1 Cognitive therapy for depression

David J. A. Dozois and Peter J. Bieling

The nature of the disorder

Depression is a heterogeneous phenomenon that ranges from a mild and relatively transient negative mood state (dysphoria or despondency), often associated with a sense of loss, disappointment, or hopelessness, to a debilitating cluster of symptoms that impair most aspects of social or occupational functioning. In its clinical state, major depression refers to a constellation of symptoms that is associated with significant cognitive, emotional, behavioral, physiological, and interpersonal impairment (American Psychiatric Association [APA]) [1].

As defined by the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV-TR; [1]), an individual must minimally experience five out of nine symptoms nearly every day for at least two weeks to meet diagnostic criteria for a major depressive episode. Unfortunately, the duration of a depressive episode often extends over a much longer period of time than is required diagnostically. One of these symptoms must be either sadness or loss of interest/anhedonia. Additional symptoms include changes in appetite or weight (increase or decrease), disturbed sleep (insomnia or hypersomnia), psychomotor retardation or agitation, loss of energy or fatigue, worthlessness, self-blame or excessive guilt, impaired concentration or ability to make decisions, and suicidal ideation, attempted suicide, or recurrent thoughts of death [1]. Exclusionary criteria include the physiological effects of a substance or general medical condition that fully accounts for the symptom profile, and short-term (i.e., up to two months) bereavement that is not characterized by worthlessness, suicidality, psychotic symptomatology, or psychomotor retardation [1]. Major depression is often characterized as an episodic condition with a distinct onset and offset. A first episode is termed a major depressive episode whereas the diagnosis of recurrent depression is major depressive disorder (MDD).

A number of large-scale epidemiological studies have been conducted to assess the prevalence of depression in the general population. These studies indicate that depression is among the most common of psychiatric problems. The latest estimates stem from the National Comorbidity Survey – Replication (NCS-R), a nationally representative survey of 9,282 participants in the United States. Twelve-month prevalence rates were 9.5% for any mood disorder and 6.7% for MDD [2]. Lifetime estimates for any mood disorder and MDD were 21% and 17%, respectively [3].

A depressive episode can occur at any time during the lifespan, but mid to late adolescence and early adulthood represent the periods of life most commonly associated with increased risk [4]. Approximately 25% of adults with unipolar mood disorders report an onset prior to young adulthood with 50% by age 30 years [3] (also see [4]). Adolescence is also a time when the female preponderance of depression emerges [5]; thereafter, females are consistently two times more likely than males to experience depression.

Without treatment, MDD usually lasts between four months and one year [1, 6, 7]. Most individuals (65 to 70%) recover within a year [8, 9], but many do not, and some individuals do not experience remission even after five years [8]. Enduring or fluctuating periods of residual symptoms persist for months to years in 20 to 30% of cases. This partial remission is associated with increased risk of relapse [7, 10, 11]. Within treated samples, the rate of recovery is approximately 40% within three months, 60% within six months, and 80% within one year [12]. Notwithstanding these rates, a substantial proportion

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of individuals continue on a course that is more chronic. The rate of chronicity in treated samples is 20% at two years, and between 7% and 12% after five to ten years of follow-up [13].

Depression is characterized by relapse and recurrence. Between 50% and 85% of depressed patients experience multiple subsequent episodes [14]. The risk of future episodes also increases [8, 15], and the time for an episode to recur decreases with each episode [13]. Solomon *et al.* followed 318 individuals with MDD over a period of ten years and reported that 64% of the sample suffered from at least one recurrence [16]. The number of lifetime episodes was significantly associated with the probability of recurrence, with a 16% increase in risk with each additional episode.

Earlier episodes of depression are "thought to be more susceptible to environmental stress triggers, whereas later episodes are thought to be more autonomous" [8: p. 31]. Consistent with this hypothesis, some researchers have suggested that depressed individuals may become more sensitized the longer they experience depression or the more frequently their episodes recur [17, 18]. Interpersonal phenomena may also account for the risk of relapse. Joiner [19], for instance, advanced an interpersonal model in which multiple interpersonal variables (e.g., stress generation, negative feedback seeking, excessive reassurance seeking, interpersonal conflict avoidance) interact in reciprocal ways to maintain the depressive process and increase vulnerability for the recurrence of depressive episodes (also see [20]).

Depression co-occurs with a number of psychiatric disorders and medical conditions. Particularly high rates of comorbidity have been noted between depression and anxiety, substance abuse, schizophrenia and eating disorders [8]. Most striking is the comorbidity between depression and anxiety, which often exceeds 50% [21]. Depression and anxiety also share a number of modifiable risk factors (cf. [22]), which suggests that the use of transdiagnostic interventions may be warranted (e.g., [23]). Depression also frequently co-occurs with Parkinson's disease, multiple sclerosis, temporal lobe epilepsy, Alzheimer's disease, cardiovascular illnesses, cancer, endocrine disorders, and metabolic disturbances [24, 25, 26]. Notwithstanding the importance of differential diagnosis, this overlap may complicate the evaluation of treatment efficacy for depression in these populations. For example, treating a patient for depression who is also diagnosed with Parkinson's disease will not likely result in many changes in the neurovegetative symptoms of depression.

To summarize, depression is highly prevalent and characterized by relapse and recurrence. As such, the burden of depression is substantial not only in terms of personal suffering but also with respect to its costs to society [11, 27]. Clearly there is a need for treatments that not only ameliorate the acute episode but also reduce the risk of relapse and recurrence. As we discuss subsequently, cognitive therapy is ideally suited to meet this need.

Cognitive models of depression

Cognitive theories of depression share the idea that individual differences in maladaptive thinking and negative appraisals of life stress account for the disorder (e.g., [28, 29, 30]). These theories are essentially diathesis-stress models because maladaptive cognition is believed to contribute to the onset of depression in the context of stressful life circumstances. Most contemporary cognitive models of depression have involved refinements and expansions of Beck's original theory [29, 31].

Beck proposed that a taxonomy of cognition exists, ranging from "deeper" cognitive structures to more surface-level cognitions [32, 33]: (1) schemas; (2) information processing and intermediate beliefs; and (3) automatic thoughts. Schemas may be defined as stable internal structures of stored information, including core beliefs about self. According to this model a negative self-schema develops in childhood and remains inactive until it is triggered later in life by negative circumstances (see [31]). Insecure attachment experiences and other adverse events (e.g., childhood maltreatment) are some of the early predictors of the development of a negative or maladaptive belief system [34, 35]. Once schemas are activated, they are believed to affect the manner in which information is processed and interpreted. For example, an individual vulnerable to depression may have underlying core beliefs that he or she is fundamentally incompetent or unlovable. As long as this belief system remains inactive, depression is not likely. Once this schema is kindled by life stress (e.g., a failure or rejection experience), however, the individual is more likely to engage in information processing biases (e.g., attentional or memory biases toward negative content) and to experience cognitive errors and negative automatic thoughts associated with themes of

loss, failure, worthlessness, defectiveness, incompetence, and inadequacy [31, 32]. Automatic thoughts are more superficial and proximal to a given situation than are other levels of cognition but are functionally related to one's deeper beliefs and schemas. Automatic thoughts refer to the constant flow of positive and negative thoughts that run through an individual's mind and which are not accompanied by direct conscious appraisal. In the context of depression, automatic thoughts often focus on what Beck called the "cognitive triad," a negative view of oneself, the world, and the future [29].

The empirical literature has generally supported Beck's cognitive theory of depression. Numerous studies have demonstrated that depressed individuals exhibit problems with negative automatic thoughts, dysfunctional attitudes, hopelessness, worthlessness, negative explanatory styles, irrational beliefs, and negatively biased memory and attention (see [36]). The notion of a temporally stable "depressive schema" has also received empirical support [37]). Dozois and Dobson [38], for example, measured the self-representation of clinically depressed women using a computerized task. Participants were retested six months later when half of the sample had remained depressed and the other half had improved. The organization of negative adjective content remained stable across time even among individuals who no longer met diagnostic criteria for major depression (see also [39]).

Given that studies of remitted samples do not elucidate mechanisms related to the onset of depression, cognitive vulnerability has also been studied in individuals who are considered vulnerable but who are not currently depressed. Children of depressed mothers, for instance, tend to show depressotypic information processing, negative explanatory styles, greater hopelessness, and lower self-worth than do children of non-psychiatric mothers [40, 41]. Longitudinal studies have also supported Beck's theory, demonstrating that the interaction of cognitive vulnerability (e.g., dysfunctional attitudes) and life stress predicts depression [42, 43, 44].

Although cognition represents the main focus in Beck's theory and therapy, his model acknowledges that cognitions, emotions, behaviors, and biological processes are interrelated. As outlined above, Beck's conceptualization is that depression involves a top–down process – the self-schema influences information processing, which, in turn, impacts negative automatic thoughts. Cognitive therapy, however, tends to work as a bottom–up endeavor – therapists begin to target surface level cognitions (automatic thoughts) and eventually proceed to modify deeper schemas and core beliefs.

Cognitive therapy aims to help individuals shift their cognitive appraisals from ones that are unhealthy and maladaptive to ones that are more evidence based and adaptive. Patients learn to treat their thoughts as hypotheses rather than as facts. Framing a belief as a hypothesis, provides an opportunity to test its validity, affords patients the ability to consider alternative explanations, and permits them to gain distance from a thought to allow for more objective scrutiny [45].

Cognitive therapy is highly collaborative and involves designing specific learning experiences to help patients monitor their automatic thoughts, understand the relationships among cognition, affect, and behavior, examine the validity of automatic thoughts, develop more realistic and adaptive cognitions, and alter underlying beliefs, assumptions, and schemas.

Empirical evidence for cognitive therapy for depression

Cognitive therapy for depression has received considerable research attention and empirical support (see [45] for review). More than 75 clinical trials have been published on cognitive therapy for MDD since 1977 [46]. For treating an acute episode of depression, cognitive therapy is comparable to behavior therapy [47], other bona fide psychological treatments [48], and antidepressant medication, with these treatments each producing superior results than placebo control conditions [49, 50, 51]. Recent studies have also demonstrated that cognitive therapy and pharmacotherapy are equally effective for severe depression ([52, 53, 54]; but see [55]).

A particular benefit of cognitive therapy relative to antidepressant medication is that fewer patients (i.e., approximately half) relapse [56]. In their meta-analysis of the efficacy of cognitive therapy for depression, Gloaguen *et al.* reported that the average risk of relapse (based on follow-up periods of one to two years) was 25% after cognitive therapy, compared to 60% following antidepressant medication [56]. Some research data also suggest that patients who receive cognitive therapy alone are no more likely to relapse after treatment than are those individuals who continue to receive medication [51, 57]. Cognitive

therapy has also been compared to antidepressant treatment (selective serotonin reuptake inhibitors, SSRIs) for severe depression [52, 53]. Both interventions resulted in equal outcomes of remission in the acute phase of treatment, but the risk of relapse at one-year follow-up was favorable for individuals treated with cognitive therapy even compared to those treated with continuance medication [53].

As some researchers have argued, antidepressants may be "symptom suppressive rather than curative" [52: p. 789]. In other words, cognitive therapy and antidepressant medication may be equivalent in their modification of more surface-level cognitions (e.g., negative automatic thoughts and dysfunctional attitudes), but may differ in their ability to modify "deeper" cognitive structures. Consistent with this idea, Segal, Gemar, and Williams administered the Dysfunctional Attitude Scale (DAS) to patients who had successfully completed either a trial of cognitive therapy or pharmacotherapy [58]. The DAS was administered before and after a negative mood induction procedure in which participants were to think about a time in their lives when they felt sad. While in a neutral mood state, there were no significant between-group differences on the DAS. Following the mood induction, however, those individuals successfully treated with antidepressants exhibited an increase in dysfunctional attitudes, an effect that was not evident in those treated with cognitive therapy.

Also consistent with the notion that cognitive therapy may produce deeper cognitive change than medication are the findings from a trial that compared the combination of cognitive therapy and pharmacotherapy (CT+PT) to pharmacotherapy (PT) alone [59]. Both groups showed significant and equivalent shifts in depressive symptoms and proximal cognitions (e.g., negative automatic thoughts, dysfunctional attitudes). However, patients treated with CT+PT demonstrated significantly greater cognitive organization (interconnectedness of adjective content) of positive interpersonal content and less well connected negative interpersonal content than did those treated with medication alone. In addition, patients in the CT+PT group showed significant pre-post differences on positive and negative cognitive organization, an effect that was not evident in the antidepressant group. Although these results need to be replicated and extended, they suggest that cognitive therapy may alter conceptually deeper cognitive structures than antidepressant medication.

Introduction to a clinical case

Diane was a 59-year-old woman who presented to a specialty cognitive–behavioral therapy (CBT) clinic for the treatment of longstanding depressed mood. She had two grown daughters and her husband had recently retired from a civil service job. She had been employed for many years as a copy-editor for a publishing company, but had been struggling to keep up with the normal demands of that work. Her first clinical episode had been a post-partum depression, with approximately four or five further episodes that were often related to periods of stress or transition, including the discovery of her husband's extramarital affair ten years earlier. Over the years she had also periodically over-used alcohol, likely meeting criteria for abuse, with the worst point occurring after knowledge of the affair. In retrospect, her drinking behavior had usually been a sign of increasing depression, and had caused some strain with her husband and family. She indicated that her marriage was now reasonably happy, but felt that in some ways she and her husband were merely cohabitating and had fairly independent lives. She described herself as quite lonely, having not had much recent contact with friends and other family. The current episode of depression was likely triggered by work-related stress – a new supervisor had been hired and she was changing a number of work procedures. Diane described her relationship with her supervisor as difficult. There was to be a new regimen of performance management in their department, and Diane had been given feedback that she ought to be more open to change.

Diane was interviewed using the Structured Clinical Interview for DSM-IV (SCID) and met criteria for both major depressive disorder, recurrent, moderate and substance abuse in sustained full remission. She also endorsed a number of symptoms related to worry about the future and social concerns, but these symptoms were not sufficient to meet diagnostic criteria. She tended to be most anxious and avoidant of others when her depression symptoms became more severe, and these worries and fears abated when the depression symptoms improved. The current episode of depression had been going on for about six months, and was marked by both sadness and loss of pleasure. Concerns about work, particularly communication with her supervisor, were daily issues and caused rumination for several hours per day. Her sleep was quite disturbed; she described having almost no restful sleep and

experienced early morning awakening during which she had long crying spells, eventually resulting in her dragging herself out of bed and to work. It was at these points that she felt the worst, when she woke up early she felt like she was "the only person in the whole world." In addition to non-restorative and poor sleep, her appetite was poor and friends had begun to tell her she was looking gaunt.

Diane denied having active thoughts of suicide; she put this option "off-limits" because of her two daughters and a grandchild. She did admit that she was hopeless about the future and that the thought of no longer being alive sometimes brought her a certain amount of relief and peace. There were no signs of frank cognitive impairment, though she did describe not being as "sharp" as she was when she was not depressed. In part because of this she sometimes found it difficult to keep up at work with technological and software advances; every supposed improvement at the business seemed to her a new kind of mountain to climb.

Diane had been prescribed antidepressants and benzodiazepines when she first became depressed in her twenties. She indicated that in the past she had been diagnosed with both anxiety and depression, not surprising given the combination of anxious and depressive symptoms found during the SCID interview. She had not considered psychotherapy as an option for most of her life but had been able to overcome the substance abuse by attending Alcoholics Anonymous (AA) meetings. Alcoholics Anonymous had helped her to understand that problems could be solved by sharing, talking, and learning.

After the stress at work triggered the current episode, her family doctor had prescribed an SSRI. She had some relief from this, but associated taking medication with use of substances and was more than willing to explore alternatives. Near the end of the consultation and intake process, she also admitted that she was most concerned about starting to use alcohol again. She had contemplated doing so on a number of occasions but had managed not to by attending several AA meetings. She had an intense fear that if she began drinking again, she might well lose herself in the alcohol.

Overview of the treatment protocol

General structure of sessions

The effectiveness of CBT is based on the extent to which patients learn to use the skills conveyed in therapy outside of the actual session. The emphasis on education, in addition to building a therapeutic alliance and the therapist's contributions to developing new behaviors and cognitions, informs the flow of each session as well as the sequence of sessions. The therapist needs to ensure that the important skills and principles of CBT are covered during each session. Therapy exercises within and between sessions allow patients to apply the skills to their own experiences, those "real life" moments when they are beginning to feel more down or depressed. At the same time, the exact way in which the skills are used by patients and the kinds of emotions, thoughts, and behaviors that are targeted is usually left up to patients, or decided on collaboratively. For example, the therapist may use a didactic approach to explain the concept "cognitive distortion" and discuss types of distortions from a list provided. The discovery aspect of the session would follow, and involve exploring some examples from the patient's life where a distortion may have been present. The "real world" examples can neither be pre-planned nor scripted, and this is what makes them powerful teaching tools. The result is "guided discovery," a term that describes both the directive and explorative nature of CBT for depression and other conditions.

Symptoms may fluctuate from session to session; therefore, it is useful before each session to have some kind of formal scale completed that gives an overview of current severity. Large changes from one week to the next in either direction often foreshadow agenda items; something "good" may have happened resulting in a positive change or something may have gone wrong that is important to focus on in the session. It is also common to briefly review the previous week's session to consolidate learning before giving a brief overview of what the next steps would be. This is followed by setting the session agenda, an important aspect of working with people who are depressed. Taking a few minutes to prioritize with the patient what needs to be discussed can prevent a session from becoming a meandering discussion of various "depressing" topics and, early in the session, sets a more productive and goal-oriented tone.

A structured approach to starting off each session is also consistent with the goal-focused, targeted approach of CBT more generally. Patients and therapists work together in the assessment and early sessions to create a list of goals to be achieved. The diagnostic/consultation process helped Diane to

focus on her most troubling symptoms, and these were then translated into two goals: (1) coming to terms with the work situation, particularly untangling the situation with the new supervisor and work routines; and (2) being more productive at work and then enjoying "off" time more.

Following the agenda and moving through the content of the session can be challenging in CBT for depression. Some degree of "time-keeping" is necessary at certain points so that all of the items on the agenda can be discussed. Pacing the session, which involves determining how much time to spend on one topic before moving to the next, is important for that reason. Sometimes it is easy to stay too long with an example, especially when the example is rich and seems to tap an important area. Deviating from the agenda by spending excessive time on certain topics is almost inevitable in at least some sessions with someone who is moderately or severely depressed. However, not following the agenda can be problematic as important new material may not be covered and one can easy run out of time. At the same time, the patient's current affect needs to be attended to, and sometimes sticking to the agenda can feel artificial and forced. A useful question when considering a deviation from the agenda might be "Is the deviation I am exploring likely to be as helpful for this patient in the long run as the material we planned to cover would be?" If the answer is "yes" then a deviation is likely warranted.

The final and critical portion of the session is homework assignment. Ideally, the homework is planned based on the content of the session and the examples that emerged from the patient's life. That is, a good homework assignment blends the concepts learned in therapy with the problems experienced by the patient that need to be resolved. It is important that sufficient time be left in the session for creating homework, rather than having homework as an afterthought.

In the case of Diane, the therapist also thought it useful to have a companion manual, and *Mind over Mood* was deemed the best fit to the case [60]. The goals and the diagnostic formulation in Diane's case called for a combination of behavioral activation in early sessions, to thought-based strategies in the middle sessions, with belief work and relapse prevention in closing sessions. It was expected that about three sessions would be spent on behavioral activation, around four sessions on cognitive strategies, and a further four sessions on beliefs, with five further sessions at somewhat longer intervals to focus on wellness and relapse prevention. This total of 16 sessions seemed warranted in light of the complexity and chronicity of this case, but is still in the range of the usual 12 to 16 sessions in typical CBT for depression trials.

The therapeutic relationship

A full review of the therapeutic alliance in CBT for depression is beyond the scope of this chapter, though this literature continues to grow and contains a number of interesting nuances. However, it seems fair to state that both the connection between patient and therapist as well as their agreement on the work of therapy may be important in facilitating change, while symptom change in turn helps to foster a strong bond between client and therapist [61]. A therapeutic stance that is understanding, empathic, and offers unconditional positive regard is a pre-requisite for working with a depressed client using CBT. Getting to this point requires two distinct perspectives to be in positive synchrony, the patient's view of the therapist and the therapist's view of the patient.

With regard to how the patient might view the therapist, one of the challenges is that negative affect, sadness, and hopelessness often pervade the presentation of people with moderate to severe depression and colors the way they see the world. Some patients will react rather strongly to therapists who seem, at least to them, to be "cheerleading" and overly positive. When the therapist appears overly positive, depressed patients are likely to conclude that the therapist is so different from them that whatever the therapist offers will provide nothing of value. The therapist needs to maintain a stance of optimism and positive expectation while, at the same time, doing so in such a way as to "join" with the patient and demonstrate understanding. It is critical to validate the patient's struggles; to admit that the work ahead may be challenging, but that the yield will be positive if followed through.

In a healthy therapeutic alliance in CBT for depression the typical pattern in sessions is one of empathy, acknowledging, supporting and then offering a change strategy to "try out." To an objective observer, it ought to appear as if both the patient and therapist are working at about the same level, in terms of talking time, offering examples, and coming

up with suggestions. To the extent that one or the other party (typically the therapist) is doing more of the work there are likely to be issues in the therapeutic alliance, the patient's motivation, or the therapist's abilities with the techniques.

Strategies and techniques

Behavioral activation techniques

One of the most notable characteristics of the depressed patient is the manner in which his or her life is devoid of gratification and sense of accomplishment. As a result of loss of reinforcement from usual activities, the depressed person withdraws from many activities. Even those activities that are completed (in Diane's case, work or conversations with family) are viewed as a chore and are not enjoyable. At the outset of treatment, depressed individuals may not have enough energy to begin to examine their thoughts – they will appear sad, their rate of speech may be slow and the expression of affect impoverished. Behavioral activation can increase the person's energy level and set the stage for cognitive strategies.

Because of this behavioral profile, CBT for depression usually begins with strategies related to activation. A usual starting point for behavioral activation involves having patients monitor, or record, their daily activities and rating their mood for each waking hour of the day. This activity log provides an accurate and comprehensive "snapshot" of the person's day-to-day life and enhances understanding that variations in mood might be related to the kinds of routines the person has. Diane's monitoring revealed several interesting nuances that were not readily apparent from her self-report. Much to her own surprise, her mood seemed to be better, overall, during work times than it was on weekends. When her mood was low at work it was usually related to the supervisor situation (emails from her boss bothered her particularly and she disclosed that she would often write emotion-laden replies but delete them rather than sending them, which often made her feel worse). Her lowest mood ratings, however, were on weekends. She tended to be home alone and would ruminate about events of the past week or worry about what was to come.

Important questions related to the activity log include: How withdrawn is the patient from usual activities of daily living? Are there adequate exposures to potentially reinforcing situations? Is there a balance of pleasurable events and events that lead to a sense of accomplishment or mastery? Answers to these questions usually result in the consideration of adding activities, and sometimes finding ways to limit activities that induce a low mood. Through this process, the patient begins to understand the intimate connection between feelings and activities. It is also important to explain the concept of mastery and pleasure (or work and play), to be sure that, when consideration is given to trying on new behaviors, the core concept is to provide more of a balance of activities that are nourishing or rewarding in multiple ways. For Diane, considerable time was spent discussing basic issues that were not being attended to related to sleep hygiene, exercise, and nutrition. Central in this case, however, was the way she was spending time at work, specifically parsing the emails of her boss and then "responding" knowing there was no chance of her sending that response (and recognizing that doing so would not have been helpful). The weekends also became a priority for planning events that would pull her away from the usual rumination/anticipation cycle. With some trepidation, Diane agreed to get a group of her friends together for a program of walking on weekend mornings followed by breakfast with the group. She also asked her husband to walk with her on some evenings after work and found that, once they were out and walking, this quite naturally led to more conversation than they would have had at home. Diane found that the exercise and social activities were quite rewarding right away, but it took more concentrated effort from the therapist before she agreed to spend less time on the communications from her boss. When she did not respond to these messages she found that she was happier and could move on much quicker and refocus on the work she had to complete.

Scheduling activities (also known as graded task assignments) has benefits on two fronts. Most concretely, these activities raise the patient's energy level and are likely to lead to better concentration and less fatigue. Second, the patient begins to experience a sense of accomplishment and starts to see him/herself as more competent. Thus, such assignments are likely to produce both functional and cognitive benefits. Spending less time on those activities that decrease mood is another main focus of behavioral activation. This area is sometimes even more challenging since, at least on the surface, many patients believe that such activities (e.g., Diane venting her feelings into unsent emails) serve a function and may be associated

with certain kinds of rewards. Careful scrutiny of mood patterns and a functional analysis will often be necessary for the patient to discover that the costs to these behaviors often outweigh their benefits. Over time, Diane began to contain the reading of her supervisors' emails to a segment of time at the end of the day, and responded (if strictly necessary) only the next day. This change alone resulted in a major efficiency gain and resulted in her feeling much more in control and more productive.

Cognitive techniques for automatic thoughts in depression

As therapy begins to transition from behavioral activation to cognitive work, patients begin to monitor cognitions and learn to recognize the relationship between their thoughts and their mood. For Diane, this occurred in session 4 through discussion of her weekly activities. She had noted a large change in her mood during a training program at work. As with most patients, Diane had not ever considered sharing her internal dialogue with anyone, but did acknowledge that in this situation she had doubted her abilities and was berating herself for being too slow to learn.

This process, of recording situations that produce strong affect and concomitant automatic thoughts, will usually be done on something that resembles the daily record of dysfunctional thoughts (or DRDT). Many different and specific forms of the DRDT exist, some with five columns and some with more. However, almost all will have columns to represent the situation encountered, the emotion or symptoms experienced, and associated thoughts. Like any skill learned in CBT, it may require several examples before patients are able to identify the thoughts in a given situation that really drive the strong emotion. Early in this process, the thoughts recorded are often related to the situation in a non-emotional way. For example, Diane recalled thinking many questions (e.g., "why are they moving to this new system?") and observations (e.g., "this instructor seems to speak a different language from me"). Only through Socratic questioning did Diane acknowledge that a thought, such as "I'm too stupid to learn this," was actually present and driving her negative emotions.

Once patients are more reliably able to identify their painful automatic thoughts, the process of answering back to these thoughts (or putting them on trial) can begin. This is the phase of therapy in which Socratic dialogue becomes critical. *Socratic dialogue*, a series of interconnected questions to reach a more logical, objective conclusion about one's inner experiences, is a common theme for all cognitive techniques [45]. In fact, asking open-ended and open-minded questions is probably one of the most critical and distinguishing features of CBT. Four basic steps in this questioning process have been described: (1) characterizing the problem specifically and accurately; (2) identifying the associated thoughts, beliefs, and interpretations; (3) understanding the meanings of the thoughts for the patient; and (4) assessing the consequences of thoughts and their basis in evidence [62]. Socratic questions should neither lead nor trap the patient into agreeing with the therapist's view (which is of course also inevitably biased) and are intended to stimulate consideration of alternative perspectives and uncover information that was not previously considered.

Employing a Socratic approach, Diane learned to question thoughts along the lines of, "I'm too stupid to keep up." This was achieved by asking many informational questions and then synthesizing questions that helped her to bring that information to bear on the situation that had triggered the original negative thought. Critical questions in this process typically involve having the person think about his or her experience from another perspective, considering factors that he or she did not at first consider, and pointing out any logical leaps that might not be warranted by the actual facts. It is important to emphasize that testing beliefs and evidence gathering does not represent "positive thinking;" nor should questions be used to trap patients or invalidate their thoughts. Instead, the questions enable the patient to look at the situation objectively and non-defensively. Broadly defined, questions that gather evidence against the automatic thought are usually: (1) ascertaining all the situational parameters related to a negative thought, especially those outside of the patient's control or responsibility; (2) asking the patient to shift perspective on the situation by having him or her perceive the situation through the lens of another person; and (3) having the patient focus on information that is incomplete or unsubstantiated. Once a more complete picture of the situation emerges, the patient is asked to formulate a "balanced" thought that takes into account all of the evidence from the questioning process.

For Diane, the Socratic process helped her to discover, or perhaps rediscover, many instances in which

she was able to learn something new, manage challenging relationships, and actively cope to solve problems. She found that, beyond work, this theme of not being capable came up in a variety of contexts ranging from casual social settings to caring for her grandchild. It was also helpful to her to consider other peoples' perspectives. For example, she was able to gather information from others that demonstrated that she was not the only person who felt undermined by or upset with her new boss. By sharing her own experiences with others, she learned that some of her colleagues experienced worse interactions than she did; she also benefited by hearing about some of the ways that others dealt with this negativity. This was a significant step forward in helping to contain her thinking and rumination; she continued to see the situation as troubling, but not devastating.

Systematic errors in cognitive processing, or *cognitive distortions* [31], are often the basis for negative thoughts. Various lists of cognitive distortions exist, and different distortions are seen in different kinds of disorders. In Diane's case, she tended to engage in *arbitrary inference* (drawing a specific conclusion without supporting evidence) and *personalization* (attributing external events to oneself without evidence supporting a causal connection). For example, when Diane could not respond to every request made of her at work, she thought "I'm a horrible employee." The work situation, with her supervisor, also became highly personalized for Diane. She viewed the situation as a private battle between herself and her boss when in fact the supervisor seemed to be sparing of nobody. Teaching patients about cognitive distortions (e.g., all-or-nothing thinking, catastrophizing, jumping to conclusions) in conjunction with evidence gathering is useful because patients can quickly tackle their own cognitive errors once these concepts are understood. Once patients have identified their "usual" cognitive errors, they are able to correct their thinking more efficiently.

Aside from identifying a distortion and becoming aware of the evidence, a DRDT may also point to a lack of information or leave the individual with unanswered questions about the meaning of a situation. In such instances, patients are encouraged to conduct an *experiment*, essentially a plan to gather the information they need to reach a conclusion about the accuracy of a negative thought. The experiment in cognitive therapy embodies collaborative empiricism and asking questions in an open-minded manner. Many experiments involve some form of returning to the situation and gathering more information, but the essence of any experiment is to form a hypothesis and determine a way to test that hypothesis.

Cognitive techniques for core beliefs and assumptions

The cognitive model of depression suggests that deeply held core beliefs lead to other levels of cognition, including automatic thoughts [32]. Some amount of psychoeducation is typically conducted to explain the connection between the readily observable thoughts, early life events, and deep levels of cognition. For most patients, problematic situations and thoughts occur repeatedly, and certain "cognitive themes" emerge over the course of many thought records. Such themes are indicative of patients' more deeply held beliefs about themselves, others, and the world. These beliefs (variously called core beliefs or schemas) are believed to be rooted in early life events and learning [36, 63]. The process of understanding early learning and how it leads to the patient's beliefs and current problems is a more fluid and open-ended process compared to the DRDT. Helping patients to understand their underlying beliefs, however, helps them to change the factors that give rise to many of their troubling automatic thoughts and provides alternatives to self-defeating coping strategies.

One of the most common strategies for identifying beliefs is the downward arrow [60]. This approach begins with an automatic thought and, rather than disputing that thought with evidence gathering, the patient is encouraged to deepen his or her level of affect and explore the thought with questions such as "what would it mean if this thought were true?" This typically leads to the emergence of an underlying conditional assumption, a level of cognition that typically takes the form of "if ... then" statements. These "rules" typically specify a circumstance and an emotional consequence that is dysfunctional. For example, Diane's thought records reflected themes of being inadequate and she had rules that took the form of "I must be able to do something after seeing it done once" and "if I am not completely competent, then I am not worthwhile."

Largely, these rules exist at a level of awareness such that the patient has rarely been able to reflect on them. In these instances, it is often the therapist who picks up on a kind of emotional rule that seems to reoccur in the patient's difficulties. A number of situations may share some features and cause similar

emotional responses. Often, this means that similar rules are in operation across these situations. The therapist might initially verbalize this rule, and a collaborative effort is then made to modify the specific wording of the conditional assumption. Other times patients may be aware of their conditional beliefs and are able to state the rules that seem to govern their emotional and behavioral responses to situations.

In contrast to conditional rules, core beliefs represent extreme, one-sided views of self, other, and the world that give rise both to the conditional assumptions and automatic thoughts. Core beliefs are assumed to be primitive, extreme views that are formed as a result of early experiences [36]. Content for these beliefs varies for each individual, but it is important to emphasize that core beliefs are ways of understanding the world and were "rational" in those circumstances under which they originally formed. The most important precursor to identifying core beliefs is to explain these concepts in therapy. Patients are encouraged to see their automatic thoughts as outgrowths of something that is deeper and profoundly impacts their interpretations of events over time. The rationale (early learning) should also be provided, as it is important for the patient to understand that his/her negative core beliefs are not accidental or random, but rather understandable outcomes of previous experiences (e.g., that which was functional and rational early in life may no longer serve the same purpose or be grounded in evidence given different circumstances). Core beliefs often take on the form of an absolute statement such as "I'm a failure," "I am unlovable," or "I am in constant danger." Patients usually experience considerable affect when exposed to their core beliefs; they can often become tearful, sad, or very anxious. This is usually a sign that a highly salient type of processing has been tapped. For Diane, the theme of inadequacy was a powerful one, and this seemed rooted in early experiences with a demanding and distant father. The notion of "not being good enough" had been present starting with the post-partum depression in which she had felt she could not be a good enough mother and again after her husband's affair, which seemed to confirm that she was "not enough."

Many of the techniques used for changing automatic thoughts (e.g., examining distortions, evidence gathering) can be applied to working with deeper levels of cognition, although changing beliefs will take longer and requires more effort than altering a negative automatic thought. In addition to these techniques, are three other processes that help to change core beliefs. First, patients need to have some narrative concerning the development of these beliefs. Second, patients need to view these experiences more objectively and sympathetically, acknowledging that they learned something negative and potentially damaging. Third, it is important to engender hope that these kinds of beliefs can be "relearned" with the help of the strategies taught in therapy. Once patients have acknowledged the need to change core beliefs, they can be encouraged to create an alternative core belief, just as they worked on alternatives to their automatic thoughts and conditional assumptions. Once the alternative belief is identified, the patient is encouraged to gather evidence for the old core belief and the more adaptive alternative core belief. This encourages the patient to view subsequent experiences through a new filter and assess which of the two beliefs is a better fit to his or her current reality.

Sessions focused on deep cognition are typically less structured than are earlier sessions, in part because they cover more areas of the lifespan and do not have the thought record as a unifying theme. Discussions may involve reflections on early life events, focusing on the rigidity of certain conditional assumptions, or exploring a core belief, but also moves fluidly between these points. At the same time, therapists need to attend to opportunities to implement various worksheets and exercises including downward arrow, a positive events log, and core belief worksheet [63]. For Diane, all of these techniques came into play during the middle phase of therapy. Like many patients, Diane did not immediately reject beliefs about her own inadequacy. She did, however, acknowledge that these beliefs were rigid and harsh, and she certainly did endorse them as unhealthy for anyone else. She was also willing to consider that she might simply begin to accept herself as she was, and this theme emerged again during the end phase of therapy and discussions of long-term recovery and wellness.

Relapse prevention

The final sessions, often spaced at longer intervals as a partial check on the stability of improvement, are used to discuss relapse, readying the patient for times when his/her mood, or stress levels, become worse. It is important to emphasize that some negative affect is a part of living, particularly in response to stressors.