 days to begin treatment. The length of this waiting period represented the latency between the date of the participant’s screening interview and the date at which the next BAGT group was scheduled to begin at the CMH agency. The length of this waiting period determined each subjects classification as either a “wait-list” subject or a “treatment” subject. Those participants who waited 28 days or longer to begin treatment were considered “wait-list” subjects, while those participants who started treatment within 28 days of the initial screening were considered “treatment” subjects. All treatment groups were closed groups that did not allow the addition of group members after the first session of treatment.
Therapists

Eight therapists, two from each agency, delivered the treatment. All therapists held either a Masters degree or a Doctoral degree in psychology or social work and were licensed to deliver mental health services in the state of Michigan. Therapists received 12 hours of training in the use of Behavioral Activation Group Therapy (BAGT) for depression. Richard Spates, Ph.D., and Jeffrey Porter, M.A., conducted the training. The theory and practice of BAGT was based heavily upon the Behavioral Activation manual developed by Jacobson et al. (1997), which was derived from Beck's original Cognitive Therapy manual (Beck, Rush, et al., 1979). Jacobson et al.'s (1996) BA manual included specific guidelines for interventions that were prescribed (i.e., behavioral interventions), as well as for interventions that were proscribed (e.g., cognitive interventions). The adaptation of BA to a group therapy format was completed by the investigators of the current study with a Behavioral Activation Group Therapy manual developed to guide treatment. The BAGT manual is a "hands on" manual that was written for clinicians who did not have a strong background in behavioral psychology.

Treatment

The behavioral view explains depression in relation to three factors (Jacobson et al., 1997). The first factor is a predisposition to depression and is referred to as the vulnerability factor. Vulnerability suggests that not all persons are equally at-risk for developing depression. Recognition that a vulnerability to depression exists stems from the observation that not all people who experience similar life circumstances or who have similar genetic make-ups develop depression. Consequently, it is theorized
that vulnerability is multiply determined by a person’s genetics and by a person’s learning history. Vulnerability explains why some people get depressed when a certain life event occurs and why others do not when experiencing the same life event. For example, the termination of a significant relationship may evoke a depressive response from some individuals, while others may navigate the experience without a depressive reaction.

The second factor relates to the development of a depressive episode. This factor posits that depression results when changes in a person’s life circumstances produce a reduction in reinforcement. These changes can take the form of major life events, such as the loss of a loved one or the termination of a significant relationship, which can dramatically disturb an established schedule of reinforcement. These changes also can take the form of daily hassles and a chronically stressful environment, which can restrict opportunities for pleasurable and/or meaningful experiences. Essentially, any set of life circumstances that prevents an individual from contacting reinforcers is sufficient to promote the development of a depressive episode in a vulnerable individual.

The third factor is the maintenance factor and it explains why depression, if left untreated, tends to persist. The maintenance of depression is posited to be determined by the way an individual copes with her depression. Behavioral theory suggests that once a person becomes depressed, her ways of responding to her depression often deprives her of further reinforcement, thereby maintaining and often times making the depression worse (Jacobson et al., 1997). Thus, negative experiences, chronic stressors, and daily hassles trigger depression to develop in vulnerable persons; the individual’s method of coping, which often tends to be self-
deeating by generating fewer opportunities for reinforcement, maintains the depression and may cause it to worsen.

Based on this conceptualization of how depression develops and how it is maintained, the overall purpose of BA treatment for depression is to: (a) determine the life circumstances that have precipitated the depression, (b) determine the coping patterns that have exacerbated the depression, and (c) develop a treatment plan for improving the coping patterns and for providing access to more reinforcing life circumstances (Jacobson et al., 1997). This goal can be achieved through the use of various behavioral interventions, including but not limited to (a) monitoring of daily activities; (b) assessment of the pleasure and mastery that is achieved by engaging in a variety of activities; (c) assignment of increasingly more difficult tasks that have, as their goal, the attainment of a sense of pleasure or mastery; (d) cognitive rehearsal of scheduled activities, in which participants imagine themselves engaging in various activities with the intent of finding obstacles to the imagined pleasure or mastery expected from those events; (e) discussion of specific problems and the prescription of behavior therapy techniques for dealing with them; and (f) interventions to ameliorate deficits in social skills (e.g., assertiveness training, communication skills) (Jacobson et al., 1996, 1997).

The current study sought to extend the work of Jacobson et al. (1996) by examining BA delivered in a group therapy format. BAGT employed two co-therapists leading a group of 6 to 10 patients. Co-therapists were responsible for reviewing BDI-IIIs at the beginning of each session, leading group discussions focused on Behavioral Activation principles, soliciting group member feedback, planning and evaluating interventions, and providing feedback to group members. BAGT sessions lasted for 95 minutes and occurred weekly for a 10-week period.
The 10-week course of treatment employed in this study differed from the 16-week course of treatment used by Jacobson et al. (1996). The length of treatment was determined by a review of recent studies of cognitive-behavioral treatment for depression. Based on 24 studies reviewed by Dobson (1989) that involved treatments described as "cognitive," "behavioral," or "cognitive-behavioral," the mean course of treatment was 10.04 weeks, with a median of 10 weeks and a range of 4 to 20 weeks. Moreover, the BA treatment duration of 16 weeks utilized by Jacobson et al. (1996) was employed to provide consistency, in terms of duration of treatment with CT, which is prescribed by Beck, Rush, et al. (1979) as a 16-week treatment. Thus, in an effort to develop an increasingly cost-effective treatment for depression and due to a lack of contraindications for a briefer version of BA, a treatment duration of 10 weeks was used.

A wait-list control (WLC) condition was used to assess the effects of repeated assessment, the effects of passage of time, and, in some cases, the effects of concurrent pharmacological or psychological treatment for depression. Subjects classified as WLC subjects were informed that treatment was not available at the time of screening. Additionally, they were told that as soon as a new group formed, they would receive a 10-week course of BAGT treatment. WLC subjects waited 4 to 6 weeks to begin BAGT treatment. Subjects in this condition were asked not to initiate any new treatment for depression while waiting for BAGT treatment. However, these subjects also were told that if their depression worsened and warranted emergency treatment, that they should contact their CMH agency therapist or caseworker.

The use of a wait-list control condition strengthened our knowledge of the relationship between BAGT and therapeutic change. By including a 4- to 6-week waiting period, spontaneous remission of depression, if it occurred, could be
detected. Additionally, because many subjects were receiving some concurrent form of treatment for depression during the waiting period, the data would reflect any changes in depressive symptomatology resulting from other treatments. Thus, if subjects in the WLC condition experienced significant reductions in depression scale scores during the 4- to 6-week waiting period, this would suggest that their depression remitted as a result of the passage of time or assessment, or that their current treatment regimen was adequate to produce a significant reduction in depression. However, if depression measures for those individuals in the WLC condition did not change significantly during the 4- to 6-week period, this would suggest that their depression did not spontaneously remit or come under the control of other treatment(s). Furthermore, if those subjects then received BAGT and subsequently experienced significant reductions in depressive symptoms, then a strong argument for BAGT as the mechanism of change could be made.

The use of a community mental health population represented another point of departure from the original study (Jacobson et al., 1996). BA was shown to be efficacious for persons with depression in a controlled laboratory environment (Jacobson et al., 1996). While such empirical support is indeed valuable, it is essential to “conduct scientifically valid therapy research in the applied setting, both to address the generalizability issue and to generate meaningful results of long-lasting value” (Borkovec & Castonguay, 1998, p. 139). To achieve this end, BAGT was administered and assessed in natural CMH settings.

Evaluation of BAGT in a natural setting introduced a problem with respect to the concurrent use of psychotropic medication and BAGT. Specifically, many subjects (i.e., 79%) were receiving pharmacotherapy for depression prior to entering the study. This concurrent use of treatments had the potential to confound
interpretation of the outcome data (i.e., identification of causal agent[s]). As such, a
decision to exclude patients on this basis was considered. Because BAGT was
assessed in a natural environment, it was deemed important to preserve the
conditions of the environment. To exclude those patients on medication from the
study would be antithetical to the reason for conducting such naturalistic research.
Therefore, the concomitant use of psychotropic medication(s) with BAGT was
permitted. However, in order to control for the effects of pharmacotherapy and to
minimize the effects of a changing pharmacology regimen, the following guidelines
were followed: Patients who were taking psychotropic medication(s) at the onset of
BAGT were (a) required to be on a maintenance dose of the medication for a
minimum of 6 weeks prior to participating in the study, and (b) asked not to change
their medication use during the course of BAGT treatment. This included changing
dosages, terminating medication use and/or starting a new medication. Patients who
were not using psychotropic medication(s) at the onset of BAGT treatment were
asked not to start psychotropic medication use while receiving BAGT treatment.
Subjects were asked questions about their medication use at screening, at treatment
termination, and at follow-up; data on medication use were based on these responses.

Outcome Measures

All participants who completed treatment were evaluated for depression
(a) before treatment began, (b) at the termination of treatment, and (c) at 3 months
following the termination of treatment. The BDI-II and the RHRSD were used to
assess depressive symptomatology. Additionally, the SCID was administered at all
three assessment times to assess for the presence of Major Depressive Disorder.
Assessing subjects in terms of whether or not they met diagnostic criteria for major
depression at treatment termination and follow-up provided another means of evaluating clinical significance, equating a change in diagnostic status with clinically significant change. Subjects also were given the BDI-II at every therapy session during the course of treatment to monitor change on a weekly basis.

For subjects assigned to the WLC condition, assessment with the BDI-II occurred at the beginning and at the end of the 4- to 6-week waiting period. These assessments served as the precondition and postcondition data. Once the waiting period ended and subjects began BAGT, WLC subjects were assessed on the same schedule as treatment condition subjects. This was done in order to assess the effects of BAGT for the wait-list subjects.

The Beck Depression Inventory (BDI) is a widely used self-report measure of depression severity that has excellent psychometric properties (Beck, Steer, & Garbin, 1988) and is sensitive to clinical change (Edwards et al., 1984; Lambert, Shapiro, & Bergin, 1986). It has recently been revised into the BDI-II (Beck, Steer, & Brown, 1996) to be consistent with DSM-IV diagnostic criteria for Major Depressive Disorder. The BDI-II, like the original BDI, contains 21 items scored on a 4-point Likert scale that assess cognitive, affective, somatic, and vegetative symptoms of depression. Unlike the original BDI, which assesses depressive symptomatology during the preceding week, the BDI-II requires reporting about symptoms occurring within the preceding 2 weeks. Item scores are added to come up with a final score. Beck, Steer, and Brown (1996) have suggested the following guidelines for interpreting total BDI-II scores in persons with depression: 0–13, minimal depression; 14–19, mild depression; 20–29 moderate depression; 30–63 severe depression. According to Beck, Steer, and Brown (1996), "The transition
from the usage of the BDI to that of the BDI-II should introduce no meaningful interpretative problems" (p. 17).

Psychometric evaluations have supported the BDI-II as a valid and reliable measure of depression (Steer, Ball, Ranieri, & Beck, 1997). In a study utilizing 944 outpatient subjects collected from six samples, alpha reliability coefficients on the BDI-II ranged from .79 to .90 (Beck, Steer, Ball, & Ranieri, 1996). This suggests that variance in scores is primarily due to true variation and not to error. The reported internal consistency was .92, and test-retest reliability was .93 for psychiatric outpatients (Beck, Steer, Ball, et al., 1996). This suggests that the items contained in the BDI-II are strongly consistent with one another and that repeated administration of the BDI-II one week after the initial administration produces similar results.

Comparing the BDI-II with the BDI in psychiatric outpatients produced a correlation of .93 (p < .001), which suggests that the BDI-II possesses good concurrent validity. Furthermore, the BDI-II was found to be positively correlated (p < .001) to the Beck Hopelessness Scale (Beck & Steer, 1988) (r = .68) and the Scale for Suicidal Ideation (Beck, Kovacs, & Weissman, 1979) (r = .37), two scales which have been reported to measure the construct of depression. This evidence further suggests that the BDI-II measures the construct of depression as it purports.

The Revised Hamilton Rating Scale for Depression (RHRSD) is a revision of the Hamilton Rating Scale for Depression (HRSD), which was originally designed by Hamilton (1960) as a rating scale for clinicians to use with individuals already experiencing a depressive illness. The scale consists of 22 items that assess behavioral, somatic, cognitive, and emotional symptoms of depression. The first 17 items on the RHRSD are the original items from the HRSD and were used to
represent RHRSD scores in this study. Utilizing only the first 17 items permitted closer comparisons with other outcome studies that used the original HRSD (e.g., Jacobson et al., 1996).

Psychometric evaluations of the RHRSD have supported its use as a reliable measure of clinical depression (Warren, 1996). Internal consistency for the verification sample was estimated at .79 (Warren, 1996), suggesting that there is a high degree of consistency among items within the RHRSD. Because the RHRSD is a clinician rating form, interrater reliability is of particular importance. Estimates of interrater reliability for the original HRSD ranged from .52 to .96 (Hedlund & Vieweg, 1979). This level of interrater reliability is quite good considering the nature of clinical judgment.

Correlations between the HRSD and other measures of clinical depression support the validity of the HRSD. Hedlund and Vieweg (1979) reported an average correlation of .67 with the BDI (23 studies), and .48 with the Depression subscale of the Minnesota Multiphasic Personality Inventory (MMPI) (4 studies). The BDI and MMPI are two well-established clinical instruments, and these findings support the HRSD's validity for measuring depressive symptoms. Overall, the HRSD has been a widely accepted and widely utilized measure of depression by researchers and clinicians alike; the subtle changes contained in the RHRSD provide little reason for questioning its utility for these purposes.

Procedure

Subjects for the study were recruited within the participating CMH agencies. This was accomplished by CMH staff referring potential subjects to the BAGT therapists in house. Additionally, any new CMH clients were assessed by BAGT
therapists for inclusion in the study. Once identified, the client was given a BDI-II to complete and this was scored by the CMH agency clinician. If the client met the criteria of scoring 20 or greater on the BDI-II, the client was given a brief vocal description of the study and the treatment; the client was asked if she would like to find out more about the study. If the client was interested, the CMH agency clinician contacted the principal researcher and a screening interview was scheduled.

When potential subjects arrived at the CMH agency for the screening interview, they were given a consent form (Appendix B) and asked to read and sign it, if agreeable. If they consented to participate in the study, they were assigned a research code number, which was used on all subsequent research forms and the interviewer screened them at that time. Screening involved administration of a demographic questionnaire (Appendix C), a BDI-II (Appendix D), a RHRSD (Appendix E), and a SCID (available upon request). At the conclusion of the screening, the interviewer was available to answer questions the participant had regarding the questionnaire or any of the assessment instruments. The participant was told that she would be contacted within 7 days regarding her qualification for the study. Each participant who qualified for the study was given a group therapy version of *Coping with Depression: A Manual for Self-Help* (Jacobson et al., 1997) that was written by the principal investigator. The interviewer scored the SCID and the RHRSD and filed them, along with the demographic questionnaire and the BDI-II, in a designated folder. The participant's consent form was filed in a separate folder identified for this purpose.

A secure filing system was established at each agency that contained a folder for each subject participating in the study. All research data for each subject were stored in her/his respective folder. This was done to protect the confidentiality of the
research data. Providing and maintaining these filing systems was the responsibility of the researchers. A master list (Appendix F) was created at each agency to ensure subject confidentiality and was the only link between subjects and their research code numbers. A universal data collection form (Appendix G) was used to record all assessment information for each subject. The master lists and consent forms were stored in locked files separate from the demographic questionnaires, data collection forms, BDI-IIIs, RHRSDs, and SCIDs. Progress notes and other agency-related treatment documentation for subjects in this study were kept separate from the research data and were managed by the treating agency.

Participants not meeting the criteria for inclusion were telephoned by the CMH agency BAGT clinician, informed of their status, and offered services in a fashion consistent with the standard practice of the agency. Those meeting criteria for inclusion in the study were telephoned by the CMH agency BAGT clinician and invited to participate. Upon acceptance to participate, subjects were given the start date of their treatment, if available, or told that they would be contacted as soon as a start date was established. The scheduling of therapy sessions was the responsibility of the participating agency. A BAGT group could begin when at least 6 subjects had been assigned to the group.

BAGT sessions occurred weekly for 10 weeks. Each session lasted 95 minutes and all scheduling decisions were made by the co-therapists and their respective agency. Before each therapy session, all subjects were asked to complete a BDI-II. Weekly BDI-IIIs were collected by the co-therapists and placed in each subject’s folder.

At the end of the 4- to 6-week waiting period, subjects in the WLC condition were offered BAGT. They were again assessed with the BDI-II. These subjects
received BAGT weekly for 10 weeks in a fashion that was identical to the treatment condition subjects.

At the termination of treatment, assessments with the BDI-II, the RHRSD, the SCID, and the Treatment Termination Questionnaire (Appendix H) were conducted by an independent assessor. These assessments were completed either in person at the CMH agencies or by telephone, as many subjects were unable to arrange transportation to the agency; the assessments were filed with all previous assessments in the appropriate folder. Subjects were reminded that they would be contacted in 3 months for another assessment of their depression. At 3-month follow-up, subjects were contacted and the assessment was performed over the phone. The interviewer again administered the BDI-II, the RHRSD, the SCID, and the Follow-up Questionnaire (Appendix I) and placed these documents in the patient’s folder. At this point, all assessments were complete and the subject’s folder was closed. Subjects were thanked for their participation in the study and informed that their involvement in the study was complete.

Upon completion of the data collection, research folders and the contents from all four agencies were moved to the office of the principal investigator, where they will remain, along with the consent forms, in a locked cabinet for a period of 3 years; they will then be destroyed.
CHAPTER IV

RESULTS

Analysis Plan

A pretest-posttest design with wait-list control was used to assess for differences in BDI-II scores between subjects in the treatment condition and subjects in the wait-list condition. This was achieved using independent samples $t$ tests comparing mean BDI-II scores at posttreatment and follow-up for subjects in the treatment condition to mean BDI-II scores at postwaiting period for subjects in the wait-list condition. A significant group difference in BDI-II scores was the hypothesized outcome. The second set of primary analyses was an examination of outcome measures across time for all subjects who completed BAGT. This was possible because all subjects, including those in the wait-list condition, received the same treatment. These analyses were achieved using paired-samples $t$ tests with BDI-II and RHRSD scores as the dependent variables. Intent-to-treat analyses also were performed on the entire sample to control for dropouts.

Additionally, the data were separated by site and analyzed to determine whether differential effects of treatment occurred as a function of the site where therapy was delivered. Such allegiance effects were suggested in at least one previous study (Elkin et al., 1989) employing multiple treatment sites which imposed serious interpretative problems (Jacobson & Hollon, 1996). Examination of the effects of medication on subject response to BAGT was performed utilizing independent
samples t-tests with medication status as the independent variable and BDI-II and RHRSD scores as the dependent variables.

Preliminary Analyses

Table 1 displays demographic information for the entire sample. Of the 42 subjects who entered the study, 38 were women and 4 were men. Thirty-seven of the subjects identified themselves as “Caucasian,” while 3 identified themselves as “American Indian” and 2 identified themselves as “African American.” At the time of the initial screening, 12 reported their relationship status as “married,” 14 reported their status as “divorced,” and 9 reported their status as “separated.” The remaining 7 subjects reported their status as either “widowed,” “living with a significant other,” or “single, never married.” In terms of education level, 12 subjects reported “more than 12 years and less than 16 years of education,” 14 reported “12 years or a GED,” and 11 reported “less than 12 years of education.” The remaining 5 subjects reported either “16 years of education” or “more than 16 years of education.” Finally, 15 of the subjects reported their household income as “less than $10,000 per year,” 12 reported “$10,000 to $20,000 per year,” 11 reported “$20,000 to $30,000 per year,” and 4 reported “$30,000 to $50,000 per year.”

Background data were collected on subjects that specifically related to their mental health history. Twenty-five subjects entered the study with a diagnosis of Major Depressive Disorder, Recurrent, while another 8 subjects entered the study with diagnoses of Major Depressive Disorder, Recurrent and Dysthymic Disorder. Seven subjects entered the study with a diagnosis of Major Depressive Disorder, Single Episode, while assessors were unable to determine whether the current Major Depressive Disorder was a first episode or part of a recurrent depression for the
Table 1
Demographic Variables for Total Sample and by Condition

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total Sample ((n = 42))</th>
<th>TX Group ((n = 13))</th>
<th>WL Group ((n = 29))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>4 (9.5%)</td>
<td>4 (30.8%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>Female</td>
<td>38 (90.5%)</td>
<td>9 (69.2%)</td>
<td>29 (100.0%)</td>
</tr>
<tr>
<td>Mean Age</td>
<td></td>
<td>46.2</td>
<td>42.9</td>
</tr>
<tr>
<td>Ethnic Group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>2 (4.8%)</td>
<td>1 (7.7%)</td>
<td>1 (3.4%)</td>
</tr>
<tr>
<td>American Indian</td>
<td>3 (7.1%)</td>
<td>1 (7.7%)</td>
<td>2 (6.9%)</td>
</tr>
<tr>
<td>Caucasian</td>
<td>37 (88.1%)</td>
<td>11 (84.6%)</td>
<td>26 (89.7%)</td>
</tr>
<tr>
<td>Relationship Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>14 (33.3%)</td>
<td>3 (23.1%)</td>
<td>11 (37.9%)</td>
</tr>
<tr>
<td>Living w/significant other</td>
<td>3 (7.1%)</td>
<td>0 (0.0%)</td>
<td>3 (10.3%)</td>
</tr>
<tr>
<td>Married</td>
<td>12 (28.6%)</td>
<td>5 (38.5%)</td>
<td>7 (24.1%)</td>
</tr>
<tr>
<td>Separated</td>
<td>9 (21.4%)</td>
<td>2 (15.4%)</td>
<td>7 (24.1%)</td>
</tr>
<tr>
<td>Single, never married</td>
<td>2 (4.8%)</td>
<td>1 (7.7%)</td>
<td>1 (3.4%)</td>
</tr>
<tr>
<td>Widowed</td>
<td>2 (4.8%)</td>
<td>2 (15.4%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>Years of Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 12</td>
<td>11 (26.2%)</td>
<td>5 (38.5%)</td>
<td>6 (20.7%)</td>
</tr>
<tr>
<td>More than 12 &amp; less than 16</td>
<td>12 (28.6%)</td>
<td>6 (46.2%)</td>
<td>6 (20.7%)</td>
</tr>
<tr>
<td>12 years of GED</td>
<td>14 (33.3%)</td>
<td>0 (0.0%)</td>
<td>14 (48.3%)</td>
</tr>
<tr>
<td>16 years</td>
<td>2 (4.8%)</td>
<td>0 (0.0%)</td>
<td>2 (6.9%)</td>
</tr>
<tr>
<td>More than 16 years</td>
<td>3 (7.1%)</td>
<td>2 (15.4%)</td>
<td>1 (3.4%)</td>
</tr>
<tr>
<td>Household Income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than $10,000 per year</td>
<td>15 (35.7%)</td>
<td>4 (30.8%)</td>
<td>11 (37.9%)</td>
</tr>
<tr>
<td>$10,000 to $20,000 per year</td>
<td>12 (28.6%)</td>
<td>4 (30.8%)</td>
<td>8 (27.6%)</td>
</tr>
<tr>
<td>$20,000 to $30,000 per year</td>
<td>11 (26.2%)</td>
<td>3 (23.1%)</td>
<td>8 (27.6%)</td>
</tr>
<tr>
<td>$30,000 to $50,000 per year</td>
<td>4 (9.5%)</td>
<td>2 (15.4%)</td>
<td>2 (6.9%)</td>
</tr>
</tbody>
</table>

*Note.* TX = treatment; WL = wait-list.

remaining 2 subjects. When asked to describe any existing treatment for depression at the time of the initial screening, 19 subjects reported receiving both medication and individual therapy for depression, while 7 subjects reported receiving only individual
therapy for depression, and 4 subjects reported receiving only medication treatment for depression. The remaining 12 subjects reported receiving some combination of medication and (a) group therapy, (b) individual therapy, (c) case management, or (d) pastoral care.

With respect to previous episodes of treatment for depression, 10 subjects reported that they had not received treatment for depression prior to their current episode. Eleven subjects reported that they had received one previous episode of treatment for depression, 6 subjects reported two previous episodes of treatment for depression, and 6 subjects reported receiving three or more previous episodes of treatment for depression. The remaining 9 subjects reported an unspecified number of previous episodes of treatment for depression.

Twenty-three subjects reported that they were taking one medication for depression at the time of the initial screening, while 9 subjects reported the use of two medications, and 1 subject reported taking three medications for depression. Nine subjects reported using no medication for depression at the time of the initial screening. When asked about the use of medication for depression prior to their current medication (if any), 12 subjects reported that they had never been on an antidepressant medication prior to the current medication, while 7 subjects reported one prior medication. Nine subjects reported having been on two different antidepressant medications before the current medication. Three subjects reported having been on three or more medications for depression in the past. Eleven subjects reported an unspecified number of previous medications for depression.

The primary analyses were performed with data for all subjects who fulfilled the requirement(s) of their condition. The requirement for subjects in the treatment condition was to complete a minimum of six sessions of BAGT. Data from these
subjects were used in both the between groups analysis (i.e., treatment condition vs. wait-list condition) and the repeated measures analyses. The requirements for subjects in the wait-list condition were to (a) complete a BDI-II at the end of the wait-list period, and (b) complete a minimum of six sessions of BAGT. If wait-list control subjects fulfilled both requirements, their data were included in both the between groups analysis as well as the repeated measures analyses. If wait-list subjects fulfilled only the first requirement, their data were included only in the between groups analysis.

Pretreatment group differences were assessed through independent samples t tests (see Figure 1 and Table 2). There were no significant pretreatment differences between the treatment group and the wait-list group on BDI-II scores, \( t(32) = .124, p = .90 \) or RHRSD scores, \( t(32) = 1.84, p = .08 \), suggesting that subjects in the treatment condition and subjects in the wait-list condition came from the same population.

![Figure 1. Comparison of Pretreatment BDI-II and RHRSD Scores for Both Groups.](image)
Table 2

Pretreatment BDI-II and RHRSD Scores

<table>
<thead>
<tr>
<th>Variable</th>
<th>TX Group (n = 12)</th>
<th>WL Group (n = 22)</th>
<th>t (dfs) and p</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDI-II</td>
<td>36.8 (9.8)</td>
<td>37.2 (8.3)</td>
<td>t(32) = .12, p = .90</td>
</tr>
<tr>
<td>RHRSD</td>
<td>19.4 (3.9)</td>
<td>22.7 (5.5)</td>
<td>t(32) = 1.84, p = .08</td>
</tr>
</tbody>
</table>

Note. TX = Treatment; WL = Wait-list; BDI-II = Beck Depression Inventory-Second Edition; RHRSD = Revised Hamilton Rating Scale for Depression.

Primary Analyses

Table 3 presents the means, standard deviations, and results of the between groups analysis, while Figure 2 displays, graphically, the change in group means. The between-groups treatment outcome analyses consisted of independent samples t-test comparisons of treatment condition outcomes to wait-list condition outcome with BDI-II scores serving as the dependent variable. In the first analysis, the first point of assessment was at screening for both conditions, while the second point of assessment was immediately following treatment for subjects in the treatment condition and immediately following the waiting period for subjects in the wait-list condition. The independent samples t-test results, t(32) = 1.89, p = .07, revealed that the difference in mean BDI-II scores between the treatment condition and the wait-list condition approached, but failed to achieve statistical significance at the .05 level. In the second analysis, the points of assessment were the same except that for the treatment group, the second point of assessment was at follow-up rather than at posttreatment. The results yielded a statistically significant difference, t(32) = 3.85, p = .00, between the treatment condition subjects and the wait-list condition subjects.
Table 3

Mean Prewait-list and Postwait-list BDI-II Scores for Wait-list Subjects and Mean Pretreatment, Posttreatment, and 3-Month Follow-up BDI-II Scores for Treatment Subjects

<table>
<thead>
<tr>
<th></th>
<th>TX Group</th>
<th></th>
<th>WL Group</th>
<th></th>
<th>t(df) and p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>M  SD</td>
<td>n</td>
<td>M  SD</td>
<td></td>
</tr>
<tr>
<td>BDI-II</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>12</td>
<td>36.8 (9.8)</td>
<td>22</td>
<td>37.2 (8.3)</td>
<td>t(32) = .12, p = .90</td>
</tr>
<tr>
<td>Post</td>
<td>12</td>
<td>29.0 (13.7)</td>
<td>22</td>
<td>36.9 (10.4)</td>
<td>t(32) = 1.89, p = .07</td>
</tr>
<tr>
<td>Follow-up</td>
<td>12</td>
<td>21.3 (12.73)</td>
<td>22</td>
<td>36.9 (10.4)</td>
<td>t(32) = 3.85, p = .00</td>
</tr>
</tbody>
</table>

Note. BDI-II = Beck Depression Inventory—Second Edition; TX = Treatment; WL = Wait-list.

Figure 2. Prewait-list and Postwait-list Mean BDI-II Scores for the Wait-list Group and Pretreatment, Posttreatment, and 3-Month Follow-up Mean BDI-II Scores for the Treatment Group.

Consequently, while the results failed to uncover a statistically significant difference between the wait-list group and the treatment group at posttreatment, a statistically significant difference was obtained between the groups at follow-up. These results are suggestive of a superiority for BAGT over a waiting period in the treatment of severe depression in a community sample.
The second set of primary treatment outcome analyses consisted of paired samples $t$ tests comparing pretreatment scores to posttreatment scores and 3-month follow-up scores and posttreatment scores to 3-month follow-up scores for all subjects in the sample, with BDI-II and RHRSD scores serving as the dependent variables. These analyses were performed for all subjects who completed treatment, regardless of their treatment condition. For treatment condition subjects, the screening scores served as the pretreatment scores. For wait-list condition subjects, the end of waiting period scores served as pretreatment scores. Figure 3 displays mean BDI-II and RHRSD scores across time, while Table 4 presents the means, the standard deviations, and the results of the repeated measures analyses.

![Mean BDI-II and RHRSD Scores](image)

Figure 3. Mean BDI-II and RHRSD Scores at Pretreatment, Posttreatment, and 3-Month Follow-up for Total Sample.

The paired samples $t$ tests for the total sample of subjects completing treatment revealed a statistically significant reduction in BDI-II scores from pretreatment to posttreatment, $t(25) = 3.46, p < .01$, and in RHRSD scores from pretreatment to posttreatment, $t(25) = 6.06, p < .01$. Paired samples $t$ tests also revealed a statistically significant reduction in BDI-II scores from posttreatment to
3-month follow-up, \( t(25) = 3.24, p < .01 \) and a reduction in RHRSD scores from posttreatment to 3-month follow-up that approached statistical significance, \( t(25) = 2.00, p < .06 \).

**Table 4**

<table>
<thead>
<tr>
<th>Depression Measure</th>
<th>( n )</th>
<th>( M ) (SD)</th>
<th>( t ) (dfs) and ( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BDI-II</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>34</td>
<td>37.3 (8.6)</td>
<td>( t(25) = 3.46, p &lt; .01 )</td>
</tr>
<tr>
<td>Post</td>
<td>26</td>
<td>30.2 (11.4)</td>
<td>( t(25) = 3.24, p &lt; .01^a )</td>
</tr>
<tr>
<td>3 months</td>
<td>26</td>
<td>24.1 (13.1)</td>
<td>( t(25) = 4.56, p &lt; .01^b )</td>
</tr>
<tr>
<td><strong>RHRSD</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>34</td>
<td>21.6 (5.2)</td>
<td>( t(25) = 6.06, p &lt; .01 )</td>
</tr>
<tr>
<td>Post</td>
<td>26</td>
<td>12.5 (5.6)</td>
<td>( t(25) = 2.00, p &lt; .01^a )</td>
</tr>
<tr>
<td>3 months</td>
<td>26</td>
<td>10.4 (5.6)</td>
<td>( t(25) = 6.12, p &lt; .01^b )</td>
</tr>
</tbody>
</table>

*Note.* BDI-II = Beck Depression Inventory—Second Edition; RHRSD = Revised Hamilton Rating Scale for Depression; TX = Treatment; WL = Wait-list. \(^a\) = posttreatment to follow-up; \(^b\) = pretreatment to follow-up.

Furthermore, statistically significant reductions from pretreatment to follow-up were observed for BDI-II scores, \( t(25) = 4.56, p < .01 \) and RHRSD scores, \( t(25) = 6.12, p < .01 \). When measured as an effect size, the difference in mean BDI-II scores from pretreatment to follow-up was 1.50, representing a large effect (Cohen, 1988). These findings suggest that BAGT was associated with a significant reduction in depression scale scores of a magnitude that was not likely to occur by chance alone.
Intent to Treat Analysis

A common practice in treatment outcome studies is to perform an-intent-to-treat analysis to control for subjects who dropped out of the study. This analysis is performed by utilizing the dropout subjects’ screening scores on the dependent measures as their posttreatment scores. This process is very conservative as it assumes that subjects who dropped out of the study achieved no gains in their target symptoms. The purpose of conducting an intent-to-treat analysis is to provide a view of the effectiveness of the treatment for the entire sample, rather than merely for the subjects who stayed in the study. This type of analysis is particularly important when the subject dropout rate is high. For this study, the dropout rate was 38%.

Three intent-to-treat analyses were performed with this sample to assess change on BDI-II scores, RHRSD scores, and in diagnosis from pretreatment to posttreatment. Paired samples \( t \) tests revealed statistically significant reductions in both BDI-II scores, \( t(41) = 3.20, p < .01 \), and RHRSD scores, \( t(31) = 5.38, p < .01 \), suggesting that BAGT was still associated with a significant reduction in depression scale scores when controlling for dropouts. A paired samples \( t \) test also revealed a significant reduction in Major Depressive Disorder diagnoses, \( t(41) = 5.55, p < .01 \), from screening to posttreatment, suggesting that BAGT was associated with a significant reduction in the number of Major Depressive Disorder diagnoses in the sample when dropouts were factored into the analysis.

Allegiance Analysis

BAGT was administered at four different agencies by four different co-therapist teams. As such, analyses of outcome by agency were performed to examine
whether differential outcomes occurred as a function of therapist team. Two one-way analyses of variance, with three levels of the agency as the independent variable (the small sample size at the fourth agency did not permit inclusion in this analysis) and posttest BDI-II and RHRSD scores as the dependent variables, yielded no significant differences between agency groups on either the BDI-II, $F(2, 21) = .306, p = .740$, or the RHRSD, $F(2, 21) = .122, p = .886$. Therefore, there was no reason to suspect that treatment outcome differed significantly from one agency to another.

Post-hoc Analyses

A set of post-hoc analyses that provided interesting findings was examination of outcome measures as a function of medication status of the subjects. Mean BDI-II and RHRSD scores at all assessment times were examined by separating the sample into medication subjects and no medication subjects (74% of the treatment completers were receiving independently prescribed pharmacological treatment for depression while receiving BAGT). The reader is referred to Figures 4 and 5 and Table 5 for these data. Independent samples $t$ tests with medication status as the independent variable and BDI-II and RHRSD scores as the dependent variables revealed no statistically significant pretreatment differences on BDI-II scores, $t(32) = .41, p = .69$, or RHRSD scores $t(32) = .60, p = .56$. At posttreatment, a statistically significant difference on RHRSD scores was observed, $t(24) = 2.53, p < .05$, though the difference on BDI-II scores failed to achieve statistical significance, $t(24) = 1.15, p = .26$. At 3-month follow-up, differences on RHRSD and BDI-II scores approached statistical significance, $t(24) = 1.91, p = .07$, and $t(24) = 1.75, p = .09$, respectively. Thus, when utilizing the RHRSD as the outcome measure, subjects who received BAGT without antidepressant medication achieved significantly lower...
scores at the end of treatment compared to subjects who received BAGT along with antidepressant medication.

Figure 4. Mean RHRSD Scores as a Function of Medication Status.

Figure 5. Mean BDI-II Scores as a Function of Medication Status.

These differential outcomes as a result of medication status prompted repeated measures analyses of BAGT only subjects and BAGT plus medication subjects to provide a perspective of how each groups of subjects responded to BAGT. When BAGT was added to an existing medication regimen, repeated measures t-tests revealed a near statistically significant reduction in BDI-II scores from pretreatment to posttreatment, \( t(17) = 1.84, p = .08 \), a statistically significant reduction from posttreatment to 3-month follow-up, \( t(17) = 2.16, p < .05 \), and a
Table 5
Mean BDI-II and RHRSD Scores as a Function of Medication Status

<table>
<thead>
<tr>
<th></th>
<th>No Medication</th>
<th>Medication</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>M</td>
</tr>
<tr>
<td>BDI-II</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>9</td>
<td>38.11</td>
</tr>
<tr>
<td>Post</td>
<td>8</td>
<td>26.38</td>
</tr>
<tr>
<td>3-Month</td>
<td>8</td>
<td>17.63</td>
</tr>
<tr>
<td>RHRSD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>9</td>
<td>20.67</td>
</tr>
<tr>
<td>Post</td>
<td>8</td>
<td>8.75</td>
</tr>
<tr>
<td>3-Month</td>
<td>8</td>
<td>6.63</td>
</tr>
</tbody>
</table>

Note. BDI-II = Beck Depression Inventory–Second Edition; RHRSD = Revised Hamilton Rating Scale for Depression

significant reduction from pretreatment to 3-month follow-up, t(17) = 3.11, p < .01.
This trend continued and produced a statistically significant reduction from posttreatment to 3-month follow-up, t(17) = 2.16, p < .05. These analyses suggest that the addition of BAGT to antidepressant medication resulted in significant reductions in depressive symptomatology.

Evaluating the results of BAGT when administered to subjects without concurrent medication use, paired samples t tests revealed statistically significant reductions in mean BDI-II scores from pretreatment (M = 38.9) to posttreatment (M = 26.4), t(7) = 3.0, p < .05, from posttreatment to 3-month follow-up (M = 17.6), t(7) = 2.6, p < .05, and from pretreatment to 3-month follow-up, t(7) = 3.8, p < .01. These results suggest that BAGT was associated with significant reductions in depression when administered to subjects who were not receiving pharmacotherapy for depression.
Diagnostic Outcome

As an additional measure of clinically significant change, DSM-IV diagnoses at screening were compared with DSM-IV diagnoses at posttreatment and 3-month follow-up. Figure 6 and Table 6 present the frequency of major depression diagnoses at these three times for all subjects who completed treatment. At screening, 26 subjects (100%) met DSM-IV criteria for Major Depressive Disorder. At posttreatment, 8 subjects (30.8%) met DSM-IV criteria for Major Depressive Disorder, while at 3-month follow-up, 7 subjects (26.9%) met DSM-IV criteria for Major Depressive Disorder. These results suggest that approximately 2 out of every 3 subjects who received BAGT no longer met diagnostic criteria for Major Depressive Disorder immediately following treatment. Furthermore, approximately 3 out of every 4 subjects were free of a Major Depressive Disorder 3 months after treatment.

![Figure 6. Percentage of Treatment Completers Meeting DSM-IV Criteria for Major Depressive Disorder at Screening, Posttreatment, and 3-Month Follow-up](image_url)
Table 6

Number of Treatment Completers Meeting DSM-IV Criteria for Major Depressive Disorder at Pretreatment, Posttreatment, and Follow-up

<table>
<thead>
<tr>
<th></th>
<th>Pretreatment n (% of sample)</th>
<th>Posttreatment n (% of sample)</th>
<th>3-Month Follow-up n (% of sample)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Depressive Disorder</td>
<td>26 (100%)</td>
<td>8 (30.8%)</td>
<td>7 (26.9%)</td>
</tr>
</tbody>
</table>

Client Satisfaction With Treatment

To measure subject satisfaction with BAGT, a 5-point Likert scale was utilized at posttreatment. This scale asked subjects to rate BAGT on a continuum from “much worse” to “much better.” These results are presented in Table 7. At posttreatment, 25% of the sample rated it “much better” than individual therapy, while 12.5% rated it “better” than individual therapy. Forty-one and seven tenths percent (41.7%) rated it “about the same” as individual therapy. Sixteen and seven tenths percent (16.7%) rated it “much worse” than individual therapy. Compared to other therapy groups, 20.8% rated BAGT at “much better,” while another 20.8% rated it as “better.” Twelve and five tenths percent (12.5%) of the sample rated BAGT “about the same” as other therapy groups, while 45.8% could not make a comparison due to lack of previous experience with group therapy.

When asked to rate the Behavioral Activation approach compared to other therapy approaches with which subjects had experience, 47.8% rated it “much better,” while 34.8% rated it “better.” Four and three tenths percent (4.3%) rated the Behavioral Activation approach as “worse” than other approaches. Thirteen percent (13%) did not have a basis for comparison. In terms of the subject rated effectiveness
Table 7

Subject Ratings of BAGT at Posttreatment and 3-Month Follow-up

<table>
<thead>
<tr>
<th>Question</th>
<th>Much Worse/ Worse</th>
<th>Worse</th>
<th>Same</th>
<th>Better</th>
<th>Much Better/ Best</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
</tr>
</tbody>
</table>

**POSTTREATMENT**

<table>
<thead>
<tr>
<th>BAGT vs ind. therapy</th>
<th>4 (16.7%)</th>
<th>0 (0.0%)</th>
<th>10 (41.7%)</th>
<th>3 (12.5%)</th>
<th>6 (25.0%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAGT vs other group therapies</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>3 (12.5%)</td>
<td>5 (20.8%)</td>
<td>5 (20.8%)</td>
</tr>
<tr>
<td>BA vs other approaches</td>
<td>0 (0.0%)</td>
<td>1 (4.3%)</td>
<td>0 (0.0%)</td>
<td>8 (34.8%)</td>
<td>11 (47.8%)</td>
</tr>
<tr>
<td>BAGT vs other therapies (effectiveness)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>7 (31.8%)</td>
<td>5 (22.7%)</td>
<td>8 (36.4%)</td>
</tr>
<tr>
<td>BAGT vs meds (process)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>4 (22.2%)</td>
<td>8 (44.4%)</td>
<td>2 (11.1%)</td>
</tr>
<tr>
<td>BAGT vs meds (effectiveness)</td>
<td>0 (0.0%)</td>
<td>1 (5.3%)</td>
<td>5 (26.3%)</td>
<td>7 (36.8%)</td>
<td>3 (15.8%)</td>
</tr>
<tr>
<td>Rate depression after BAGT</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>7 (28.0%)</td>
<td>13 (52.0%)</td>
<td>4 (16.0%)</td>
</tr>
<tr>
<td>Rate BAGT overall</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>5 (20.0%)</td>
<td>5 (20.0%)</td>
<td>14 (56.0%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Strong No</th>
<th>No</th>
<th>Maybe</th>
<th>Yes</th>
<th>Strong Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
</tr>
<tr>
<td>Recommend BAGT to a friend?</td>
<td>0 (0.0)</td>
<td>1 (4.0%)</td>
<td>3 (12.0%)</td>
<td>2 (8.0%)</td>
</tr>
<tr>
<td>Go through BAGT again?</td>
<td>1 (4.0%)</td>
<td>1 (4.0%)</td>
<td>2 (8.0%)</td>
<td>4 (16.0%)</td>
</tr>
</tbody>
</table>

**3-MONTH FOLLOW-UP**

<table>
<thead>
<tr>
<th>Depression compared to 6 months ago</th>
<th>Worse</th>
<th>Same</th>
<th>Better</th>
</tr>
</thead>
<tbody>
<tr>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
<td></td>
</tr>
<tr>
<td>Depression compared to 6 months ago</td>
<td>0 (0.0%)</td>
<td>6 (24.0%)</td>
<td>18 (72.0%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 (72.0%)</td>
<td>6 (24.0%)</td>
</tr>
</tbody>
</table>

| BAGT helpful in managing depression? | 20 (80.0%) | 4 (16.0%) |

<table>
<thead>
<tr>
<th>BAGT provide long-term benefits?</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 (80.0%)</td>
</tr>
</tbody>
</table>
of BAGT compared to other therapies, 36.4% of the sample rated it as “much better,” with 22.7% rating it as “better” and 31.8% rating it as “about the same” in its ability to treat depression. Nine and one tenth percent (9.1%) of the sample could not make a comparison.

When asked to rate how the process of BAGT compared to the process of taking medication, 11.1% rated it “much better,” with 44.4% rating BAGT as “better,” and 22.2% rating it as “about the same.” In terms of the subject-rated effectiveness of BAGT compared to medication, 15.8% rated BAGT as “much better,” while 36.8% rated BAGT as “better,” and 26.3% rated BAGT as “about the same.” Five and three tenths percent (5.3%) rated BAGT as “worse” than medication.

Subjects were asked to rate their depression immediately following treatment. Sixteen percent (16.0%) rated their depression as “much better” than before receiving BAGT, while 52.0% of the sample rated their depression as “better” compared to when they started BAGT. Twenty-eight percent (28.0%) of the sample rated their depression as the “same” as when they started BAGT. When asked to rate BAGT overall, 56.0% rated it as the “best” therapy they ever had. Twenty percent (20.0%) rated BAGT as “better” than average, while another 20.0% rated it as the “same” as other therapies. When asked whether they would recommend BAGT to a friend suffering from depression, 68.0% responded that they would “strongly recommend” it to a friend. Eight percent (8.0%) responded that they would “probably recommend” it to a friend, while 12.0% responded they would “maybe recommend” it to a friend. Four percent (4.0%) reported that they would “probably not” recommend it to a friend. Finally, when asked if they would go through BAGT again, 64.0% responded that they “definitely would,” 16.0% responded that they “probably
would," 8.0% responded that they "maybe would," 4.0% responded that they "probably would not," and 4.0% responded that they "definitely would not" go through BAGT again.

Client Report of Depression at Follow-up

At 3-month follow-up, subjects were asked to rate their depression compared to 6 months prior with an open-ended question. This response was then categorized into same-better-worse categories. Examples of responses coded as "better" included: "better," "not as bad," "less of a problem," and "it causes less problems in my life." Examples of responses coded as the "same" include: "about the same," "no better," "no worse," and "still a problem." Seventy-two percent (72.0%) of the sample rated their depression as "better," while 24.0% rated their depression as the "same" as 6 months ago. One subject did not respond to this item. When asked if BAGT provided long-term benefits for managing depression, 80.0% stated "yes," while 16.0% stated "no." One subject did not respond to this item.
CHAPTER V

DISCUSSION

The purpose of this study was to examine the effectiveness of Behavioral Activation Group Therapy as a treatment for Major Depressive Disorder in a sample of “real world” subjects. Research has demonstrated the efficacy of Behavioral Activation treatment for clinical depression as an individual therapy in the laboratory (Jacobson et al., 1996). The primary question addressed by this study was whether or not BA could be an effective treatment for clinical depression when delivered by CMH clinicians to CMH clients in a group format. Due to the parsimony of BA, it was hypothesized that the aforementioned goal could be achieved, thereby supporting BAGT as a clinically effective and cost-effective treatment for depression.

Main Outcomes

While the results of this study failed to demonstrate a clear-cut advantage for 10 weeks of BAGT over a WLC condition in the treatment of severe clinical depression in a CMH population, they did suggest that over the follow-up period, BAGT was associated with a further reduction in depressive symptomatology that was superior to any reduction associated with the wait-list. As such, one could conclude that placing a depressed patient on a waiting list for BAGT was as effective in managing depression in the short run as providing BAGT. However, a closer examination of the results may support a less decisive interpretation.
The absence of a statistically significant difference in outcome scores between treatment condition subjects at posttreatment and wait-list condition subjects may best be explained from a statistical perspective, rather than from a clinical perspective. In defense of BAGT, it is likely that the small sample size of the treatment group yielded insufficient power to detect a real difference between the treatment group and the wait-list group when such a difference may have existed. To assess the relative contribution of the small sample size, a hypothetical analysis was performed by adding subjects to the treatment group utilizing the BDI-II posttreatment mean score for the treatment group as the posttreatment scores for the hypothetical subjects. This analysis revealed that, while maintaining the original between groups difference, adding only 2 subjects to the treatment group resulted in a statistically significant between-groups difference $t(34) = 2.04$, $p < .05$. As such, if the observed between-groups difference at posttreatment had occurred with only 2 more subjects in the treatment group, a significant difference between the treatment group and the wait-list group would have occurred. Thus, it is possible that a significant difference between groups did exist; yet, this difference went undetected by statistical methods due to the small sample size.

A more useful way to approach the between groups data may be to look at the actual change in group means. The mean BDI-II score for the wait-list group changed from 37.2 at pre-waiting period to 36.9 at post-waiting period. Subjects in the wait-list condition, as a whole, experienced no meaningful reduction in their BDI-II scores over the course of the waiting period. This absence of change suggests that depression did not improve as a result of being on the wait-list. Examining the data in this fashion assists in uncovering the primary reason for utilizing a wait-list control condition—to assess change in target symptoms associated with each condition. The
study demonstrated that for this sample of depressed individuals, neither the passage of time, nor the effect of repeated assessment, nor the influence of existing pharmacological agents was sufficient to produce a reduction in depression scale scores.

Conversely, inspecting the data for the 12 subjects in the treatment group revealed a near significant reduction in mean BDI-II scores from pretreatment (36.8) to posttreatment (29.0), \( t(11) = 2.10, p = .06 \), and a significant reduction in mean BDI-II scores from pretreatment (36.8) to 3-month follow-up (21.3), \( t(12) = 3.66, p < .01 \). Interpreting these mean scores within the parameters established for the BDI-II suggests that treatment group subjects experienced a shift from severe to moderate depression after 10 weeks of treatment, followed by continued improvement to low-moderate depressive symptomatology at follow-up.

Consequently, although the difference on BDI-II scores between the treatment group at posttreatment and the wait-list group may not have been large enough to achieve statistical significance with this sample, the results demonstrated that subjects on the waiting list did not experience any improvement in their depression, whereas subjects who received BAGT experienced an improvement in their depression that may have been clinically significant at 10 weeks and that was statistically and, presumably, clinically significant at follow-up.

The second main finding, that BAGT was associated with a significant reduction in BDI-II scores, RHRSD scores, and Major Depressive Disorder diagnoses after 10 weeks of treatment, is encouraging given this difficult-to-treat sample. This finding implies that, overall, levels of depression decreased significantly for subjects who received six or more sessions of BAGT. Furthermore, scores on all outcome measures continued to decrease at 3-month follow-up, suggesting that the
change process that occurred during treatment continued after therapy had ended. This latter finding has important implications for understanding the psychotherapeutic process of BAGT. These results suggest that in addition to facilitating antidepressant change during the course of therapy, 10 sessions of BAGT equipped subjects with knowledge and skills that enabled them to continue the antidepressant change process after formal treatment had concluded. This supports the effectiveness of BAGT as an adjunct, if not a stand-alone treatment for severe depression in a CMH population.

An obvious criticism of this interpretation lies in the observation that the posttreatment BDI-II sample mean of 30.2 represents a severe level of depression. Beck, Steer, and Brown (1996) identified a BDI-II score of 30 as the cut-off score between moderate and severe depression. One could therefore argue that BAGT was associated only with a change from severe to moderate/severe depression, failing to return subjects to a state of health. This raises the question, “What is an acceptable or a successful outcome?” One way to address this question is to consider the severity of the depression and the history of treatment success/failure in the sample. Seventy-nine percent (79%) of the sample entered the study with a diagnosis of recurrent depression. This suggests that for a majority of these subjects, depression was a chronic condition. One hundred percent (100%) of the sample was involved in formal treatment for depression at the time of screening, with 83% of the subjects receiving medication for depression, considered by some the treatment of choice for severe depression (Elkin et al., 1989). Despite these pharmacological and psychotherapeutic treatments, 100% of the subjects met DSM-IV criteria for Major Depressive Disorder, in addition to scoring at least in the range of moderate depression on two outcome measures. In actuality, the sample as a whole scored in the range of severe depression on the BDI-II and the RHRSD at screening. This information suggests
that the depression experienced by the sample was severe, chronic, and refractory to pharmacological and psychotherapeutic efforts. As such, any improvement in depressive symptomatology would seem to be significant for this sample, and, consequently, an appropriate expectation may have been only a reduction in symptoms, rather than a return to health.

Another standard by which to assess treatment outcome is to compare it to a similar treatment for the same condition. Jacobson et al. (1996) obtained impressive results with their use of BA to treat depression. The results of the present study fell short of the degree of depression scale score reduction obtained in that study, with a posttreatment mean BDI-II score of 30.2 compared to a posttreatment BDI-II mean of 9.1. In that study, Jacobson et al. (1996) moved subjects from a moderate/severe level of depression to no clinical depression (as measured by the BDI) with 16 weeks of BA. In the present study, subjects moved from severe depression to moderate/severe depression with 10 weeks of BAGT. Aside from the possibility that BAGT may not have been as effective a treatment for depression as BA, the explanation(s) for these different outcomes may lay in understanding the differences between the two samples.

Several significant differences existed between the present sample and the Jacobson et al. (1996) sample. Foremost, the present sample consisted of individuals with more severe depression, as evidenced by a pretreatment mean BDI-II score that was 8 points higher ($M = 37$ vs. $M = 29$) than the mean BDI-II score for the Jacobson et al. (1996) sample. This difference represented a 28% higher BDI-II mean score for the present sample compared to the other sample. Difference in level of initial severity of depression has been associated with differential outcomes, with higher levels of severity resulting in poorer response to cognitive-behavioral
treatment (Elkin et al., 1989). Consequently, it is possible that the comparatively higher posttreatment BDI-II scores obtained in the present sample were a function of the initial severity of the depression, rather than a function of ineffective treatment.

A second factor that differentiated the present sample from the Jacobson et al. (1996) sample was that 84% of the present sample were being treated pharmacologically for depression, whereas subjects in the other study were without medication for depression. The methodology of the present study required subjects on medication to be stabilized at a maintenance dose of the medication for a minimum of 6 weeks prior to screening in order to be considered for participation. Therefore, 84% of the sample scored in the range of moderate to severe depression on the BDI-II and the RHRSD, despite pharmacological treatment for depression. As such, before initiating BAGT with these subjects we had knowledge regarding baseline response to medication. When BAGT was added to the medication regimen, these patients experienced a drop in BDI-II scores from pretreatment (36.6) to posttreatment (31.9). This trend continued at 3-month follow-up (26.9), representing a 26% reduction in depression scale scores from the pretreatment mean and a moderate level of depression. These results suggest that BAGT was associated with a significant reduction in depression scale scores, despite utilizing a sample of subjects whose depression was likely more resistant to treatment than that of the Jacobson et al. (1996) sample.

To control for medication use in this study, we looked solely at the data for those subjects who received BAGT without concurrent pharmacological treatment and compared those data to the data from Jacobson et al. (1996). These data are presented in Figures 7 and 8 and Table 8. This analysis permitted comparison of pretreatment, posttreatment, and follow-up BDI-II and RHRSD scores between two...
similar samples of subjects. With the medication factor controlled for, a decreasing trend in outcome scores similar in magnitude to that of Jacobson et al. (1996) was observed for the present sample. Posttreatment and follow-up means for the present sample remained higher than those of the comparison sample, but were proportional to the pretreatment differences that existed between the samples. This suggested that the magnitude of change experienced by no medication subjects in the present study approximated the magnitude of change experienced by subjects in the Jacobson et al. (1996) study. This finding supports BAGT's effectiveness as a treatment for clinical depression.

Figure 7. Mean BDI-II Scores for This Sample and for the Jacobson et al. (1996) Sample.

Figure 8. Mean RHRSD Scores for This Sample and for the Jacobson et al. (1996) Sample.
Table 8
Pretreatment, Posttreatment, and Follow-up BDI-II and RHRSD Scores for Subjects in This Sample Compared to Subjects in the Jacobson et al. (1996) Sample

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td><strong>BDI-II</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>38.88 (8.97)</td>
<td>29.3 (6.6)</td>
</tr>
<tr>
<td>Post</td>
<td>26.38 (12.76)</td>
<td>9.1 (7.9)</td>
</tr>
<tr>
<td>Follow-up</td>
<td>17.63 (13.19)</td>
<td>8.5 (7.6)</td>
</tr>
<tr>
<td><strong>RHRSD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>21.50 (3.96)</td>
<td>17.4 (3.9)</td>
</tr>
<tr>
<td>Post</td>
<td>8.75 (4.10)</td>
<td>6.4 (4.6)</td>
</tr>
<tr>
<td>Follow-up</td>
<td>6.63 (6.86)</td>
<td>6.6 (4.8)</td>
</tr>
</tbody>
</table>

*Note. BDI-II = Beck Depression Inventory–Second Edition; RHRSD = Revised Hamilton Rating Scale for Depression*

Secondary Outcomes

A post-hoc analysis that produced intriguing results was an examination of outcome measures as a function of medication status. Statistical tests revealed a significant difference in RHRSD scores at posttreatment between subjects receiving medication and subjects not receiving medication. This trend continued at 3-month follow-up at a rate that approached significance (p = .07). These results favored subjects who did not receive medication, with their posttreatment and follow-up scores placing them in the range of mild depression, while subjects who received medication still scored in the range of moderate depression immediately after treatment and at follow-up. Barlow (1997) observed a similar pattern in a Panic Disorder treatment outcome study. The results of the study suggested that subjects who received only the psychotherapeutic intervention fared better on outcome
measures than subjects who received both the psychotherapeutic intervention and the pharmacological intervention.

Several interpretations could explain why subjects who received BAGT alone apparently benefited more than subjects who received BAGT along with antidepressant medication. First, it is possible that the subjects who were not on medication were the subjects with single episode depression, whereas the subjects who were on medication were the subjects with recurrent depression or double depression. If such a difference existed between the two groups, it could have been this factor, and not the medication factor, that was responsible for the differential outcomes. Consequently, initial diagnoses were compared for both groups of subjects. This analysis revealed that in the no-medication group, 67% of the subjects received an initial diagnosis of recurrent depression, while 33% received a diagnosis of single episode depression. These percentages were similar to those of the medication group, with 78% of the mediation group receiving an initial diagnosis of recurrent or double depression and 22% receiving a diagnosis of single episode depression. This analysis suggests that initial diagnosis was not a factor in determining the differential outcomes between the medication and the no-medication groups.

Second, it is possible that the subjects on medication were the subjects with refractory depression. Their exposure to pharmacological treatment had already demonstrated the resilience of their depression, and consequently, antidepressant change may have been less likely to occur for these individuals. In other words, these individuals had treatment histories that made significant improvement in depression unlikely. As such, their depression scale scores decreasing as they did supports the relative effectiveness of BAGT.
A third interpretation, and one that stems from a more psychological perspective, is that subjects who were not receiving medication for depression put more "stock" in BAGT, as it was their primary treatment. As a result, their expectations for BAGT may have been greater than the expectations of the medication subjects, which in turn may have affected their behavior in therapy. For example, believing that they did not need medication to overcome depression, these subjects may have expected the work that they put into BAGT to relieve their depression. Viewing BAGT as their means to recovery, they may have invested more energy into therapy than the medication subjects and, as a result, benefited more from BAGT. Conversely, subjects who received medication may have believed that BAGT was only for talking about problems or meeting new people. As such, they may not have seen the value in BAGT, and their investment in therapy, and the subsequent return, may have been minimal.

A third interpretation of the aforementioned finding is that subjects receiving medication may have viewed depression primarily as a biological illness (i.e., chemical imbalance), and, consequently, had little belief in BAGT as a treatment for depression. For example, medication subjects may have believed that depression, like an ear infection, required medication for successful treatment. They may have believed that attending BAGT could not hurt them, but that any improvement in their depression would result from their medication. And because BAGT, like other cognitive-behavioral treatments, required active involvement on part of the subject, the results of BAGT for these subjects may have been less than those for other subjects. In sum, subjects who did not receive medication along with BAGT seemed to benefit more from BAGT than subjects who received BAGT and medication. This differential outcome may have reflected differences in expectations for BAGT,
differences in the investment subjects made into BAGT, or differences in understanding depression and its treatments.

Social Validity

Subject satisfaction data suggested that overall, BAGT was a well-tolerated and well-received treatment for depression. The majority of subjects who completed BAGT rated it as superior to other group therapies with which they had experience. Also, the majority of subjects rated Behavioral Activation as superior to other approaches to therapy. Most subjects rated BAGT as equal to or more effective than medication for depression. Furthermore, more than one-half of the subjects rated their depression as improved after receiving BAGT. Overall, subject ratings of BAGT and its effectiveness suggested that it was a valuable tool for treating depression; one that most subjects would utilize again if given the opportunity.

The social validity data obtained from this study endorsed BAGT as an acceptable form of treatment, which is promising for several reasons. First, group therapy can be seen by patients as "second rate" treatment. Consequently, to have a majority of the treatment completers rate BAGT favorably compared to other treatments (e.g., individual therapy, medication) suggests that group therapy can be desirable if organized properly. This bodes well for today's health care providers, as group therapy has been shown to hold advantages over individual therapy in terms of conservation of clinician and third party resources (Piper & Joyce, 1986). The finding that the majority of subjects rated the BA approach as superior to other therapy approaches was encouraging, given the newness of BA. This suggests that in addition to being clinically effective (Jacobson et al., 1996), the Behavioral Activation approach fits well into subjects' expectations for therapy and that it provides
experiences that subjects consider meaningful. This type of appraisal is likely to facilitate continued use of and research into BA approaches for treating depression.

Limitations of This Study

Several limitations of this study were inherent in conducting it as an effectiveness study. For example, experimental control was sacrificed in order to conduct the research in a "real world" setting. One sacrifice was our inability to collect treatment adherence data on the BAGT therapists. We were unable to collect these data due to the physical structures of the participating CMH agencies; the group therapy rooms did not have observation capabilities. Without these data, we were less certain that the treatment delivered was that treatment which was prescribed by the study. The inclusion of in-session BAGT subject manuals encouraged a focus on Behavioral Activation principles; however, we were resigned to rely upon clinician reports of their own therapy and upon our own beliefs about therapist training and performance as indicators of treatment adherence.

A second limitation of the study was our inability to randomly assign subjects to the treatment or the wait-list condition. Because the CMH agencies preferred to recruit subjects from existing clients rather than to advertise outside the agencies, we were limited in our access to potential subjects. Mass subject accumulation was therefore difficult and was replaced by a trickle-in of subjects that occurred over a 4- to 8-week period. This quasi-experimental design was inferior to a true experiment in which assignment to treatment condition would have been manipulated by the experimenter. As a result, we encountered problems such as unequal sized groups (i.e., treatment group, wait-list group) which made interpretation of the data difficult.
Finally, as previously discussed, was the limitation associated with the small sample size; this was problematic with respect to the between-group analysis. The small size of the treatment group yielded low power, which in turn made it difficult to detect real differences between conditions if they existed. This, coupled with the severity of depression of the sample, made it difficult to show a statistically significant difference between the treatment group and the wait-list group. As previously suggested, the between-groups difference that occurred may have been real as well as the largest difference that could have been achieved with this population; however, the small sample size prevented the difference from achieving statistical significance. If this was the case, then the weakness of the study may lay not with the treatment but with the size of the sample.

Conclusions and Future Directions

The results of this study support BAGT as a valuable approach for treating clinical depression. Although BAGT was not associated with the same degree of antidepressant change that has been achieved in the cognitive-behavioral literature, the severity of this population may explain this outcome. Because this was the first study to employ Behavioral Activation Group Therapy, one purpose was to provide an indication of whether or not further pursuit of BAGT is warranted. These results support continued examination of the benefits of BAGT as an adjunct as well as a stand-alone treatment for clinical depression.

One direction for future evaluation of BAGT would be to utilize this treatment with a population of persons with less severe depression. Such an effort would provide a valuable view of BAGT's utility with a population that may respond better to treatment. A second direction would be to evaluate the effects of a longer
course of BAGT, as many subjects provided feedback suggesting that 10 weeks of treatment was inadequate. In other words, with the population utilized in the present study, depression treatment, such as BAGT, may need to be conceptualized as part of a sustained treatment program that is available to the individual as needed to maintain therapeutic gains. For this population, the notion of a pre-determined length of treatment may fail to appreciate the complexity and the resiliency of the illness. Finally, future evaluation of BAGT would benefit from employing a larger sample. Given that depression varies in severity and in course, it will be important to collect a large enough sample that the investigator(s) have the statistical power to detect even moderate changes in depression scale scores; these changes may be the best outcomes attainable with difficult-to-treat populations.
Appendix A

Treatment Description Script
To be read to persons interested in the study:

"The Department of Psychology at Western Michigan University and (name of CMH agency) are conducting a study to assess the effectiveness of a new group therapy treatment for depression. Past research has shown that this type of therapy has been very effective with adults experiencing problems with depression. The therapy is a solution-focused approach to treating depression and clients are assisted in breaking the cycle of depression that has developed through making strategic changes in behavior. The group of 6–8 clients will meet once a week for 10 consecutive weeks. Therapy sessions will last for 95 minutes.

Adults experiencing problems with depression are encouraged to schedule an appointment for an intake interview to be assessed for acceptance into the study. Participation in an interview in no way obligates you to participate in the study, but it serves to give both you and the researchers a better understanding of how appropriate the therapy would be for you. If accepted into the study, you would be expected to complete the 10-week course of treatment which would require approximately 90 minutes of your time per week. In addition, you would be expected to perform certain tasks between therapy sessions that are aimed at relieving your depression.

Are you interested in participating?"
Appendix B

Consent Form
I have been invited to participate in a research project entitled "Southwestern Michigan Treatment of Depression Collaborative Study: Behavioral Activation Group Therapy: An Initial Investigation." This research is intended to study the effects of a particular group treatment for depression with adults in a community setting. This project is Jeffrey F. Porter's dissertation project.

My consent to participate in this project indicates that during my intake interview, I will be asked to provide some personal information on a brief questionnaire and to complete a form asking questions about the symptoms of depression that I have experienced during the past two weeks. Also during my intake interview I will be interviewed to further assess my symptoms of depression and general mental health. If my condition is not appropriate for participation in the study, I will be referred back to the agency for mental health services. If I am invited to participate in the treatment, I will be assigned to a therapy group of 6–10 persons led by two therapists at this agency. If asked, I agree to wait for up to four weeks for treatment to begin and will not begin any other treatment for my depression during this period. The purpose of this group therapy is to assist group members in overcoming their depression. I will be asked to attend 10 weekly group therapy sessions of approximately 95 minutes each. I will be asked to spend the first 5 minutes of each therapy session completing a depression questionnaire and to complete certain tasks between therapy session that are aimed at relieving my depression. At the end of the 10 week treatment, I will again be asked to complete the depression questionnaire and be interviewed again to assess my symptoms of depression and general mental health. Finally, three months after treatment has concluded, I will again be asked to complete the depression questionnaire and will again be interviewed to assess my depressive symptoms and my general mental health. I am aware that other types of treatment for depression, such as individual psychotherapy or medication treatment, are typically effective and I may have access to these services if I choose not to participate in this study.

As in all research, there may be unforeseen risks to the participant. If an accidental injury occurs, appropriate emergency measures will be taken; however, no compensation or treatment will be made available to me except as otherwise specified in this consent form. One potential risk of my participation in this project is that I may experience unpleasant emotions, including anger, frustration, depression, and disappointment, as I recall my problems and experiences and actively work to change certain behaviors in order to reduce my depression. I am informed that this agency is prepared to make a referral should emergency care become necessary. I will be responsible for the cost of emergency care should such care become necessary.
I may benefit from participating in this study in several ways. Primarily, I may experience a significant reduction in my depression as a result of receiving this treatment. Also, by becoming a member of a small treatment group, I may benefit socially from interactions with others having similar experiences to mine. Finally, I may learn more about psychological treatment and group therapy which may assist me in making future decisions regarding mental health care. Additionally, I and others seeking treatment for depression in the future may benefit from the knowledge that is gained by this research.

All research information collected from me is confidential. This means that my name will not appear on any research questionnaires I complete or on any other research forms that contain personal information that I have provided. These forms will be coded and Jeffrey Porter will keep a separate master list with the names of the participants and the corresponding code numbers. The master list will be the only link between the data on the recording forms and my identity. Once all data are collected and analyzed, the master list will be destroyed. These forms will be kept in a research folder in a locked file cabinet in this clinic during my participation in the study. I am informed that the policy of this clinic requires that progress notes and other information about me be recorded and placed in a treatment folder. This is necessary because by participating in this study, I also am a client of this clinic. However, the information in my treatment folder belongs to the clinic and may not be used as data for this study. I am informed that forms used in this study may be duplicated and placed in my treatment folder where they will be retained until they are destroyed along with the rest of the papers in my treatment folder according to the policies of the clinic. At the end of my participation in the study, my research folder will be moved to a locked cabinet in the Department of Psychology where it will be stored for a minimum of three years after the completion of this study. It will then be destroyed.

I may refuse to participate or quit at any time during the study without prejudice or penalty. If I have any questions or concerns about this study, I may contact either Dr. Richard Spates at (616) 387-4329 or Jeffrey Porter at (616) 353-8650. If I have questions about my rights as a research participant or about any other aspects of my participation, I also may contact the Chair of Human Subjects Institutional Review Board at (616) 387-8293 or the Vice President for Research at (616) 387-8298 with any concerns that I have.

This consent document has been approved for use for one year by the Human Subjects Institutional Review Board as indicated by the stamped date and signature of the board chair in the upper right corner of each page. Subjects should not sign this document if all upper right corners do not have a stamped date and signature.

My signature below indicates that I have read and/or had explained to me the purpose and requirements of the study and that I agree to participate.

Signature

Date

Consent obtained by: ____________________

initials of researcher

Date
Appendix C
Demographic Questionnaire
Demographics Questionnaire

Research Code Subject Number: ______________________

Age: ____________ Date of Birth: ______/_____/_____

Gender: (Circle one) Male  Female

Ethnicity: (Mark best choice)
African American _____
American Indian _____
Asian American _____
Alaskan American _____
Caucasian (white) _____
Hispanic _____
International/non US Resident _____
Other (please specify): ______________________

Relationship Status: (Mark best choice)
Single, never married _____
Living with significant other _____
Separated _____
Divorced _____
Married _____

Years of Education: (mark best choice)
Less than 12 years _____
12 years or GED _____
More than 12 and less than 16 years _____
16 years _____
16+ years _____

Household Income: (Mark best choice)
Under $10,000 per year ______
$10,000-$20,000 per year ______
$20,000-$30,000 per year ______
Over $30,000 per year ______

(Over)
• Are you currently receiving treatment for depression?
  Yes _____
  No _____
  If yes, what type of treatment? (Mark all that apply)
  • Medication Treatment _____
  • Hospital (Inpatient or Partial Hospitalization) Care _____
  • Pastoral Care _____
  • Individual Therapy _____
  • Group Therapy _____
  • Support Group _____

• Have you been in treatment for depression in the past?
  Yes _____
  No _____
  • If yes, how many episodes of treatment have you been through? _____

• Are you currently taking prescription medication(s) for depression?
  Yes _____
  No _____
  • If yes, what medication(s) are you taking and what is the dosage?

• Have you taken prescription medication(s) for depression in the past?
  Yes _____
  No _____
  • If yes, what medication(s)? ______________________________

• Are you currently in treatment for any psychological condition(s) other than depression?
  Yes (please specify) ______________________________
  No _____

• Have you been treated for any psychological condition(s) other than depression in the past?
  Yes (please specify) ______________________________
  No _____

Current Stressors:  __________________________________________
  __________________________________________
  __________________________________________
Appendix D

Beck Depression Inventory–Second Edition
Appendix E

Revised Hamilton Rating Scale for Depression
The Revised Hamilton Rating Scale for Depression is copyrighted by W. L. Warren, 1994. Persons interested in obtaining information regarding this instrument should contact Western Psychological Services, 12031 Wilshire Boulevard, Los Angeles, California 90025-1251.
Appendix F

Master List
## Master List of Subjects

<table>
<thead>
<tr>
<th>Name Code</th>
<th>Last 4</th>
<th>Research Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Appendix G

Data Collection Form
**Assessment Information for: Subj.#________________**

**Intake Interview:**
- BDI-II Score: _____
- RHRSD Score: _____
- SCID Diagnosis:
  - Axis I
  - Axis II
  - Axis III
  - Axis IV
  - GAF Score

**Pretreatment (if more than 10 days from intake to first session):**
- BDI-II Score _____
- RHRSD Score _____

**BDI-II scores during treatment:**
- Week 1 _____
- Week 2 _____
- Week 3 _____
- Week 4 _____
- Week 5 _____
- Week 6 _____
- Week 7 _____
- Week 8 _____
- Week 9 _____
- Week 10 _____
Post-treatment:
  • BDI-II score ____
  • RHRSD score ____

3 Month Follow-up:
  • BDI-II score ____
  • RHRSD score ____
  • SCID Diagnosis:
    • Axis I ______________________
      ______________________
    • Axis II ______________________
    • Axis III ______________________
    • Axis IV ______________________
    • GAF Score ______________________

All Data Collection Complete: Initials: _____ Date ______
Appendix H

Treatment Termination Questionnaire
BAGT Termination Interview Questionnaire

Subject Number: _____________________ Date: _____________________

Medication Use Changes During BAGT Treatment:
Did you start a new antidepressant medication? Yes No
If yes, which medication(s)? _______________________________________

Did you stop an antidepressant medication? Yes No
If yes, which medication(s)? _______________________________________

Did the dosage of your antidepressant medication change? Yes No
If yes, did it increase or decrease? ____________________________________

Psychotherapy Use During BAGT Treatment:
Did you receive individual therapy during BAGT? Yes No
If yes, how often did you see your therapist? ___________________________

Did you attend another therapy group during BAGT? Yes No
If yes, how often and what type of group? _____________________________

Rating Behavioral Activation Group Therapy

1 = much worse  3 = same  5 = much better

How did BAGT compare to individual therapy? 1 2 3 4 5 N/A
How did BAGT compare to other group therapies? 1 2 3 4 5 N/A
How did the BA approach compare to other approaches? 1 2 3 4 5 N/A
How effective was BAGT compared to other approaches? 1 2 3 4 5 N/A
How did BAGT compare to medication treatment? 1 2 3 4 5 N/A
How effective was BAGT compared to medication treatment? 1 2 3 4 5 N/A
How would you rate this therapy overall? 1 2 3 4 5 N/A
How would you rate your depression as a result of receiving BAGT? 1 2 3 4 5 N/A

1 = strong no  3 = maybe  5 = strong yes

Would you recommend BAGT to a friend? 1 2 3 4 5 N/A
Would you go through BAGT again? 1 2 3 4 5 N/A

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Appendix I

Follow-up Questionnaire
BAGT Follow-up Questionnaire

Subject #: ______________________ Date: __________

Are you currently in individual therapy? Yes No
   If yes, how often? ________________________________

Are you currently in group therapy? Yes No
   If yes, how often? ________________________________

Are you currently taking medication for depression? Yes No

How is your depression compared to 6 months ago? ______________

Did the group provide long-term benefits for managing depression? ___
   _________________________________________________________
Appendix J

Western Michigan University Human Subjects
Institutional Review Board Approval
Date: 11 January 1999

To: Richard Spates, Principal Investigator  
    Jeffrey Porter, Student Investigator for dissertation

From: Sylvia Culp, Chair  

Re: HSIRB Project Number 98-10-17

This letter will serve as confirmation that your research project entitled “Southwestern Michigan Treatment of Depression Collaborative Study: Behavioral Activation Group Therapy: An Initial Investigation” has been approved under the full category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note that you may only conduct this research exactly in the form it was approved. You must seek specific board approval for any changes in this project. You must also seek reapproval if the project extends beyond the termination date noted below. In addition if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: 11 January 2000
BIBLIOGRAPHY


90

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.


Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.


