CHAPTER

91 Cognitive and Behavioral Therapies

Edward S. Friedman[1]
Michael E. Thase[1]
Jesse H. Wright[2]

[1]Department of Psychiatry, University of Pittsburgh Medical Center, Pittsburgh, PA, USA
[2]Department of Psychiatry and Behavioral Sciences, University of Louisville School of Medicine, Louisville, KY, USA

The cognitive and behavioral therapies have evolved as an alternative to more traditional nondirective and insight-oriented modes of psychotherapy (Beck 1991, Wolpe 1982, Kazdin 1982, Robins and Hayes 1993). The family of cognitive and behavioral therapies includes a diverse group of interventions. Nevertheless, the treatments share several pragmatic and theoretical assumptions. First, these therapies emphasize psychoeducation: patients learn about the nature of their difficulties and are provided reasons for use of particular treatment strategies. Second, the cognitive and behavioral therapies typically employ homework and self-help assignments to provide patients the opportunity to practice therapeutic methods that enhance the generalization of newly acquired skills outside of the therapy hour. Third, objective assessment of psychiatric illness is an integral part of treatment, and the selection of therapeutic strategies derives logically from such assessments. Fourth, the therapeutic methods used are structured and directive, and as such require a high level of therapist activity (often they are described in treatment manuals). Fifth, for most disorders, the cognitive and behavioral therapies are time-limited interventions. Sixth, and perhaps most important, these therapies are built on empirical evidence that validates their theoretical orientation and guides the choice of therapeutic techniques. Specifically, learning theories (i.e., classical, operant, and observational models of learning) and the principles of cognitive psychology are relied on heavily in constructing cognitive–behavioral treatment models.

Cognitive Model

The basic theories of the cognitive model are rooted in a long tradition of viewing cognitions as primary determinants of emotion and behavior. Cognitive therapy concepts have been traced as far as the writings of the Greek Stoic philosophers (Beck 1976, Ellis 1989, Dobson and Block 1988) and have been linked to a number of other influences, including the phenomenological school of philosophy, Albert Ellis' rational emotive therapy, and the contributions of Adler and other neofreudians (Wright et al. 2003, Wright et al. 2006). However, the greatest impetus for the development of cognitively oriented therapy has been the work of Aaron T. Beck (Beck 1991, Beck 1976, Beck 1963, Beck 1964, Beck 1967, Beck 1993). For reviews of the historical bases of cognitive therapy, see Dobson and Block (1988), Clark et al. (1999), and Wright et al. (2006). Clark et al. (1999) also provide an excellent review of the philosophical and theoretical assumptions of the cognitive theory of depression.

At the time Beck began to formulate his theories, the predominant treatment approach was psychoanalytically oriented psychotherapy. Freud conceived of depression as the result of anger turned inward (Freud 1950). However, when Beck attempted to study depression from this perspective, he noted that stereotypical patterns of pessimistic and self-critical thinking and distorted information processing were essential characteristics of depression (Beck 1963). This early work led to development of a cognitive model of depression (Beck 1964), the description of specific treatment interventions, and a substantial research effort to study cognitive functioning and treatment outcome in a variety of disorders (Beck 1976, Beck et al. 1979, Beck and Rush 2000, Wright et al. 2003).

Along the way, contributions from cognitive psychologists, behavioral therapists, and other clinical practitioners have been incorporated into the cognitive model (Meichenbaum 1977, Nelson and Craighead 1977, Hollan and Kendall 1980, Lewinsohn et al. 1982, Clark 1986, Dobson and Shaw 1986, Barlow and Cerny 1988, Wright and Thase 1992). The description of cognitive

Psychiatry, Third Edition. Edited by Allan Tasman, Jerald Kay, Jeffrey A. Lieberman, Michael B. First and Mario Maj.
 ISBN 978-0470-06571-6.

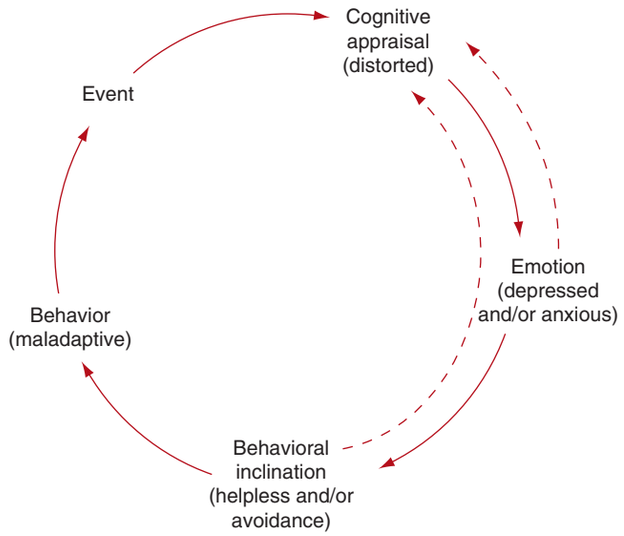

Figure 91–1 *Reprinted with permission from the American Psychiatric Association.*

theories given here is based largely on Beck's concepts. This model of therapy tends to give somewhat more emphasis to cognitive than behavioral factors in treatment interventions, but both are considered to be integral parts of the model (Figure 91–1).

Depending on the case formulation and the phase of therapy, attention may be directed primarily at cognitive or behavioral aspects of the disorder. In most cases, a combination of cognitive and behavioral techniques is used. For this reason, we use the term cognitive–behavioral therapy (CBT) throughout the chapter unless referring to a specific form of behavioral treatment.

Figure 91–2 displays a simplified model for understanding the relationships between environmental events, cognitions, emotion, and behavior (Wright et al. 2003, Wright 1988, Friedman and Thase 2006). This model is based on the theoretical assumption that environmental stimuli trigger cognitions associated with personal meaning that elicit subsequent physiological and affective arousal (emotions). These emotions, in turn, have a potent reciprocal effect on cognitive content and information processing, stimulating dysfunctional thoughts and worsening negative affect. Thus, the individual's behavioral responses to stimuli and thoughts are viewed as both a product and a cause of maladaptive cognitions. In doing CBT, treatment interventions may be targeted at any or all components of the model.

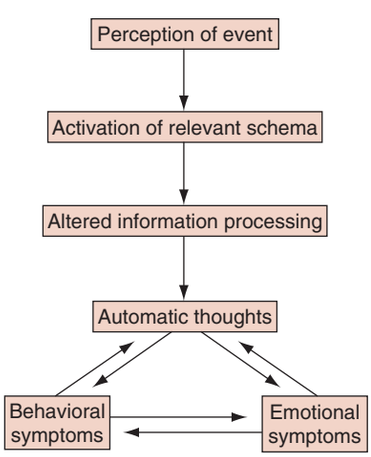

Figure 91–2 *Cognitive model of information processing.*

Of course, many other factors are involved in psychiatric disorders, including genetic predisposition, state-dependent neurobiological changes, and various interpersonal variables. These influences are also included in the case conceptualization in CBT. Wright and Thase (1992) have outlined an expanded cognitive-biological model that can be used for synthesizing cognitive and neurobiological factors in a combined therapy approach. Contemporary psychiatric research is striving to understand how best to combine and/or sequence CBT and pharmacotherapy, and relate CBT technique to new understandings in cognitive neuroscience. Nevertheless, the working model in Figure 91–2 can be used as a practical template to guide the therapist's case formulation and interventions.

Automatic Thoughts and Schemas

Dysfunctional information processing is apparent in many psychiatric disorders at two major levels of cognition-automatic thoughts and schemas (Beck 1976, Dobson and Shaw 1986, Teasdale 1983, Segal 1988, Alfrod and Correia 1994). Automatic thoughts are cognitions that stream rapidly through an individual's mind, either spontaneously or in response to some prompt or stimulus. Automatic thoughts may be triggered by affective arousal (i.e., anger, anxiety, or sadness), or conversely, affective shifts are generally accompanied by automatic negative thoughts (Teasdale 1983). Their automatic nature refers to their speed of entry into awareness and their implicit truthfulness. In this way, automatic thoughts have emotional validity (Friedman and Thase 2006). For most people, before therapy, automatic thoughts are usually not examined carefully for validity. In fact, many people susceptible to anxiety or depression often use an affectively biased manner of thinking referred to as emotional reasoning (i.e., "I *feel* that this is correct, therefore it is correct"). Although we all experience automatic thoughts, in depression, anxiety, and other psychiatric disorders the thoughts are distinguished by their greater intensity and frequency (LeFebvre 1981).

Beck (1967) coined the term *negative cognitive triad* to describe the content of automatic negative thoughts. Typically, automatic negative thoughts may be grouped by themes pertaining to (1) self, (2) world (i.e., significant others or people in general), and (3) future. As described subsequently, the themes revealed in one's characteristic automatic negative thoughts can be used to infer deeper levels of cognition: beliefs, rules, and schemas. Once they are comfortable recognizing their automatic negative thoughts, patients can be taught to examine their beliefs and the operational rules that underlie beliefs. Although patients are not fully aware of their schemas (relatively stable cognitive patterns that are the product of ones beliefs, attitudes, and behavioral responses), these cognitions are usually accessible through the questioning techniques used in CBT (Wright et al. 2003).

Beck and coworkers (Beck et al. 1979, Beck and Emery 1985, Wright and Beck 1983) have noted that stereotypic errors in logic (termed cognitive errors or cognitive distortions) also shape the content of automatic thoughts. Examples of these processes include personalization, magnification and minimization, all-or-nothing thinking, jumping to conclusions and ignoring the evidence (e.g., disregarding the positive, or selective abstraction). Definitions of a number of common cognitive errors are included in Table 91–1. Cognitive errors help to translate between the "surface" level of cognition (revealed in automatic negative thoughts) and deeper cognitive structures such as basic assumptions, rules and schemas (Friedman and Thase 2006, Segal 1988, Young and Lindermann 1992). It has been proposed that such apparently illogical thinking during times of heightened emotion may have had evolutionary value (Friedman and Thase 2006). Specifically, cognitive distortions during periods of affective arousal tend to narrow one's focus of attention, simplify information processing, and intensify behavioral responses. Thus, the individual may be primed to respond decisively to the crisis at hand. This is consistent with recent findings that elucidate the neurocircuitry of brain fear pathways (distinct affective and cognitive pathways). LeDoux has shown that activation of the fear pathway causes a sequential activation of affective (limbic-amygdala branch) and cognitive (hippocampal-cortical branch) pathways. However, the affective pathway is shorter allowing activation milliseconds before the cognitive pathway. This primes the system with a sequenced affective/cognitive response to fearful environmental stimuli (LeDoux 1988).

Table 91–1 Common Patterns of Irrational Thinking in Anxiety and Depression

Cognitive Error	Definition
Overgeneralization	Evidence is drawn from one experience or a small set of experiences that reach an unwarranted conclusion with far-reaching implications.
Catastrophic thinking	An extreme example of overgeneralization, in which the impact of a clearly negative event or experience is amplified to extreme proportions, e.g., "If I have a panic attack, I will lose *all* control and go crazy (or die)."
Maximizing and minimizing	The tendency to exaggerate negative experiences and minimize positive experiences in one's activities and interpersonal relationships.
All-or-none (black or white, absolutistic) thinking	An unnecessary division of complex or continuous outcomes into polarized extremes, e.g., "Either I am a success at this, or I'm a total failure."
Jumping to conclusions	Use of pessimism or earlier experiences of failure to prematurely or inappropriately predict failure in a new situation; also known as fortune telling.
Personalization	Interpretation of an event, situation, or behavior as salient or personally indicative of a negative aspect of self.
Selective negative focus – "ignoring the evidence" "mental filter"	Undesirable or negative events, memories, or implications are focused on at the expense of recalling or identifying other, more neutral or positive information; in fact, positive information may be ignored *or* disqualified as irrelevant, atypical, or trivial.

Adapted from Beck et al. (1979).

Schemas represent the sum of one's beliefs and attitudes. They are the basic assumptions or unspoken rules that act as templates for screening and decoding information from the environment (Segal 1988, Wright and Beck 1983, Young and Lindermann 1992). Psychological wellbeing may be understood to represent the development of a set of schemas that yield realistic appraisals of self in relation to world (e.g., "I'm reasonably attractive, but looks aren't everything," "I can be loved under the right circumstances," or "I must work harder to compensate for an average intellect"). Although unspoken, schemas may be inferred from one's beliefs and attitudes. In the cognitive model, dysfunctional attitudes are the structural "bridge" between pathological schemas and automatic negative thoughts. Schemas pertaining to safety, vulnerability to threat, self-evaluation, one's lovability, and one's competence or self-efficacy contain the ground rules for personal behavior that are particularly relevant to the understanding of disorders such as anxiety, depression, or personality disorders (Segal 1988. Young and Lindermann 1992, Blackburn et al. 1986a, Beck et al. 1990). A number of schemas relevant to psychiatric illness are listed in Table 91–2. Bowlby has noted that most psychopathologically relevant schemas are developed early in life, when the individual is relatively powerless and dependent on caregivers (Bowlby 1985).

The cognitive model of psychiatric illness emphasizes the concept of stress-diathesis (Friedman and Thase 2006, Metalsky et al. 1987). From this perspective, a schema such as "I must be loved to have worth," might remain latent until activated by a relevant life stressor (i.e., a romantic breakup). Thus, being "dumped" by a romantic partner may trigger marked emotional response in a person with a "matching" schematic vulnerability but only a normal amount of sadness in someone with a healthier schema (e.g., "The fact that she dumped me means I'm worthless" versus "I am still a worthwhile person that someone else can love") (Hammen et al. 1989). Some schemas may be influenced by neurobiological factors. In panic disorder, exquisite sensitivity to neurobiological signals, such as the evolutionarily ancient "suffocation alarm," may simultaneously trigger noradrenergic arousal and fearful cognitions (Klein 1993). This combination may underpin the schema "I am weak and unable to cope with distress." In recurrent depression, neurobiological changes may exaggerate stress responsivity, undermine the individual's hardiness in the face of adversity, and dampen hedonic capacity (Wright and Thase 1992). As a result, the individual may develop the dysfunctional attitude "I am powerless to change my destiny."

Underlying schemas may be buttressed by either maladaptive or adaptive attitudes (e.g., "No matter how hard I try, I'm bound to fail" versus "I'm a survivor; if I just hang in there things will be okay"), but many of these cognitive structures have mixed features (Wright et al. 2003). Schemas such as "If I'm not perfect, I will fail" may lead to driven obsessional behavior, rigid attitudes and beliefs,

Table 91–2 Proposed Maladaptive Schemas

	Autonomy
Dependence	The belief that one is unable to function with the constant support of others
Subjugation-lack of individuation	The voluntary or involuntary sacrifice of one's own needs to satisfy others' needs
Vulnerability to harm or illness	The fear that disaster (i.e., natural, criminal, medical, or financial) is about to strike at any time
Fear of losing self-control	The fear that one will involuntarily lose control of one's own impulses, behavior, emotions, mind, and so on
	Connectedness
Emotional Deprivation	The expectation that one's needs for nurturance, empathy, or affect will never be adequately met by others
Abandonment-loss	The fear that one will imminently lose significant others or be emotionally isolated forever
Mistrust	The expectation that others will hurt, abuse, cheat, lie, or manipulate you
Social isolation/ alienation	The belief that one is isolated from the rest of the world, is different from other people, or does not belong to any group or community
	Worthiness
Defectiveness-unlovability	The assumption that one is inwardly defective or that, if the flaw is exposed, one is fundamentally unlovable
Social undesirability	The belief that one is outwardly undesirable to others (e.g., ugly, sexually undesirable, low in status, dull, or boring)
Incompetence-failure	The assumption that one cannot perform competently in areas of achievement, daily responsibilities, or decision-making
Guilt-punishment	The conclusion that one is morally bad or irresponsible and deserving of criticism or punishment
Shame-embarrassment	Recurrent feelings of shame or self-consciousness experienced because one believes that one's inadequacies (as reflected in the preceding maladaption schemas of worthiness) are totally unacceptable to others
	Limits and standards
Unrelenting standards	The relentless striving to meet extremely high expectation of oneself at all costs (i.e., at the expense of happiness, pleasure, health, or satisfactory relationships)
Entitlement	Insistence that one should be able to do, say, or have whatever one wants immediately

From Thase ME, Beck AT: An overview of cognitive therapy. In Wright JH, Thase ME, Beck AT, Ludgate JW (eds): Cognitive Therapy with Inpatients: Developing a Cognitive Milieu. New York: Guilford Press, 1992:9. Adapted from Young J: Schema-focused cognitive therapy for personality disorders. Unpublished manuscript, Cognitive Therapy Center of New York, 1987.

and frequent bouts of dysphoric or irritable moods. On the other hand, perfectionistic beliefs tempered by realistic expectations and actual achievement can also result in high levels of performance and success.

The concept of attributional style (Hammen et al. 1989) describes an alternative view of cognitive vulnerability. Derived from human studies of the learned helplessness paradigm, (Seligman 1975) attributional style refers to the characteristic way that people explain the causality, controllability, and impact of events. People susceptible to depression are more likely to have an attributional style in which negative events are perceived to be personally controllable (i.e., internality), far-reaching (i.e., globality), and enduring (i.e., stability) (Peterson et al. 1985, Abramson et al. 1989, Sweeney et al. 1986). There is an obvious parallel between the depressogenic attributional style of Abramson and colleagues (1978) and Beck's negative cognitive triad.

In general, studies of people suffering from depression and anxiety have confirmed that pathological information processing is an important part of these disorders. Negative automatic thoughts and cognitive errors have been found to be more common in depressed patients than in control subjects (Dobson and Shaw 1986, Blackburn et al. 1986b, LeFebvre 1981, Watkins and Rush 1983). Similarly, automatic thoughts concerning uncontrollability, threat, or danger have been documented in patients with high levels of anxiety (Kendall and Hollon 1989, Ingram and Kendall 1987). In clinical studies, depressed subjects also demonstrated elevated levels of dysfunctional attitudes (Blackburn et al. 1986b, Simons et al. 1984, DeRubeis et al. 1990), distorted attributions to life events (Abramson et al. 1978, Peterson et al. 1985, Sweeney et al. 1986, Zautra et al. 1985, Deutscher and Cimbolic 1990), and negatively biased responses to feedback (DeMonbreun and Craighead 1977, Rizley 1978, Wenzloff and Grozier 1988). Anxious individuals have been found to have an unrealistic view of the danger or threat in situations (Mathews and MacLeod 1987, Fitzgerald and Phillips 1991), an attentional bias toward threatening stimuli (Mathews and MacLeod 1987), and an enhanced memory for anxiety-provoking situations (Ingram and Kendall 1987, Cloitre and Liebowitz 1991.

Taken together, the results of these studies suggest that disturbances in information processing are essential features of depression and anxiety. Theoretical assumptions and treatment strategies for CBT of many other conditions, including the eating disorders, substance abuse, personality disturbances, and psychoses, have been articulated. The reader is referred to publications on these topics for descriptions of how the cognitive model can be adapted for treatment of a wide variety of psychiatric disorders (Beck et al. 1990, Linehan et al. 1993, Freeman et al. 1989, Beck et al. 1993, Wright et al. 1993, Kingdon and Turkington 1995, Wilkes et al. 1994, Beck and Emery 1985, Wright 2004). Specific applications of cognitive and behavioral treatment strategies are described later in the chapter.

Behavioral Model

The learning theories underpinning the behavioral therapies date to the work of Pavlov (Pavlov and Gantt 1928) and Skinner (1938). Voluminous laboratory research on learning in animals subsequently established certain lawful relationships in the acquisition and maintenance of behavior (Hull 1943, Mowrer 1947, Spence 1956). Moreover, demonstrations that abnormal or "neurotic" behaviors in animals could be either induced by repeated pairings of a noxious stimulus with a neutral one (i.e., classical conditioning) or shaped by controlling reinforcement schedules (i.e., operant conditioning) suggested that these

approaches were relevant to psychiatric illness as well (Watson and Rayner 1920, Masserman 1943, Skinner 1948, Wolpe 1952, Lindsley 1956).

By the late 1950s, there was considerable dissatisfaction with the medical and psychoanalytic models of psychopathological processes and treatment, particularly from within academic clinical psychology (Kazdin 1982). Such ferment was underpinned by the low levels of diagnostic reliability, even for well-established illnesses such as schizophrenia, (Kanfer and Saslow 1965, Mischel 1968) as well as by the lack of evidence supporting the effectiveness of psychodynamic psychotherapy (Eysenck 1952, Zubin 1953). Moreover, the revolution that has become modern psychopharmacology was still in its infancy and no alternative paradigm at the time had adequate scientific currency. The behavioral therapy movement was thus born, emphasizing the use of scientific principles of investigation with a focus on learned and measurable behaviors (Kazdin 1982, Beck et al. 1990). Further demonstrations of the utility of operant conditioning (i.e., behavior modification experiments in institutionalized, chronically mentally ill patients by use of contingent reinforcement or extinction (Ayllon and Azrin 1968, Ullmann and Krasner 1965) and counter-conditioning treatment of anxiety disorders (such as systematic desensitization (Marks and Gelder 1965, Paul 1966) triggered a surge of enthusiasm for these more objective treatment methods. By the late 1970s, behavioral therapy had become the most academically influential model of treatment outside of the medical setting (Kazdin 1982, Beck and Emery 1985).

The behavioral model is based on the relatively straightforward "chain" of events and responses illustrated in Figure 91–3. Through the years, considerable effort and debate have concerned whether stimulus-response and response-reinforcement relationships could be invoked to account for the complexity of human behavior (Kazdin 1982, Staats 1964). In its maturity, behavioral therapy has broadened beyond an exclusive focus on observable behaviors (i.e., radical behaviorism) and now incorporates cognitive processes and other individual variables that affect learning (Bandura 1977a, Goldfried and Davison 1994). For example, in observational learning, the stimulus-response contingency relationship is established vicariously, by watching, reading about, or imagining the event in question. Reinforcement does not have to take place explicitly; it may occur vicariously, or it may simply be imagined. Other factors, such as the individual's past history, inherent talents, or skillfulness of his or her pertinent response repertoire, help account for the wealth of inter-individual variability in stimulus-response relationships. Bandura's cognitive–behavioral formulation of self-efficacy is one example of a "mental" construct that has abiding behavioral implications. This modifiable attitude or belief (roughly akin to self-confidence) influences persistence, willingness to try new things, optimism, and capacity to endure setbacks (Bandura 1977b).

One of the most important enduring experimental models of depression (learned helplessness) is the direct descendant of studies of animal learning (Seligman 1975, Maier and Seligman 1976, Miller and Seligman 1975). Learned helplessness is a state of behavioral passivity and apparent apathy induced by repeated exposure to noxious, yet inescapable, stimuli. The learned helplessness paradigm is based on a modification of escape or avoidance conditioning. A wide variety of species, ranging from goldfish to humans, can readily learn to avoid or escape from a setting when given advance notice (i.e., a light or tone) of an impending noxious event (i.e., a painful shock) (Maier and Seligman 1976). However, when escape is impossible (e.g., a dog is harnessed, or the walls of the experimental box are too high to be scaled), the animal is observed to be passive and inactive. During such "helplessness training," the animal's affect and behavior shift progressively from a state of apprehensive arousal (perhaps similar to human anxiety?) to one that may be analogous to depression. After repeated pairings, the animal will become unable or unwilling to escape from the stimulus when unharnessed. The parallels to human experiences are obvious, although it is not known if the animal cognates helpless thoughts ("It won't work… why bother to try…I'm better off just to be still") (Oakes and Curtis 1982). Nevertheless, neurochemical and pharmacological studies underscore the phenomenological similarities between learned helplessness and depression (Weiss and Simson 1985, Willner 1991). Further, "helpless" dogs can be retrained to escape with techniques much like those used in behavioral therapy (Klein and Seligman 1976).

Figure 91–3 *Chain of events.*

Over the past decade, several researchers have attempted to distinguish the extent to which the behavioral components of CBT are responsible for its therapeutic effect. The BA approach derives from the work of Ferster (1973), Lewinsohn (1974) and Rehm (1977). They hypothesized a link between avoidant (and withdrawal) behavior and the maintenance of depression. They recommended activation strategies that undermine avoidance, reduce antidepressant reinforcers, and increase positive reinforcement from the environment (Dimidjian et al. 2006). Recently, Dimidjian and colleagues (2006) described an "expanded BA model" that included increased focus on assessment and treatment of avoidance behaviors, the establishment/maintenance of regular routines, and behavioral strategies for targeting rumination. This latter strategy emphasizes the functional impact of ruminative thinking and moves away from the analysis of content toward a focus on direct, immediate experience (Dimidjian et al. 2006).

Cognitive and Behavioral Treatment Strategies

The cognitive and behavioral therapies are well known for their use of specific treatment techniques. Commonly used CBT procedures are directly linked to the theoretical constructs and empirical research of this school of therapy. Although techniques are given somewhat more emphasis in CBT than in some other forms of psychotherapy, there is still considerable room for therapists to be creative and flexible in developing a treatment plan. In fact, novice therapists sometimes focus too much on applying techniques at the expense of nurturing the therapeutic alliance and case formulation (Rush and Beck 1995). Development of a productive therapeutic relationship and an individualized case conceptualization should always take precedence over the implementation of specific cognitive or behavioral

techniques. A number of the more important CBT strategies are described briefly here. More detailed accounts of CBT interventions can be found elsewhere (Beck et al. 1979, Beck 1995, Barlow and Cerny 1988, Freeman et al. 1989, Persons 1989).

Collaborative Empiricism

As in all effective psychotherapies, the therapeutic relationship is important in CBT. However, interchanges between therapist and patient often differ from those observed in supportive or dynamically oriented treatment. One difference is that the therapist is responsible for managing the pace of the session. Using and adhering to an agenda makes each session as efficient as possible. Another difference is that CBT therapists adopt a therapeutic relationship that emphasizes: 1) a high degree of collaboration and 2) a scientific attitude toward testing the validity or usefulness of particular cognitions and behavior. This therapeutic stance is referred to as collaborative empiricism. The empirical nature of the relationship reflects that therapist and patient work together as an investigative team to develop hypotheses about cognitive or behavioral patterns, examine data, and explore alternative ways of thinking or behaving. At first, therapists usually spend more time teaching and explaining in CBT than in other forms of therapy, yet in the course of therapy, patients are actively engaged to become increasingly involved in the direction and the work of treatment.

Critics of CBT sometimes suggest that the patient-therapist relationship is compromised by the therapist's attempt to "replace" negative thoughts with positive ones. One jaded senior colleague referred to CBT as a "feel good therapy," and another stated that CBT's unspoken strategy was to teach people to lie to themselves. CBT *is* a cautiously optimistic therapy, but effective therapists do not use a "Pollyanna" approach to treatment. The data demonstrating CBT's efficacy, discussed below, is the basis for our prognostic optimism. The collaborative empirical stance requires that the therapist and patient work together to honestly appraise the validity of cognitions as well as of the adaptive or maladaptive aspects of beliefs and behaviors. If a negative assessment proves to be accurate (e.g., the patient actually has made serious mistakes, the individual's spouse is highly likely to leave, or the patient has engaged in a repetitive self-defeating behavior pattern), then the therapist and patient need to work together in a problem-solving mode to develop a plan to cope with the problems at hand or practice more adaptive strategies for use in the future.

Wright and Beck, and others, have recommended several strategies for enhancing collaborative empiricism (Wright et al. 2003, Clark et al. 1999). These include: 1) adjusting the therapist's level of activity to match the patients' symptom severity or the phase of treatment; 2) encouraging the use of self-help procedures; 3) attending to the "nonspecific" variables important in all therapeutic relationships (e.g., empathy, respect, equanimity, kindness, and good listening skills); 4) promoting frequent two-way feedback; 5) devising coping strategies to help deal with real losses or implementing a plan of action to address maladaptive behavior; 6) recognizing transference phenomena; 7) customizing therapeutic interventions; and 8) using humor judiciously. It is also important to recognize and account for the wide variety of individual differences in cultural backgrounds, social attitudes, and expectations that each patient brings to the therapy encounter (Wright and Davis 1994).

Psychoeducation

Most forms of CBT integrate explicit psychoeducational procedures as a core element of the treatment process. Psychoeducational procedures are typically blended into treatment sessions in a manner that de-emphasizes formal teaching. There is a concerted effort to teach the patient *why* it is important to challenge automatic thoughts, identify cognitive errors, and practice implementing a more rational thinking style. Behavioral interventions are also preceded by psychoeducation to convey the background for principles such as extinction, reinforcement, self-monitoring, exposure, and response prevention.

There are a number of ways in which therapists employ psychoeducation in CBT. Perhaps the most important is the demonstration of basic concepts, which usually begins in the first therapy session (Beck et al. 1979, Thase and Wright 1991). Patients are more likely to grasp and implement therapy concepts when cognitive–behavioral principles are applied to situations that are personally significant. On occasion, therapists may give "mini-lectures," (Epstein et al. 1988) but an interactive and guided method of instruction, called Socratic questioning usually predominates (Beck et al. 1979, Overholser 1993a, 1993b, 1993c).

In the early phases of treatment, special attention is paid to socializing the patient to CBT. The basic cognitive-behavioral model is demonstrated, and expectations for both patient and therapist are conveyed. Some of the frequently used psychoeducational procedures in CBT include brief, impromptu explanations (often written on a chalkboard or a pad of paper to increase the chances of comprehension and retention) and reading assignments (bibliotherapy), such as *Coping with Depression* (Beck and Greenberg 1974), *Feeling Good* (Burns 1980), or *Mind Over Mood* (Greenberger and Padesky 1995), or *Getting Your Life Back* (Wright and Basco 2001). Psychoeducational initiatives typically become more complex as therapy proceeds. For example, detailed explanations and repeated exercises may be needed before the patient fully grasps abstract concepts such as attributional style or schemas. As therapy progresses, homework assignments continue to explicitly reinforce and expand upon material covered during therapy sessions.

As in other forms of learning, individual differences in homework compliance may influence the progress of therapy. For example, some evidence suggests that homework compliance is correlated with treatment outcome (Whisman 1993, Burns and Spangler 2000). We have found that homework compliance is influenced partly by the therapist's consistency, enthusiasm, and ability to integrate the assignments into the treatment plan.

Because psychoeducation can be time consuming and is a routine part of therapy, several investigators have developed computer programs that provide education on cognitive therapy, encourage homework completion, and actively involve patients in self-help exercises. One of the earliest programs, developed by Selmi and coworkers (1990, 1991), was found to be efficacious in the treatment of depression. Although this software relies completely on

written text for conveying information and is not available for clinical use, it demonstrated the potential benefits of computer tools for CBT. More recently, Wright and coworkers (1995, 2002, 2005) have introduced a multimedia form of computer-assisted CBT ("Good Days Ahead") that uses full screen video and vivid graphics to engage users in the learning process. Research with this program has demonstrated strong effects on learning, high levels of acceptance by patients, and evidence for efficacy in the treatment of depression (Wright et al. 2002, 2005). Marks and coworkers (Shaw et al. 1999, Kenwright et al. 2001) have been using a text-based computer program (Fear Fighter) in Great Britain for treating anxiety disorders with exposure therapy. This group has reported significant increases in treatment efficiency when the computer program is used to provide psychoeducation and involve patients in exposure protocols (Kenwright et al. 2001). The use of computers as treatment adjuncts has been reviewed in several publications (Locke and Rezza 1996, Wright and Wright 1997, Wright 2004). Computer-assisted treatment is still in the early stages of development, but there appears to be considerable potential for using these new technologies to augment the process of psychotherapy.

Modifying Automatic Thoughts

The first step in changing automatic thoughts is to help the patient recognize when she or he is having them. The therapist is often able to illustrate the presence of automatic negative thoughts during the initial session by gently calling attention to a change in the patient's mood. Such "mood shifts" can be excellent learning experiences that give personally relevant illustrations of the linkage between cognitions and feelings. Use of a mood shift to identify automatic thoughts is illustrated in the following interchange.

> ***Therapist:*** *I noticed a moment ago that your mood appeared to change. All of a sudden, you looked very sad. Do you mind if we talk about what was going through your mind?*
> **Patient:** No…but I'm not really sure what you mean…I guess I just felt that this therapy might be too hard to handle.
> **Therapist:** *I'd like to make a distinction between what you thought and what you felt. It looked like you were sad. Am I right? (patient nods) And, at about that time, you had the thought that this therapy might be too difficult? (patient nods) This could be an example of what we call a negative automatic thought. Let's spend a few minutes to see if it is one, and if so, what it might mean.*

One common misconception of CBT is that its practitioners disregard the role of affect or feelings in the etiology and treatment of psychiatric disorders. Actually, one of the principal components of CBT is the stimulation and modulation of emotion (see, for example, Figure 91–1). In fact, Beck referred to emotion as "the royal road to cognition" (Beck 1991). In contrast to experiential therapies, variations in emotion are used in CBT to establish links with cognition and identify errors in information processing. Getting in touch with feelings is thus not a goal in CBT but only a means by which therapy helps patients to gain greater control over the processes that influence their moods and behaviors.

Socratic Questioning

The most frequently used technique to uncover and modify automatic negative thoughts is Socratic questioning (or guided discovery) (Beck et al. 1979, Overholser 1993a, 1993b, 1993c). Socratic questioning teaches the use of rationality and inductive reasoning to ascertain whether what is thought or felt is actually true. The therapist models the use of Socratic questioning and encourages the patient to start raising questions about the accuracy and validity of his or her thinking. There are few formal guidelines for Socratic questioning (Overholser 1993a). Rather, therapists learn to use their experience and ingenuity to frame good questions that engage the patient in a process aimed at recognizing and modifying a biased or distorted cognitive style. Typical questions include: What ran through you mind at that time? What is the evidence that your impression is accurate? Could there be any alternative explanations? If this were true, what would be the worst thing that would happen? When guided discovery methods are not sufficient to draw out automatic thoughts, the therapist may turn to several alternative ways of eliciting dysfunctional cognitions, as described in the following.

Imagery Techniques and Role-Playing

Imagery techniques and role-playing are used when direct questioning does not fully reveal important underlying cognitions. When imagery is used, the therapist sets the scene by asking the patient to visualize the situation that caused distress. Although some patients can readily imagine themselves in a previous scene, many need prompts or imagery induction to encourage their active participation in the exercise. Several types of questions can be used to help frame the scene. These include inquiries about (1) the physical details of the setting, (2) occurrences immediately before the interaction, and (3) descriptions of the other people in the scene (Wright et al. 2003). In role-playing exercises, the therapist and patient act out an interpersonal vignette to uncover automatic thoughts or to try out a revised pattern of thinking. This technique is used less frequently than imagery by most cognitive–behavioral therapists and may be reserved for situations in which transference distortions are unlikely (Wright et al. 2003).

Thought Recording

Thought recording is one of the most useful procedures for identifying and changing automatic thoughts. This technique is first presented in relatively simple two- or three-column versions in the early stages of therapy. When the two-column procedure is used, patients are instructed to write down events in one column and thoughts in the other. Alternatively, they can record events, thoughts, and emotions in the three columns. The purpose of this exercise is to encourage patients to begin to use self-monitoring to increase awareness of their thought patterns. Next, the strength of the emotion and the believability of the automatic negative thoughts are rated on a scale of 0 to 100. In subsequent sessions, a more complex five-column thought record, the thought change record (TCR) is introduced (Figure 91–4). The fourth column of the TCR

Date	Event	Automatic thoughts	Emotions	Rational thoughts	Outcome
	a. Describe actual event preceding unpleasant emotion or b. Stream of thoughts, daydream, or memories preceding unpleasant emotion.	a. Write automatic thought(s) that led to emotion(s). b. Rate of belief in automatic thought(s), 0–100%.	a. Specify sad, anxious, angry, tense, and so on. b. Rate degree of emotion, 0–100.	a. Identify cognitive errors. b. Write rational response to automatic thought(s). c. Rate belief in rational response, 0–100%.	a. Specify and rate subsequent emotion(s), 0–100.
1/30/95	My boss asks for a progress report.	I'm in big trouble. (85) I can't handle this job. (90) I've messed everything up. (95)	Anxious (95) Sad (80)	Magnification, ignoring the evidence, overgeneralization. I'm slightly behind schedule, but I can catch up. (95) I've had a good track record with this job. (100) I'm doing O.K. in some other areas of my life. (95)	Anxious (40) Sad (20)
	My son comes home late from a party.	Nobody listens to me. (90) He doesn't care. (75) What's the use of trying? (80)	Angry (75) Sad (85)	All or none thinking, ignoring the evidence, personalizing. My son pays attention a fair amount of the time, but he doesn't always do what I want. (90) There's plenty of evidence that he cares about me. (100) We need to improve how we communicate. (95) I need to tell him that I'm angry. (100)	Angry (30) Sad (25)

Figure 91–4 *Daily record of dysfunctional thoughts.*

encourages the patient to develop rational alternatives that rebut the automatic negative thoughts; the fifth column used for a reevaluation of the mood and cognitive ratings. Work on identifying cognitive errors can also be included in this form of thought recording.

Examining the Evidence

The examining the evidence procedure is a collaborative exercise used to test the validity of automatic negative thoughts. Cognitions are set forth as hypotheses rather than established facts. The patient is encouraged to write down evidence that either supports or refutes the automatic thought using a two-column form (i.e., pros and cons). For example, examining the evidence for the automatic thought "everyone always looks down on me" might reveal data in support of both sides of the question. It is likely that the patient will recall many times when he or she felt looked down on, treated disrespectfully, or criticized unfairly. On the other hand, it would be virtually impossible that others *always* perceive the individual in this way. Specific evidence of good job performance, positive relationships with relatives and friends, and successes in school or recreational activities may then be used to help counterbalance the patient's negatively biased and overgeneralized automatic thought. More ambiguous examples may also be revealed in which the evidence does not clearly point in one direction or the evidence is not clear. In these situations, the therapist may suggest homework to collect additional information. Cognitive errors such as overgeneralization, catastrophic thinking, maximizing or minimizing, personalization, and all-or-nothing thinking are frequently revealed in these situations (see Table 91–1).

Next, the therapist helps the patient to revise the automatic negative thought in light of the evidence (e.g., "I *often* feel inferior to others, even when there's no good evidence that I should feel that way" or "I have had a number of difficulties with my teachers and employers, but not all relationships have been bad and some have been very good"). The process thus moves from the patient's general and globally negative interpretations to more specific, factually based statements.

When an honest appraisal uncovers evidence in support of negative cognitions, the therapist may choose to focus on the patient's attributions of causality or internality. The patient who posits a negative attribution for poor work evaluation (e.g., "My performance was poor because I don't have what it takes") can usually be aided to consider a more neutral attribution (e.g., "My performance was poor because I was not prepared . . . my depression and lack of motivation contributed to this too"). The treatment plan may also be revised to develop better methods of coping in similar situations or to work on ways of remediating skill deficits. Sometimes, particular difficulties cannot be changed (e.g., physical handicaps,

markedly unattractive physical looks, or severe financial limitations). A trainee once remarked to one of us, "I'm not sure that CBT is the right treatment for my patient. He really is ugly and dumb, and as far as I can tell, no one has ever loved him!" Before turning supervisory attention to the patient's problems, the therapist-in-training was engaged in a guided discovery exercise to clarify his assumptions and beliefs about the essential importance of physical beauty, intelligence, and romantic love. Subsequently, the patient was able to address these issues successfully in therapy as well.

Generating Alternatives

If automatic thoughts prove to be largely dysfunctional, the patient is encouraged to generate alternatives that are more accurate or factual. Many of the techniques discussed earlier can be used to help generate alternatives to automatic thoughts. Socratic questioning is used in therapy sessions to help the patient start to think more creatively. Also, psychoeducational procedures may be employed to teach brainstorming techniques. For example, the patient may be taught to use "expert testimony" or the opinions of someone who knows her or him well (i.e., a sibling, spouse, or best friend) to help develop less emotional and more rational alternatives. Thought records are often used to record alternatives to automatic thoughts. We often encourage patients to collect their thought records in notebook form for ongoing use. Figure 91–4 illustrates the use of rational alternatives during CBT for a depressed patient.

Many patients with depression, anxiety, and related conditions have relatively rigid cognitive styles that perpetuate dysfunctional thought and behavior patterns. For example, an individual who was given the homework assignment of challenging the automatic negative thought "I am a loser" presented the "realistic alternative" that "whenever I start thinking about how I'm a loser, I will force myself to stop thinking about it". These thoughts about thoughts tend to undermine the credibility of the rational responses and may dampen the patient's enthusiasm for using the procedure. The therapist may notice a particular facial expression or a change in the patient's posture that suggests the existence of second-order thoughts. In such cases, more active therapeutic assistance may be needed. For example, the therapist may need to act as a teacher or coach in the area of adaptive cognitive functioning, rapidly rebutting automatic thoughts as they arise. Coping cards, which are index cards with helpful reminders on the use of CBT methods (in this case, rational responses to repetitive automatic negative thoughts), may be written during sessions and carried by the patient in his or her pocket, wallet, or purse for later use.

Cognitive–Behavioral Rehearsal

Cognitive–behavioral rehearsal is a treatment strategy that is particularly useful for preparing patients to put their experiences in CBT to work in real-life circumstances. After automatic thoughts have been elicited and modified through procedures described before, the therapist guides the patient in a series of rehearsal exercises to try out alternative cognitions in a variety of situations. By using imagery and role-playing scenarios to practice generating more adaptive cognitions, the patient may become aware of problems that could interfere with implementation of the new style of thinking. Further practice and targeted homework assignments may then be needed before alternative cognitions can be fully used. For example, the effects of cognitive–behavioral rehearsal may be extended to real situations by assigning homework to test use of the modified automatic thoughts.

Modifying Schemas

The emphasis in the early phases of therapy is usually on behavioral activation, identifying and changing automatic thoughts, and the reduction of symptoms. However, as the patient gains knowledge of cognitive–behavioral principles and acute symptoms begin to subside, the focus of the treatment sessions usually shifts toward work on the schema level. Schemas are relatively stable cognitive patterns that are the product of one's beliefs, attitudes, and behavioral responses. Because schemas serve as underlying templates for the processing of new information, they play a major role in the modulation of more superficial cognitions (automatic thoughts), regulation of affect, self-esteem, and control of behaviors. Thus, schema modification is an important component of cognitively oriented therapies.

With Axis I disorders such as major depressive disorder and panic disorder, schema revision efforts are directed at correcting dysfunctional attitudes that may predispose the patient to symptomatic recurrences. After several months of productive therapy, schema modification may be placed in the context of reducing future vulnerability. CBT of personality disorders typically requires that a major portion of therapy be devoted to modifying schemas and related patterns of behavioral dysfunction (Beck et al. 1990). When schematic work cannot be fully addressed in time-limited therapy, the model of ongoing change may be introduced. Thus, the patient may begin to change her or his "life course" by development of a long-term self-help plan. Jarrett has proposed continuation and maintenance phases of CBT treatment of depression, and she argues for focusing on schema change in these phases of treatment if it is not accomplished in the acute phase of treatment (Jarrett et al. 2001).

Many of the techniques used to test and modify automatic thoughts are also used to identify and revise schemas. Psychoeducational interventions are usually required as a first step. Most patients are not aware of their "guiding principles," so the therapist may need to begin by introducing and illustrating this concept. It is often useful to review the connection between automatic negative thoughts, basic assumptions, core beliefs, personal rules, and behavior patterns using material from the patient's own experience (Wright et al. 2003). Socratic questioning is the core procedure used for schema modification (Beck et al. 1979, Overholser 1993c).

The downward arrow technique (Figure 91–5) is a particularly powerful way to move from surface cognitions to deeper cognitive structures (Friedman and Thase 2006). This technique describes asking the patient a question such as: "If this automatic thought were true, what would it mean about you as a person?" Another useful approach is to examine patterns of automatic thoughts from thought records to sort out common themes. The therapist may suggest themes based on her or his knowledge of the patient's

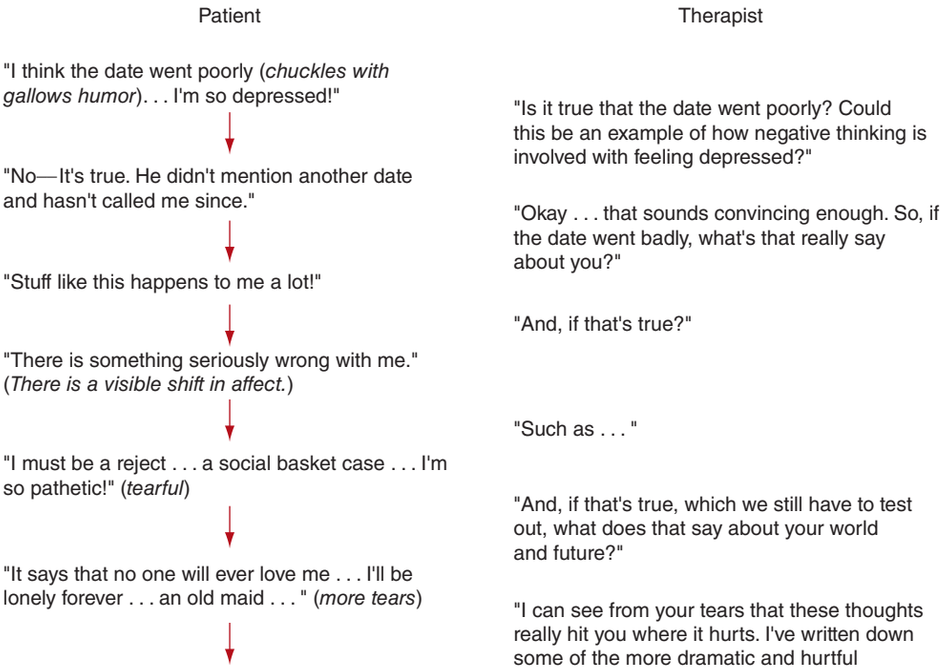

Figure 91–5 *The downward arrow technique.*

automatic negative thoughts. In some situations, it may be helpful to have patients review a description of common pathological schemas to recognize some of their core beliefs (see Table 91–2). On occasion, it may be useful to have the patient write a brief autobiography to help elucidate the historical antecedents of the schema. Computerized learning programs can also be employed to help patients uncover their schemas and may be particularly useful in teaching patients how to change core beliefs (Wright et al. 2002, 2005). A study comparing computer-assisted cognitive behavior therapy (CCBT) with standard CBT found that depressed persons treated with CCBT had statistically greater change in dysfunctional attitudes than those treated with standard CBT (Wright et al. 2005).

Because schemas are so strongly held (in essence, they have helped define reality and mold behavior for years), they may require intensive work in a number of therapy sessions to undergo significant change. Sometimes long-term continuation and maintenance CBT is required to accomplish schematic restructuring. Therapists can select from a number of CBT techniques, including examining the evidence, listing advantages and disadvantages, generating alternatives, cognitive response prevention, and cognitive–behavioral rehearsal, as they attempt to modify schemas (Wright et al. 2003). Examining the evidence, generating alternatives, and cognitive–behavioral rehearsal were described earlier as methods of changing automatic thoughts.

Cognitive Response Prevention

In cognitive response prevention, the patient agrees to complete a homework assignment in which she or he must behave in a way that is inconsistent with the pathological schema. For example, a person with perfectionist attitudes may be assigned a task in which she or he must perform in a "so-so" manner. This is intended to activate the schema that is triggering automatic negative thoughts (e.g., "They'll think I'm a sloth" or "I'll never be trusted with an important assignment again"). By not responding to the perfectionist demands dictated by the schema, the individual, thus, has the opportunity to cope with the automatic negative thoughts consequent to this "rule violation."

Listing Advantages and Disadvantages

The listing advantages and disadvantages procedure is particularly useful when a schema appears to have both adaptive and maladaptive features. Schemas that have damaging effects are often maintained because they also have a positive side. For example, the schema "I must be perfect to be accepted" can have significant benefits (e.g., hard work and attention to detail often lead to success in work or school). Nevertheless, because perfection is seldom possible, the individual may remain vulnerable to setbacks. Other schemas, such as "I'm a complete loser," may not seem to have any advantages at first glance. However, even such a markedly negative basic assumption can reinforce other behaviors associated with it. For example, a person who believes that he or she is a loser may avoid making commitments, withdraw from challenging assignments, or refuse to exert a sustained effort to solve a difficult problem. This strategy may thus protect the person from painful setbacks at the expense of achieving successes. The advantages and disadvantages analysis provides the patient and therapist with essential information for planning modifications. Schemas are most likely to be revised when they take into account both the maladaptive and the adaptive features of the old basic assumption.

In general, it is recommended that patients keep a list of the schemas as they have been identified. The schema

list helps to focus the patient's attention on the overarching nature of these maladaptive principles. Because schemas often become manifest only during periods of increased stress or symptom expression, they may appear to fade in significance as the patient begins to improve. For example, behavioral treatment programs that neither endorse nor aim to modify schemas are generally as effective as CBT in the short run. However, there may be a false security engendered by symptom relief. The cognitive model posits that the individual will remain vulnerable to the depressogenic impact of "matching" life events unless schema revision is accomplished (Friedman and Thase 2006).

Behavioral Techniques

In CBT, behavioral methods are usually integrated with cognitive restructuring in a comprehensive treatment plan. Behavioral strategies may be given a greater emphasis earlier in therapy with more severely symptomatic patients such as those with intense depression, bipolar symptoms, or schizophrenia (Beck et al. 1979, Thase and Wright 1991, Kingdon and Turkington 1995, Basco and Rush 1996, Scott and Wright 1997). Some cognitive-behavior therapists may rely primarily on behavioral interventions for conditions such as obsessive-compulsive disorder (OCD) or simple phobias. Commonly used behavioral strategies are described here in alphabetical order.

Activity Scheduling, Graded Tasks, and Mastery-Pleasure Exercises

Depressed people may spend excessive amounts of time alone or have tangible reductions of pleasurable activity. One of the earliest behavioral formulations of depression viewed the disorder as an "extinction state" resulting from the loss of reinforcers (Ferster 1973). Neurobiological changes accompanying prolonged stress may also dampen hedonic capacity, which in turn reduces the salience of reinforcers (Weiss and Simson 1985, Willner 1991). Thus, the learned helplessness paradigm brings together behavioral and neurobiological domains. Depressed operant (i.e., goal-directed) behavior may elicit negative cognitions as well (Teasdale 1983). For example, depressed people often procrastinate against performing potentially "overwhelming" chores or tasks. Procrastination, in turn, elicits guilty thoughts and self-criticisms. Moreover, the depressive cognitive state increases the likelihood that individuals will minimize the positive value of the activities they are able to complete. As a result, it may also be said that depressed people suffer from a deficit of self-reinforcement (Rehm 1977).

One key to the behavioral approach for treatment of depression is the interruption of the downward spiral linking mood, inactivity, and negative cognition (Beck et al. 1979, Lewinsohn et al. 1982) (Figure 91–6). Completing an activity schedule is often the first behavioral homework assignment used in CBT (Beck and Greenberg 1974). Depressed patients are asked to begin to keep a daily log that is used to chart the relationship between their moods and their activities (Figure 91–7).

The nature of the activities is examined, and deficits in activities that might elicit pleasure or feelings of competence are identified. Next, assignments are made to engage in discrete pleasurable activities (or, in the case of an anhedonic individual, activities that were rewarding before becoming depressed). If needed, a Pleasant Events Schedule can be used to identify a "menu" of reinforcers (Lewinsohn et al. 1982). Following operant principles, activities that have been "high-grade" reinforcers in the past are scheduled during times of low moods or decreased activity. Next, subjective ratings of mastery or competence and pleasure are added to the activity schedule by use of a simple scale (i.e., 0 to 5), to avoid the tendency of dichotomous thinking. In this way, achieving a small degree of pleasure or mastery during a scheduled activity may be framed as an accomplishment, particularly early in the course of therapy.

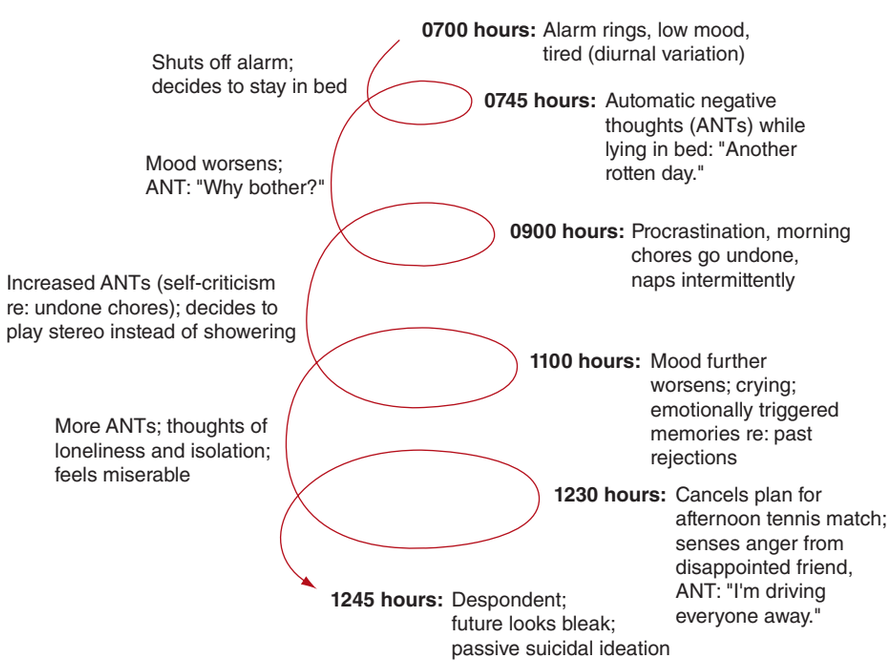

Figure 91–6 *The downward spiral: interaction of affect, behavior, and cognition in severe depression. ANTs, Automatic negative thoughts.*

Note: Grade activities **M** for mastery and **P** for pleasure

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
AM 6:00 6:30							
7:00 7:30							
8:00 8:30							
9:00 9:30							
10:00 10:30							
11:00 11:30							
PM 12:00 12:30							
1:00 1:30							
2:00 2:30							
3:00 3:30							
4:00 4:30							
5:00 5:30							

Mastery, accomplished, achieved something
Pleasure, fun, amusement, enjoyment

Scale: 0–5; 0, none, 5, most

Figure 91–7 *Weekly activity schedule.*

The activity schedule may also be used, prospectively, to begin to tackle overdue chores or other dreaded activities. The graded task approach is based on the premise that in a depressed state, many normal activities are indeed too demanding for depressed patients to complete according to their usual standards or with their characteristic efficiency. Thus, the task is broken down into units or components. The first homework assignment is typically to identify and complete a minimally acceptable initial step. For example, a depressed businessman had concealed from his family that he was 6 months behind in paying their income taxes. When he tried to tackle the project, he thought, "I'm too tired to do it now…I can't concentrate on this stuff…I'll get more depressed if I try and fail." These cognitions were so discouraging that he invariably postponed working on the taxes. As a result, he felt some relief immediately (a reinforcer for procrastination). However, within minutes he was plagued by automatic negative thoughts about the implications of putting off such an important task yet again. He also had shameful thoughts about what his family or friends would think about him when his secret was discovered. In this case, the man estimated that the task would require at least 10 hours *if he were well*. He also estimated that he had only about 50% of his normal energy and ability to concentrate. Therefore, 20 hours of work was planned in small blocks spaced out for the next 20 days. The first assignment was for the man to spend only 15 minutes organizing the forms necessary to do the overdue income taxes. The use of self-instruction and visual imagery can help patients to initiate action, and self-reinforcement after completion of each step furthers therapeutic momentum.

Breathing Control

An important component of CBT for anxiety disorders involves teaching the patient breathing exercises that may be used to counteract hyperventilation and/or reduce tension (Clark et al. 1985). Slow, deep breathing can have a calming effect not unlike progressive muscle relaxation (Bernstein and Borkovec 1973). These exercises also help to distract the patient from autonomic cues. After initial instruction and practice, the breathing skills are then applied anxiety-provoking situations of increasing intensity.

A note of caution is in order when teaching patients breathing control exercises. We have seen many patients who have misunderstood instructions and who have developed a pattern of overly deep breathing in response to stress. Instead of reducing anxiety, their breathing changes may increase the likelihood of hyperventilation. Thus, we typically recommend teaching patients about the pace and form of normal breathing patterns. Next clinicians can model normal, calm breathing as compared to rapid breathing typical of an anxiety attack. A second hand of a watch can be used to time breaths to slow them to a normal rate. Positive, calming images can also be used to reduce anxiety during the breathing exercises. Finally, we suggest that

patients regularly practice breathing exercises to reinforce their mastery of this anxiety management technique.

Contingency Contracting and Behavior Exchange

These strategies use the principles of operant conditioning (Skinner 1938) to modify the probability of occurrence of either undesired or desired behaviors. Malott and colleagues (1993) have written an excellent introduction to these methods. One key to applied behavioral analysis is understanding the control over the contingencies or reinforcers. Another important factor is that the terms of the contract are negotiated and should be specific and relatively straightforward. The positive contingency or reinforcer should be desirable and available shortly after the terms of the contract have been met. A paycheck is a good example of a contingency contract. Another common strategy is to chain, or pair, a high-frequency behavior (e.g., reading, watching television, or listening to music) to a low-frequency one (e.g., doing paperwork, doing housework, spending time with the children). Contingencies should generally start out relatively "rich" (e.g., 1 hour of video game time after 15 minutes of paperwork) and may be progressively "thinned" in time (Malott et al. 1993). Punishments or "response cost" contingencies are less widely used because of their negative affective responses (Azrin and Holz 1966).

Behavior exchange contracts are used with couples or families. For example, a distressed couple may voice dissatisfaction about two distinctly different behavioral tendencies, as illustrated.

> ***Partner 1:*** *You never help me out around the house.*
> **Partner 2:** That's not true, I'm always pitching in. My problem is that on the weekends you never want to go out and have fun.
> ***Partner 1:*** *That's partly true…but if I wasn't so sick and tired of being stuck with all the housework, maybe I'd feel more like going out.*

Rather than join the debate to ascertain which partner is right about what, the therapist suggests a contract to objectify the communication and increase the likelihood of mutually rewarding experiences. The contingencies used in the contract represent an exchange of desired behaviors. In the example, partner 1 desires assistance with specific household tasks (e.g., wash the dishes, fold the laundry). A desired frequency is also determined (e.g., nightly). For partner 2, a weekend outing is specified, and a mutually acceptable activity is chosen. The contract is written and signed by both parties and the therapist. Consequences for nonadherence may also need to be formulated.

Behavioral contracts may be particularly useful for assisting patients with medication adherence. For example, the therapist may help the patient identify barriers to taking medication as prescribed and then work out behavioral solutions that are written in contract form. Behavioral methods may include pairing medication taking with routine activities such as brushing teeth or meals, reminder systems, and reinforcement from significant others. We recommend explicit discussion of adherence problems and mutual agreement on a plan for taking medications when patients have difficulty in following the pharmacotherapy plan.

Desensitization and Relaxation Training

Systematic desensitization (Wolpe 1958) was one of the first behavioral strategies to gain wide acceptance. Systematic desensitization relies on exposure through a progressive hierarchy of fear-inducing situations. This procedure may use pairing of progressive deep muscle relaxation and visualization of the target behavior to decondition fearful responses. Systematic desensitization is useful for treatment of simple phobias, social phobia, panic attacks, and generalized anxiety (Wolpe 1982). Some evidence suggests that the active ingredient of systematic desensitization is exposure to the feared situation, first in imagination and later in reality, rather than an actual counterconditioning through the relaxation response (Kazdin and Wilcoxin 1976). Progressive deep muscle relaxation is also useful as a self-directed coping strategy and for treatment of sleep-onset insomnia (Goldfried and Davison 1994, Bernstein and Borkovec 1973).

Exposure and Flooding

The purpose of these strategies is to speed extinction of conditioned fear or anxiety responses. Behavioral theory dictates that fearfulness is reinforced by avoidance and escape behaviors (Rachman et al. 1986). Because the basis of the fear or phobia is irrational, the optimal strategy is to increase exposure to the feared activity without aversive consequences. In obsessive-compulsive disorder, the ritualistic behavior (e.g., hand washing or checking) is hypothesized to be reinforced by the relief of the anxiety associated with the compulsion (e.g., hand washing temporarily relieves the fear of contamination) (Rachman et al. 1986). In exposure, there are at least three means of fear reduction: autonomic habituation, recognition that the fear is irrational, and explicit enhancement of morale or self-efficacy that accompanies mastering the previously dreaded activity.

In graded or progressive exposure, a hierarchy is established, ranging from least-to-most anxiety-provoking situations. The individual is taught one or more ways to cope with anxiety (e.g., relaxation or self-instruction), and with the help of the therapist, the items on the hierarchy are worked through, one item at a time. Mastery is predicated on maintaining a sufficient duration of exposure for the fear to extinguish or dissipate. In some cases, imagery (exposure "in vitro") is used before moving to exposure to the actual feared stimulus. Exposure may also be enhanced by guided support (i.e., the therapist's presence during the session) or by use of coping cognitions for the duration of the exposure exercise.

Flooding, which relies on the same principles, dispatches with the hierarchical approach. The individual is exposed to the maximal level of anxiety as quickly as possible. The rationale for this accelerated approach is that it may hasten autonomic habituation. To be effective, flooding needs to be accompanied by response prevention. In response prevention treatment of obsessive-compulsive disorder, the individual agrees not to perform the compulsion despite strong urges to do so. Because obsessions are more private than compulsions, there can be less certainty that

the individual has fully participated in response prevention exercises (Stern 1978).

Participant modeling or contact desensitization is an accelerated form of exposure that produces rapid response in the treatment of simple phobias. The therapist serves as a supportive coach or guide and assists the patient through a progressively more demanding level of exposure to the feared situation. In most cases, lifelong fears of air travel, tunnels, heights, matches, dogs, water, or insects can be fully treated in a few hours of guided exposure.

Social Skills Training

Satisfactory interpersonal relationships require a complex set of skills, including reciprocity, respect for another's opinion, appropriate modulation of self-disclosure, the tempered ability to yield on some occasions and to set limits at other times, the natural use of social reinforcers, and the capacity to express anger and resolve conflicts in a constructive manner (Lewinsohn et al. 1982, Hersen et al. 1984). Many people with psychiatric disorders suffer from either a state-dependent deterioration of these social skills or lifelong deficits of such skills. Once established, social skills deficits can increase the likelihood of experiencing stressful life events as well as "turn off" family members and other sources of social support that may help to buffer people against stressors (Coyne et al. 1987).

Problems as diverse as lack of assertiveness, temper "attacks," excessive self-disclosure, monopolistic conversational style, under-reinforcement of significant others, and splitting (i.e., playing one against another) are amenable to social skills training. The methods employed include modeling (i.e., the therapist demonstrates a more effective alternative approach), role playing and role reversal, behavior rehearsal, and specific practice assignments. Often, the interpersonal anxiety and lack of self-confidence that go hand in hand with social skills deficits lessen in response to successful mastery of targeted assignments.

Thought Stopping and Distraction

Automatic negative thoughts and repetitive, intrusive ruminations are sometimes too intense to address with purely cognitive interventions. The technique of thought stopping capitalizes on the individual's ability to use a selectively narrowed attentional focus to suppress the intrusive cognitions. For example, a ruminative individual may be asked to visualize a large red stop sign, including its octagonal shape and white lettering. The command Stop! is paired with the image. The image and command are then used to interrupt a "run" of ruminations. At first, the technique is practiced in sessions at times when automatic thoughts or ruminations are mild. After initial success, the technique is next applied to more intensely disturbing cognitions. For individuals who find visualization difficult or ineffective, a rubber band may be worn on the wrist as a distractor. In a manner similar to that described before, the command Stop! is paired with a brisk snap of the rubber band.

Anxious patients may benefit from use of other distraction techniques to cope with panicky thoughts or increased sensitivity to interoceptive cues. Specifically, patients susceptible to panic often have a heightened awareness of otherwise normal physiological cues (e.g., alterations in heart rate, dryness in the throat, muscular tightness in the chest, or increased peristalsis). In turn, such sensitivity triggers automatic negative thoughts about an imagined impending calamity. Distractions such as counting backward, praying, or imagining a calming scene may be applied to direct attention away from the internal stimuli. Distraction techniques thus help the individual exert some control over the symptoms, permitting greater exposure and a growing sense of self-efficacy.

Formulation of Treatment

Indications for Treatment

The cognitive and behavioral therapies are indicated as primary treatments for adults suffering from several nonpsychotic, nonorganic Axis I disorders in the *Diagnostic and Satistical Manual of Mental Disorders*, fourth Edition (DSM-IV). These include major depressive disorder, dysthymic disorder, panic disorder, social phobia, OCD, PTSD, generalized anxiety disorder and bulimia nervosa (Wright et al. 2002). Cognitive and behavioral therapies are also useful as adjunctive treatments for patients with bipolar disorder (Basco and Rush 1996, Basco and Thase 1998, Lam et al. 2000, 2005b, Scott et al. 2003, and Zaretsky et al. 1999) and schizophrenia (Mueser 1998, Kingdon and Turkington 1995, Sensky et al. 2000). Although not extensively studied, cognitive and behavioral therapies incorporating coping skills training and relapse prevention strategies may also improve the outcome of individuals with substance abuse disorders (Wright et al. 2002).

Cognitive and behavioral therapies, like most other types of treatment, have not been studied widely in patients with Axis II disorders. However, the CBT approach to problem specification and explicit training in coping skills may be well suited for treatment of individuals willing to work on changing these habitual, ingrained patterns of thinking and behavior (Beck et al. 1990). Specific cognitive-behavioral formulations have been developed for each of the personality disorders, and modifications of CBT methods have been described for working with patients with Axis II problems (Beck et al. 1990). Linehan's model of CBT (dialectical behavior therapy) has been shown to be efficacious in reducing parasuicidal behavior in patients with borderline personality disorder (Linehan et al. 1991, Linehan et al. 1993, 2006).

Selection of CBT Treatment

Perhaps the greatest "rate-limiting step" in selection of CBT is having access to a well-trained therapist. However, there are a growing number of training programs in CBT, and centers for CBT are available in many cities throughout the world. Cognitive-behavior therapy is now a required element in the education of psychiatry residents and is the major orientation of many psychology graduate programs. The Academy of Cognitive Therapy (academyofct.org) is a nationally recognized body that certifies therapists in this approach.

Selection of CBT for an individual patient should be based on the appropriateness of cognitive-behavior therapy for the treatment situation. Relevant questions include: Is the patient psychotic? If so, are there specific target behaviors and has psychopharmacological treatment been optimized? Does the patient suffer from a disorder for which there is evidence for the efficacy of CBT? Within groups of

patients with potentially treatable disorders, other indicators of responsivity include chronicity, severity, and comorbidity (Whisman 1993, Thase et al. 1993). A good general rule is that patients with acute, mild to moderately severe, mood and anxiety disorders are the best candidates for treatment with traditional CBT alone (Thase 1995). Patients with more chronic, severe, or complicated illnesses may be better candidates for combined treatment strategies than for CBT alone (Wright and Thase 1992, Thase and Howland 1994, Friedman 1997, Friedman et al. 2006). McCullough (2000) has developed a variant of CBT for chronic depression that has shown much promise alone and combined with antidepressant medication.

An outpatient trial of acute phase CBT typically ranges from 10 to 20 weekly treatment sessions (Wright and Beck 1983, Beck et al. 1979, Barlow and Cerny 1988, Persons 1989). However, shorter courses of treatment have been shown to be efficacious in some situations (Wright et al. 2005). Deterioration or noncompliance of the patient may warrant early termination of a treatment trial, and for certain chronic conditions such as borderline personality disorder and bipolar disorder, longer courses of therapy may be indicated (Beck et al. 1990, Linehan et al. 1993, 2006, Basco and Rush 1996). Jarrett and Kraft (Jarrett and Kraft 1997, Jarrett et al. 2001) have conceptualized treatment across the acute, continuation, and maintenance phases of the depressive disorder. We will discuss these phases of treatment in greater detail below. During treatment of major depressive disorder and panic disorder, a majority of patients who will benefit from CBT will show a significant reduction in symptoms within 6–8 weeks of starting therapy (Ilardi and Craighead 1994). Moreover, those who show a late response to CBT (i.e., between weeks 12 and 16) may be at high risk for subsequent relapse (Thase et al. 1992).

Issues of Gender, Race, and Ethnicity

The cognitive and behavioral therapies appear equally effective for men and women and people of various races (Dobson 1989, Thase et al. 1994a). As with other forms of psychotherapy, a productive CBT working alliance is based on mutual respect for individual differences (Wright and Davis 1994). For some persons with gender, racial, or ethnically related issues, it may be useful to select therapists with special skills or experiences (e.g., therapists specializing in gay and lesbian issues or posttraumatic stress syndromes due to rape or incest). It has been recommended that cognitive–behavioral therapists receive special training and supervision in methods of responding to gender, race, and ethnicity variations (Wright and Davis 1994).

Case Formulation

An individualized case conceptualization is used for directing the course of CBT. An analysis of cognitive–behavioral elements is combined with assessment of biological, social, interpersonal, and other possible influences on symptoms in order to produce a comprehensive formulation and treatment plan (Wright et al. 2006). Both cross-sectional (typical cognitive–behavioral responses to current environmental stressors) and longitudinal (developmental and life history contributions to develop schemas and core behavioral strategies) perspectives are considered. Details of how to perform cognitive–behavioral case formulations are provided in a basic CBT text with video illustrations (Wright et al. 2006). Also, the Academy of Cognitive Therapy Website (academyofct.org) has examples of written case conceptualizations.

Preparation of the Patient

The cognitive and behavioral therapies explicitly incorporate strategies to increase involvement and preparedness of the patient for therapy. Patients are typically encouraged to read relevant written materials describing the theory and strategies of the therapy; for common disorders, such as major depressive disorder and panic disorder, self-help manuals for patients are now available (Burns 1990, Greenberger and Padesky 1995, Wright and Basco 2002). It is likely that multimedia programs will have an increasing role in therapy preparation (Locke and Rezza 1996, Wright and Wright 1995, Wright et al. 2002). Regardless of the mode of application, patients beginning CBT need to become acculturated to the following: 1) they will be active participants in trying out new strategies; 2) they will be expected to do homework; 3) the outcome of therapy will be measured and strategies will be altered if they are not helping; 4) therapy will be focused on symptoms and social functioning and generally will be time limited in nature; and 5) the chances of success after treatment termination can be gauged by the patients' incorporation of the therapy into their day-to-day life.

Phases of Treatment

Most cognitive and behavioral therapies may be viewed as using a three-stage process. The initial phase includes the processes of clinical assessment, case formulation, establishment of a therapeutic relationship, socialization of the patient to therapy, psychoeducation, and introduction to treatment procedures. The middle stage involves the sequential application and mastery of cognitive and behavioral treatment strategies. The second stage ends when the patient has obtained the desired symptomatic outcome. The final phase of therapy is characterized by preparation for termination. The frequency of sessions is reduced, and there is a steady transfer of the responsibility for the continued use of therapeutic strategies from the therapist to the patient. The third stage of treatment also focuses on relapse prevention. Strategies used at this point include anticipation of reaction to future stressors or high-risk situations, identification of prodromal symptoms, rehearsal of self-help procedures, and establishment of guidelines for return to treatment (Otto et al. 1993, Thase 1993). The failure to achieve a remission of depressive symptoms after 16–20 weeks of treatment may indicate a need for continuation phase treatment to achieve these goals and maintenance phase treatment for relapse prevention. Incomplete symptomatic remission after 20 weeks of CBT may also indicate the need for adding pharmacotherapy to the treatment plan as we discuss in greater detail below.

Intensity of Treatment

Outpatient CBT is normally conducted once or twice a week. In selected cases, three times weekly or even daily sessions may be useful, but the cost-effectiveness of such a labor-intensive approach is uncertain. One of the authors (J.H.W.), who often uses CBT in combination with pharmacotherapy

and computer-assisted treatment, has found that he can reduce sessions for ambulatory patients to every other week or to a shortened time frame (i.e., 20-25-minute sessions) when a good therapeutic relationship has been established and the patient has started to make significant progress.

When patients are seen in a day treatment hospital or inpatient setting, sessions are typically provided on a daily or every-other-day basis. Many programs blend individual and group therapies (Wright et al. 1993). In our experience, holding sessions more frequently helps to offset symptom severity and demoralization in severely ill patients (Thase and Wright 1991). The cost-effectiveness of more or less intensive cognitive–behavioral strategies has not been systematically studied. Nevertheless, we believe that therapists should adjust the frequency and intensity of treatment according to the needs of patients as well as the therapy resources that are available.

Duration of Treatment

In most cases, treatment is conducted in a period of 3–6 months. For those who begin therapy as inpatients, a similar period of aftercare is strongly recommended (Thase 1993). Unsuccessful therapy (e.g., failure to effect significant symptomatic improvement) should generally not continue past 12–16 weeks for outpatients. Therapy should not be terminated until patients have achieved symptomatic remission. Ideally, at least two or three sessions are planned on an every-other-week basis in preparation for termination.

Outcome Assessment

Cognitive and behavioral therapies are, in part, distinguished by their integrated use of objective assessment methods. For depression and the anxiety disorders, a number of well-established rating scales are available. Therapist-administered scales include the Hamilton Anxiety Rating Scale (Hamilton 1959) and the Hamilton Depression Rating Scale (Hamilton 1960) as well as the Yale-Brown Obsessive-Compulsive Scale (Goodman et al. 1989). Self-report assessments of symptoms include the Beck Depression Inventory (Beck et al. 1961), the Beck Anxiety Inventory (Beck et al. 1988), the Fear Survey Schedule (Wolpe and Lang 1964), the Fear Questionnaire (Marks and Matthews 1979), and the Hopkins Symptom Checklist (Derogatis et al. 1974). These scales are typically administered before treatment and repeated periodically (e.g., weekly or monthly) to monitor progress. The Dysfunctional Attitudes Scale, the Attributional Style Questionnaire, and the Automatic Thoughts Questionnaire may be used to evaluate distorted cognitions (Dobson and Shaw 1986). As suggested earlier, high residual levels of cognitive symptoms most likely convey an increased risk for relapse after termination of treatment (Thase et al. 1992, Simons et al. 1986, Fava et al. 1998a). Similarly, high scores on the Hopelessness Scale (Beck et al. 1974) have been associated with a high risk for subsequent suicidal behavior (Beck et al. 1985).

Augmentation of Therapy

One of the major methods of augmenting a cognitive and behavioral therapy is to add an appropriate form of pharmacotherapy. For example, a depressed or agoraphobic person who has not benefited much from eight weeks or more of CBT alone should probably be considered for pharmacotherapy. In such cases, the neurobiological substrate of the illness may be too severely disturbed to be responsive to the CBT without concomitant pharmacotherapy (Wright and Thase 1992, Jindal et al. 2002). In clinical practice, psychiatrists who are trained in CBT often combine cognitive therapy and pharmacotherapy from the beginning of treatment unless the patient expresses a strong desire to receive only a single form of therapy.

There are no contraindications to combining CBT and pharmacotherapy (Wright and Thase 1992). In fact, these modalities are highly compatible in theory and practice. As noted earlier, pharmacological stabilization is a prerequisite for CBT for some Axis I disorders (e.g., psychotic depressions, schizophrenia, and bipolar disorder). When these treatments are used in combination, the treatment team should have a well-defined division of labor, open lines of communication, and an explicit sense of collaboration. Treatment of patients with severe, refractory, or incapacitating mood and anxiety disorders may represent the best use of combined therapies (Thase and Howland 1994, Bowers 1990, Otto et al. 1994, Scott 1992, Whisman et al. 1991). Other strategies used to enhance CBT include increasing the frequency of visits, switching emphasis (i.e., from cognitive to behavioral or vice versa), or involving the spouse or significant others in the therapy (Beach et al. 1994, Emmelkamp and Gerlsma 1994). The last strategy has been shown to be particularly useful in cases of depression associated with marital discord (Jacobson et al. 1991, Beach and O'Leary 1992). Computer augmentation is a new addition to the tools available for CBT (Selmi et al. 1991, Wright and Wright 1997, Kenwright et al. 2001, Wright et al. 2002, Wright et al. 2005). Greater availability of personal computers with multimedia capability and increased pressure to reduce the cost of treatment may make this form of therapy augmentation a more common practice in clinical settings.

Continuation and Maintenance Phase CBT

When Beck and associates (Beck et al. 1979) described CBT in the late 1970's depression researchers were primarily concerned with the issue of response to treatment—is psychotherapy or pharmacotherapy effective in reducing the symptoms of the disorder over a given time period (generally 1 month to 10 weeks for efficacy studies of the tricyclic antidepressants, 6–12 weeks for efficacy studies of SSRI'S and 12–20 weeks for studies of psychotherapies)? This phase of treatment has come to be called the "acute phase." Because some patients do not completely achieve a remission of symptoms (their return to premorbid well state) and because many patients experience depression as a recurring illness, there is a need for longer-term treatment methods for major depression (Kupfer et al. 1986). Furthermore, incomplete remission of depression leads to recurrence, and this conveys many adverse economic, interpersonal and medical consequences (Thase 1992).

Over the past 18 years, studies conducted by Thase and coworkers at the University of Pittsburgh have identified and replicated correlates of relapse (return of symptoms during continuation phase treatment) and recurrence (return of symptoms after one year of remission of the illness) following the termination of acute phase CT (A-CT). Failure to achieve a complete remission of the index episode by the sixth week of A-CT is associated with a 3–5-fold increase in the subsequent risk of relapse or recurrence. Thase and

coworkers have found that between 50 and 60% of A-CT responders meet this criteria for risk and Jarrett's group has demonstrated that an 8-month course of continuation-CBT essentially neutralizes this higher risk of relapse. C-CT focuses on the vulnerabilities for recurrent depression in three domains: biologic (genetics, biology, familial, and developmental), psychosocial (personality, interpersonal, and social), and cognitive (Jarrett et al. 2001). By identifying and modifying risks and vulnerabilities and learning more effective ways of managing mood symptoms, C-CT helps prevent relapse and recurrence.

Fava (Fava et al. 1994) has developed another interesting approach to reduce the risk of relapse, the sequencing of treatment depending upon the degree of response following acute therapy. He found that a 12-session course of CBT focusing on healthy lifestyle changes significantly reduced depressive symptoms (Fava et al. 1994), increased the likelihood of successfully withdrawing from antidepressants (Fava et al. 1996, Fava et al. 1998b), and decreased the risk of subsequent relapse after withdrawing anti-depressant medications (Fava et al. 1998a). Other studies (Blackburn and Moore 1997, Paykel et al. 1999) support the strategy of using a short course of focused CBT to offset the risks of relapse and recurrence of major depression.

Efficacy of CBT

The cognitive and behavioral therapies are, as a class, the best studied type of psychotherapy. Numerous research studies have demonstrated the efficacy for a variety of Axis I disorders.

Mood Disorders

Most of the evidence for the effectiveness of Beck's model of CBT for mood disorders is derived from studies of outpatients with major depressive disorder (nonbipolar, nonpsychotic subtype). There is no doubt that CBT is an effective treatment of major depression compared with a waiting list control condition (Thase 1995, Dobson 1989, Depression Guideline Panel 1993). Dating to an initial study by Rush and associates (Rush et al. 1977), one major research focus has been to establish the efficacy of CBT vis-á-vis antidepressant pharmacotherapy. At this time, eight controlled trials contrasting CBT and tricyclic antidepressants have been completed (McCullough 2000), as have a legion of studies using other designs and other comparison groups (Thase 1995, Jarrett and Rush 1994). Several meta-analytical reviews have been published (Dobson 1989, Depression Guideline Panel 1993, Gloaguen et al. 1998, Butler et al. 2006). Dobson found CBT to be superior to untreated controls, wait-list participants, pharmacotherapy with tricyclic antidepressants, and other therapies (Dobson 1989). Gloaguen et al. (1998) reported CBT was superior when compared with wait-list and placebo control conditions; modestly superior to other therapies. Recently Butler and colleagues (2006) reviewed meta-analyses of CBT and report that CBT was somewhat superior to antidepressants in the treatment of adult depression, OCD and several other disorders.

Thase and coworkers (2000) have reported on a retrospective comparison of consecutive cohorts treated with CBT or supportive counseling and pill-placebo. The findings of this analysis suggest that CBT has greater therapeutic effects than this competently administered control condition, the ideal comparator for pharmacology efficacy studies.

The results of the National Institute of Mental Health Treatment of Depression Collaborative Research Program (TDCRP) (Elkin et al. 1989), a large, controlled three-site clinical trial, initially appeared to be inconsistent with these findings. The study reported that CBT was as effective as the tricyclic antidepressant imipramine in the full sample, but neither CBT nor imipramine was significantly more effective than the control condition, supportive clinical management and pill-placebo. Furthermore, in the more severely ill patients or in patients with greater functional impairment, CBT appeared to be less effective than imipramine. Moreover, the study results suggested that CBT was slightly, although not statistically, less effective than interpersonal psychotherapy (IPT), especially when recovery (stable symptomatic remission lasting greater than 8 consecutive weeks) was the outcome measure examined. However, when this same cohort was observed over the course of 18 months of follow-up (Shea et al. 1992), it was determined that there was no significant difference among any of the treatments with respect to the number of patients that recovered and remained well. When the follow-up outcome of the CBT patients was reviewed, the authors found that CBT patients had the lowest rates of receiving some kind of treatment during the follow-up period and CBT patients had the lowest rates of relapse after 18 months. This led the authors to be encouraged about the prophylactic value of CBT.

Ablon and Jones (2002) also question the validity of the results of the psychotherapy findings of the Treatment of Depression Collaborative Research Program. The authors used actual transcripts of the IPT and CBT sessions and rated CBT and IPT sessions with respect to therapy process, therapy technique, and intervention styles. They report that both the IPT and CBT sessions adhered most strongly to the ideal prototype of CBT. In addition, adherence to the CBT prototype yielded more positive correlations with outcome measures across both types of treatment.

The acute-phase treatment findings of the Treatment of Depression Collaborative Research Program have raised questions about the suitability of CBT as a treatment of severe depression (American Psychiatric Association 1993). Alternatively, the adequacy of CBT provided in the Treatment of Depression Collaborative Research Program trial has been challenged by some who believe CBT therapists may need a longer period of training than that required to become proficient at interpersonal psychotherapy (Thase 1994). Nevertheless, in other groups' hands, CBT is fully the equal of pharmacotherapy (Blackburn et al. 1981, Murphy et al. 1984, Hollon et al. 1992). A recent three-site study by DeRubeis and colleagues randomized 240 moderately to severely depressed patients to CBT, antidepressant medication therapy (paroxetine), or placebo. Overall, CBT was shown to be as effective as antidepressant medication in the treatment of moderate to severe depression when provided by highly experienced cognitive therapists (there was a significant difference in site treatment interaction at one site) (DeRubeis et al. 2005). Furthermore, CBT has also been demonstrated to be effective for inpatients with severe and chronic depression (DeJong et al. 1986). An intensive CBT protocol has been demonstrated to be an effective treatment of 60% to 70% of unmedicated depressed

inpatients suffering from nonpsychotic major depression (Thase et al. 1993, Thase et al. 1991).

There is additional evidence for the effectiveness of CBT in the treatment of severely ill depressed patients. In a large multisite randomized clinical trial of a difficult cohort of severe and chronically depressed patients, McCullough's CBT-based treatment, The Cognitive–behavioral Analysis System for Psychotherapy, (Keller et al. 2000, McCullough 2000) has shown equal efficacy to the serotonin-norepinephrine reuptake inhibitor, nefazodone, each being effective in 55% of cases, but the combination of the two treatments produced an impressive response rate of 85% at the end of 12 weeks of treatment. Thus, a version of CBT modified to specifically address the problems of severe and chronic depression has shown efficacy. Further evidence supporting the use of CBT in severe depression is found in a study that suggests a benefit for CBT in preventing suicide attempts. These investigators compared CBT to enhanced treatment as usual in patients who recently attempted suicide. The CBT subjects had a significantly lower reattempt rate, were 50% less likely to reattempt suicide than the control group, and reported less severe depression and hopelessness in follow-up (Brown et al. 2005).

More recently, results of the multi-site, NIMH-sponsored Sequenced Treatment Alternatives to Relieve Depression (STAR*D) trial compared CBT as a second-step treatment in patients with unipolar major depression who did not receive benefit from an adequate trial of the SSRI medication citalopram (Thase et al. In press). In one comparison, participants were randomized to augmentation of citalopram with either CBT or medication (either bupropion SR or buspirone). CBT augmentation was as effective as medication augmentation, but the latter was associated with a more rapid response. In the second comparison patients were switched to CBT or medication (sertraline, bupropion SR, or venlafaxine XR). There were also no differences in the effectiveness of switch to CBT or medications, although pharmacotherapy was associated with significantly more adverse side effects. The authors conclude that for patients without adequate benefit from citalopram, CBT was an effective pharmacotherapy whether used as a switch or augmentation strategy (Thase et al. 2007).

Regarding the efficacy of combining CBT and medications, a meta-analysis of studies that examined treatment with medication alone (including tricyclics amitriptyline, chlomipramine, nortriptyline, desipramine, and nefazodone) versus medication combined with CBT, Friedman and colleagues (2006) found the benefit favoring combination treatment over pharmacotherapy alone to be almost twice as great.

Interestingly, group CBT strategies for treatment of depression have been found to be nearly as effective as individual treatment in both direct comparisons (Ross and Scott 1985) and composite meta-analytical comparisons (Depression Guideline Panel 1993, DeRubeis and Crits-Christoph 1998). These studies, which have not yet dramatically affected practice habits, suggest that a significant savings in cost-effectiveness might be gained by more regular use of group treatments. One study (Ravindran et al. 1999) in dysthymic patients compared the efficacy of sertraline and group cognitive behavioral therapy, alone or in combination. These authors found the group CBT to be less effective than sertraline in alleviating clinical symptoms. However, CBT augmented the effects of sertraline with respect to some functional changes, and in a subgroup of patients it attenuated the functional impairments characteristic of dysthymia.

Marital CBT also appears to be as effective as individual CBT in treatment of depression associated with marital discord (Jacobson et al. 1991, Beach and O'Leary 1992). When effective, this marital therapy also typically produces concomitant improvement in dyadic adjustment, whereas effects of individual CBT are primarily limited to symptom variables (Jacobson et al. 1991, Beach and O'Leary 1992). Because marital discord plays a major role in the pathogenesis of many depressive episodes, greater use of couples treatment strategies may be indicated (Beach et al. 1994, Baucom et al. 1990) and such strategies have been described (Baucom and Epstein 1990).

Some evidence suggests that CBT reduces the risk for relapse after termination of treatment (vis-á-vis patients withdrawn from antidepressants) (Simons et al. 1986, Evans et al. 1992, Blackburn et al. 1986a). In the study of Evans and colleagues, (Evans et al. 1992) CBT responders had the same degree of prophylaxis against relapse at more than 1 year of follow-up as did antidepressant responders treated with continuation phase pharmacotherapy (Figure 91–8). The risk for relapse after CBT may be particularly low for patients who achieve a complete remission before ending treatment (Thase et al. 1992). The use of CBT for relapse prevention by Fava's group has been discussed (Fava et al. 1994). In a 12-month naturalistic follow-up study of patients who responded to acute phase treatment (see DeRubeis et al. 2005, discussed above), it was found that compared to successfully treated pharmacotherapy patients, CBT patients were significantly less likely to relapse, suggesting a possible enduring prophylactic effect for CBT (Hollon et al. 1992). These findings are supported by a study comparing patients with recurrent major depression who achieved remission and were assigned to continued treatment as usual with pharmacotherapy compared to such treatment augmented with a brief course of CBT over 2 years duration. These investigators found the addition of CBT resulted

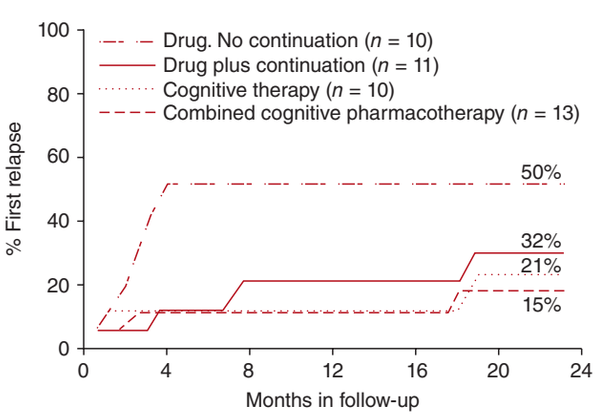

Figure 91–8 *Risk of relapse after cognitive therapy and pharmacotherapy, singly or in combination. (From Evans MN, Hollon SD, DeRubeis RJ, et al: Differential relapse following cognitive therapy and pharmacotherapy for depression. Arch Gen Psychiatry 1992; 49:802-808. Copyright 1992. American Medical Association.)*

in a significant protective effect, which intensified with the number of previous depressive episodes experienced (Bockting et al. 2005).

Other models of cognitive and behavioral therapy have also been studied in randomized clinical trials of major depressive disorder, and they have generally matched or exceeded the results of the antidepressant condition (McLean and Hakstian 1979, Wilson 1982, Hersen et al. 1984). In two studies, the combination of behavioral therapy and antidepressants resulted in significantly more rapid improvement (Wilson 1982, Roth et al. 1982). Behavioral strategies emphasizing self-control skills, problem-solving skills, and increased pleasant activities have also been consistently found to be superior to waiting list control conditions (Thase 1995, Depression Guideline Panel 1993). Jacobson and colleagues (1996) performed a randomized trial comparing standard CBT with behavioral activation (BA), a condition in which cognitive interventions were proscribed. They found that BA produced as much symptomatic improvement as did the full CBT treatment. When the relapse rate in these groups was examined after 2 years, there was also no difference between the treatments (Gortner et al. 1998). More recently, Dimidjian and colleagues (2006) compared an "expanded BA model" to standard CBT and antidepressant medication (ADM) in a randomized placebo controlled design in adults with nonpsychotic major depression. In the less severe patients there was no difference between the treatments but among the more severely depressed patients, BA was comparable to ADM and both significantly outperformed CBT (in this condition behavioral techniques were proscribed). These results support the contention that more severely depressed patients require BA techniques to achieve symptomatic improvement and that BA is the preferred focus initially in such cases. As a result of these studies, Dimidjian and colleagues (2006) question the necessity of targeting negative thinking to achieve therapeutic response.

Anxiety Disorders

Controlled studies have established the efficacy of cognitive and behavioral therapies for generalized anxiety disorder, obsessive-compulsive disorder, simple phobia, social phobia, panic disorder, and agoraphobia (Wolpe 1982, Clum et al. 1993, Beck and Zebb 1994, Chambless and Gillis 1993, Durham and Allan 1993, Butler et al. 1991, Barlow et al. 2000, Clark et al. 2006, Haby et al. 2006, Schuurmans et al. 2006). CBT has also been shown in a randomized clinical trial to be an effective treatment for anxiety disorders in older adults at the end of therapy and over 12 months of follow-up. These authors included patients with a wide range of anxiety disorders to allow generalization of their findings to a greater "real-world" population (Barrowclough et al. 2001).

CBT is very effective for *simple phobias*. The cognitive and behavioral treatments emphasizing progressive (graded) exposure, systematic desensitization, relaxation training, and the use of homework assignments are well established and are considered the psychotherapeutic treatment of first choice for the simple phobias (Wolpe 1982, Rachman and Wilson 1980, Chambless and Gillis 1993).

CBT interventions are effective and frequently used interventions for the treatment of Obsessive-compulsive *disorder* (OCD). Whereas OCD is often refractory to traditional psychosocial treatments, response rates of 50% to 70% are typically reported in CBT trials (Emmelkamp and Beens 1991, Foa et al. 1992, Stekette 1994, Rufer et al. 2005). Behavioral strategies generally take precedence over cognitive interventions, with the paired strategies of exposure and response prevention proving particularly useful (Emmelkamp and Beens 1991, Foa et al. 1992, Salkovskis and Westbrook 1989). In a recent study, Whittal and colleagues (2005), found exposure and relapse prevention (ERP) to be equally effective as CBT in 59 completers at 3-months of follow-up. Although comparative studies are fewer, therapies emphasizing exposure and response prevention have been found to be comparable to antiobsessional pharmacological agents (such as clomipramine) in patients with behavioral compulsions (Foa et al. 1992, Marks et al. 1988). Interestingly, in a small study by Baxter and colleagues (1992), behavioral treatment of obsessive-compulsive disorder produced a change in glucose metabolism in the caudate nucleus (a putative neurobiological marker of obsessive-compulsive disorder) comparable to that observed in patients treated with pharmacotherapy. Several studies have examined whether pharmacological and cognitive–behavioral strategies can be used fruitfully in combination or in sequence (Kampman et al. 2002, Marks et al. 1980, Turner et al. 1980, van Oppen et al. 2005). Van Oppen et al. (2005) studied the long-term effectiveness of CBT alone, exposure in vivo and response prevention (ERP) alone, and CBT or ERP plus fluvoxamine. They concluded that (1) the prevalence of OCD declined in all three treatment conditions, (2) that these benefits were maintained for 5 years, (3) OCD complaints were more severe for treatment drop-outs than for completers, and 4) about half of the fluvoxamine patients continued antidepressant use. Regarding the question of treatment sequencing, Kampman and colleagues (2002) found the addition of CBT was effective in fluoxetine nonresponders.

Generalized anxiety disorder and *social phobia* are common and protean conditions, often presenting with much depressive and Axis II comorbidity. CBT emphasizing relaxation training, cognitive coping skills, social skills training, and graded exposure to feared situations has generally been shown to be superior to waiting list or nonspecific therapy control conditions (Blowers et al. 1987, Borkovec et al. 1987, Borkovec and Mathews 1988, Borkovec and Costello 1993, Butler et al. 1991, Durham et al. 1994, Heimberg 1990, Linden et al. 2005). An average of 60% to 80% of patients treated in clinical trials have responded to cognitive and behavioral methods (Gelernter et al. 1991, Power et al. 1990). In a controlled trial of patients with generalized anxiety disorder comparing CBT to behavioral therapy (BT) and a wait-list control group, results show a clear advantage for CBT over BT. There was a consistent pattern of change favoring CBT in measures of anxiety, depression, and cognition. A randomized, controlled trial in older adults with GAD of CBT versus a nondirective supportive psychotherapy found no significant differences between the treatments although both reduced worry anxiety and depression (Stanley et al. 1997). Linden and colleagues (2005) randomized 72 outpatients with GAD to either CBT or a contact control group and after the control period these patients were treated with CBT as well. They reported that CBT significantly reduced anxiety and that

the clinical effect remained stable over 8 months of follow-up. Their conclusion was that CBT is an effective treatment for GAD with an effect size comparable or larger than those reported for antidepressant medications. These results are supported by an 8-14 year follow-up study of CBT treatment which concluded that CBT and the complexity and severity of presenting problems appear to influence the long-term outcome of GAD (Durham et al. 2003). Another interesting study randomized 61 patients to either CBT or a nonspecific therapy control group to facilitate benzodiazepine discontinuation. They reported that 75% of patients in the CBT group ceased benzodiazepine use versus 37% in the control group and that a greater number of patients in the CBT group no longer met GAD criteria. However, discontinuation rates were twice as high in the CBT condition (Gosselin et al. 2006).

The comparative efficacy of cognitive and behavioral treatments and pharmacotherapy for *panic disorder* and *agoraphobia* is currently a topic of intensive investigation (Clark et al. 1994, Clum et al. 1993, Beck and Zebb 1994, Margraf et al. 1993, National Institutes of Health 1991, Ost et al. 2004, Otto and Deveney 2005). These treatments teach patients to disregard or deemphasize internal cues linked to sensitivity to anxiety while mastering behavioral self-control strategies such as breathing exercises and deep muscle relaxation. Cognitive strategies are also used in these models to decrease exaggerated thinking patterns (e.g., catastrophization) and reduce worrying.

In general, between 70% and 90% of patients treated with CBT become panic free within 2 to 4 months of beginning therapy (Clum et al. 1993, Chambless and Gillis 1993, National Institutes of Health 1991, Otto and Deveney 2005). The specific models of CBT introduced by Beck and Emery (1985), Clark (1986), and Barlow and Cerny (1988) have been shown to be superior to waiting list or nonspecific control conditions (Margraf et al. 1993, Barlow et al. 1989, Beck et al. 1992). In a study using an across-subjects design, CBT is significantly superior to information-based therapy in reducing panic attacks in patients with panic disorder and secondary depression (Laberge et al. 1993). Meta-analyses (Beck et al. 1985, Chambless and Gillis 1993) suggest comparability of CBT and pharmacotherapy (i.e., tricyclic antidepressants or potent benzodiazepines) during acute phase therapy. In one trial, the selective serotonin reuptake inhibitor fluvoxamine was superior to CBT (Black et al. 1993). However, in other studies, similar advantages favored CBT (Margraf et al. 1993, Klosko et al. 1990, Marks et al. 1993). In this regard, Heldt and colleagues (2006) found sustained significant benefit after one year in 63 patients who completed group CBT for panic disorder after failing to respond adequately to previous pharmacotherapy.

Even if it is comparably effective, the cost efficiency of pharmacologic treatment may be reduced (relative to CBT) by high rates of relapse after discontinuation of pharmacotherapy (DuPont et al. 1992, Noyes et al. 1991, Pollack et al. 1993). Evidence collected to date suggests that there may be fewer relapses after cessation of CBT compared with relapse rates after medication discontinuation (Otto and Deveney 2005). This prophylactic effect may be related to significant changes in neurophysiological sensitivity (Beck and Zebb 1994). For example, Shear and colleagues (1991) found that successful CBT resulted in a significant reduction in patients' sensitivity to sodium lactate, a biological probe that reliably induces panic attacks in a significant number of patients susceptible to panic.

As with treatment of depression, CBT has shown value when it is used sequentially to reduce the risk of relapse after withdrawal of pharmacotherapy (Otto et al. 1993, Spiegel et al. 1994). To date, evidence does not indicate that the combination of CBT and pharmacotherapy yields a strongly synergistic effect (Clum et al. 1993, Marks et al. 1993, Hegel et al. 1994, Mavissakalian and Michelson 1986, Gelder 1998).

There is also interest in the application of CBT to posttraumatic stress disorder. A recent review of controlled outcome studies indicated that CBT is the psychological treatment of choice and that is more effective than eye movement desensitivization and reprocessing (Bryant and Friedman 2001).

Eating Disorders

Many research studies have demonstrated the efficacy of CBT for bulimia nervosa (Agras et al. 1992, 1994, 2000, Fairburn et al. 1991, 1992, 1993, 1995, Garner 1992, Goldbloom et al. 1997, Walsh et al. 1997). Reviews of controlled studies of CT have found strong evidence for the efficacy (Wilson 1999, Ricca et al. 2000) and theoretical utility (Reas and Grilo 2004) of CBT. Combined cognitive and behavioral therapy has been shown to be superior to a behavior therapy alone approach to bulimia (Thackwray et al. 1993). At the six-month follow-up assessment after treatment, 69% of the subjects who received CBT reported no binge eating and purging as compared to 38% abstinence in the behavior therapy group and 15% abstinence in the attention placebo group. In a comparison of CBT and a guided self-help condition, subjects in both treatment conditions showed a significant decrease over time in binge eating and vomiting frequencies (Bailer et al. 2004). Reviews of research on combined CBT and pharmacotherapy for bulimia have found that CBT has an additive effect to antidepressant therapy (Wilson 1999, Ricca et al. 2000). But, there appears to be no advantage to adding medication to CBT for anorexia nervosa. In addition, CBT has also been advocated for binge eating disorder (Vaidya 2006).

Bipolar Disorders

There are several randomized control trials of CBT in patients with bipolar disorder. Cochran (1984) studied whether CBT improved lithium compliance at 6 and 12 months after treatment as compared to a control group. The results indicated no difference in lithium compliance on the self-reports, informant-reports, or serum lithium levels, but the physician (who was not blind to which group the patient belonged) reported more compliance. Scott et al. (2001) reported the results of a pilot study of cognitive therapy in patients with bipolar I ($n = 34$) and bipolar II ($n = 8$) disorders. Half the patients were assigned to immediate CBT or 6-month wait-list control, which was then followed by a course of CBT. At six-month follow-up, subjects who had CBT showed statistically significantly greater improvement in symptoms and functioning than those in the waiting-list control group. In the 29 patients who eventually received CBT, relapse rates in the 18 months after commencing CBT showed a 60% reduction in comparison with the 18 months

prior to commencing CBT. Seventy percent of the subjects who commenced CBT found it to be a highly acceptable form of treatment. Immediately after receiving CBT changes in symptoms and functioning were significant but these changes were not maintained at 6 months after CBT was finished. Interestingly, in the CBT group, reductions in depressive symptoms were more robust than reductions in manic symptoms. Interestingly, this same group (Scott et al. 2006) recently reported on a subsequent study of 253 bipolar subjects, which found no overall benefit of CBT, compared to treatment as usual, in reducing relapse rates. However, CBT was effective in preventing relapse in persons who had fewer than 12 previous bipolar episodes.

Another line of research into the benefit of CBT for bipolar patients examines using CBT to prevent relapse in patients with bipolar disorder who are taking mood stabilizer medications. The authors modified CBT by (1) a psychoeducational component that modeled bipolar illness as a stress-diathesis illness; (2) adaptive CBT shills to cope with producers (identifying the onset of symptoms of bipolar disorder characteristic of the patient's illness pattern); (3) promoting the importance of circadian regularity by emphasizing the importance of routine and sleep; and (4) dealing with the long-term vulnerabilities and difficulties of the illness. Therapy consisted of 12–20 sessions and lasted 6 months and outcomes were measured at 6- and 12-month points. The CBT group had significantly fewer bipolar episodes, higher social functioning, better coping strategies for bipolar problems, evidence of less fluctuation in symptoms of mania and depression, less hopelessness, better medication compliance, and they used significantly less neurologic medication (Lam et al. 2000). Recently, Lam and colleagues (2005a) reported on the 30-month follow-up of this cohort. They report that over 30 months the CBT group had significantly better outcome in terms of time to relapse. Patients in the CBT group also had significantly fewer days in bipolar episodes. However, there was no significant additional CBT effect in relapse reduction over the last 18 months of the study period, suggesting the need for booster or maintenance CBT treatment sessions. Additionally, this group found that CBT plus mood stabilizers was superior to mood stabilizers alone in terms of cost-effectiveness for those with frequent relapses of bipolar disorder (Lam et al. 2005b).

Another recent study by Ball et al. (2006) observed that 6 months of CBT for bipolar disorder had clinical benefit in reducing depression, dysfunctional attitudes, and global ratings of symptom severity. There was a trend for lower relapse rates in patients treated with CBT. These authors note that the short-term effects of CBT treatment were greater than the long-term effects, which may suggest that maintenance phase therapy may be needed to sustain the therapeutic effects of CBT in bipolar patients. In the recent, multisite, NIMH-sponsored study of the effectiveness of treatments in bipolar disorder, the Systematic Treatment Enhancement Program for Bipolar Disorder (STEP-BD) study, several intensive psychotherapies were compared to a minimal psychosocial intervention (called collaborative care) (Miklowitz et al. 2007). The intensive psychotherapies included CBT, family-focused treatment (FFT) and the Interpersonal and Social Rhythm Therapy (IPSRT). These investigators found that despite equal rates of attrition across groups, patients receiving intensive psychotherapy had significantly higher year-end recovery rates and shorter times to recovery than patients in the collaborative care group. These patients were also 1.58 times more likely to be clinically well during any study month than those in collaborative care. No statistically significant differences were observed in the outcomes of the three intensive therapies.

Other Disorders

Although CBT is not as well established as a primary treatment for other disorders, promising preliminary data are available in studies of borderline personality disorder (Linehan et al. 1991, Linehan et al. 1993, Salkovskis et al. 1990). Cognitive and behavioral therapies have also been studied in substance abuse disorders and tend to be more effective than standard counseling approaches only with patients with concomitant psychiatric illness (Woody et al. 1984, Carroll et al. 1994, Higgins et al. 1994). The directive methods employed by cognitive–behavioral therapists may help to lessen the resistance characteristic of more sociopathic substance-abusing patients, who may have limited ability to make use of reflective and insight-oriented strategies (Kadden et al. 1989).

For the psychotic Axis I disorders, including schizophrenia and bipolar disorder, the cognitive and behavioral therapies have been shown to be useful adjunctive treatments for patients stabilized with appropriate psychotropic agents. The first trials of CBT for psychosis were uncontrolled but suggested that this treatment approach could be used effectively for hallucinations, delusions, and other symptoms of schizophrenia (Fowler and Morley 1989, Chadwick and Birchwood 1994, Kingdon and Turkington 1991). Subsequently, several randomized controlled trials have found that CBT can add to the effect of medication (Drury et al. 1996a, 1996b, Kuipers et al. 1997, Tarrier et al. 1993, Sensky et al. 2000).

For example, Drury and coworkers (1996a, 1996b) observed that positive symptoms improved more in hospitalized patients who received CBT than those patients receiving nonspecific and supportive treatment. This research group also observed reduced time required for recovery in those treated with CBT. Sensky and coworkers (2000) studied 90 patients with schizophrenia who had persistent, drug resistant symptoms. In this study both forms of psychotherapy (CBT and an equal amount of time in "befriending") were effective at the end of active treatment. However, 9 months after treatment subjects who received CBT had significantly lower ratings on measures of positive and negative symptoms.

Conclusion

The cognitive and behavior therapies are based on well-articulated theories that have a strong empirical basis. These therapies emphasize objective assessments and use of directive interventions aimed at reducing symptomatic distress, enhancing interpersonal skills, and improving social and vocational functioning. Cognitive interventions are focused primarily on identifying and modifying distorted thoughts and pathological schemas. Behavioral techniques to increase exposure, increase activity, enhance social skills, and improve anxiety management are useful modalities, and can complement or amplify the effects of cognitive

strategies. Similarly, the cognitive perspective can add depth to behavioral models for therapy by teaching patients how to recognize and modify their attitudinal vulnerabilities.

The cognitive and behavioral therapies are the best-studied psychological treatments of major depressive, panic, generalized anxiety, and obsessive-compulsive disorders. Overall, there is good evidence for the effectiveness of these interventions within these indications. Cognitive and behavioral therapies are being adapted for adjunctive use with pharmacotherapy for treatment of bipolar disorder and schizophrenia. There are no contraindications for use in combination with pharmacotherapy. The cognitive and behavioral therapies have become one of the standard psychosocial treatment approaches for mental disorders.

Acknowledgement

This work is supported by grants MH-30915 (Mental Health Intervention Research Center), MH-58356 (Relapse Prevention), and MH-41884 (PRD).

References

Ablon JS and Jones EE (2002) Validity of controlled clinical trials of psychotherapy: Findings from the NIMH treatment of depression collaborative research program. American Journal of Psychiatry 159(5), 775–783.

Abramson LY, Metalsky GI, and Alloy LB (1989) Hopelessness depression: A theory-based subtype of depression. Psychology Review 96, 358–372.

Abramson LY, Seligman MEP, and Teasdale J (1978) Learned helplessness in humans: Critique and reformulation. Journal of Abnormal Psychology 87, 49–74.

Agras WS, Rossiter EM, Arnow B, et al. (1992) Pharmacologic and cognitive–behavioral treatment for bulimia nervosa: A controlled comparison. American Journal of Psychiatry 149, 82–87.

Agras WS, Telch CF, Arnow B, et al. (1994) Weight loss, cognitive–behavioral, and desipramine treatments in binge eating disorder: An additive design. Behavior Therapy 25, 225–238.

Agras WS, Walsh BT, Fairburn CG, et al. (2000) A multicenter comparison of cognitive–behavioral therapy and interpersonal psychotherapy for bulimia nervosa. Archives of General Psychiatry 57(5), 459–466.

Alfrod BA and Correia CJ (1994) Cognitive therapy of schizophrenia: Theory and empirical status. Behavior Therapy 25, 17–33.

American Psychiatric Association (1993) Practice guideline for major depressive disorder in adults. American Journal of Psychiatry 150(Suppl.), 1–26.

Ayllon T and Azrin NH (1968) The Token Economy: A Motivational System for Therapy and Rehabilitation. Appleton-Century-Crofts, NY, USA.

Azrin NH and Holz WC (1966) Punishment. In Operant Behavior: Areas of Research and Application, Honig WK (ed). Appleton-Century-Crofts, NY, USA, pp 12–32.

Ball JR, Mitchell PB, Corry JC, et al. (2006) A randomized controlled trial of cognitive therapy for bipolar disorder: Focus on long-term change. Journal of Clinical Psychiatry 67, 277–286.

Bailer U, de Zwann M, Leisch F, et al. (2004) Guided self-help versus cognitive–behavioral group therapy in the treatment of bulimia nervosa. International Journal of Eating Disorders 35(4), 522–537.

Bandura A (1977a) Self-efficacy: Toward a unifying theory of behavioral change. Psychology Review 84, 191–215.

Bandura A (1977b) Social Learning Theory. Prentice Hall, Englewood Cliffs, NJ, USA.

Barlow DH and Cerny JA (1988) Psychological Treatment of Panic. Treatment Manual for Practitioners. Guilford Press, NY, USA.

Barlow DH, Craske MG, Cerny JA, et al. (1989) Behavioral treatment of panic disorder. Behavior Therapy 20, 261–282.

Barlow DH, Gorman JM, Shear MK, et al. (2000) Cognitive–behavioral therapy, imipramine, or their combination for panic disorder: A randomized controlled trial. Journal of the American Medical Association 283(19), 2529–2536.

Barrowclough C, King P, Colville J, et al. (2001) A randomized trial of the effectiveness of cognitive–behavioral therapy and supportive counseling for anxiety symptoms in older adults. Journal of Consulting and Clinical Psychology 69(s), 756–762.

Basco RM and Rush AJ (1996) Cognitive-behavior Therapy for Bipolar Disorder. Guilford Press, NY, USA.

Basco RM and Thase ME (1998) Cognitive–behavioral treatment of bipolar disorder. In International Handbook of Cognitive and Behavioral Treatments for Psychological Disorders, Caballo VE (ed). Elsevier Science LTD, Oxford, pp 521–550.

Baucom D and Epstein N (1990) Cognitive–behavioral Marital Therapy. Brunner/Mazel, NY, USA.

Baucom D, Sayers S, and Scher T (1990) Supplemental behavioral marital therapy with cognitive restructuring and emotional expressiveness training: An outcome investigation. Journal of Consulting and Clinical Psychology 58, 636–645.

Baxter LR, Schwartz JM, Bergman KS, et al. (1992) Caudate glucose metabolic rate changes with both drug and behavior therapy for obsessive-compulsive disorder. Archives of General Psychiatry 49, 681–689.

Beach SRH and O'Leary KD (1992) Treating depression in the context of marital discord: Outcome and predictors of response of marital therapy versus cognitive therapy. Behavior Therapy 23, 507–528.

Beach SRH, Whisman MS, and O'Leary KD (1994) Marital therapy for depression: Theoretical foundation, current status, and future directions. Behavior Therapy 25, 345–371.

Beck AT (1963) Thinking and depression. Archives of General Psychiatry 9, 324–333.

Beck AT (1964) Thinking and depression 2: Theory and therapy. Archives of General Psychiatry 10, 561–571.

Beck AT (1967) Depression: Clinical, Experimental, and Theoretical Aspects. Harper & Row Publishers, NY, USA.

Beck AT (1976) Cognitive Therapy and the Emotional Disorders. International Universities Press, NY, USA.

Beck AT (1991) Cognitive therapy: A 30-year retrospective. American Psychology 46, 368–375.

Beck AT (1993) Cognitive therapy: Past, present, and future. Journal of Consulting and Clinical Psychology 61, 194–198.

Beck AT and Emery G (with Greenberg RL) (1985) Anxiety Disorders and Phobias: A Cognitive Perspective. Basic Books, NY, USA.

Beck AT, Epstein N, Brown G, et al. (1988) An inventory for measuring clinical anxiety: Psychometric properties. Journal of Consulting and Clinical Psychology 56, 893–897.

Beck AT, Freeman A, and Associates (1990) Cognitive Therapy of Personality Disorders. Guilford Press, NY, USA.

Beck AT and Greenberg RL (1974) Coping with Depression. Institute for Rational Living, NY, USA.

Beck AT and Rush AJ (2000) Cognitive Therapy. In Comprehensive Textbook of Psychiatry, Vol 7, Kaplan HI and Saddock BJ (eds). Williams & Wilkins, Baltimore, MD, USA.

Beck AT, Rush AJ, and Shaw BF, et al. (1979) Cognitive Therapy of Depression. Guilford Press, NY, USA.

Beck AT, Sokol L, Clark DA, et al. (1992) A crossover study of focused cognitive therapy for panic disorder. American Journal of Psychiatry 149, 778–783.

Beck AT, Steer RA, Kovacs M, et al. (1985) Hopelessness and eventual suicide: A ten-year prospective study of patients hospitalized with suicidal ideation. American Journal of Psychiatry 142, 559–563.

Beck AT, Ward CH, Mendelson M, et al. (1961) An inventory for measuring depression. Archives of General Psychiatry 4, 561–571.

Beck AT, Weissman A, Lester D, et al. (1974) The measurement of pessimism: The hopelessness scale. Journal of Consulting and Clinical Psychology 42, 861–865.

Beck AT, Wright FD, Newman CF, et al. (1993) Cognitive Therapy of Substance Abuse. Guilford Press, NY, USA.

Beck JS (1995) Cognitive Therapy: Basics and Beyond. Guilford Press, NY, USA.

Beck JS and Zebb BJ (1994) Behavioral assessment and treatment of panic disorder: Current status, future directions. Behavior Therapy 25, 581–611.

Bernstein DA and Borkovec TD (1973) Progressive Relaxation Training. Research Press, Champaign, IL, USA.

Black DW, Wesner R, Bowers W, et al. (1993) A comparison of fluvoxamine, cognitive therapy, and placebo in the treatment of panic disorder. Archives of General Psychiatry 50, 44–50.

Blackburn IM, Bishop S, Glen AIM, et al. (1981) The efficacy of cognitive therapy in depression. A treatment trial using cognitive therapy and pharmacotherapy, each alone and in combination. British Journal of Psychiatry 139, 181–189.

Blackburn IM, Eunson KM, and Bishop S (1986a) A two-year naturalistic follow-up of depressed patients treated with cognitive therapy, pharmacotherapy and a combination of both. Journal of Affective Disorders 10, 67–75.

Blackburn IM, Jones S, and Lewin RJP (1986b) Cognitive style in depression. British Journal of Clininical Psychology 25, 241–251.

Blackburn IM and Moore RG (1997) Controlled acute and follow-up trial of cognitive therapy and pharmacotherapy in out-patients with recurrent depression. British Journal of Psychiatry 171, 328–334.

Blowers C, Cobb J, and Mathews A (1987) Generalized anxiety: A controlled treatment study. Behavior Research Therapy 25, 493–502.

Bockting CLH, Schene AH, Spinhoven P, et al. (2005) Preventing relapse/recurrence in recurrent depression with cognitive therapy: A randomized controlled trial. Journal of Consulting and Clininical Psychology 73, 647–657.

Borkovec TD and Costello E (1993) Efficacy of applied relaxation and cognitive–behavioral therapy in the treatment of generalized anxiety disorder. Journal of Consulting and Clinical Psychology 61(4), 611–619.

Borkovec TD and Mathews AM (1988) Treatment of nonphobic anxiety disorders: A comparison of nondirective, cognitive, and coping desensitization therapy. Journal of Consulting and Clinical Psychology 56, 877–884.

Borkovec TD, Mathews AM, Chambers A, et al. (1987) The effects of relaxation training with cognitive or nondirective therapy and the role of relaxation-induced anxiety in the treatment of generalized anxiety. Journal of Consulting and Clinical Psychology 55, 883–888.

Bowers WA (1990) Treatment of depressed inpatients. Cognitive therapy plus medication, relaxation plus medication, and medication alone. British Journal of Psychiatry 156, 73–78.

Bowlby J (1985) The role of childhood experience in cognitive disturbance. In Cognition and Psychotherapy, Mahoney MJ and Freeman A (eds). Plenum Publishing, NY, USA, pp 181–200.

Brown GK, Have TT, Henriques GR, et al. (2005) Cognitive therapy for prevention of suicide attempts: A randomized controlled trial. Journal of the American Medical Association 294, 563–570.

Bryant R and Friedman M (2001) Medication and non-medication treatments of post-traumatic stress disorder. Current Opinion in Psychiatry 14(2), 119–123.

Burns DD (1980) Feeling Good. William Morrow, NY, USA.

Burns DD (1990) The Feeling Good Handbook. Penguin Books, NY, USA.

Burns DD and Spangler DL (2000) Does psychotherapy homework lead to improvements in depression in cognitive behavioral therapy or does improvement lead to increased homework compliance? Journal of Consulting and Clinical Psychology 68(1), 46–56.

Butler AC, Chapman JE, Forman EM, et al. (2006) The empirical status of cognitive therapy: A review of meta-analyses. Clinical Psychology Review 26, 17–31.

Butler G, Fennell M, Robson P, et al. (1991) Comparison of behavior therapy and cognitive behavior therapy in the treatment of generalized anxiety disorder. Journal of Consulting and Clinical Psychology 59, 167–175.

Carroll KM, Rounsaville BJ, Gordon LT, et al. (1994) Psychotherapy and pharmacotherapy for ambulatory cocaine abusers. Archives of General Psychiatry 51, 177–187.

Chadwick P and Birchwood M (1994) The omnipotence of voices: A cognitive approach to auditory hallucinations. British Journal of Psychiatry 164, 190–201.

Chambless DL and Gillis MM (1993) Cognitive therapy of anxiety disorders. Journal of Consulting and Clininical Psychology 62, 248–260.

Clark DA, Beck AT, and Alford BA (1999) Scientific Foundations of Cognitive Theory and Therapy of Depression. John Wiley and Sons, NY, USA, 36–76.

Clark DM (1986) A cognitive approach to panic. Behavior Research Therapy 24, 461–470.

Clark DM, Ehlers A, Hackmann A, et al. (2006) Cognitive therapy versus exposure and applied relaxation in social phobia: A randomized controlled trial. Journal of Consulting and Clinical Psychology 74, 568–578.

Clark DM, Salkovskis PM, and Chalkley AJ (1985) Respiratory control as a treatment for panic attacks. Journal of Behavior Therapy and Experimental Psychiatry 16, 23–30.

Clark DM, Salkovskis PM, Hackmann A, et al. (1994) A comparison of cognitive therapy, applied relaxation, and imipramine in the treatment of panic disorder. British Journal of Psychiatry 164, 759–769.

Cloitre M and Liebowitz MR (1991) Memory bias in panic disorder: An investigation of the cognitive avoidance hypothesis. Cognitive Therapy Research 15, 371–386.

Clum GA, Clum GA, and Surls R (1993) A meta-analysis of treatments of panic disorder. Journal of Consulting and Clinical Psychology 61, 317–326.

Cochran SD (1984) Preventing medical noncompliance in the outpatient treatment of bipolar affective disorders. Journal of Consulting and Clinical Psychology 52, 873–878.

Coyne JC, Kessler RC, Tal M, et al. (1987) Living with a depressed person. Journal of Consulting and Clinical Psychology 55, 347–352.

DeJong R, Treiber R, and Henrich G (1986) Effectiveness of two psychological treatments for inpatients with severe and chronic depressions. Cognitive Therapy Research 10, 645–663.

DeMonbreun BG and Craighead WE (1977) Distortion of perception and recall of positive and neutral feedback in depression. Cognitive Therapy Research 1, 311–329.

Depression Guideline Panel (1993) Depression in Primary Care, Vol 2, Treatment of Major Depression. Clinical Practice Guideline, Number 5. U.S. Department of Health and Human Services. Agency for Health Care Policy and Research publication 93-0551, Rockville, Maryland.

Derogatis L, Lipman R, and Rickels K (1974) The Hopkins symptom checklist (HSCL): A self-report symptom inventory. Behavioral Science 19, 1–16.

DeRubeis RJ and Crits-Christoph P (1998) Empirically supported individual and group psychological treatments for adult mental disorder. Journal of Consulting and Clinical Psychology 66(1), 37–52.

DeRubeis RJ, Evans MD, Hollon SD, et al. (1990) How does cognitive therapy work? Cognitive change and symptom change in cognitive therapy and pharmacotherapy for depression. Journal of Consulting and Clinical Psychology 58, 862–869.

DeRubeis RJ, Hollon SD, Amsterdam JD, et al. (2005) Cognitive therapy vs medications in the treatment of moderate to severe depression. Archives of General Psychiatry 62, 409–416.

Deutscher S and Cimbolic P (1990) Cognitive processes and their relationship to endogenous and reactive components of depression. Journal of Nervous and Mental Disorders 178, 351–359.

Dimidjian S, Hollon SD, Dobson KS, et al. (2006) Randomized trial of behavioral activation, cognitive therapy, and antidepressant medication in the acute treatment of adults with major depression. Journal of Consulting and Clinical Psychology 74, 658–670.

Dobson KS (1989) A meta-analysis of the efficacy of cognitive therapy for depression. Journal of Consulting and Clinical Psychology 57, 414–419.

Dobson KS and Block L (1988) Historical and philosophical bases of the cognitive–behavioral therapies. In Handbook of Cognitive Behavioral Therapies, Dobson KS (ed). Guilford Press, NY, USA, pp 3–38.

Dobson KS and Shaw BF (1986) Cognitive assessment with major depressive disorders. Cogntive Therapy Research 10, 13–29.

Drury V, Birchwood M, Cochrane R, et al. (1996a) Cognitive therapy and recovery from acute psychosis: A controlled trial I; impact on psychotic symptoms. British Journal Psychiatry 169, 593–601.

Drury V, Birchwood M, Cochrane R, et al. (1996b) Cognitive therapy and recovery from acute psychosis: A controlled trial II; impact on recovery time. British Journal Psychiatry 169, 602–607.

DuPont RL, Swinson RP, Ballenger JC, et al. (1992) Discontinuation of alprazolam after long-term treatment of panic-related disorders. Journal of Clinical Psychopharmacology 12, 352–354.

Durham RC and Allan T (1993) Psychological treatment of generalized anxiety disorder. A review of the clinical significance of results in outcome studies since 1980. British Journal of Psychiatry 163, 19–26.

Durham RC, Chambers JA, MacDonald RR, et al. (2003) Does cognitive-behavioural therapy influence the long-term outcome of generalized anxiety disorder? An 8–14 year follow-up of two clinical trials. Psychology Medicine 33(3), 449–509.

Durham RC, Murphy T, Allan T, et al. (1994) Cognitive therapy, analytic psychotherapy and anxiety management training for generalized anxiety disorder. British Journal of Psychiatry 165, 315–323.

Elkin I, Shea MT, Watkins JT, et al. (1989) National Institute of Mental Health Treatment of Depression Collaborative Research Program. General effectiveness of treatments. Archives of General Psychiatry 46, 971–982.

Ellis A (1989) The history of cognition in psychotherapy. In Comprehensive Handbook of Cognitive Therapy, Freeman A, Simon KM, Beutler LE, et al. (eds). Plenum Press, NY, USA, pp 5–19.

Emmelkamp PMG and Beens H (1991) Cognitive therapy with obsessive-compulsive disorder: A comparative evaluation. Behavior Research Therapy 29, 293–300.

Emmelkamp PMG and Gerlsma C (1994) Marital functioning and the anxiety disorders. Behavior Therapy 25, 407–429.

Epstein N, Schlesinger SE, and Dryden W (1988) Cognitive–behavioral Therapy with Families. Brunner/Mazel, NY, USA.

Evans MD, Hollon SD, DeRubeis RJ, et al. (1992) Differential relapse following cognitive therapy and pharmacotherapy for depression. Archives of General Psychiatry 49, 802–808.

Eysenck HJ (1952) The effects of psychotherapy: An evaluation. Journal of Consulting and Clinical Psychology 16, 319–324.

Fairburn CG, Agras WS, and Wilson GT (1992) The research on treatment of bulimia nervosa: Practical and theoretical implications. In The Biology of Feast and Famine: Relevence to Eating Disorders, Anderson GH and Kennedy SH (eds). Academic Press, San Diego, CA, USA, pp 318–340.

Fairburn CG, Jones R, Peveler RC, et al. (1991) Three psychological treatments for bulimia nervosa. Archives of General Psychiatry 48, 463–469.

Fairburn CG, Jones R, Peveler RC, et al. (1993) Psychotherapy and bulimia nervosa. Archives of General Psychiatry 50, 419–428.

Fairburn CG, Norman PA, Welch SL, et al. (1995) A prospective study of outcome in bulimia nervosa and the long-term effects of three psychological treatments. Archives of General Psychiatry 52, 304–312.

Fava GA, Grandi G, Zielezny M, et al. (1994) Cognitive behavioral treatment of residual symptoms in primary major depressive disorder. American Journal of Psychiatry 151(9), 1295–1299.

Fava GA, Grandi G, Zielezny M, et al. (1996) Four-year outcome for cognitive behavioral treatment of residual symptoms in major depression. American Journal of Psychiatry 153(7), 945–947.

Fava GA, Rafanelli C, and Grandi S (1998a) Six-year outcome for cognitive behavioral treatment of residual symptoms in major depression. American Journal of Psychiatry 155(10), 1443–1445.

Fava GA, Rafanelli C, Grandi S, et al. (1998b) Prevention of recurrent depression with cognitive behavioral therapy. Archives of General Psychiatry 55, 816–820.

Ferster CB (1973) A functional analysis of depression. American Psychologist 28, 857–870.

Fitzgerald TE and Phillips W (1991) Attentional bias and agoraphobic avoidance: The role of cognitive style. Journal of Anxiety Disorders 5, 333–341.

Foa EB, Kozak MJ, Steketee GS, et al. (1992) Treatment of depressive and obsessive-compulsive symptoms in OCD by imipramine and behaviour therapy. British Journal of Clinical Psychology 31, 279–292.

Fowler D and Morley S (1989) The cognitive–behavioral treatment of hallucinations and delusions: A preliminary study. Behavioral Psychotherapy 17, 262–282.

Freeman A, Simon KM, Beutler LE, et al. (eds) (1989) Comprehensive Handbook of Cognitive Therapy. Plenum Publishing, NY, USA.

Freud S (1950) Mourning and melancholia. In Collected Papers. Hogarth Press and the Institute of Psychoanalysis, London 4, 152–172 (Original work published in 1917).

Friedman ES (1997) Combined therapy for depression. Journal of Practical Psychiatry and Behavioral Health 3(4), 211–222.

Friedman ES and Thase ME (2006) In Cognitive–behavioral therapy for depression and dysthymia, Textbook of Mood Disorders, Stein DJ, Kupfer DJ, and Schatzberg AF (eds). American Psychiatric Publishing, Washington, DC, USA, pp 353–371.

Friedman ES, Wright J, Jarrett RB, et al. (2006) Combining cognitive therapy and medication for mood disorders. Psychiatric Annals 36, 320–328.

Garner DM (1992) Psychotherapy for eating disorders. Current Opinion in Psychiatry 5, 391–395.

Gelder MG (1998) Combined pharmacotherapy and cognitive behavioral therapy in the treatment of panic disorder. Journal of Clinical Psychopharmacology 18(S), 2S–5S.

Gelernter CS, Uhde TW, Cimbolic P, et al. (1991) Cognitive–behavioral and pharmacological treatments of social phobia. Archives of General Psychiatry 48, 938–945.

Gloaguen V, Cottraux J, Cucherat M, et al. (1998) A meta-analysis of the effects of cognitive therapy in depressed patients. Journal of Affective Disorders 49, 59–72.

Goldbloom DS, Olmsted M, Davis R, et al. (1997) A randomized controlled trial of fluoxetine and cognitive behavioral therapy for bulimia nervosa: Short-term outcome. Behavior Research Therapy 35(9), 803–811.

Goldfried MR and Davison GC (1994) Clinical Behavior Therapy. John Wiley & Sons, NY, USA (Expanded Version).

Goodman WK, Price LH, Rasmussen SA, et al. (1989) The Yale–Brown Obsessive Compulsive Scale. II. Validity. Archives of General Psychiatry 46, 1012–1016.

Gortner ET, Gollan JK, Dobson KS, et al. (1998) Cognitive–behavioral treatment for depression: Relapse prevention. Journal of Consulting and Clinical Psychology 66(2), 377–384.

Gosselin P, Ladouceur R, Morin CM, et al. (2006) Benzodiazepine discontinuation among adults with GAD: A randomized trial of cognitive–behavioral therapy. Journal of Consulting and Clinical Psychology 74(5), 908–919.

Greenberger D and Padesky CA (1995) Mind Over Mood. A cognitive therapy treatment manual for clients. Guilford Press, NY, USA.

Haby MM, Donnelly M, Corry J, et al. (2006) Cognitive behavioural therapy for depression, panic disorder and generalized anxiety disorder: A meta-regression of factors that may predict outcome. Australian and New Zealand Journal of Psychiatry 40, 9–19.

Hamilton M (1959) The assessment of anxiety states by rating. British Journal of Medical Psychology 32, 50–55.

Hamilton M (1960) A rating scale for depression. Journal of Neurology, Neurosurgery and Psychiatry 23, 56–62.

Hammen C, Ellicott A, Gitlin M, et al. (1989) Sociotropy/autonomy and vulnerability to specific life events in patients with unipolar depression and bipolar disorders. Journal of Abnormal Psychology 98, 154–160.

Hegel MT, Ravaris CL, and Ahles TA (1994) Combined cognitive–behavioral and time-limited alprazolam treatment of panic disorder. Behavior Therapy 25, 183–195.

Heimberg RG, Dodge CS, Hope DA, et al. (1990) Cognitive behavioral group treatment for social phobia: Comparison with a credible placebo control. Cognitive Therapy Research 14, 1–23.

Heldt E, Gus Manfro G, Kipper L, et al. (2006) One-year follow-up of pharmacotherapy-resistant patients with panic disorder treated with cognitive-behavior therapy: Outcome and predictors of remission. Behavior Research Therapy 44(5), 657–665.

Hersen M, Bellack AS, Himmelhoch JM, et al. (1984) Effects of social skill training, amitriptyline, and psychotherapy in unipolar depressed women. Behavior Therapy 15, 21–40.

Higgins ST, Budney AJ, Bickel WK, et al. (1994) Incentives improve outcome in outpatient behavioral treatment of cocaine dependence. Archives of General Psychiatry 51, 568–576.

Hollan SD and Kendall PC (1980) Cognitive self-statements in depression: Development of an automatic thought questionnaire. Cognitive Therapy Research 4, 383–395.

Hollon SD, DeRubeis RJ, Evans MD, et al. (1992) Cognitive-therapy and pharmacotherapy for depression: Singly and in combination. Archives of General Psychiatry 49, 774–781.

Hollon SD, DeRubeis RJ, Shelton RC, et al. (2005) Prevention of relapse following cognitive therapy vs medication in moderate to severe depression. Archives of General Psychiatry 62, 417–422.

Hull CL (1943) Principles of Behavior. Appleton, NY, USA.

Ilardi SS and Craighead WE (1994) The role of nonspecific factors in cognitive-behavior therapy for depression. Clinical Psychology: Science and Practice 1(2), 138–156.

Ingram RE and Kendall PC (1987) The cognitive side of anxiety. Cognitive Therapy Research 11, 523–536.

Jacobson NS, Dobson KS, and Truax P (1996) A component analysis of cognitive–behavioral treatment fro depression. Journal of Consulting and Clinical Psychology 64, 295–304.

Jacobson NS, Dobson KS, Fruzzetti AE, et al. (1991) Marital therapy as a treatment for depression. Journal of Consulting and Clinical Psychology 59, 547–557.

Jarrett RB and Kraft D (1997) Prophylactic cognitive therapy for major depressive disorder. In Session: Psychotherapy in Practice 3(3), 65–79.

Jarrett RB, Kraft D, Doyle J, et al. (2001) Preventing recurrent depression using cognitive therapy with and without a continuation phase: A randomized clinical trial. Archives of General Psychiatry 58, 381–388.

Jarrett RB and Rush AJ (1994) Short-term psychotherapy of depressive disorders: Current status and future directions. Psychiatry 57, 115–132.

Jindal R, Thase ME, Fasiczka AL, et al. (2002) Electroencephalographic sleep profiles in single-episode and recurrent unipolar forms of major depression: II. Comparison during remission. Biological Psychiatry 51(3), 230–236.

Kadden RM, Conney NL, Getter H, et al. (1989) Matching alcoholics to coping skills or interactional therapies: Pretreatment results. Journal of Consulting and Clinical Psychology 57, 698–704.

Kampman M, Keijsers GP, Hoogduin, et al. (2002) Addition of cognitive-behaviour therapy for obsessive-compulsive disorder patients non-responding to fluoxetine. Acta Psychiatrica Scandinavica 106(4), 314–319.

Kanfer FH and Saslow G (1965) Behavioral analysis: an alternative to diagnostic classification. Archives of General Psychiatry 12, 529–538.

Kazdin AE (1982) History of behavior modification. In International Handbook of Behavior Modification and Therapy, Bellack AS, Hersen M, and Kazdin AE (eds). Plenum Publishing, NY, USA, pp 3–32.

Kazdin AE and Wilcoxin LA (1976) Systematic desensitization and nonspecific treatment effects: A methodological consideration. Psychology Bulletin 83, 729–758.

Keller MB, McCullough JP, Klein DN, et al. (2000) A comparison of nefazodone. The cognitive behavioral-analysis system for psychotherapy, and their combination for the treatment of chronic depression. New England Journal of Medicine 342, 1462–1470.

Kendall PC and Hollon SD (1989) Anxious self-talk: Development of the anxious self-statements questionnaire (ASSQ). Cognitive Therapy Research 13, 81–93.

Kenwright M, Liness S, and Marks IM (2001) Reducing demands on clinicians by offering computer-aided self-help for phobia/panic: A feasibility study. British Journal of Psychiatry 179, 456–459.

Kingdon DG and Turkington D (1991) The use of cognitive behavior therapy with a normalizing rationale in schizophrenia. Journal of Nervous and Mental Disorders 179, 207–211.

Kingdon DG and Turkington D (1995) Cognitive–behavioral Therapy of Schizophrenia. Guilford Press, NY, USA.

Klein DC and Seligman MEP (1976) Reversal of performance deficits in learned helplessness and depression. Journal of Abnormal Psychology 85, 11–26.

Klein DF (1993) False suffocation alarms, spontaneous panics, and related conditions: An integrative hypothesis. Archives of General Psychiatry 50, 306–317.

Klosko JS, Barlow DH, Tassinari RB, et al. (1990) Comparison of alprazolam and behavior therapy in the treatment of panic disorder. Journal of Consulting and Clininical Psychology 58, 77–84.

Kuipers E, Garety P, and Fowler D (1997) London-East Anglia randomized controlled trial of cognitive–behavioral therapy for psychosis: I. Effects of the treatment phase. British Journal of Psychiatry 171(10), 319–327.

Kupfer DJ, Frank E, Perel JM, et al. (1986) Five-year outcome for maintenance therapies in recurrent depression. Archives of General Psychiatry 43, 43–50.

Laberge B, Gouthier JG, Cote G, et al. (1993) Cognitive–behavioral therapy of panic disorder with secondary depression: A preliminary investigation. Journal of Consulting and Clinical Psychology 61(6), 1028–1037.

Lam DL, Bright J, Jones S, et al. (2000) Cognitive therapy for bipolar illness – A pilot study of relapse prevention. Cognitive Therapy and Research 24(5), 503–520.

Lam DL, Haywood P, Watkins ER, et al. (2005a) Relapse prevention in patients with bipolar disorder: Cognitive therapy outcomes after 2 years. Archives of General Psychiatry 162, 324–329.

Lam DL, McCrone P, Wright K, et al. (2005b) Cost-effectiveness of relapse prevention cognitive therapy for bipolar disorder: 30-month study. British Journal of Psychiatry 186, 500–506.

LeDoux J (1988) Fear and the brain: Where have we been, and where are we going. Biological Psychiatry 44, 1229–1238.

LeFebvre MF (1981) Cognitive distortion and cognitive errors in depressed psychiatric and low back pain patients. Journal of Consulting and Clinical Psychology 49, 517–525.

Lewinsohn PM (1974) A behavioral approach to depression. In The psychology of Depression: Contemporary Theory and Research, Friedman RJ and Katz MM (eds). Winston, Washington, DC, USA, pp 157–185.

Lewinsohn PM, Sullivan JM, and Grosscup SJ (1982) Behavioral therapy: Clinical applications. In Short-Term Psychotherapies for Depression, Rush AJ (ed). Guilford Press, NY, USA, pp 50–87.

Linden M, Zubraegel D, Baer T, et al. (2005) Efficacy of cognitive behaviour therapy in generalized anxiety disorders. Results of a controlled clinical trial (Berlin CBT-GAD Study). Psychotherapy and Psychosomatics 74(1), 36–42.

Lindsley OR (1956) Operant conditioning methods applied to research in chronic schizophrenia. Psychiatry Research 5, 118–139.

Linehan MM, Armstrong HE, Suarez A, et al. (1991) Cognitive–behavioral treatment of chronically parasuicidal borderline patients. Archives of General Psychiatry 48, 1060–1064.

Linehan MM, Comtois KA, Murray AM, et al. (2006) Two-year randomized controlled trial and follow-up of dialectical behavior therapy vs therapy by experts for suicidal behavior and borderline personality disorder. Archives of General Psychiatry 63, 757–766.

Linehan MM, Heard HL, and Armstrong HE (1993) Naturalistic follow-up of a behavioral treatment for chronically parasuicidal borderline patients. Archives of General Psychiatry 50, 971–974.

Locke SE and Rezza MEH (1996) Computer-based education in mental health. MD Computing 13, 10–45.

Maier SF and Seligman MEP (1976) Learned helplessness: Theory and evidence. Journal of Experimental Psychology 105, 3–46.

Malott RW, Whaley DL, and Mallott ME (1993) Elementary Principles of Behavior. Prentice Hall, Englewood Cliffs, NJ, USA.

Margraf J, Barlow DH, Clark DM, et al. (1993) Psychological treatment of panic: Work in progress on outcome, active ingredients, and follow-up. Behavior Research Therapy 31, 1–8.

Marks IM and Gelder MG (1965) A controlled retrospective study of behaviour therapy in phobic patients. British Journal of Psychiatry 111, 561–573.

Marks IM, Lelliott P, Basoglu M, et al. (1988) Clomipramine, self-exposure and therapist-aided exposure for obsessive compulsive rituals. British Journal of Psychiatry 152, 522–534.

Marks IM and Matthews AM (1979) Brief standard self-rating for phobic patients. Behavior Research Therapy 17, 263–267.

Marks IM, Stern RS, Mawson D, et al. (1980) Clomipramine and exposure for obsessive compulsive rituals. British Journal of Psychiatry 136, 1–25.

Marks IM, Swinson RP, Basoglu M, et al. (1993) Alprazolam and exposure alone and combined in panic disorder with agoraphobia: A controlled study in London and Toronto. British Journal of Psychiatry 162, 776–787.

Masserman JH (1943) Behavior and Neurosis. University of Chicago Press, Chicago, IL, USA.

Mathews A and MacLeod C (1987) An information-processing approach to anxiety. Journal of Cognitive Psychotherapy 1, 105–115.

Mavissakalian M and Michelson L (1986) Agoraphobia: Relative and combined effectiveness of therapist-assisted in-vivo exposure and imipramine. Journal of Consulting and Clinical Psychology 47, 117–122.

McCullough JP (2000) Treatment for Chronic Depression: Cognitive Behavioral Analysis System of Psychotherapy. Guilford Press, NY, USA.

McLean PD and Hakstian AR (1979) Clinical depression: Comparative efficacy of outpatient treatments. Journal of Consulting and Clinical Psychology 47, 818–836.

Meichenbaum DB (1977) Cognitive-Behavior Modification: An Integrative Approach. Plenum Publishing, NY, USA.

Metalsky GI, Halberstadt LJ, and Albramson LY (1987) Vulnerability to depressive mood reactions: Toward a more powerful test of the diathesis-stress and causal mediation components of the reformulated theory of depression. Journal of Personality and Social Psychology 52, 386–393.

Miklowitz DJ, Otto MW, Frank E, et al. (2007) Psychosocial treatments for bipolar depression: A 1-year randomized trial from the Systematic Treatment Enhancement Program. Archives of General Psychiatry 64, 419–427.

Miller WR and Seligman MEP (1975) Depression and learned helplessness in man. Journal of Abnormal Psychology 84, 228–238.

Mischel W (1968) Personality and Assessment. John Wiley & Sons, NY, USA.

Mowrer OH (1947) On the dual nature of learning—a re-interpretation of 'conditioning' and 'problem-solving'. Harvard Education Review 16, 102–140.

Mueser KT (1998) Cognitive–behavioral treatment of schizophrenia. In International Handbook of Cognitive and Behavioral Treatments for Psychological Disorders, Caballo VE (ed). Elsevier Science LTD, Oxford, pp 551–570.

Murphy GE, Simons AD, Wetzel RD, et al. (1984) Cognitive therapy and pharmacotherapy. Singly and together in the treatment of depression. Archives of General Psychiatry 41, 33–41.

National Institutes of Health (1991) Treatment of panic disorder. National Institute of Health Consens Statement 9(2), 25–27.

Nelson RE and Craighead WE (1977) Selective recall of positive and negative feedback, self-control behaviors and depression. Journal of Abnormal Psychology 86, 379–388.

Noyes R, Garvey MJ, Cook B, et al. (1991) Controlled discontinuation of benzodiazepine treatment for patients with panic disorder. American Journal of Psychiatry 148, 517–523.

Oakes WF and Curtis N (1982) Learned helplessness: Not dependent upon cognitions, attributions, or other such phenomenal experiences. Journal of Personality 50, 387–408.

Ost LG, Thulin U, and Ramnero J (2004) Cognitive behavior therapy vs exposure in vivo in the treatment of panic disorder with agoraphobia. Behavior Research Therapy 42(10), 1105–1127.

Otto MW and Deveney C (2005) Cognitive–behavioral therapy and the treatment of panic disorder: Efficacy and strategies. Journal of Clinical Psychiatry 66(S4), 28–32.

Otto MW, Gould RA, and Pollack MH (1994) Cognitive–behavioral treatment of panic disorder: considerations for the treatment of patients over the long term. Psychiatric Annuals 24, 307–315.

Otto MW, Pollack MH, Sachs GS, et al. (1993) Discontinuation of benzodiazepine treatment: Efficacy of cognitive–behavioral therapy for patients with panic disorder. American Journal of Psychiatry 150(10), 1485–1490.

Overholser JC (1993a) Elements of the Socratic method: I. Systematic questioning. Psychotherapy 30, 67–74.

Overholser JC (1993b) Elements of the Socratic method: II. Inductive reasoning. Psychotherapy 30, 75–85.

Overholser JC (1993c) Elements of the Socratic method: III. Universal definitions. Psychotherapy 31, 286–293.

Paul GL (1966) Insight Versus Desensitization in Psychotherapy: An Experiment in Anxiety Reduction. Stanford University Press, Stanford, CA, USA.

Pavlov IP and Gantt WH (translated) (1928) Lectures on Conditioned Reflexes. International Publishers, NY, USA.

Paykel ES, Scott J, Teesdale JD, et al. (1999) Prevention of relapse in residual depression by cognitive therapy. A controlled Trial. Archives of General Psychiatry 56, 829–837.

Persons JB (1989) Cognitive Therapy in Practice: A Case Formulation Approach. WW Norton, NY, USA.

Peterson C, Villanova P, and Raps CS (1985) Depression and attributions: Factors responsible for inconsistent results in the published literature. Journal of Abnormal Psychology 94, 165–168.

Pollack MH, Otto MW, Tesar GE, et al. (1993) Long-term outcome after acute treatment with clonazepam and alprazolam for panic disorder. Journal of Clinical Psychopharmacology 13, 257–263.

Power KG, Simpson RJ, Swanson V, et al. (1990) A controlled comparison of cognitive-behavior therapy, diazepam, and placebo, alone, and in combination, for the treatment of generalized anxiety disorder. Journal of Anxiety Disorders 4, 267–292.

Rachman SJ, Craske MG, Tallman K, et al. (1986) Does escape behavior strengthen agoraphobic avoidance? A replication. Behavior Research Therapy 26, 41–52.

Rachman SJ and Wilson GT (1980) The Effects of Psychological Therapy. Pergamon Press, NY, USA.

Ravindran AV, Anisman H, Merali Z, et al. (1999) Treatment of primary dysthymia with group cognitive therapy and pharmacotherapy: Clinical symptoms and functional impairment. American Journal of Psychiatry 156(10), 1608–1617.

Reas DL and Grilo CM (2004) Cognitive–behavioral assessment of body image disturbances. Journal of Psychiatric Practices 10(5), 314–322.

Rehm LP (1977) A self-control model of depression. Behavior Therapy 8, 787–804.

Ricca V, Mannucci E, Zucchi T, et al. (2000) Cognitive-behavioural therapy for bulimia nervosa and binge eating disorder: A review. Psychotherapy and Psychosomatics 69, 287–295.

Rizley R (1978) Depression and distortion in the attribution of causality. Journal of Abnormal Psychology 87, 32–48.

Robins CJ and Hayes AM (1993) An appraisal of cognitive therapy. Journal of Consulting and Clinical Psychology 61, 205–214.

Ross M and Scott M (1985) An evaluation of the effectiveness of individual and group cognitive therapy in the treatment of depressed patients in an inner city health center. Journal of the Royal College of General Practictioners 35, 239–242.

Roth D, Bielski R, Jones M, et al. (1982) A comparison of self-control therapy and antidepressant medication in the treatment of depression. Behavior Therapy 13, 133–144.

Rufer M, Hand I, Alsleben H, et al. (2005) Long-term course and outcome of obsessive-compulsive patients after cognitive–behavioral therapy in combination with either fluvoxamine or placebo: A 7-year follow-up of a randomized double-blind trial. European Archives of Psychiatry and Clinical Neuroscience 255(2), 121–128.

Rush AJ and Beck AT (1995) Cognitive therapy. In Comprehensive Textbook of Psychiatry:Vol. 6, Kaplan HI, Sadock BJ (eds). Wiliams and Wilkins, Baltimore, MD, USA, pp 2167–2177.

Rush AJ, Beck AT, Kovacs M, et al. (1977) Comparative efficacy of cognitive therapy and pharmacotherapy in the treatment of depressed outpatients. Cognitive Therapy Research 1, 17–37.

Salkovskis PM, Atha C, and Storer D (1990) Cognitive-behavioural problem solving in the treatment of patients who repeatedly attempt suicide. A controlled trial. British Journal of Psychiatry 157, 871–876.

Salkovskis PM and Westbrook D (1989) Behavior therapy and obsessional ruminations: Can failure be turned into success? Behavior Research Therapy 27, 149–160.

Schuurmans J, Comijs H, Emmelkamp PM, et al. (2006) A randomized, controlled trial of the effectiveness of cognitive–behavioral therapy and sertraline versus a waitlist control group for anxiety disorders in older adults. American Journal of Geriatric Psychiatry 14(3), 255–263.

Scott J (1992) Chronic depression: Can cognitive therapy succeed when other treatments fail? Behavior Psychotherapy 20, 25–36.

Scott J, Garland A, and Moorehead S (2001) A pilot study of cognitive therapy in bipolar disorders. Psychological Medicine 31, 459–467.

Scott J and Wright JH (1997) Cognitive therapy for chronic and severe mental disorders. In American Psychiatric Press Review of Psychiatry, Vol 16, Dickstein LJ, Riba MB, and Oldham JM (eds). Washington, DC, USA, pp 1135–1170.

Scott J, Palmer S, Paykel E, et al. (2003) Use of cognitive therapy relapse prevention in chronic depression: Cost-effectiveness study. British Journal of Psychiatry 192, 221–227.

Scott J, Paykel E, Morriss R, et al. (2006) Cognitive-behavioural therapy for severe and recurrent bipolar disorders: Randomized controlled trial. British Journal of Psychiatry 188, 313–320.

Segal ZV (1988) Appraisal of the self-schema construct in cognitive models of depression. Psychological Bulletin 103, 147–162.

Seligman MEP (1975) Helplessness: On Depression, Development, and Death. WH Freeman, San Francisco, CA, USA.

Selmi PM, Klein MH, Greist JH, et al. (1990) Computer-administered cognitive–behavioral therapy for depression. American Journal of Psychiatry 147, 51–56.

Selmi PM, Klein MH, Greist JH, et al. (1991) Computer-administered therapy for depression. MD Computing 8, 98–102.

Sensky T, Turkington D, Kingdon D, et al. (2000) A randomized controlled trial of cognitive–behavioral therapy for persistent symptoms in schizophrenia resistant to medication. Archives of General Psychiatry 57(2), 176–172.

Shaw SC, Marks IM, and Toole S (1999) Lessons from pilot tests of computer self-help for agoraphobia, claustrophobia, and panic. MD Computing 16(4), 44–48.

Shea MT, Elkin I, Imber SD, et al. (1992) Course of depressive symptoms over follow-up: Findings from the National Institute of Mental Health Treatment of Depression Collaborative Research Program. Archives of General Psychiatry 49, 782–787.

Shear MK, Fyer AJ, Ball G, et al. (1991) Vulnerability to sodium lactate in panic disorder patients given cognitive–behavioral therapy. American Journal of Psychiatry 148, 795–797.

Simons AD, Garfield SL, and Murphy CE (1984) The process of change in cognitive therapy and pharmacotherapy for depression. Archives of General Psychiatry 41, 45–51.

Simons AD, Murphy GE, and Levine JL (1986) Cognitive therapy and pharmacotherapy of depression: Sustained improvement over one year. Archives of General Psychiatry 43, 43–48.

Skinner BF (1938) The Behavior of Organisms. Appleton-Century-Crofts, NY, USA.

Skinner BF (1948) Superstition in the pigeon. Journal of Experimental Psychology 38, 168–170.

Spence KW (1956) Behavior Theory and Conditioning. Yale University Press, New Haven.

Spiegel DA, Bruce TJ, Gregg SF, et al. (1994) Does cognitive behavior therapy assist slow-taper alprazolam discontinuation in panic disorder? American Journal of Psychiatry 151, 876–881.

Staats AW (1964) Human Learning: Studies Extending Conditioning Principles to Complex Behavior. Holt, Rinehart & Winston, NY, USA.

Stanley MA, Beck JG, and Glosso DJ (1997) Treatment of generalized anxiety in older adults: A preliminary comparison of cognitive behavioral and supportive approaches. Behavior Therapy 27, 285–296.

Stekette G (1994) Behavioral assessment and treatment planning with obsessive compulsive disorder: A review emphasizing clinical application. Behavior Therapy 25, 613–633.

Stern RS (1978) Obsessive thoughts: The problem of therapy. British Journal of Psychiatry 133, 200–205.

Sweeney PD, Anderson K, and Bailey S (1986) Attributional style in depression: A meta-analysis review. Journal of Personality and Social Psychology 50, 974–991.

Tarrier N, Beckett R, Harwoods S, et al. (1993) A trial of two cognitive–behavioral methods of treating drug-resistant residual psychotic symptoms in schizophrenic patients: I. Outcome. British Journal of Psychiatry 162, 524–532.

Teasdale JD (1983) Negative thinking in depression: Cause, effect, or reciprocal relationship? Advances in Behavior Research Therapy 5, 3–25.

Thackwray DE, Smith MC, Bodfish JW, et al. (1993) A comparison of behavioral and cognitive–behavioral interventions for bulimia nervosa. Journal of Consulting and Clinical Psychology 61, 639–645.

Thase ME (1992) Long-term treatments of recurrent depressive disorders. Journal of Clinical Psychiatry 53(9), 32–44.

Thase ME (1993) Transition and aftercare. In Cognitive Therapy with Inpatients, Wright JH, Thase ME, Beck AT, et al. (eds). Guilford Press, NY, USA, pp 414–435.

Thase ME (1994) After the fall: Cognitive behavior therapy of depression in the "post-collaborative era". Behavior Therapy 17, 48–52.

Thase ME (1995) Reeducative psychotherapy. In Treatments of Psychiatric Disorders: The DSM, 4th edition, Gabbard GO (ed). American Psychiatric Press, Washington, DC, USA.

Thase ME, Bowler K, and Harden T (1991) Cognitive behavior therapy of endogenous depression: Part 2. Preliminary findings in 16 unmedicated inpatients. Behavior Therapy 22, 469–477.

Thase ME, Friedman ES, Berman S, et al. (2000) Is cognitive behavior therapy just a 'nonspecific' intervention for depression? A retrospective comparison of consecutive cohorts treated with cognitive behavior therapy or supportive counseling and pill placebo. Journal of Affective Disorders 57, 63–71.

Thase ME, Friedman ES, Biggs MM, et al. (2007) Cognitive therapy as a second-step treatment: A STAR*D report. American Journal of Psychiatry 164, 739–752.

Thase ME and Howland R (1994) Refractory depression: Relevance of psychosocial factors and therapies. Psychiatric Annuals 24, 232–240.

Thase ME, Reynolds CF III, Frank E, et al. (1994a) Do depressed men and women respond similarly to cognitive behavior therapy? American Journal of Psychiatry 151, 500–505.

Thase ME, Reynolds CF III, Frank E, et al. (1994b) Response to cognitive behavior therapy in chronic depression. Journal of Psychotherapy Practice Research 3, 204–214.

Thase ME, Simons AD, McGeary J, et al. (1992) Relapse after cognitive behavior therapy of depression: Potential implications for longer courses of treatment? American Journal of Psychiatry 149, 1046–1052.

Thase ME, Simons AD, and Reynolds CF III (1993) Psychobiological correlates of poor response to cognitive behavior therapy: Potential indications for antidepressant pharmacotherapy. Psychopharmacology Bulletin 29, 293–301.

Thase ME and Wright JH (1991) Cognitive behavior therapy manual for depressed inpatients: A treatment protocol outline. Behavior Therapy 22, 579–595.

Turner SM, Hersen M, Bellack AS, et al. (1980) Behavioral and pharmacological treatment of obsessive-compulsive disorders. Journal of Nervous and Mental Disorders 168, 651–657.

Ullmann LP and Krasner L (eds) (1965) Case Studies in Behavior Modification. Holt, Rinehart & Winston, NY, USA.

Vaidya V (2006) Cognitive behavior therapy of binge eating disorder. Advances in Psychosomatic Medicine 27, 86–93.

van Oppen P, van Balkom AJ, de Haan E, et al. (2005) Cognitive therapy and exposure in vivo alone and in combination with fluvoxamine in obsessive-compulsive disorder: A 5-year follow-up. Journal of Clinical Psychiatry 66(11), 1415–1422.

Walsh BT, Wilson GT, Loeb KL, et al. (1997) Medication and psychotherapy in the treatment of bulimia nervosa. American Journal of Psychiatry 154(4), 523–531.

Watkins JT and Rush AJ (1983) Cognitive response test. Cognitive Therapy Research 7, 425–436.

Watson JB and Rayner R (1920) Conditioned emotional reactions. Journal of Experimental Psychology 3, 1–14.

Weiss JM and Simson PG (1985) Neurochemical mechanisms underlying stress-induced depression. In Stress and Coping, Field TM, McCabe PM, and Schneiderman N (eds). Lawrence Erlbaum, Hillsdale, NJ, USA, pp 93–113.

Wenzloff RM and Grozier SA (1988) Depression and the magnification of failure. Journal of Abnormal Psychology 97, 90–93.

Whisman MA, Miller IW, Norman WH, et al. (1991) Cognitive therapy with depressed inpatients: Specific effects on dysfunctional cognitions. Journal of Consulting and Clinical Psychology 59, 282–288.

Whisman MS (1993) Mediators and moderators of change in cognitive therapy of depression. Psychology Bulletin 114, 248–265.

Whittal ML, Thordarson DS, and McLean PD (2005) Treatment of obsessive-compulsive disorder: Cognitive behavior therapy vs. exposure and response prevention. Behaviour Research and Therapy 43(12), 1559–1576.

Wilkes TCR, Belsher G, Rush AJ, et al. (1994) Cognitive Therapy for Depressed Adolescents. Guilford Press, NY, USA.

Willner P (1991) Anival models as simulations of depression. Trends of Pharmacology Science 12, 131–136.

Wilson GT (1999) Cognitive behavior therapy for eating disorders: Progress and problems. Behavior Research Therapy 37, S79–S95.

Wilson PH (1982) Combined pharmacological and behavioral treatment of depression. Behavior Research Therapy 29, 173–184.

Wolpe J (1952) Experimental neuroses as learned behavior. British Journal of Psychology 43, 243–268.

Wolpe J (1958) Psychotherapy by Reciprocal Inhibition. Stanford University Press, Stanford, CA, USA.

Wolpe J (1982) The Practice of Behavior Therapy. Pergamon Press, NY, USA.

Wolpe J and Lang PJ (1964) A fear survey schedule for use in behavior therapy. Behavior Research Therapy 2, 27–30.

Woody GE, McLellan AT, and Luborsky L (1984) Psychiatric severity as a predictor of benefits from psychotherapy. American Journal of Psychiatry 141, 1171–1177.

Wright JH (1988) Cognitive therapy of depression. In The American Psychiatric Press Review of Psychiatry, Vol 7, Frances AJ and Hales RE (eds). American Psychiatric Press, Washington, DC, USA, pp 554–590.

Wright JH (2004) Computer-assisted Cognitive-behavior Therapy. In Cognitive-behavior Therapy, Wright JH (ed). American Psychiatric Publishing Inc., Washington, DC, USA, pp 55–82.

Wright JH, Basco MR, and Thase ME (2006) Learning Cognitive Behavior Therapy: An Illustrated Guide, American Psychiatric Publishing Inc., Washington, DC, USA.

Wright JH and Beck AT (1983) Cognitive therapy of depression: Theory and practice. Hospital Community Psychiatry 34, 1119–1127.

Wright JH, Beck AT, and Thase ME (2003) Cognitive therapy. In Textbook of Clinical Psychiatry, Fourth edition, Hales RE, Yudofsky SC, and Talbott JA (eds). American Psychiatric Publishing, Washington, DC, USA, pp 1245–1284.

Wright JH and Davis D (1994) The therapeutic relationship in cognitive–behavioral therapy: Patient perceptions and therapist responses. Cognitive Behavior Practices 1, 25–45.

Wright JH, Salmon P, Wright AS, et al. (1995) Cognitive Therapy: A Multimedia Learning Program. MindStreet, Louisville, KY, USA.

Wright JH and Thase ME (1992) Cognitive and biological therapies: A synthesis. Psychiatric Annuals 22, 451–458.

Wright JH, Thase ME, Beck AT, et al. (1993) Cognitive Therapy with Inpatients: Developing a Cognitive Milieu. Guilford Press, NY, USA.

Wright JH and Wright AS (1995) Computer-assisted psychotherapy. Journal of Psychotherapy Practice and Research 315–329.

Wright JH, Wright AS, Albano AM, et al. (2005) Computer-assisted cognitive therapy for depression: Maintaining efficacy while reducing therapist time. American Journal of Psychiatry 162, 1158–1164.

Wright JH, Wright AS, and Beck AT (2002) Good days Ahead: The Multimedia Program for Cognitive Therapy. Mindstreet, Louisville, KY, USA.

Young JE and Lindermann MD (1992) An integrative schema-focused model for personality disorders. Journal of Cognitive Psychotherapy 6, 11–23.

Zaretsky AE, Segal ZV, and Gemar M (1999) Cognitive therapy for bipolar depression: A pilot study. Canadian Journal of Psychiatry 44, 491–494.

Zautra JH, Guenther RT, and Chartier GM (1985) Attributions for real and hypothetical events: Their relation to self-esteem and depression. Journal of Abnormal Psychology 94, 530–540.

Zubin J (1953) Evaluation of therapeutic outcome in mental disorders. Journal of Nervous and Mental Disorders 117, 95–111.