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CHAPTER 47
Cognitive and Behavioral Therapies

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Psychotherapies that focus primarily on individuals' thoughts and behaviors are generally known as cognitive–behavioral therapies (CBTs). There have been many different CBT approaches; some have attended mostly to cognitive processes, some have attended mostly to behavioral processes, and others have been equally attentive to both. CBT is typically active, structured, directive, focused, and present-oriented. Dobson and Block (1) reviewed the historical and philosophical bases of CBT. They credit Ellis (2) and Beck (3) with introducing the first CBT (rational emotive therapy and cognitive therapy, respectively), and they cite other important early contributors (4–11).

Early applications of CBT were to depression (12), anxiety (13), and various other problems, including anger, stress, somatic disorders, sexual dysfunction, and pain (14,15). More recently, CBT has been applied to such complex problems as personality disorders (16–18), schizophrenia (19,20), crisis intervention (21,22), and suicidal behavior (23). Consistent with this focus on more complex problems, CBT has increasingly been applied to substance abuse (24–31). Two major multisite, randomized, controlled studies of substance abuse included CBT as main treatment conditions (32,33). This chapter reviews three theories of CBT for substance abuse, discusses principles of treatment, and describes techniques.

COGNITIVE–BEHAVIORAL THEORIES OF SUBSTANCE ABUSE

The application of cognitive–behavioral theory to substance abuse is relatively recent. For most of the twentieth century until the mid-1980s, the field of psychotherapy largely ignored substance abuse, viewing it as a superficial symptom of more important underlying problems (34). As substance abuse became more widely recognized, interest in developing effective treatments increased.

This section describes three major cognitive–behavioral theories of substance abuse: *relapse prevention, cognitive therapy*, and *behavioral learning theory*. These theories provide the conceptual foundation for treatment strategies discussed later in the chapter. All of these theories make the following assumptions:

1. Substance abuse is mediated by complex cognitive and behavioral processes.
2. Substance abuse and associated cognitive–behavioral processes are, to a large extent, learned.
3. Substance abuse and associated cognitive–behavioral processes can be modified, particularly by means of CBT.
4. A major goal of CBT for substance abuse is to teach coping skills to resist substance use and to reduce the problems associated with substance abuse.
5. CBT requires comprehensive case conceptualization that serves as the basis for selecting specific CBT techniques.
6. To be effective, CBT must be provided in the context of warm, supportive, collaborative therapeutic relationships.

Relapse Prevention

Most CBT is derived at least in part from the work of Marlatt and Gordon (27). Their relapse prevention model is important for several reasons: it was the first major CBT approach to substance abuse; it provides practical, flexible interventions that can be applied by a wide range of clinicians; it can be used adjunctively with other treatments; and, it provides a straightforward conceptual model for understanding substance abuse. Their sensitive descriptions of substance abusers' subjective experiences, as well as their clear articulation of a theoretical model and specific interventions, have contributed to making Marlatt and Gordon's text the seminal CBT work on substance abuse (35,36). Some popular relapse prevention techniques include the identification and avoidance of high-risk situations, exploration of the decision chain leading to drug use, lifestyle modification (e.g., choosing friends who do not use), and learning from "slips" to prevent future relapses. Originally developed for substance abuse, relapse prevention has since been adapted for a variety of psychological problems (37,38).

According to Marlatt and Gordon (27), the potential for relapse begins with a high-risk situation, defined as any circumstance "that poses a threat to the individual's sense of control and increases the risk of potential relapse" (39, p. 37). The most common high-risk situations are negative emotional states, interpersonal conflicts, and social pressure (40). Individuals with effective coping responses (e.g., substance refusal skills) are most likely to develop self-efficacious beliefs (i.e., self-confidence) about their abilities to refrain from substance use. Self-efficacy, in turn, decreases their probability of relapse. In contrast, individuals without effective coping responses have decreased self-efficacy regarding their abilities to resist substance use. They are more likely to expect positive effects from initial substance use. Decreased self-efficacy and positive outcome expectancies lead to initial substance use (i.e., a "slip"), which may lead to the abstinence violation effect (AVE). The AVE is the often-seen cognitive phenomenon in which a single slip becomes the basis of a

full-blown relapse ("I've had one drink, so I might as well give up on recovery altogether").

Cognitive Therapy of Substance Abuse

Cognitive therapy of substance abuse (24,41–44) is based on the same basic principles as cognitive therapy for other problems, such as depression (12), anxiety (13), and personality disorders (16). In cognitive therapy of substance abuse, the focus is on the complex behaviors that derive from substance-related beliefs, automatic thoughts, and facilitating beliefs. Complex behaviors involve the consumption of substances as well as actions to avoid the negative consequences of substance abuse (e.g., lying about drinking to avoid conflicts with a spouse). Substance-related beliefs involve positive ("anticipatory") beliefs about the effects of substance use (e.g., "Nothing feels as great as getting stoned!"), as well as negative ("relief-oriented") beliefs about the effects of refraining from substance use (e.g., "If I quit now, I'll get the shakes"). Automatic thoughts are brief ideas that spontaneously flash across a person's mind. Some automatic thoughts manifest themselves as sharp visual images, like frozen frames from a movie, such as the image of an ice-cold beer on a hot summer's day. Facilitating beliefs involve permission to use despite prior commitments to stop using (e.g., "I'll just have one drink").

"Triggers" are an important concept in cognitive therapy for substance abuse and other models such as relapse prevention. From the cognitive therapy perspective, substance use is initiated by activating stimuli ("high-risk situations"). Activating stimuli can be either internal or external. Internal cues may include negative feelings (e.g., anxiety, boredom), positive feelings (e.g., joy, excitement), memories (e.g., flashbacks of being abused), and physiologic sensations (e.g., cravings, pain). External cues include interpersonal conflicts, sights and sounds (e.g., seeing a wine advertisement), other substance users, problems at school or work, and celebration times such as parties and holidays.

In response to internal and external cues, people use psychoactive substances because they believe they will either increase positive feelings (pleasure), or they will alleviate negative feelings (pain). These anticipatory and relief-oriented beliefs lead to automatic thoughts and images (e.g., "I need a drink," "I want a hit"), that result in craving for the substance. Following these cravings, individuals may give themselves permission to use (e.g., "I'll quit soon," "Just one is okay"). Permissive beliefs lead to action plans, which eventually lead to continued use or relapse.

Although the focus in cognitive therapy is primarily in the present, the past may help explain the development of substance abuse problems and may be highly relevant for treatment. Liese and Franz (43), for example, have proposed a model that focuses on difficult or traumatic early life experiences. Such experiences contribute to basic beliefs about their own unlovability and inadequacy, which, in turn, increase the likelihood of experimentation with substances.

Behavioral Learning Theories of Substance Abuse

Behavioral theories contend that human behavior is learned and shaped via complex contingencies (45,46). Thus, behavioral theories of substance use are based on the assumption that the primary goal of treatment is to help patients unlearn old, ineffective behaviors and learn more adaptive ones (31,47). These theories suggest several ways that learning to use substances may occur.

Social learning theory (45) emphasizes the importance of modeling; that is, learning occurs by observing other people's behavior and its consequences. In terms of substance use, modeling can occur indirectly through cultural norms and prescriptions (e.g., media depictions of substance use) as well as directly through family and peer socialization (e.g., children observing their parents using alcohol to cope with problems). Such modeled behaviors get translated into attitudes, expectancies, and beliefs about substance use (e.g., the belief that alcohol enhances social interactions) (47). Given the vicarious nature of social learning, much learning about substance use can take place before an individual ever consumes any substances, such as in childhood.

A second way that learning may occur is through operant conditioning (46). Operant learning takes place when a behavior serves an instrumental function and, as a result, is reinforced by its consequences. A positive reinforcer strengthens any behavior that produces it, whereas a negative reinforcer strengthens any behavior that reduces or terminates it (46). The use of substances is established and maintained by both positive and negative reinforcers. Positive reinforcement occurs when substance use is rewarded by, for example, increasing social confidence, enhancing positive affect, and facilitating entry into social groups of substance-using peers. Conversely, substance use is negatively reinforced when it allows escape from aversive stimuli such as negative affect or the physiologic symptoms of withdrawal. The positive and negative reinforcers of substance use vary widely among individuals and it is important for clinicians to assess the specific reasons that any given person uses substances (31).

A third form of learning is classical conditioning. The first type of learning to be studied within the behaviorist tradition, classical conditioning was originally researched by Pavlov in the 1920s. In Pavlov's experiments with dogs, he found that repeated pairings of a conditioned stimulus (i.e., a bell ringing) with an unconditioned stimulus (i.e., food) would eventually cause the unconditioned response (i.e., salivating) to occur at the presentation of the conditioned stimulus. When applied to substance use, classical conditioning suggests that substance use may

become paired with a variety of stimuli that reliably precede consumption of substances (e.g., drug paraphernalia, sights and smells associated with substance use, people, places, times of day, and negative emotions). Eventually, exposure to these stimuli may come to elicit a variety of substance-related conditioned responses such as intense cravings, physiologic changes (e.g., increased heart rate), and substance-related thoughts (31,48).

BASIC PRINCIPLES

Regardless of specific therapeutic techniques, certain principles are important to all CBT substance abuse treatments. These principles include case conceptualization, collaboration, psychoeducation, structure, attending to the multiple needs of patients, and monitoring substance use.

Case Conceptualization

Substance abuse patients comprise an extremely heterogeneous group. Some have no coexisting psychiatric problems while others have one or more psychiatric syndromes such as depression or panic disorder. Some are highly motivated to change while others deny that they have serious problems. Some have major coexisting life problems, such as acquired immunodeficiency syndrome (AIDS) or homelessness, while others are stable and high-functioning.

Case conceptualization involves the assessment of patients' backgrounds, presenting problems, psychiatric diagnoses, developmental profiles, and cognitive–behavioral profiles (24,41,43). Furthermore, the case conceptualization should include information about the unique variables responsible for the development and maintenance of substance use for the individual. This case formulation process may be facilitated by the use of standardized assessment instruments. For a guide to substance abuse assessment, see the recent chapter by Najavits (49), which provides a variety of Internet links to substance abuse measures that can be directly downloaded, as well as other resources. Additionally, several methods for organizing information about the chain of cognitive and behavioral events surrounding substance use have been developed, including conducting functional analyses of substance use behavior (31) and using the cognitive case conceptualization diagram created by Beck (50).

The therapist's selection and timing of therapeutic techniques should follow directly from the case conceptualization. For example, after conducting a functional analysis of an individual's substance use, treatment planning can focus on the specific skills necessary to intervene in the unique chain of events that lead to substance use for that individual (51). This approach reflects the CBT emphasis on adapting treatment to individuals, rather than expecting individuals to adapt to treatment. Other ways to individualize treatment include structuring sessions to include time for patient-driven material, repeating topics if patients have difficulty understanding a concept, and offering examples provided by the patient when presenting a new skill or topic (31).

The case conceptualization would be incomplete without an assessment of motivation to change. Prochaska, DiClemente, and Norcross (52,53) developed a system for assessing individuals' readiness to change. Substance abusers who believe that they have no problems are considered to be in the precontemplation stage. Those who believe that they may have problems are in the contemplation stage. Those taking steps to get ready for change are in the preparation stage. Those who have changed for at least 24 hours are in the action stage. And those who have endured change for at least 6 months are in the maintenance stage.

Research on the stages of change model has consistently shown evidence of a relationship between readiness to change and treatment outcome (52). Hence, CBT therapists are encouraged to carefully assess individuals' thoughts and behaviors regarding change and choose interventions accordingly. For example, precontemplators are unlikely to benefit from interventions that are heavy-handed and focus on specific methods of changing. Instead, precontemplators are likely to positively respond to discussions in which they are listened to empathetically and encouraged to discuss ambivalence.

Collaboration

CBT for substance abuse is highly collaborative, supportive, and empathetic (24,41–44,54–56). Collaboration is important because it creates a trusting atmosphere that supports the difficult work of changing addictive behaviors. In addition, substance abuse patients have notoriously high treatment dropout rates (57) and general therapeutic strategies aimed at cultivating rapport, collaboration, and alliance can help to maximize retention. Substance abusers tend to evoke more negative responses in therapists than many other patient populations (58,59). Some therapists feel frustrated, angry, or helpless because they are unable to stop patients from substance use. Many find that they cannot compete with substances that provide more intense and immediate effects than therapy. Some therapists feel frustrated because they cannot relate to the chronically impaired lives of such patients.

Cognitive–behavioral therapists are strongly encouraged to directly confront their thoughts about patients who abuse substances (42,43). For example, rather than thinking, "This drug addict will never change," therapists are taught to think, "If I am patient, this person may eventually make some important changes." Therapists are also encouraged to use effective communication skills with patients. For example, they are discouraged from lecturing and cajoling patients; instead, active listening and role playing are recommended. When patients want to discuss

non–substance-related problems, therapists are encouraged to spend appropriate time discussing, rather than minimizing, these problems. Therapists are encouraged to regularly elicit feedback about patients' responses to therapy by asking such questions as, "What was most and least helpful about our talk today?" and "How will you implement what we've talked about?"

Psychoeducation

CBT usually incorporates significant psychoeducational efforts, particularly early in treatment. The complexity of biologic, behavioral, cognitive, and spiritual problems associated with substance abuse requires that CBT therapists be well informed about these areas. Psychoeducation is a delicate process. Just as individuals vary in their readiness to change, they also vary in their readiness for educational interventions. Both timing and style of delivery determine the value of psychoeducational presentations. Rather than randomly lecturing patients, CBT therapists elicit knowledge from patients in areas relevant to their circumstances and needs. Therapists offer opportunities for patients to learn more by means of brief lectures, written materials, videotapes, or workbooks on a variety of topics. Long lectures are inappropriate. ("too long" is defined as the point at which patients become bored or distracted). Areas for education might include the physiologic effects of particular substances, high-risk behaviors, the impact of substance use on the family, dual diagnosis, and psychological models for understanding substance abuse. Information in these areas may be found in CBT manuals, or free from resources such as the National Clearinghouse for Alcohol and Drug Information (800-729-6686).

Structure

Most CBT is quite structured. In cognitive therapy of substance abuse (24,41,43), for example, the structure includes setting the agenda, checking the patient's mood, bridging from the last visit (including a review of substance use, urges, cravings, and upcoming triggers), discussion of problems (including potential coping strategies and skill-building activities), frequent summaries, the assignment and review of homework, and feedback from the patient about the session. In the Seeking Safety model of CBT for the dual diagnosis of substance abuse and posttraumatic stress disorder (PTSD) (56,60), the structure includes a check-in, a brief inspiring quotation to emotionally engage patients, distribution of handouts to help instill new learning, and a check-out to end the session on a positive note (e.g., "Name one thing you got out of today's session") (56,60).

Attention to the Multiple Needs of Patients

CBTs for substance abuse recognize that patients typically suffer from serious life problems, including health, legal, employment, family, and housing problems. In some cases, these are the result of substance use (e.g., a heroin abuser who has contracted human immunodeficiency virus [HIV] by sharing needles). In other cases, these life problems may have led to substance abuse (e.g., a teenage girl who uses alcohol to cope with childhood sexual abuse). Actively addressing these real-life issues is a necessary component of CBT.

There are numerous opportunities for CBT therapists to provide case management services. For example, they might refer patients for specialized assistance (e.g., medical, legal, family, or vocational counseling), give patients listings of sober houses, help patients fill out welfare forms, provide referrals to and basic information about self-help groups (e.g., Alcoholics Anonymous or other 12-step programs), review newspaper job listings during sessions, monitor patients' important visits to their physicians, help patients complete domestic abuse restraining orders, or call detoxification hospital units to determine whether beds are available. Thus, therapists must be familiar with community resources, including legal services, detoxification centers, HIV testing sites, and self-help groups.

In addition to general life problems, many substance-using patients have one or more comorbid psychiatric disorders that must be actively addressed, such as depression, personality disorders, and anxiety disorders (61). Such comorbidity presents significant treatment challenges, because these disorders are intricately bound to substance abuse in complex cyclical patterns and abstinence from substances may either decrease or increase psychological symptoms. The etiologies of dual diagnoses are typically multifactorial. While psychiatric disorders might lead some people to "self-medicate," resulting in alcohol or drug problems, substance abuse might lead others to develop psychiatric problems (e.g., cocaine addicts who develop secondary panic disorder). Comorbid disorders are known to affect treatment outcome, as seen in a classic study by Woody and colleagues (62), in which psychiatric severity predicted differential response to psychotherapy, including CBT.

In treating dually diagnosed patients, the most important step is the initial assessment and monitoring of symptoms throughout treatment. It is important to understand the relationship between psychiatric symptoms and drug use, cravings, and withdrawal (63). Following initial assessment, patients with coping skills deficits are taught new skills for managing their lives. While previously many patients were told to first become abstinent before comorbid disorders could be addressed (e.g., "First get clean, and then we'll talk about your depression"), most CBT models support integrated treatment (i.e., simultaneously addressing multiple disorders). Several CBT dual-diagnosis treatments have been developed and empirically evaluated for PTSD (60), personality disorders (64–67), bipolar disorder (68–70), and schizophrenia (71–74). When clinicians

cannot directly provide dual diagnosis treatment, referral to adjunctive treatments is recommended.

Monitoring Substance Use

CBT therapists actively monitor the types, quantities, and routes of recent substance use at each treatment session. There are various methods for monitoring substance use (49). While self-report is the most common, urine and breathalyzer tests provide more objective data. Some forms of urine and breathalyzer testing are relatively easy to implement and some insurance companies will pay for this type of monitoring. One of the most commonly used self-report instruments for monitoring substance use is the Timeline Followback (TLFB) (75). Originally developed for alcohol use, the TLFB facilitates patients' recall of their substance use patterns over specified periods of time. This method has demonstrated reliability, especially when memory aids are used to facilitate recollection of substance use (75). Another method for assessing substance use is the widely used Addiction Severity Index (76). A common screening tool is Ewing and Rooss' four-question alcohol screening tool the CAGE (cut down [on drinking], annoyance, guilt [about drinking], [need for] eyeopener) (77). These instruments can be augmented with information from family members, probation officers, or other persons who have knowledge of patients' substance use. Regardless of the method chosen, asking patients about substance use at each session is an essential component of CBT and the accuracy of self-reports is enhanced when confidentiality is assured (49).

SPECIFIC TREATMENTS AND TECHNIQUES

CBT for substance abuse comprises a wide range of specific treatments and techniques that focus on general substance use disorders (24,27,78–81) as well as specific substances of abuse (26,29–31,82–88). Despite their diversity, there are several strategies common to most CBT approaches to substance abuse. These strategies include conducting functional analyses and providing training in coping skills to better manage the identified antecedents and consequences of substance use. Examples of these strategies are briefly described in this section.

Functional Analysis of Substance Use

Virtually all CBT attempts to identify the chain of cognitive, behavioral, and emotional events that precede and follow incidents of substance use. This process, referred to as *functional analysis* (or chain analysis), is defined as "the identification of important, controllable, causal functional relationships applicable to a specified set of target behaviors for an individual client" (89, p. 654). The goal of functional analysis is to understand the variables that are controlling the target behavior (i.e., substance use) and to use this information to provide a focus for coping skills training.

Accordingly, the initial step is to conduct a functional analysis to help the patient recognize what factors tend to trigger and reinforce episodes of substance use, and to determine what skills they will need to learn to intervene in this process (31,51). This chain of events is composed of exposure to triggers for substance use, responses to these triggers, acquisition and actual use of the substance, and the positive and negative consequences of use (51). An important assumption of CBT is that patients can learn to alter this chain of events by managing these triggers and reinforcers (and thereby managing their substance use) after learning how they operate in their lives.

Functional analysis requires a careful assessment of the circumstances surrounding episodes of substance use and is often addressed through open-ended exploration of patients' substance abuse history (e.g., determinants of substance use, patterns of substance use, common thoughts and feelings associated with urges to use, reasons for using substances) (31). Standardized assessment instruments may also be useful in this process, such as the Inventory of Drinking Situations (90).

Coping Skills for Managing the Antecedents of Substance Use

Once antecedents of substance use have been identified via functional analysis, coping skills are taught to better manage these triggers in an effort to break their connection to substance use. A number of different types of antecedents may be involved in triggering substance use, including social, environmental, emotional, cognitive, and physical factors (31,51). Examples of CBT strategies for addressing these types of antecedents are briefly described.

Social Antecedents

Social antecedents for substance use include any social situations or interactions the patient may encounter in which they are at increased risk for substance use. Many substance users consume substances in social contexts and thus have developed networks of family, friends, dating partners, and coworkers with whom they have used substances in the past. These people may trigger urges to use directly by pressuring the individual to engage in substance use or indirectly by their conditioned association with substance use. Social triggers may also include attending social events such as parties or celebrations at which people are using substances.

Lifestyle Changes

One strategy for coping with social antecedents is to make lifestyle changes that help patients avoid exposure to social

situations that trigger substance use. Lifestyle changes may range from informal discussions of lifestyle options to formal planning of, and participation in activities together (87). Other techniques include contracting to engage in new activities that are incompatible with substance use (e.g., exercise, meditation), referring patients to external resources to develop alternative pursuits (e.g., helping patients sign up for volunteer work), and identifying healthy activities.

Enhancing Social Support

Another strategy is to encourage the development of social support networks that are supportive of abstinence. Often patients' social networks include many people who use substances and, thus, may trigger urges to drink or use drugs. Strategies include minimizing contact with people who use substances, and developing a new social support network that is supportive of abstinence (93). In network therapy (79), for example, family or close friends are invited to attend sessions with patients and actively become involved in treatment contracting. In other treatments, such as cognitive therapy (24), family sessions are provided to enable family members to learn about the treatment and support patients' efforts.

Refusal Skills

Virtually all CBT includes training in substance-refusal skills to help patients cope with social pressure to use substances. Techniques include role playing to practice refusing offers of substances; educating patients about passive, aggressive, and assertive communication styles; anticipating consequences of refusal; and paying attention to body language and nonverbal cues.

Environmental Antecedents

Environmental antecedents to substance use include any external cues that are associated with substance use for an individual and increase urges to use. These include substance-related cues (e.g., advertisements for alcohol, the smell of alcohol) and general cues that have come to be associated with substance use through classical conditioning (e.g., money, times of day).

Cue Exposure

Drawing from classical conditioning theory, cue exposure treatment (CET) seeks to diminish conditioned responses to substance use cues by repeatedly exposing patients to these cues in the absence of actual substance use (91,92). CET involves repeated exposure to the environmental cues associated with substance use (e.g., drug-related paraphernalia, photographs of high-risk locations, and depictions of actual drug use), with the goal of decreasing responsivity (e.g., cravings, substance-related thoughts) to these stimuli (51).

Decision-Making Skills

One strategy for managing environmental triggers of substance use is to train patients in decision-making skills that help them to decrease exposure to these stimuli. Relapse prevention models of substance use focus on the decision chain leading to drug use, including identifying "seemingly irrelevant decisions" that increase the risk of relapse (27), such as, "I can get a job as a bartender." Training in decision-making skills can help patients to interrupt these decision chains before substance use occurs. Strategies include identifying examples of poor decisions (e.g., keeping substances in the house), recognizing associations between decisions and exposure to high-risk situations, challenging cognitive distortions that encourage risky decisions, and practicing safe decision-making (31).

Emotional Antecedents

Negative emotions such as anger and anxiety can be a common trigger of relapse, and substance use often functions as a way to decrease or avoid these aversive emotional states. Conversely, positive affect (e.g., joy, excitement) can also trigger substance use, as it can remind patients of enjoyable times with others and pleasurable emotions they have experienced when using substances. CBT strategies for coping with emotional triggers focus on how to regulate and tolerate emotional states to decrease the risk of substance abuse.

Change Strategies

CBT for substance abuse includes many emotion regulation strategies that are focused on changing negative affect. Cognitive strategies include challenging distorted thoughts that fuel negative affect, completing daily thought records, and using positive coping statements (e.g., "I can handle these feelings without using"). Behavioral strategies include activities to decrease the intensity of negative affect such as distraction, engaging in pleasurable activities, self-soothing, acting opposite of emotions, and relaxation strategies.

Acceptance Strategies

In contrast to techniques aimed at changing negative affect, acceptance strategies focus on increasing tolerance for negative emotional states, decreasing emotional avoidance, and encouraging acceptance of emotional experiences (18,93,94). One common technique is mindfulness meditation. Mindfulness is a cognitive strategy that focuses attention on emotions by observing them in an

objective, nonjudgmental way, rather than avoiding or suppressing them. The goal of mindfulness is to alter one's relationship to negative affect rather than to change or eliminate the emotion itself, and has been referred to as taking a "decentered perspective" or "cognitive distancing" (93–95). In substance abuse treatment, mindfulness is hypothesized to prevent relapse by increasing conscious awareness of automatic emotional (and cognitive) responses to substance use triggers (94). Mindfulness may serve as a form of covert exposure to emotions, thereby decreasing the need for patients to engage in substance use as a way to avoid aversive emotions (94).

Cognitive Antecedents

Cognitive antecedents of include drug-related beliefs (e.g., "Using drugs improves my mood"), automatic thoughts (e.g., "Smoke!"), and facilitating beliefs (e.g., "I can handle just one hit") that increase the risk of use or relapse. These cognitions often derive from core beliefs about the self (e.g., "I'm vulnerable") and resulting rules that a person has developed for survival (e.g., "If I let myself feel my emotions, I'll fall apart").

Modifying Automatic Thoughts and Drug-Related Beliefs

An initial step in cognitive therapy for substance use is to help patients identify their automatic thoughts and drug-related beliefs and to recognize that they may not be completely accurate (96). Patients are taught to identify logical errors in their thinking that may trigger substance use (e.g., ignoring evidence that substance use is becoming problematic, exaggerating their ability to quit, overemphasizing the positive aspects of substance use, devaluing non–substance-using friends and activities, and believing that life without substance use is boring) (97). A variety of cognitive restructuring techniques can be used to modify distorted automatic thoughts and drug-related beliefs, including examining the evidence, considering the alternatives, keeping daily thought records, using a cognitive continuum, surveying others, and the double-standard technique. In addition, patients can create flash cards on which they write their common automatic thoughts and effective challenges to them. Patients can refer to the flash cards when confronted with high-risk situations that trigger these cognitions.

Modifying Conditional Assumptions and Core Beliefs

A later step in cognitive therapy for substance use is to identify and modify patients' conditional assumptions and core beliefs that are fueling negative automatic thoughts (96). A variety of techniques are available for identifying core beliefs, including the downward arrow technique, looking for central themes in patients' automatic thoughts, recognizing core beliefs that are expressed as automatic thoughts, Socratic questioning, and the what-if method. Once patients' core beliefs have been identified, strategies for modifying these beliefs include examining advantages and disadvantages, historical tests, keeping a daily log of evidence that supports and contradicts the core belief, and conducting behavioral experiments to test the conditional assumptions associated with core beliefs.

Physical Antecedents

Physical antecedents to substance use typically involve cravings and withdrawal symptoms. In addition, individuals may use substances to cope with other types of physical symptoms that may be unrelated to cravings or withdrawal (e.g., headaches, fatigue, nausea).

Distraction

Perhaps the most common technique for managing cravings is distraction. This involves engaging in activities that distract attention from the craving experience (e.g., physical exercise, talking with someone, snapping a rubber band on their wrist, relaxation strategies). Another version is thought-stopping wherein patients silently say "stop!" when experiencing cravings. Patients can create a coping card containing a list of distraction techniques to help them manage future cravings.

Urge Surfing

Similar to mindfulness techniques for coping with negative affect, urge surfing (going with the craving) involves letting cravings occur, peak, and pass without either fighting them or giving in to them (31). Urge surfing is done by focusing attention on the experience of craving and describing the physical sensations, feelings, and thoughts associated with it in an objective way (31). Urge surfing aids in increasing acceptance of craving as a time-limited, normal experience that patients can manage without using substances.

Focus on Consequences

Patients often overemphasize the positive aspects of substance use and ignore the negative consequences. Conversely, patients tend to minimize the benefits of abstinence and focus only on its disadvantages. One strategy for correcting these errors is to conduct an advantages–disadvantages analysis to identify the pros and cons of abstinence and continued use. Another strategy involves recalling the negative consequences of past substance use in order to make the disadvantages of giving in to the craving more salient. This can be done by having patients carry a reminder card that lists past negative effects of their

substance use and having them review this card whenever cravings occur (51).

Coping Skills for Managing the Contingencies of Substance Use

In addition to providing training in coping skills for managing the antecedents of substance use, CBT also attempts to help patients manage the contingencies (i.e., positive and negative reinforcers) of their substance use. Examples of strategies for managing contingencies are briefly described here.

Contingency Management

Using principles of operant conditioning, contingency management techniques implement reinforcement to strengthen the incentive to become abstinent and weaken the incentive to continue using substances. Such reinforcement can be either positive (i.e., rewarding patients for abstinence) or negative (i.e., withdrawal of rewards for substance use). Less frequently, treatments have investigated the use of punishment in decreasing substance use (e.g., inducing nausea).

Some treatments (e.g., voucher-based incentive programs) use positive reinforcement as the central mechanism of treatment (98,99). Formal systems of are devised to motivate behavior change, such as paying patients for clean urines with increasing rates of pay for longer periods of abstinence (e.g., $1.50 for the first urine; $3.00 for the third). In some programs, patients are provided with vouchers that can be redeemed for items that could support substance-free activities and lifestyles (e.g., sports equipment and movie passes).

Another version of contingency management is the community reinforcement (80,81). This is designed to have patients participate in a social community that is highly reinforcing of abstinence. It involves providing patients with numerous services (e.g., individual and couples counseling, vocational counseling, a social club, recreational skills training) that reinforce abstinence in many areas of patients' lives.

Substituting Alternative Behaviors

Another behavioral strategy for addressing the reinforcers of substance use is to substitute the use of substances with functionally equivalent and more adaptive behaviors. It involves identifying both the positive and negative contingencies of substance use and finding less destructive behaviors that could serve the same function. For example, if substance use decreases negative affect, it could be substituted with emotion regulation strategies (e.g., distraction, self-soothing). If substance use serves a relaxation purpose, functionally equivalent alternative behaviors might include relaxation or meditation.

SUMMARY AND CONCLUSIONS

Over the past decade, numerous CBT approaches to substance abuse have been developed. These structured, focused, collaborative approaches have been based on the assumption that substance abuse is mediated by complex cognitive-behavioral processes. In this chapter, an overview of cognitive-behavioral substance abuse theories and techniques has been presented. According to Rotgers, these approaches "have been among the most productive of the last quarter century with respect to the advancement of empirically validated knowledge of the origins and treatment of... substance use disorders" (100, p. 198).

Liese and Franz (43) have described 10 lessons learned from applying cognitive therapy to substance abuse. Specifically, cognitive-behavioral therapists should (a) be knowledgeable about a wide variety of psychoactive drugs, addictive behaviors, and traditional treatment modalities; (b) communicate and collaborate with other addiction treatment personnel; (c) understand and address the role of substances in mood regulation; (d) conceptualize and treat coexisting psychopathology; (e) explore the development of all patients' substance abuse problems; (f) address therapeutic relationship issues; (g) confront patients appropriately and effectively; (h) stay focused in sessions; (i) use techniques appropriately and sparingly; and (j) never give up on addicted patients. Many more lessons will likely be learned as CBT continues to be applied to substance abuse.

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