VOLUME XXXII, NUMBER 2
APRIL 1978

American Journal of Psychotherapy

Cognitive Therapy of Depression and Suicide*

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This article reviews the cognitive therapy of depression. The psychotherapy based on this theory consists of behavioral and verbal techniques to change cognitions, beliefs, and errors in logic in the patient's thinking. A few of the various techniques are described and a case example is provided. Finally, the outcome studies testing the efficacy of this approach are reviewed.

INTRODUCTION

Beck[1] reformulated the phenomenon of depression from a cognitive viewpoint. This formulation was designed to provide a model for understanding the relationships of the signs and symptoms of the depressive syndrome (e.g., guilt, difficulty concentrating, low energy, etc.). In addition, the cognitive framework was to provide a basis for a systematic psychotherapy of depression called "cognitive therapy."

This paper will review briefly the cognitive theory of depression. We will describe a few specific psychotherapy techniques used in the cognitive therapy of depression to change cognitions. A case example will illustrate the application of cognitive therapy. Finally, we will review the controlled psychotherapy research studies designed to test the efficacy of cognitive therapy with depressed patients.

THE COGNITIVE THEORY OF DEPRESSION

The cognitive theory of depression is a formulation which grew out of careful clinical observation and experimental testing. This interplay of a clinical and experimental approach has allowed for careful evolution of this model and of the psychotherapy it has spawned.[2]

The cognitive model postulates three specific notions to explain depression: cognitive triad, schemas, and cognitive errors. The cognitive triad consists of three major cognitive patterns that induce the patient to regard himself, his future, and his experiences in an idiosyncratic manner.

*Presented at the Thirteenth National Scientific Meeting of the Association for the Advancement of Psychotherapy, May 1, 1977, Toronto, Canada.

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Cognitive Triad

The first component of the triad revolves around the patient's negative view of himself. He sees himself as defective, inadequate, or unworthy. He tends to attribute his unpleasant experiences to a physical, mental, or moral defect in himself. The patient believes he is undesirable and worthless *because* of his presumed defects. He tends to underestimate or criticize himself because of them. Finally, he believes he lacks the attributes he thinks are essential to attain happiness and contentment.

The second component consists of the depressed person's tendency to interpret his ongoing experiences in a negative way. He sees the world as making exorbitant demands on him and/or presenting insuperable obstacles to reaching his life goals. He misinterprets his interactions with the world around him as evidence for defeat or deprivation. These negative misinterpretations are evident by observing that the patient negatively construes situations *even* when less negative, more plausible, alternative interpretations are available. The depressed person may realize that his initial negative interpretations are biased if he is persuaded to reflect on these less negative alternative explanations. In this way, he can come to realize that he tailored the facts to fit his preconceived negative conclusions.

The third component consists of a negative view of the future. As the depressed person looks ahead, he anticipates that his current difficulties or suffering will continue indefinitely. He expects unremitting hardship, frustration, and deprivation. When he thinks of undertaking a specific task, he expects to fail.

The cognitive theory considers the other signs and symptoms of the depressive syndrome to be consequences of the activation of the negative cognitive patterns. For example, if the patient incorrectly *thinks* he is being rejected, he will react with the same negative affect (e.g., sadness, anger) that occurs with *actual* rejection. If he erroneously believes he is a social outcast, he will feel lonely.

The motivational symptoms (e.g., paralysis of will, escape and avoidance wishes, etc.) can be explained as consequences of negative conditions. "Paralysis of will" results from the patient's pessimism and hopelessness. If he expects a negative outcome, he won't commit himself to a goal or undertaking. Suicidal wishes can be understood as an extreme expression of the desire to escape from what *appears* to be insolvable problems or an unbearable situation. The depressed person may see himself as a worthless burden and consequently believe that everyone, himself included, will be better off when he is dead.

Increased dependency is also explicable in cognitive terms. Because he sees himself as inept and undesirable, the depressed person unrealis-

tically overestimates the difficulty of normal tasks and expects things to turn out badly. The patient tends to seek help and reassurance from others whom he considers more competent and capable.

Finally, the cognitive model may also explain the physical symptoms. Apathy and low energy may result from the patient's belief that he is doomed to failure in all his efforts. A negative view of the future (a sense of futility) may lead to "psychomotor inhibition."

Schemas

A second major ingredient in the cognitive model consists of the notion of schemas. This notion is used to explain why a depressed patient clings to painful attitudes despite objective evidence of positive factors in his life.

Any situation is composed of a plethora of stimuli. An individual selectively attends to specific stimuli, combines them in a pattern and conceptualizes the situation. Although different persons may conceptualize the same situation in different ways, a particular person tends to be consistent in his responses to similar types of events. Relatively stable cognitive patterns form the basis for the regularity of interpretations of a particular set of situations.

The term "schema" designates these stable cognitive patterns. When a person faces a particular circumstance, a schema related to the circumstance is activated. The schema is the basis for molding data into cognitions (defined as any mental activity with verbal content). Thus, a schema constitutes the basis for screening out, differentiating, and coding the stimuli that confront the individual. He categorizes and evaluates his experiences through a matrix of schemas.

The kinds of schemas employed determine how an individual will structure different experiences. A schema may be inactive at one time but can be activated by specific environmental inputs. The schemas activated in a specific situation directly determine how the person affectively responds to the circumstance. For example, if a person is concerned over whether or not he is competent and adequate, he may be assuming the validity of the schema, "Unless I do everything perfectly, I'm a failure." In this case, he will be construing situations in terms of the question of adequacy even when the question *is not* related to the situation. For instance, while swimming at the beach (an apparently fun activity *not* related to personal competence), this person may be thinking, "Is my swimming good enough? Do I look as good as the others?," and so forth.

Thus, the depressed patient's conceptualizations of specific situations are distorted to fit the schemas. The orderly matching of stimulus and appropriate schema is upset by the intrusion of overly active idiosyn-

cratic schemas which displace more appropriate ones. As these idiosyncratic schemas become more active, they are evoked by a wider range of stimuli which are less logically related to them. The patient loses control of his thinking processes and is unable to invoke other more appropriate schemas.

In milder depressions the patient is able to view his negative thoughts with some objectivity. As the depression worsens, his thinking is increasingly dominated by negative ideas, although there may be no logical connection between actual situations and negative interpretations. The patient is less able to entertain the notion that his negative interpretations are erroneous, possibly because the stronger idiosyncratic schemas interfere with reality testing and reasoning. These hypervalent schemas lead to distortions of reality and consequently to systematic errors in the depressed person's thinking.

Cognitive Errors

These systematic errors in the logic of the depressed person's thinking include arbitrary inference, selective abstraction, overgeneralization, magnification or minimization and personalization.

1. *Arbitrary inference* refers to the process of drawing a conclusion in the absence of evidence to support the conclusion or when the evidence is contrary to the conclusion.

2. *Selective abstraction* consists of focusing on a detail taken out of context, ignoring other more salient features of the situation, and conceptualizing the whole experience on the basis of this element.

3. *Overgeneralization* refers to the pattern of drawing a general conclusion on the basis of a single incident.

4. *Magnification and minimization* is reflected in errors in evaluation that are so gross as to constitute a distortion.

5. *Personalization* refers to the patient's proclivity to relate external events to himself when there is no basis for making such a connection.

The cognitive theory offers a hypothesis about forming a predisposition to depression. Briefly, the notion is that early experiences constitute a basis for forming a negative view about one's self, the future, and the world around. These negative concepts are formulated in terms of schemas. Schemas may be latent but they can be activated by specific circumstances which are analogous to experiences initially responsible for embedding the negative attitude.

For example, disruption of a marital situation may activate the concept of irreversible loss associated with death of a parent in childhood. Alternatively, depression may be triggered by a physical abnormality or disease that activates the notion he is destined for a life of suffering. While these and other events might be painful to most people, they

wouldn't necessarily produce a depression unless the person is particularly sensitive to the situation because of previous experience and consequent predepressive cognitive organization.

In response to such traumas the average person will still maintain interest in and realistically appraise other nontraumatic aspects of his life. However, the thinking of the depression-prone person becomes markedly constricted and negative ideas develop about every aspect of his life.

There is substantial empirical support for the cognitive theory of depression. Naturalistic studies, clinical observations and experimental studies have recently been reviewed.[2] Studies have documented the presence and intercorrelation of the constituents of the "cognitive triad" in association with depression. Several studies document the presence of specific cognitive deficits (e.g., impaired abstract reasoning, selective attention) in depressed or suicidal persons.[3] The presence of dysfunctional attitude or schemas has recently been found with depressed patients.[4] However, more experimental support is needed. This theory has led to a specific psychotherapy for depressed, suicidal patients.

OVERVIEW OF THE TECHNIQUES OF COGNITIVE THERAPY

The cognitive theory forms the basis for "cognitive therapy." This therapy consists of a number of specific techniques for treating depressed patients. These techniques have been compiled in a Treatment Manual.[4] This section will review a few of these techniques to provide a flavor for how this treatment is conducted. Then an illustrative case example follows.

Cognitive therapy is a short-term, time-limited psychotherapy usually involving a maximum of twenty sessions over ten to twelve weeks. The therapist actively directs the discussion to focus on selected problem areas presented by the patient. Questioning is frequently used to elicit specific thoughts, images, definitions, and meanings. For example, the therapist might say, "What was it about the telephone call which made you most upset?" "What did the phone call mean to you?," or "What were you thinking just as you hung up the telephone?" In addition, questioning is used to expose inner contradictions, inconsistencies, and flaws in logic of the patient's thinking or conclusions. Skill and tact are required, however, to assure that this questioning is not construed as an interrogation or cross-examination, which might lead the depressed person to conclude that his reasoning powers are defective.

The therapist and patient collaborate to use an empirical methodology to focus on specific problem areas. The therapist must

clearly understand the patient's conceptualizations of himself and the world around him. In essence, he must be able to see the world "through the patient's eyes." If the patient's conceptualizations differ from the therapist's views of reality, the collaborators tend to reconcile the differences with a logical empirical approach.

In essence, the patient's thoughts are treated as if they were hypotheses requiring validation. During this validation process (often conducted as homework), the patient needs to clearly understand what beliefs or ideas (hypotheses) are being tested and, therefore, must understand the purpose of each homework assignment. Technically, cognitive therapy may be compared to a scientific investigation: (1) collecting data that are as reliable and valid as possible; (2) formulating hypotheses based on the data; and (3) testing and, if indicated, revising hypotheses based on new information.

The data consist of the patient's "automatic thoughts," feelings, and wishes.[5] These automatic thoughts or cognitions are collected as oral or written reports from the patient. The therapist accepts these cognitions as truthful (although not necessarily *accurate*) representations of reality, since the basic premise of the cognitive theory is that the depressed person negatively misconstrues his experiences.

First, the therapist tries to elicit automatic thoughts surrounding each upsetting event. He tries to obtain specific evidence for or against the patient's potentially distorted or dysfunctional thinking by questioning the patient about the total circumstances of a particular event.

Secondly, the cognitive therapist helps the patient to identify or infer the assumptions or themes in the recurrent negative automatic thoughts. For example, such a theme might be "expecting to fail" or "reading rejection into personal situations." The therapist helps the patient to see that such a belief may not necessarily reflect reality. For example, the therapist would use logic, persuasion, and evidence from the patient's current and past functioning to get the patient to view a belief (e.g., "I am unable to learn") as an idea or hypothesis requiring validation rather than as a belief.

Thirdly, the cognitive therapist teaches the patient to identify specific errors of logic in his thinking (e.g., arbitrary inference, overgeneralization, etc.). Learning to recognize and correct these errors helps the patient to repeatedly assess the degree to which his thinking mirrors reality.

The patient and therapist collaborate to identify basic attitudes, beliefs, and assumptions, which (according to the model) shape moment-to-moment thinking. Sometimes, an attitude may be so dominant or pervasive that despite changes in environmental events, the conclusion never varies (e.g., "I can't be happy unless I'm loved"). By articulating

these attitudes, the therapist helps the patient not only to develop a basis for empirical validation, but also to recognize subsequent cognitions based on these attitudes.

Cognitive therapy techniques are designed to facilitate changes in specific target symptoms found in depression (e.g., inactivity, self-criticism, lack of gratification, suicidal wishes.) The specific techniques are described in detail elsewhere.[4] Here we will describe just a few of these techniques to illustrate the nature of the treatment.

In general, a therapy session begins with a discussion of the formerly assigned homework. This homework generally focuses on the patient's thinking. The latter part of each session is spent developing and planning the subsequent homework assignment.

In the initial sessions, therapy tends to emphasize increased activity and environmental interaction (i.e., behavioral changes). In the course of such changes, the patient learns to monitor and recognize his thinking in regard to his behavior or activity. This early emphasis on behavioral objectives is based on our recognition that the severely depressed patient is often unable to engage in cognitive tasks because of difficulty in abstract reasoning.

As the depression lessens, concentration improves and the intensity of the affect decreases. The patient is taught to collect, examine, and test his automatic thoughts (e.g., Triple Column Technique below). In subsequent sessions, the assumptions supporting these cognitions are identified and subjected to empirical validation through homework assignments. These cognitive-change techniques require a greater ability to abstract and use logic. Therefore, they are employed after the depression lessens in severity. However, the therapist may employ these cognitive-change techniques from the outset if the patient is only moderately depressed.

We will describe a technique with a primary behavioral objective (the Graded Task Assignment) and one with a primary cognitive objective (the Triple Column Technique). However, a task designed to alter mainly behavior, will also influence the patient's thinking. Similarly, a cognitive change may result in a behavioral change as well.

Graded Task Assignment

The Graded Task Assignment is based on the assumption that the depressed patient has difficulty completing tasks which had been relatively simple, prior to the depression. Although the patient has the skill and information necessary to perform the task, he experiences difficulty with it because he thinks "I can't do anything" or "It's useless to try." The end result of such thinking is decreased activity and further negative self-evaluation. This reaction is a logical result of an over-

generalized belief that "because an activity is no longer simple, therefore, it is impossible." The cognitive therapist approaches this problem from an empirical viewpoint ("Would you be willing to test your belief?") rather than trying to take an opposing stand ("Yes, you can do it if you try.") since this latter strategy may alienate the patient. The Graded Task Assignment consists of subdividing the major task into mini-tasks which are within the patient's capability. Thus, this technique not only increases activity by inducing the patient to undertake more tasks but it also helps the patient recognize and correct unrealistically negative cognitions which maintain inactivity.

Other techniques designed to change behavior include *Activity Scheduling* (the patient and therapist collaborate to schedule hourly assignments); the *Mastery and Pleasure Technique* (scheduled activities are rated according to the amount of mastery or pleasure obtained with each); and *Cognitive Rehearsal* (the patient imagines each step in the sequence leading to completion of the assignment). Each of these techniques is used to help the patient reevaluate his initial negative beliefs in hopes of making an appropriate cognitive change (e.g., "I *thought* that I couldn't do anything but the evidence is that the tasks are hard to do but not impossible."). In using these techniques the therapist emphasizes the immediate goal of relieving the patient's self-debasement.

Triple Column Technique

A number of specific techniques are designed to help the patient identify and reevaluate his thinking. For example, the Triple Column Technique is often used to help the patient to identify and reality test upsetting cognitions. The patient records the events associated with unpleasant affect as well as the actual cognitions or automatic thoughts associated with the dysphoria. Next, the patient attempts to answer these cognitions using concrete evidence ("facts") to test the validity and reasonableness of each cognition. The evidence for and against each specific thought (e.g., "I'm a complete failure," or "Everyone is disgusted with me.") is examined. In this way, the patient learns to see his cognitions as psychological events or responses rather than as an accurate reflection of reality. The therapist helps the patient categorize his cognitions under relevant themes such as self-blame, inferiority, or deprivation. The patient learns that of the many ways to interpret life experiences he tends to persevere in a few stereotyped, self-defeating patterns.

As the patient distances himself from his automatic thinking and as he learns to answer his distorted negative thoughts with concrete evidence, he begins to reconceptualize problems and to develop alternative methods of problem solving. This problem solving involves a search for

alternative interpretations and solutions to problematic events. Therapy is not simply thinking positively but rather thinking realistically and logically.

The latter stages of cognitive therapy involve identification of chronic attitudes and assumptions by which the patient constructs and orders his experiential world. The content of these attitudes is inferred from the recurrent themes present in the patient's cognitive response to specific situations. Some of the attitudes found to be associated with depression include notions such as: "I must be successful in whatever I undertake"; "My value as a person depends on what others think of me"; and "I can't live without love." The patient learns to examine and assess the reasonableness of these basic attitudes by considering the evidence for and against each belief. He is often asked to undertake homework to test out the validity or the general applicability of a specific attitude.

The following case example serves to illustrate a number of the specific ingredients in cognitive therapy. The case history is presented to exemplify practical issues in differential diagnosis and treatment planning. In applying cognitive therapy to a specific patient, the therapist judiciously selects techniques from a variety of possibilities. The basic guidelines for the selection of the most pertinent techniques are detailed elsewhere.[6] This case example illustrates the use of a few of the many techniques of cognitive therapy.

CASE REPORT

Mr. L., a 52-year-old, married father of two, retired naval officer, was self-referred. He sought treatment stating "Maybe I am a manic-depressive and need lithium." He complained of guilt, difficulty concentrating, suicidal ideation, early-morning and sleep-onset insomnia, anorexia, a fifteen-pound weight loss, social withdrawal, decreased libido, intermittent impotency, lack of interest in formerly enjoyable activities, and mild psychomotor retardation. Although he had no history of alcohol addiction, he had been given to excessive drinking since the onset of the depression.

His depression had been triggered three years previously when he discovered his wife's extramarital affair with a fellow officer. His wife terminated the affair when Mr. L. found out. A year later he had resigned from the service as a consequence of his depression.

He believed he had forced his wife to stay with him by his discovery, although there was no evidence, even after several interviews with her that this was a valid belief. She stated she chose to stay with him because she loved him. She saw the affair as a symptom of difficulties in the relationship. He spent most of his waking moments thinking about the affair which he interpreted in terms of personal failure and inadequacy.

He had had two other episodes of the depressive syndrome in the past. Each episode lasted one year, each remitted without formal treatment, and each was

associated with the failure to get promoted on time. Each of these events was construed by the patient as testimony to his incompetence.

There was also suggestive evidence of hypomanic episodes with increased activity, euphoria, energy and feelings of creativity, but these episodes failed to meet criteria for hypomania.[6] The patient presented evidence by history and mental status of obsessive-compulsive personality. He showed significant concern over issues of respect, control, and time.

Treatment consisted of both chemotherapy and cognitive therapy administered simultaneously. Hourly sessions of cognitive therapy were conducted once weekly for a total of 16 sessions. Chemotherapy consisted of amitriptyline maintained at 100–150 mg/day until the 16th week of treatment when it was discontinued. The therapy sessions initially included only the patient but subsequently included his spouse as well. The patient's response to this combination approach, according to the Beck Depression Inventory, (BDI) is shown in Table 1.

TABLE 1:

Week No.	Initial	2	5	6	8	10	12	16	24
BDI	19	10	7	4	5	1	0	2	7

Chemotherapy was used in hopes of providing rapid symptomatic relief as the patient appeared very suicidal and hopeless at the beginning of treatment. Hospitalization appeared imminent if symptomatic relief could not be provided rapidly. We also hoped, by responding to the patient's expectation for, and indeed, near insistence on drug treatment, to create a milieu in which psychological treatment might be accepted at least as an adjunct treatment.

Cognitive therapy was designed to help the patient: (1) identify and record his negative automatic thinking; (2) identify stimuli which triggered these negative thoughts; (3) provide methods to control these thoughts; (4) provide methods for the patient to refute and correct these thoughts; and (5) identify and correct the silent assumptions or themes which ran throughout and supported his negative thinking.

Step 1: The patient recorded his negative thoughts and associated environmental events in his notebook. He reported a profusion of negative automatic thoughts or cognitions. These cognitions were repetitious, upsetting, distorted, and generally reflected a very negative view of himself. The content consisted of statements such as, "I am a failure in my occupation. My wife has shown me I'm a failure in marriage. I can't get a job in civilian life. No one respects me. I've never succeeded at anything. Why bother to apply for a job, they'll never hire someone as old as I am. I can't even play tennis anymore," and so forth.

Step 2: By recording the environmental events associated with negative thinking, the patient identified stimuli for this thinking. Exacerbating stimuli included playing tennis, having dinner with his wife, and looking at old Navy pictures. Drinking alcohol or walking in the woods alone decreased the frequency of the thoughts. The patient's concentration was severely impaired because of this recurrent stream of self-critical thinking.

Step 3: The patient used a wrist counter to monitor the frequency of these thoughts and the stimuli associated with them. On the average, these thoughts occurred about 60 times per hour during most of the day.

The patient was instructed to record and graph the exact number of negative thoughts per minute for four days for every waking minute using a stopwatch and counter. With this technique he reduced the thoughts to as few as 3 to 7 per hour. He gained some control over his thoughts with this technique. In addition, he began to look at his thinking more objectively (i.e., to regard these thoughts as upsetting yet repetitious psychological events, rather than accurate reflections of reality).

Step 4: After he learned to control and to become more objective about his negative thoughts, he was able to begin to correct, validate, and/or refute each thought. When asked for evidence that these thoughts were true, he repeated the previous experiences of delayed promotion, failure to make Admiral, and his current difficulty with sexual performance. He felt his wife was too ashamed of her affair to seek a divorce. This inference explained why she was still living with him when he believed she still loved her former paramour. Furthermore, the paramour had been of a higher rank than the patient. This fact was seen by the patient as evidence that he wasn't good enough for her. He saw his wife as a bright, attractive, talented, artistic, and much admired and respected woman. In comparison, he saw himself as an occupational, marital, sexual, and social failure. He attributed his many military honors to "the system," while he attributed occupational failures to himself. In reviewing these thoughts he learned to identify and correct the cognitive distortions of overgeneralization, arbitrary inference, and magnification.

He learned to identify specific themes which were inferred from the negative automatic thoughts he recorded. He learned to evaluate these themes with logic and, at times, with experimental testing. Examples of these themes are "Unless I do everything perfectly, I'm a failure. If I am not rewarded and respected, I'm a failure. If I make a mistake, it means I'm defective. Because my wife had an affair, she no longer loves or respects me. I can't enjoy anything if I'm not the best."

Initially, the patient enumerated a plethora of specific events from his past, each of which he construed as supporting these themes. Often his evidence went back five to twenty-five years prior to treatment. By reviewing the evidence point by point and suggesting alternative interpretations of the events reported, enough doubt developed in the patient's thinking, that he would consider running an experiment to test the assumption or theme under consideration. For example, he was directed to intentionally lose at several sets of tennis with a mediocre player, while trying to identify what else he might be enjoying while playing. He reported enjoying the exercise, conversation, weather, and other players at the club, thereby disentangling the issues of achievement and enjoyment.

He learned to see his wife's affair more as a reflection of her view of herself and the marriage rather than conclusive proof of some permanent defect in himself. By learning how he had inadvertently blocked communication (at least from his wife's viewpoint), he could take corrective action to discuss and solve

problems rather than concluding that he was a total failure by overgeneralizing from a few complaints from his wife.

At six-month follow-up, the patient's Beck Depression Inventory was six. He was taking no medication. He was employed full time, still married and not drinking excessively. He and his wife reported a dramatic improvement in marital satisfaction.

This case illustrates the use of combined chemotherapy and cognitive therapy. The combination treatment may have certain advantages. Chemotherapy may provide rapid symptomatic relief (e.g, for insomnia) and it may sufficiently match the patient's expectations, so that cognitive and behavioral change techniques can be applied. Cognitive therapy may have resulted in sufficient correction of how this patient chronically gives distorted negative meanings to events both past and present, to provide prophylaxis against future depressions.

Furthermore, this case illustrates how a cognitive or behavioral approach can involve the couple or family system. Often the spouse can provide information to correct cognitive distortions.[7] Furthermore, as the spouse becomes aware of the patient's negative thinking, he or she can resort to verbal and nonverbal behaviors to consistently "dis"confirm the patient's negative automatic thinking.

OUTCOME STUDIES OF COGNITIVE THERAPY

We have briefly presented the cognitive model of depression. This model has been a basis for developing a specific cognitive therapy for depression. The rationale for the cognitive therapy of depression is derived from this formulation: if the source of the depression is a hypervalent set of negative concepts, then the correction and damping down of these schemas may be expected to alleviate the depressive symptomatology. In cognitive therapy, the therapist and patient work together to identify distorted cognitions, derived from his dysfunctional beliefs. These distorted negative cognitions and dysfunctional beliefs are subjected to logical analysis and empirical testing. Moreover, through the assignment of behavioral tasks, the patient learns to master problems and life situations which he previously considered insuperable, and consequently, he learns to realign his thinking with reality.

Studies of the efficacy of cognitive therapy have implications for the cognitive model. If techniques to correct cognitions offer no specific advantage over no treatment or nonspecific treatment controls, we might conclude that negative cognitions, although present in association with a depressed mood, may simply be a secondary effect of the mood itself, an epiphenomenon, rather than having a causal relationship to the disorder. Secondly, if dysfunctional attitudes contribute to a predis-

position to depression and if these attitudes are corrected with cognitive therapy, then patients treated with cognitive therapy may be afforded some prophylaxis against relapse compared to no treatment or perhaps to other treatments.

A number of outcome studies comparing the efficacy of cognitive therapy with other treatments for depression are now available. To date three controlled outcome studies with depressed students have been conducted, two of which used a group-treatment format. Cognitive therapy exceeded the results obtained in waiting-list, supportive-treatment, or positive-experience control groups.

Shipley and Fazio[8] treated twenty-four subjects with an individual approach which provided functional problem-solving alternatives. Twenty-five depressed controls received a nonspecific interest-support treatment. The experimental treatment resulted in significantly greater improvement than the control treatment. In addition, these effects were independent of the subjects' initial expectancies.

Taylor and Marshall[9] conducted a controlled-treatment comparison among groups which received cognitive modification, behavior modification, cognitive *and* behavior modification, as well as a waiting list group. They found that patients in all active treatment groups showed significant improvement in depression compared to the waiting-list control subjects. The combination treatment was superior to the cognitive and the behavioral treatments alone.

Gioe[10] compared a modified cognitive-modification treatment in combination with a "positive group experience," a cognitive-modification treatment, a treatment consisting of a "positive group experience" alone and a waiting-list control. Using a group-therapy modality with ten depressed students in each group, he reported that the combination treatment package was clearly superior in alleviating depressive symptomatology.

Turning to studies of cognitive therapy in depressed psychiatric patients, we find a total of four controlled outcome studies and three case reports. Cognitive therapy has exceeded the results of waiting-list group, insight therapy, behavior therapy, nondirective therapy, and pharmacotherapy.

Shaw[11] treated depressed patients referred from a University Health Service. Psychometric ratings, self-reports, and independent clinical evaluations were used. A group-therapy format was employed with one therapist treating eight subjects in each group. All active treatments produced significantly better results than a waiting-list control. Cognitive therapy was found to be more efficacious than behavior therapy (interpersonal skills training), nondirective therapy, and a waiting-list control.

Rush and coworkers[7] reported on cognitive therapy of three patients with chronic relapsing depression. The main behavioral modality consisted of the use of activity schedules. The cognitive approach was directed at exposing and correcting the patient's negative misevaluations of his activities. These patients, although not previously helped by drug therapy, showed prompt and sustained improvement with therapy according to clinical and self-report measures.

Morris[12] compared a "didactic cognitive behavioral program," an "insight-oriented therapy" (an experiential and unstructured program which focused on self-understanding), and a waiting-list control group with depressed female outpatients. Twenty-two subjects were treated in the cognitive-behavioral group, seventeen in the insight group and twelve served as controls. The cognitive-behavioral program was superior. Furthermore, the cognitive-behavioral treatment was as effective in a three-week period as in a six-week period when the number of sessions[4] remained constant. This latter finding emphasizes a notable feature of the cognitive approach (i.e., significant change can occur during a brief time period).

Using a single-subject design, Schmickley,[13] reported significant improvement in eleven clinical outpatients as a direct result of four one-hour sessions of cognitive-behavioral treatment intervention. At termination, improvement was found with eleven of twelve psychometric and behavioral measures.

We recently undertook an intensive pilot study at the University of Pennsylvania.[14] We compared the relative efficacy of cognitive therapy with a tricyclic antidepressant drug (imipramine hydrochloride) in the treatment of forty-one depressed outpatients. Cognitive therapy was found to be more effective than imipramine.

We have recently extended our study to forty-four depressed outpatients, and follow-up data are now available. All patients were self-referred psychiatric outpatients who satisfied research diagnostic criteria for the depressive syndrome.[6] All had a diagnosis of depressive neurosis according to the Diagnostic Statistical Manual-II.[15] As a group they were generally white, partially college educated, and in their mid-thirties.

Their past histories and Minnesota Multiphasic Personality Inventories indicated a substantial degree of psychopathology. In general, the patients had been intermittently or chronically depressed almost nine years, and one-fourth of these patients had been hospitalized for depression in the past. The average patient had seen over two therapists prior to the study. On the average, the current episode of depression had been present for just less than twelve months at the time of entering the study. At the start of treatment, all patients were

moderate-severely depressed by self-report (Beck Depression Inventory),[16] observer evaluation (Hamilton Rating Scale),[7] and therapist rating (Raskin Scale).[18] Seventy-five percent of these patients reported significant suicidal ideation at the start of treatment. In essence, our unipolar depressed patients generally had a substantial degree of psychopathology *and* a history of *poor* response to other psychotherapies.

Patients were randomly assigned to either individual cognitive therapy or pharmacotherapy (imipramine hydrochloride) for twelve weeks of treatment. Prescribed psychotherapy consisted of twice weekly hour-long cognitive therapy sessions for a maximum of twenty visits. Pharmacotherapy consisted of not less than 100 mg/day, but not more than 250 mg/day of imipramine prescribed in twenty-minute, once weekly visits for a maximum of twelve weeks.

Therapists consisted mainly of psychiatric residents who had treated only two "practice" cases with supervision prior to treating research cases. The methodology of cognitive therapy was specified in a treatment manual.[4] The therapists were systematically supervised on a weekly basis by three experienced clinicians. All sessions were audio-recorded and spot checked for adherence to protocol.

Both treatment groups were equivalent with respect to demographic characteristics, histories of illness, treatment and mean severity of depression at the start of treatment. Of nineteen patients assigned to cognitive therapy, eighteen completed treatment over a mean period of eleven weeks. Of twenty-five patients assigned to pharmacotherapy, seventeen completed treatment over the same mean period of time.

By the end of active treatment, both treatment groups showed statistically significant decreases ($p < .001$) in depressive symptomatology according to self-reports, observer evaluations, and therapist ratings. By the end of treatment, cognitive therapy resulted in significantly greater improvement than did pharmacotherapy on self-reports and observer-based clinical ratings of depression ($< .01$). The response rates to both pharmacotherapy and cognitive therapy exceeded the usually reported degree of response to placebo in depressed outpatients.[19] In addition, both treatments resulted in substantial decreases in subjective reports and interviewer-based ratings of anxiety.

Interestingly, the dropout rate during active treatment was significantly greater with pharmacotherapy than with cognitive therapy ($p < .05$). However, even when these dropouts were eliminated from the data analysis, cognitive therapy patients showed a significantly greater improvement in depressive symptomatology than the pharmacotherapy patients ($p < .05$).

Follow-up data at three and six months after termination of treatment for those who completed cognitive therapy and pharmacotherapy

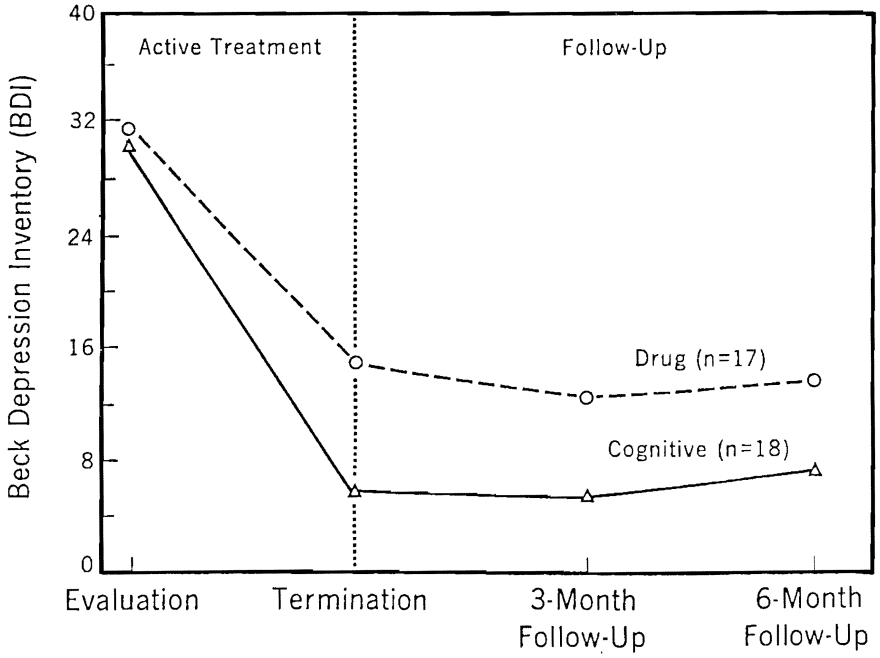

FIGURE 1
SEVERITY OF DEPRESSION DURING TREATMENT AND SIX-MONTH FOLLOW-UP FOR PATIENTS COMPLETING TREATMENT

are shown in Figure 1. Treatment gains were maintained for both groups. A greater number of the drug-treatment group returned to treatment during this period compared to cognitive-therapy patients. The cognitive-therapy patients showed significantly lower levels of depression at three months ($p < .05$) and a trend toward lower levels at six months ($p < .10$).

Also those patients who had dropped out of both cognitive therapy and pharmacotherapy were followed up at three and six months after they would have completed treatment. When both those who completed and those who dropped out of therapy are combined in a comparison of cognitive therapy and pharmacotherapy groups, cognitive therapy resulted in statistically significant lower levels of depression at both three months ($p < .05$) and six months of follow-up ($p < .05$).

This is the first study to show that any psychotherapy was equivalent to or exceeded the efficacy of pharmacotherapy in the relief of the acute symptoms of the depressive syndrome. Of course, our results await confirmation. In addition, our follow-up data indicated that treatment gains are maintained over time. Our preliminary data suggest that

cognitive therapy may exceed pharmacotherapy in preventing relapse or need for further treatment, once both treatments are discontinued since a greater number of pharmacotherapy patients returned to treatment during follow-up compared to the cognitive therapy cases.

Several other studies[20, 22] have compared different psychotherapies directly or indirectly with antidepressant pharmacotherapy in the treatment of depressed outpatients. The psychotherapies studied included interpersonal therapy,[20] marital therapy,[21] and supportive-expressive group treatments.[22] These psychotherapies did not compare with the efficacy of antidepressant medication in the relief of the acute symptoms of the depressive syndrome. These studies also indicate that the increased amount of therapist contact time for patients in cognitive therapy in itself is insufficient to account for the greater efficacy of cognitive therapy in symptomatic relief.

In general, psychotherapy outcome studies of both depressed students and psychiatric outpatient populations have shown that cognitive therapy is more effective than waiting-list and other active-treatment controls, including pharmacotherapy (the most effective treatment known to date for the depressive syndrome). Secondly, the potential prophylactic value of cognitive therapy is implied by preliminary follow-up data. These findings are consistent with the notion that cognitions and schemas play a major role in the induction or maintenance of depression. Additional studies are needed to identify the predictors of response to this treatment and to determine the applicability of this psychotherapy to other populations.

SUMMARY

The cognitive theory of depression offers a testable set of hypotheses to explain the symptomatology and the predisposition of relapse in patients with the depressive syndrome. The cognitive triad (negative views of self, future, and world), specific thinking errors deficient in logic, and the existence of hypervalent schemas form the cornerstones of this model.

This cognitive theory is the basis for a specific psychotherapy for depression—cognitive therapy. This treatment consists of a number of techniques, a few of which are described and illustrated above. Seven controlled outcome studies in depressed students or psychiatric outpatients show cognitive therapy to exceed the efficacy of waiting-list, nondirective, supportive and behavioral-therapy controls. Our recent study in moderate-severely depressed outpatients shows that cognitive therapy was more effective than imipramine hydrochloride in providing acute symptomatic relief and in decreasing premature dropouts from

treatment. Additional studies of the acute and prophylactic effects of this psychotherapy are indicated.

Acknowledgements: The authors wish to express sincere appreciation to Ms. Josephine Rahn for her assistance in typing the manuscript, and Ms. Charlotte Hardy, M.S.W. for her editorial assistance.

This work was supported in part by U.S. Public Health Service grants MH-28459-02 (A.J.R.) and MH-19989-06 (A.T.B.).

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