

10 Cannabis Addiction



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Learning Objectives

1. Learn about the difference between THC and CBD and how each affects the body separately and together.
2. Become aware of how legalization may affect usage levels.
3. Become familiar with the many effects that cannabis has on individuals.
4. Become informed about the diagnostic criteria for cannabis use disorder.
5. Discover the two most effective methods for treating cannabis addicts.

CHALLENGING YOUR ASSUMPTIONS ABOUT THIS ADDICTION

1. What is your current attitude regarding cannabis use? To what extent does your opinion change, if any, regarding those who use regularly and heavily?
2. If you have (or anticipate having) children, how would you feel if your child began smoking pot almost every day? What if she or he began smoking heavily? What actions would you take, if any?
3. If you came home and found your significant other and a few friends so stoned together that they could hardly speak or function, what reaction would you have? What would you say, and what would you do?
4. Do you support the legalization of cannabis and, if so, under what conditions? If not, on what basis do you believe legalization is contraindicated?
5. If you were (or are) ill and discovered that cannabis might relieve some of your symptoms, what would you want to know before deciding for or against its use?

PERSONAL REFLECTIONS

When I was using, I always asked for the strongest pot . . . so do the other addicted cannabis users I know. People are more likely to become addicted to cannabis if the product they are using has high THC content.

Still, to this day, every time I smell the burning bud as I am out and about, I inhale deeply, sweetly remembering the many times I was high and had amazingly wonderful experiences. We call this *euphoric recall*. Deception, minimization, and denial were our secret friends. It is a tendency of people with addictive disorders to remember their use by focusing only on the positive memories associated with it. Somehow the multitude of negative experiences and negative consequences seem to disappear when one reminisces about the “good ole times.” Forgetting easily how emotionally unavailable and numb I had become, how insensitive to others I had become, how impulsive and irrational at times I had become: and how inhuman I was becoming at some deep level.

You read about some of *my* struggles with cannabis back in the Preface. I shared as much as I felt comfortable but hid so much pain associated with 42 years of use, sometimes intermittent and sometimes continuous. But now my eyes are open as I watch the sequence occur in other addicts. My ears are open, too, as I hear their gasping coughs as if their last breath had just been exhaled.

I don't have to look far past my nose. A very close family member is also a cannabis addict, and we both quit at about the same time in October 2014. We hadn't planned to quit

together but somehow serendipitously ended up in the same psychological place at the same time. And then there is one of my closest young friends who began smoking up since he was in his early teens. He lived in my basement for several months at one point, and I remember so many times wanting to have deep philosophical talks with him but realizing that he was psychologically unavailable morning, noon, and night. At that point in my life, I felt deeply alone and having another person with cannabis use disorder in the house who was using as constantly as he could did not ease any of my sunken and defeated feelings.

There is growing irritability that develops in addicted cannabis users over time. This occurs even with cannabis, the drug that so many use to relax and feel gentler inside. Often forgetful and sometimes rude without intention, I eventually had to ask my friend to move out. At the time, I doubt he was aware of any of that.

You see, cannabis affects our episodic memory. There are people I met in the past that, when I see them today, I have no idea who they are even though they remember me. They have that look of knowing in their eyes, while I stare blindly inside myself and pretend that I know them. And some of them seem to know me quite well. It is a most disarming feeling. It happened to me again this past Saturday night. There are movies I watched when I was using that I could not tell you a thing about. If I were to watch the film again, a few memories would return to me like a flashback following an LSD trip. Thank God, I have found myself.

Background Information

Cannabis refers to all preparations (e.g., marijuana, hashish, hash oil) derived from the flowering tops, stems, leaves, and seeds of hemp plants (e.g., *Cannabis sativa*, *Cannabis indica*, *Cannabis americana*). Cannabis is most often used as a mild hallucinogenic resulting from its psychoactive ingredient, delta-9-tetrahydrocannabinol (THC), and/or for its controversial medical properties that include the substance called cannabidiol (CBD). Cannabis is classified as a hallucinogen because it alters perceptions at lower doses and produces hallucinations at higher doses (Csiernik, 2016). *Cannabis sativa* contains at least 144 compounds called *cannabinoids* and more than 1100 other compounds, including terpenoids and flavonoids (Englund, Freeman, Murray, & McGuire, 2017). Cannabis also contains caryophyllene oxide, which is the substance trained dogs scent for when detecting hidden marijuana (Salhab, 2017). Cannabis can be smoked, liquified, and swallowed, often baked into cookies, brownies, or cakes. Cannabis oil typically has the highest THC content, but even marijuana's potency has increased significantly since the advent of hydroponics (Csiernik, 2016).

Cannabis has a long history, with accounts of it being used medicinally since at least 2700 BC (Miller & Oberbarnschielt, 2017). The earliest recorded reference to marijuana use dates back 12,000 years ago in China (Ouzir & Errami, 2016). It was first brought to the west between 1845 and 1919 by East Indian emigrants who moved to Trinidad to work on sugarcane plantations (Maharajh, Ali, & Maharaj, 2014). The emigrants used it for both its perceived medicinal properties and to help them adjust to the new hostile environment they found themselves in. Until 1950, it remained a legal drug in the Caribbean that could be purchased in shops and parlors. But, over time, people's perceptions of it changed. Cannabis became criminalized in most countries following the Single Convention on Narcotic Drugs in 1961, an international treaty intended to halt the production and distribution of many psychoactive drugs except for purposes of research and medical treatment (Englund et al., 2017). The Single Convention had "incorrectly labelled cannabis as a narcotic and thus purposefully shaped international drug policy regarding this drug for over half a century" (Csiernik, 2016, p. 335).

Today, marijuana is the most prevalent illicit drug around the world (Earleywine, 2016). But so are the problems associated with its use as the potency of cannabis sold on both the legal and illegal market increases (Englund et al., 2017). Although cannabis is controlled under Schedule I of the Comprehensive Drug Abuse Prevention and Control Act of 1970 in the United States, several states have already legalized for recreational use, and many others have legalized for medicinal purposes.

Although there are several countries where possession of cannabis is legal to one extent or another, currently the only country that has legalized possession, selling, cultivation, and transport is Uruguay. Uruguay legalized cannabis in December 2013. Research conducted about 1–1.5 years later revealed that the lifetime prevalence of using marijuana had quadrupled in that country from 2001 to 2014. In a subsample of 294 users (58% men, 41.2% women), 45% consumed pot 5 or more days a week (Boidi, Cruz, & Queirolo, 2015). Boidi et al. (2015) concluded that their preliminary data indicated

Marijuana consumption is higher among young adults, which also poses a challenge related to control and regulation. Data indicate that among regular consumers, the frequency of consumption has significantly increased. It is reasonable to assume, thus, that risk behaviors have also increased with the frequency of consumption. (p. 9)

The medicalization and legalization of cannabis products remain highly controversial. The benefits of legalization are several, including the information that will be gleaned by studying an increased number of users at varying dose levels of THC. This may lead to cannabis use guidelines, including the most beneficial ratio of THC to CBD¹ (Englund et al., 2017). Miron (as cited by Balkin, 2015) estimated that, in 2010, the United States spent about \$13.7 billion on cannabis criminalization procedures. If legalized, these monies could be spent in other ways. Furthermore, when cannabis and other drugs are acquired illegally, they do not come with a guarantee of purity. The slang term *dusting*, for example, refers to adding PCP, heroin, fentanyl, or other drugs to marijuana to increase its potency.

On the other hand, many concerns have been raised regarding the medical and recreational use of cannabis. The effect of both legal and illegal psychoactive drugs is influenced not only by their psychopharmacological effects but also by their social acceptability and their accessibility (Atkinson, 2016). Legalizing a drug increases acceptability and accessibility while simultaneously increasing consumption levels. When alcohol sales on Sundays occurred in the United States, for example (thereby increasing accessibility), overall consumption increased (Yoruk, 2014). A legalized market would decrease people's perceptions of the risks associated with use and would likely lead to an increase in problems with youth (Earleywine, 2016). In their review, Firmin, Pugh, Sohn, Voss, and Cltuang (2016) concluded that legalized marijuana would have a negative effect on the American people. They point out that, once legalized, "it is highly unlikely to be reversed" (p. 24). Arguable negative impacts have also been expressed regarding upcoming legalization in Canada with a suggestion that decriminalization ought to occur—and not legalization—until we know more about cannabis (Kalant, 2016).

Miller and Oberbarnschielt (2017) released a disconcerting report regarding medical marijuana (MM). They wrote that it "does not meet the legal definition of drug as defined by the U.S. Food and Drug Administration (FDA) in the US" (Miller & Oberbarnschielt, 2017, p. 335). For a drug to be considered safe by the FDA, it must undergo 12 stages of drug testing: MM has *not* been subjected to any of these stages. Furthermore, MM is not available in pharmacies, does not proceed through the typical prescribing route, and may be grown by care providers who receive no supervision or regulation (Miller & Oberbarnschielt, 2017). Studies that have claimed medicinal properties were performed on cannabinoids, not on smoked marijuana and THC. Marijuana is also associated with the use of other drugs (Miller & Oberbarnschielt, 2017).

Miller and Oberbarnschielt (2017) wrote that the addiction potential for marijuana is comparable to that of alcohol and nicotine, and they predict legalization will lead to an increase in cannabis addiction levels. Lastly, Csiernik (2016, p. 164) stated that the long-term effects of hallucinogens are "purely psychological" with only one exception: cannabis. Cannabis is known to have negative effects on one's long-term physical health as well.

¹The interaction of these will be discussed later.

Although the percentage of CBD in street cannabis has been decreasing (Morgan, Freeman, Schafer, & Curran, 2010), the percentage of THC in it has increased dramatically. In the United States it was about 4% in 1995 and is now on average about 12%, whereas, in Europe and Australia, 15% THC is more common with about 0.1% CBD (Curran et al., 2016). Some hashish has been found with 60% THC, and new extraction methods have produced hash oil with upwards of 75% THC (Englund et al., 2017).

In the United States, the National Institute of Drug Abuse provides researchers with cannabis containing less than 4% THC (Curran et al., 2016). Given the substantially increased potency of street cannabis today, the generalizability of results from earlier longitudinal studies and even most current experimental studies is limited (Curran et al., 2016). This is critical as we know that cannabis with higher concentrations of THC is more harmful regarding its risks (e.g., addiction, psychosis, cognitive impairment) (Englund et al., 2017). Cannabis consumed with tobacco increases its addictive potential (Englund et al., 2017).

Most research has focused on THC and CBD. These two substances seem to have opposite effects on the brain and behavior. For example, although THC can create psychotic symptoms, anxiety, and impaired learning, CBD can reduce psychotic symptoms and anxiety; it can also enhance learning. When combined, CBD can offset many of the harmful effects of THC (Curran et al., 2016). However, it is currently unknown what the ideal percentage of THC to CBD is in a cannabis product (Englund et al., 2017). These experiments are more likely to occur following increased legalization of cannabis throughout many parts of the world.

Users of cannabis seek out its pleasurable qualities, which may include euphoria, enhanced sociability, an increased pleasure of food, and increased enjoyment of sexual experiences while under its influence (Salhab, 2017). A person who is “high” usually presents as euphoric, sedated, impaired in judgment, and displaying inappropriate affect or grandiosity (Balkin, 2015). The “stoned” experience is variable, however, and other indicators of a high person might be a tendency to eat and giggle lots (Curran et al., 2016). High individuals might report a heightened appreciation for music and color (Curran et al., 2016).

Smoking cannabis with a water pipe is considered the most efficient way to produce its effects (Salhab, 2017). Inhaled or smoked THC appears in the blood between 3 and 10 min with effects that may last for several hours, whereas orally ingested THC appears in the blood between 30 and 60 min and effects continue for 4–6 hours (Salhab, 2017).

Recent research suggests that there are three distinguishable pathways of cannabis use (in 14- to 30-year-olds) that begins in early adolescence: (a) continuous increasing risk, (b) increased risk followed by decreasing risk (i.e., maturing out risk), and (c) continuing low risk (Kosty, Seeley, Farmer, Stevens, & Lewinsohn, 2017). DeRamus (2011) suggested that there are three motivators for pot smokers: (a) stress release, (b) social purposes, and (c) psychological reasons. DeRamus concluded that stress is the most common reason that people smoke marijuana. He added that, whereas smoking pot appears to offer an escape from negative emotions, the reality is that 80% of what people call stress is self-created. Those who smoke for social reasons do so because pot helps them become less inhibited around others. Psychological smokers are motivated to smoke marijuana because they are experiencing diagnosable psychiatric disorders (e.g., depression, schizophrenia, or another psychosis).

Individuals use marijuana for different reasons, and sometimes for a multitude of reasons (Zvolensky, Bonn-Miller, Leyro, Johnson, & Bernstein, 2011). Substance use may result from individuals wanting to increase their positive affect (Trull, Wycoff, Lane, Carpenter, & Brown, 2016). Furthermore, more-impulsive individuals experience greater stress reduction from using substances compared to those who are less impulsive, increasing the likelihood that they will repeatedly use (Trull et al., 2016). In one study, some factors that predict that a person will become dependent over a 3-year period included living alone, having major financial problems, and experiencing lessening ability to control usage (Atkinson, 2016). Critical life events (e.g., parental separation, early parental death) in addition to mental and social conflicts are also related to cannabis addiction (Schlossarek, Kempkensteffen, Reimer, & Verthein, 2016). Protective factors that reduce the likelihood of young people using cannabis include religiosity, warmth, and parental monitoring (Sharma, 2009).

We also know that an important risk factor for all addictions, including cannabis, is childhood maltreatment (Wardell, Strang, & Hendershot, 2016). Childhood maltreatment includes emotional, physical, and sexual abuse and emotional and physical neglect. Wardell et al. (2016) concluded that maltreatment is correlated with high levels of impulsivity and emotional dysregulation. Whiteside and Lynam (2001) had earlier conducted a factor analysis that identified four factors regarding impulsivity: (a) displaying a lack of perseverance, (b) acting without forethought, (c) sensation-seeking, and (d) acting carelessly when experiencing negative emotions. Wardell et al. concluded that list item “d” (i.e., acting carelessly) was most associated with later problems with cannabis and alcohol.

Cannabis users are 2.87 times more likely to experience cannabis dependency if they had been unemployed for at least 3 months compared to those who were consistently employed (Boden, Lee, Horwood, Grest, & McLeod, 2017). From a neuroscience perspective, one study found that those carrying a gene variant that “favors hyperactivity of the endocannabinoid (eCB) system were significantly less likely to become cannabis dependent” (Kosten, Newton, De La Garza, & Haile, 2014, p. 764). Another study concluded that alcohol and other drug use disorders are “individually heritable” (Wetherill et al., 2015, p. 617). Consequently, genetic predisposition may be a causative factor in cannabis addiction as well.

Currently, the greatest concern involves synthetic cannabinoids (called *spice drugs*), which are herbs sprayed or soaked with THC-like chemicals made in laboratories. The list of these chemicals continues to grow, and, although most are now illegal in the United States, new variations continue to be produced (for a growing list of these see https://en.wikipedia.org/wiki/Synthetic_cannabinoids).

Spice drugs have caused some severe adverse reactions, including death (Englund et al., 2017). Consequently, they are the widest class of new drugs that are being monitored by the European Monitoring Centre on Drugs and Drug Abuse (Pintori, Loi, & Mereu, 2017). Spice drugs do not contain any CBD, thereby having no substance that helps offset their negative effects. They induce a faster effect than cannabis products, and they are associated with more severe psychosis. At higher doses, they create unpleasant arousal, anxiety, agitation, auditory and visual delusions, hallucinations, agitation, aggressiveness, intense paranoia, and possibly coma and stroke (Pintori et al., 2017). Recently, the Centers for Disease Control and Prevention and several health departments

investigated cases of severe bleeding among individuals in the United States who had used synthetic cannabinoids (American Association of Poison Control Centers, 2018).

Before I review what is harmful about cannabis, I will look at the ways it can be beneficial. Public health messages to the public have been distorted by the fact that researchers have studied the negative effects more thoroughly than the positive ones (Curran et al., 2016). In ancient times, *Cannabis sativa* was used by the Chinese for its psychoactive effects. It was once used in India to relieve pain and create tranquillity, in addition to its hypnotic, anti-inflammatory, and anticonvulsant properties (Salhab, 2017). Most users today subjectively rate the benefits as outweighing the risks (Curran et al., 2016). Some report a belief that they have “arrived at a transcendent insight” (Atkinson, 2016, p. 14).

Positive effects noted have included “enhanced divergent thinking” and creativity (Curran et al., 2016, p. 302) following both oral and smoked administrations at smaller doses (and decreased divergent thinking and creativity at higher doses; Atkinson, 2016). Cannabis creates euphoria, relaxation in some, a substantial sense of calmness, and decreased psychomotor activity (Atkinson, 2016). Users may experience focused attention on internal sensations within the body (Atkinson, 2016). Social anxiety is reduced, thereby enhancing some users’ ability to become friendlier. Boring tasks can feel less boring. Some researchers have found that it can decrease hostility, anxiety, and sadness (Trull et al., 2016).

Due to activation of the mesolimbic dopamine system, users may pay more attention to one particular thing, despite possible impairment of their executive functioning (Atkinson, 2016). Light users might not experience functional impairments or any problematic outcomes (Asbridge, Duff, Marsh, & Erickson, 2014).

Although cannabis remains illegal in most countries, there are several where physicians can prescribe cannabis products for medicinal purposes. Cannabis products can improve the symptoms of some diseases (e.g., lessening eye pressure, involuntary movements, and perception of pain). It can increase appetite, help prevent weight loss, and perhaps improve pain tolerance (Zvolensky et al., 2011). Although cannabinoids can diminish nausea in those receiving chemotherapy or radiation therapy (Zvolensky et al., 2011), chronic users may develop severe or excessive vomiting (Rastegar & Fingerhood, 2016). Cannabis has also been used to treat migraines and some types of seizures, epilepsy, and muscle spasms (Csiernik, 2016). Cannabis can sometimes reduce symptoms of gastrointestinal disorders, depression, anxiety, tension, multiple sclerosis, arthritis, sleep problems, cancer, and other severe illnesses (Csiernik, 2016).

CBD has been shown to reduce the symptoms of cannabis withdrawal with a ratio of CBD to THC of 1:1 (Englund et al., 2017). CBD has also been used to treat acute schizophrenia (Salhab, 2017). Some research suggests that CBD might reduce the likelihood of relapse in individuals with opioid use disorders (OUDs) (Hurd, Michaelides, Miller, & Jutras-Aswad, 2014). Lastly, self-reports suggest that, thanks to medicinal marijuana, some users have stopped using “hard” drugs (Earleywine, 2016).

Cochrane reviews are considered the “gold standard” in the medical profession. A recent Cochrane review concluded that cannabis products might have benefits for chronic neuropathic pain that outweighs its potential harms (Mucke, Phillips, Radbruch, Petzke, & Hauser, 2018). This conclusion was also made in a recent meta-analysis (Aviram & Samuelly-Leichtag, 2017).

Individuals who have comorbid attention deficit hyperactivity disorder and cocaine dependence who use cannabis are more likely

to continue seeking help for their cocaine addiction compared to those who do not use cannabis (Aharonovich et al., 2006). There is also a growing body of research that suggests that cannabis may be successfully used as a substitute by some individuals with sOUDs (Lucas, 2017). However, a recent study of 34,653 adults who were interviewed at wave 1 (2001–2002) who had either moderate-to-severe pain or were using opioids for nonmedical reasons were interviewed again at wave 2 (2004–2005). Those who used cannabis were more likely to develop nonmedical prescription opioid use and OUD at wave 2 (Olfson, Wall, Liu, & Blanco, 2018). In other words, cannabis acted more often as a gateway drug to opioid problems than as a resolution to it.

Although cannabis products are effective in reducing neuropathic pain and sleep disturbance in individuals with multiple sclerosis (MS) (Rog, Nurmikko, Friede, & Young, 2005), they do not have a significant effect on reducing MS-associated tremors (Fox, Bain, Glickman, Carroll, & Zajicek, 2004). However, there is also a neurological caution in using cannabis: “some neurological disorders or symptoms (e.g. multiple sclerosis, seizures, epilepsy, headache) may be caused or exacerbated by the same treatment supposed to cure them” (Solimini, Rotolo, Pichini, & Pacifici, 2017, p. 527).

Another Cochrane review concluded that evidence to date is inconclusive regarding whether CBD has an antipsychotic effect (McLoughlin et al., 2014). Furthermore, the evidence that cannabis is effective in reducing anxiety is “surprisingly not well-documented” (Turna, Patterson, & Van Ameringen, 2017, p. 1006).

Now I will focus on the negative acute (short-term) effects of using cannabis. In later sections of the chapter dealing with *impacts*, the long-term effects, particularly resulting from heavy frequency and potency, will be reviewed.

Although cannabis does not appear to create psychological impairment in most users, it does pose a distinct risk for a small percentage of individuals (Csiernik, 2016). Most people do not experience any discernible problems from using cannabis, at least not that they observe (Sparks, 2016). When problems do develop, many users will dismiss the possibility that cannabis is the source of their difficulties (Sparks, 2016). This is common with substance abusers and with those who become addicted. The dramatic changes that occur from addiction to “harder” drugs are usually not present with cannabis use, and those that do develop may not emerge for years. The changes that may unfold from cannabis use are often subtle and insidious (Schwartz, 2013). THC is extremely fat-soluble, meaning that it stores in the body’s fatty tissues, including the brain (Marijuana, 2016). THC can be detected in a user’s body for up to a month. Similarly, poorer cognitive performance following abstinence from cannabis can persist for up to 28 days (Hart & Shytle, 2011). Consequently, one can be under the influence of the drug and not realize it. For example, the subtle changes in personality—such as increased impulsivity, decreased inhibitions (Pintori et al., 2017), reduced emotional control, and increased risk-taking (Trull et al., 2016)—may go unnoticed.

Working memory and episodic memory are impaired from cannabis use, and this, in turn, impairs the encoding of new memories. Consequently, some memories and experiences cannot later be retrieved (Curran et al., 2016). Working memory impairment is most evident in tasks requiring mental processing such as performing mental arithmetic, for example, and not so much in rote memory tasks over a short period (e.g., remembering an address) (Curran et al., 2016). Distortion of time may occur such that time intervals

are not estimated accurately, and activities are done more slowly than normal (Atkinson, 2016). Decreased psychomotor activity occurs, some to the degree of becoming cataleptic (Atkinson, 2016).

Although cannabis usually induces relaxation in users, it also creates panic attacks and anxiety in some individuals under certain conditions (Zvolensky et al., 2011). Decreased motivation is common for those who are high on cannabis, and the diminutive effect of cannabis on motivation may be higher compared with other abused drugs (Atkinson, 2016). Prolonged motivational deficits caused by long-term cannabis use is referred to as the *amotivational syndrome*. The syndrome often creates a feeling of boredom at work and the diminished capacity to take initiative exacerbates the boredom (Margolis & Zweben, 2011). Frequent cannabis users in the Netherlands ($M = 39$ times and 51 times in two cities over 3 months) experienced “increased dissociation and psychedelic state, as well as fatigue, confusion, depression and anxiety, and decreased arousal, positive mood, vigor, friendliness, and elation” (van Wel et al., 2015, p. 324).

Smoking even small amounts of cannabis is harmful to the lungs. Smoking a single joint, for example, reduces breathing capacity to a similar degree as smoking five cigarettes (Csiernik, 2016). Compared with tobacco smoke, cannabis smoke creates greater fine damage to the lungs, which is what makes it more difficult to utilize oxygen efficiently (Csiernik, 2016). Cannabis use may also have cardiovascular effects. Marijuana use, for example, raises the heart rate by 20%–100% after about 20 min (Balkin, 2015), and, in some cases, heart attacks or fatal strokes result (Csiernik, 2016; Salhab, 2017; Wolff, Rouyer, & Geny, 2014).

The likelihood of having a serious motor vehicle accident almost doubles when one is high on cannabis (Rastegar & Fingerhood, 2016). Although alcohol intoxication is the leading cause of driving impairment resulting in accidents in youth between ages 18 and 30, cannabis follows in second place (Csiernik, 2016).

Regarding prevalence, cannabis is one of the most *abused* substances in the world. In the United States and globally, it is the most commonly used illicit drug (Atkinson, 2016; Salhab, 2017).

About 48% of Americans have tried cannabis, whereas 6.5% of high school seniors admit to using it *daily* (Salhab, 2017). It is currently estimated that 9% of users will become addicted, but perhaps as high as 17% for those who begin in their teens (Hart & Shytle, 2011; Salhab, 2017). Teens, on average, will become addicted within the first 5 years of use. By contrast, alcohol dependence does not develop, on average, until 10 years of use (Atkinson, 2016). Most who become addicted to cannabis do so before age 25, likely a result of the earlier age of onset for the use of this drug compared to other drugs, including alcohol (Atkinson, 2016). Up to

50% of daily users are at risk of dependency (Salhab, 2017; Sparks, 2016). Treatment admissions for cannabis use disorder (CUD) in the United States have doubled over the past 10–15 years and now constitute the greatest overall percentage of total treatment admissions compared with all other illegal drugs (Kosten et al., 2014). Cannabis also accounts for the greatest number of admissions in Europe compared with other drugs (Curran et al., 2016).

Diagnostic and Assessment Considerations

Cannabis-related disorders are found on pages 509–519 of *DSM-5* (APA, 2013) and include CUD, cannabis intoxication, cannabis withdrawal, other cannabis-induced disorders, and unspecified cannabis-related disorder. As is true for other substance disorders contained in *DSM-5*, in contrast to *DSM-IV*, a diagnosis distinguishing between *substance abuse* and *substance dependence* no longer occurs. Instead, a substance disorder is diagnosed by *severity* (i.e., by the number of diagnosable symptoms) as follows: (a) *mild*: 2 to 3, (b) *moderate*: 4 to 5, or (c) *severe*: 6 or more. *DSM-5* includes 11 listed criteria with two specifiers.

The overall diagnostic criteria for CUD is “A problematic pattern of cannabis use leading to clinically significant impairment or distress, as manifested by at least two of the following, occurring within a 12-month period” (APA, 2013, p. 509). The specific criteria include (a) loss of control over use, (b) continued desire or inability to reduce use, (c) much time is spent trying to obtain cannabis, use it, or recover from it, (d) cravings or a strong desire to use cannabis, (e) recurring use results in failure to fulfill obligations at work, school, or at home, (f) continuing use despite persistent or recurring problems socially and/or interpersonally, (g) social, occupational, or recreational activities are stopped or reduced because of use, (h) continuing use in situations where it is physically dangerous, (i) continuing use despite having a persistent or recurrent psychological or physical problem in which cannabis caused or exasperated the condition, (j) tolerance, expressed as either a need for increasing amounts of cannabis or diminished effect from continuing use of the same amount of cannabis, and (k) withdrawal, expressed as the cannabis withdrawal diagnosis (begins on page 517) or cannabis or another related substance is taken to relieve or avoid symptoms of withdrawal. As noted earlier, there are two specifiers for this diagnosis. You can specify if the condition is an *early remission*, meaning, between 3 months and 12 months, or in *sustained remission*, which requires 12 months or longer. You can also specify if the individual is *in a controlled environment*, meaning, in a place where access to cannabis is difficult if not impossible. See Table 10.1 for DSM and ICD codes.

TABLE 10.1 DSM and ICD Codes

DSM Code	Number of Symptoms Required	ICD-10	ICD-11
305.20	Mild: 2 or 3 symptoms	F12.10	6C41*
304.30	Moderate: 4 or 5 symptoms	F12.20	6C41
304.30	Severe: 6 or more symptoms	F12.20	6C41

*The cannabis codes in ICD-11 mostly begin with 6C41 but are then further distinguished by presence of the entities on the following page.

#	Specific Entity	Specific ICD-11 Code
1	Cannabis-induced delirium	6C41.5
2	Cannabis dependence, unspecified	6C41.2Z
3	Cannabis intoxication	6C41.3
4	Cannabis withdrawal	6C41.4
5	Harmful effects of drugs, medicaments, or biological substances, not elsewhere classified (includes cannabis poisoning)	NE60
6	Cannabis-induced psychotic disorder	6C41.6
7	Other cannabis-induced disorders	6C41.7
	Cannabis-induced mood disorder	6C41.70
	Cannabis-induced anxiety disorder	6C41.71
8	Disorders due to use of cannabis, unspecified	6C41.Z
9	Intentional self-harm by exposure to or harmful effects of cannabinoids or hallucinogens (includes intentional overdose of cannabis)	PC 93
10	Hazardous use of cannabis	QE11.1
11	Harmful pattern of use of cannabis, unspecified	6C41.1Z
12	Cannabis dependence, current use	6C41.20
13	Other specified disorders due to use of cannabis	6C41.Y
14	Unintentional exposure to or harmful effects of cannabinoids or hallucinogens (includes harmful effect of natural cannabis)	PB23
15	Single episode of harmful use of cannabis	6C41.0
16	Harmful pattern of use of cannabis, episodic	6C41.10
17	Harmful pattern of use of cannabis, continuous	6C41.11
18	Cannabis dependence, early full remission	6C41.21
19	Cannabis dependence, sustained partial remission	6C41.22
20	Cannabis dependence, sustained full remission	6C41.23
21	Assault by exposure to or harmful effects of cannabinoids or hallucinogens (includes assault by exposure to or harmful effects of cannabis)	PE83
22	Exposure to or harmful effects of undetermined intent of cannabinoids or hallucinogens (includes harmful effects of or exposure to cannabis, undetermined intent)	PH43

Differential Diagnosis

As *DSM-5* makes clear, it can be difficult to distinguish problematic use from nonproblematic use of cannabis. If social, behavioral, or psychological problems are evident, causation is difficult to ascertain, particularly if involvement with other drugs is occurring. This is especially so when others are referring an individual for treatment. Anxiety symptoms caused by cannabis might be misclassified or misdiagnosed as anxiety created by a primary mental disorder, and vice versa. This is also true with symptoms that might appear as “panic disorder, major depressive disorder, delusional disorder, bipolar disorder, or schizophrenia, paranoid type” (APA, 2013, p. 515). Chronic use of cannabis can also create an amotivational syndrome that could be misdiagnosed as dysthymia.

Comorbidity and Co-Addictions

Nearly 75% of cannabis users also smoke tobacco; an estimated 7 million Americans smoke both (Kosten et al., 2014). As noted earlier, cannabis use can precipitate psychosis in those predisposed to it (Hart & Shytle, 2011). Nonetheless, it is important to determine whether cannabis induced the psychosis or whether the psychotic disorder is primary (i.e., preceded the cannabis use) as treatments for each are different (Aggarwal, Banerjee, Singh, Mattoo, & Basu, 2012).

Although people entering treatment will often mention alcohol and harder drug use, they often will mention cannabis and nicotine use as an afterthought with little awareness of how these drugs may be hurting their health (Sparks, 2016). Cannabis use is comorbid with other substance use disorders (SUDs) (APA, 2013).

Cannabis users with a psychiatric disorder are more likely to develop CUD (Atkinson, 2016). Research has shown that people are more at risk for cannabis use and addiction if they (a) experience social anxiety disorder (Buckner et al., 2008), (b) have a family history of use, (c) began using early, (d) experience posttraumatic stress disorder, (e) experience certain personality disorders (antisocial, dependent, histrionic; Csiernik, 2016), and/or (f) have an externalizing disorder (e.g., attention deficit disorder, attention deficit hyperactivity disorder, conduct disorder, oppositional defiant disorder) (Atkinson, 2016; Maté, 2008). Those with mood disorders (including bipolar disorder) and anxiety disorders are more likely to use cannabis and other substances (Atkinson, 2016; Curran et al., 2016). A preexisting depressive or anxiety disorder also increases the likelihood of cannabis addiction (Curran et al., 2016).

Available Measures

Balkin (2015) stated that CUD could be assessed via a clinical interview in addition to specialized instruments. Counselors have several instruments at their disposal. Here is a list of the most common (not listed in any specific order):

Specific Measures

1. **Marijuana Motives Measure.** This instrument was factor analyzed, and it measures enhancement, conformity, expansion, coping, and social motives for use. The measure is described by Simons, Correia, and Carey (2000) and Simons, Correia, Carey, and Borsari (1998).
2. **Cannabis Use Problems Identification Test (CUPIT;** Bashford, Flett, & Copeland, 2010). A 16-question inventory covering the past 12 months of use. Useful for initial screening and deciding on treatment issues. Available from http://www.massey.ac.nz/massey/learning/departments/school-of-psychology/research/cupit/clinicians/clinicians_home.cfm
3. **Adult Cannabis Problems Questionnaire (Copeland, Gilmore, Gates, & Swift, 2005).** A 21-item inventory focused on the past 3 months. Available from https://drugsinmind.net/13.cannabis/_index.files/cannabis-problems-questionnaire.pdf
There is also an adolescent version. Available from https://drugsinmind.net/13.cannabis/_index.files/adolescent-cannabis-problems-questionnaire.pdf
4. **Cannabis Use Disorders Identification Test-Revised (CUDIT-R; Adamson et al., 2010).** As a brief eight-item assessment tool, the CUDIT-R provides a simple and reliable measure of the severity of problematic cannabis use. This article extends the utility of the CUDIT-R by demonstrating its sensitivity to change in a treatment sample, with definitions of reliable and clinically significant change applicable to research and clinical settings. Available from https://bpac.org.nz/BPJ/2010/June/docs/addiction_CUDIT-R.pdf
5. **Marijuana Craving Questionnaire (MCQ; Heishman, Singleton, & Ligouri, 2001).** Available from <https://osf.io/v8y34/>
6. **Cannabis Abuse Screening Test (CAST; Legleye, Karila, Beck, & Reynaud, 2007; Legleye, Kraus, Piontek, Phan, & Jouanne, 2012).**
7. **Reasons for Quitting Questionnaire.** DeRamus (2011) wrote that this questionnaire “is based on earlier work with tobacco cessation and has been modified based on initial results with people who use marijuana and seek treatment” (p. 30).
Questionnaire available from <https://www.drugtimes.org/marijuana-dependence/reasons-for-quitting-questionnaire.html>

General Measures

1. **Alcohol, Smoking and Substance Involvement Screening Test (ASSIST; WHO ASSIST Working Group, 2002).** This questionnaire is used via face-to-face interaction with a client. It includes only seven questions, of which six are scored. This brief measure shows a good ability to discriminate among use, abuse, and dependence (Asbridge et al., 2014). Available from http://apps.who.int/iris/bitstream/10665/44320/1/9789241599382_eng.pdf
2. **Severity of Dependence Scale (SDS; Gossop et al., 1995).** Measures cannabis as well as other substances. A five-question screening tool looking at use over the past 3 months. Better used for longitudinal follow-up than for individual use. Available from http://www.emcdda.europa.eu/attachements.cfm/att_7364_EN_english_sds.pdf
3. **Substance Abuse Subtle Screening Inventory-3 (SASSI-3; Miller & Lazowski, 1999).** This one is not specific to cannabis but instead looks at dependency versus use of substances.
4. **Car, Relax, Alone, Forget, Friends, Trouble Inventory.** “The CRAFFT is a behavioral health screening tool for use with children under the age of 21 and is recommended by the American Academy of Pediatrics’ Committee on Substance Abuse for use with adolescents” (para. 1). The CRAFFT and instructions for use are available from https://www.integration.samhsa.gov/clinical-practice/sbirt/adolescent_screening_brief_intervention_and_referral_to_treatment_for_alcohol.pdf
5. **Self-Efficacy Questionnaire.** Deramus (2011) noted that this questionnaire is extracted from the *Brief Counseling for Marijuana Dependence Manual* (available for free from https://www.integration.samhsa.gov/clinical-practice/sbirt/Brief_Counseling_for_Marijuana_Dependence.pdf)
6. **Structured Clinical Interview for DSM-5 (SCID-5).** A general interview for diagnosis purposes (available from https://www.amazon.com/Structured-Clinical-Interview-Disorders-Scid-5-cv/dp/1585624616/ref=sr_1_1?ie=UTF8&qid=1513038044&sr=8-1&keywords=structured+clinical+interview+for+dsm-5). *Note:* There is a cost for this measure.

Clinical Interview Questions

The various questionnaires and inventories mentioned in the previous section together contain a long list of questions

that can be asked in an interview. The Structured Clinical Interview for *DSM-5* can be used, but remember there is a cost to using this instrument. Marijuana Anonymous World Services (2017) provides a list of 12 questions that can be asked. The word *marijuana* in this list can be substituted for *cannabis* to be more inclusive.

The following questions may help you determine whether marijuana is a problem in your life:

1. Has smoking pot stopped being fun?
2. Do you ever get high alone?
3. Is it hard for you to imagine a life without marijuana?
4. Do you find that your friends are determined by your marijuana use?
5. Do you use marijuana to avoid dealing with your problems?
6. Do you smoke pot to cope with your feelings?
7. Does your marijuana use let you live in a privately defined world?
8. Have you ever failed to keep promises you made about cutting down or controlling your use of marijuana?
9. Has your use of marijuana caused problems with memory, concentration, or motivation?
10. When your stash is nearly empty, do you feel anxious or worried about how to get more?
11. Do you plan your life around your marijuana use?
12. Have friends or relatives ever complained that your using is damaging your relationship with them?

If you answered yes to any of the above questions, you may have a problem with marijuana. (Marijuana Anonymous World Services, 2017, para. 1)

Generic Names and Street “Lingo”

Csiernik (2016) listed many of the names that denote cannabis and/or marijuana (also spelled marihuana by some), including “A-bomb (mixed with heroin or opium), Acapulco gold, Acapulco red, ace, bazooka (mixed with cocaine), BC Bud, bhang, blunt, boom, B.T., chronic, Columbian, doobie, dope, gangster, ganja, grass, hemp, herb, home grown, jay, kiff, Mary Jane, Maui Wowie, Northern lights, pot, purple haze, ragweed, reefer, sinse, skunk, smoke, spliff, tea, Thai stick, weed” (p. 180). Two other words mentioned by Curran et al. (2016) are charas and resin. Hash, hashish, and hash oil are other terms.

Dabs is a term that has appeared in recent years.

Dabs are concentrated doses of cannabis that are made by extracting THC and other cannabinoids using a solvent like butane or carbon dioxide, resulting in sticky oils also commonly referred to as wax, shatter, budder, and butane hash oil (BHO). They’re heated on a hot surface, usually a nail, and then inhaled through a dab rig. (Leafly, 2017, para. 1)

Smoking dabs requires the concentrate noted previously, a small pick, a special bong, and a blowtorch. Given that a blowtorch is required to both make dabs and to smoke it, many novices have accidentally exploded their kitchens and basements (Watson Seupel, 2014).

Another term with a simple history is *420*. The term was coined by then-17-year-old Brad Bann on a Saturday in October 1970. Brad was known as the Bebe, and his teenage clique was called the Bebes. On a Saturday in October 1970, he and the Bebes were hanging out in a bedroom when Brad noticed the time and said, “It’s 4:20, time for bong loads.” *420* soon became code in their neighborhood for pot. Another group, which Brad called the *Waldos*, made the term *420* famous across the United States (Griffin, 2012). Today April 20 (i.e., *420*) has become known as *National Weed Day* by cannabis users.

Neuroscience

Not surprisingly, cannabis’ reward system involves the mesolimbic dopamine system, as is true of other abused substances (Atkinson, 2016). When cannabis chemicals enter the body, they bind to two kinds of receptors known as cannabinoid receptor 1 and cannabinoid receptor 2 (CB-1 and CB-2; Hart & Shytle, 2011). Because they are more prevalent than opioid receptors, it is believed that they affect more regions of the brain. CB-2 receptors are mostly located in the immune cells. Consequently, researchers speculate that cannabinoids may modulate the immune system in some capacity (Hart & Shytle, 2011).

CB-1 receptors are found mostly in the central nervous system, and they are related to the functioning and development of the brain (Balkin, 2015). CB-1 receptors are found in the basal ganglia (which includes the caudate nucleus), putamen, globus pallidus, cerebellum, hippocampus, cerebral cortex, and the nucleus accumbens. This suggests that cannabis modulates a range of behaviors (Hart & Shytle, 2011). Current research indicates that synthetic cannabinoids mostly affect CB-1 receptors (Pintori et al., 2017).

Although the neurotransmitter serotonin is most closely aligned with hallucinogen use, cannabis is instead identified with the fatty acid neurotransmitter called anandamide. This is speculated to explain why cannabis works differently from other hallucinogens (Csiernik, 2016). When an individual smokes marijuana, THC travels quickly to the brain and bonds with receptors and anandamines, both of which are prevalent in the limbic system (Csiernik, 2016). Although most PET studies have found that THC can increase dopamine in the striatum, this occurs to a much lesser degree compared with other recreational drugs (Curran et al., 2016). There is currently weak support for implicating dopamine in cannabis addiction (Curran et al., 2016). Nonetheless, in cannabis addicts, “cortical control of the mesolimbic circuitry malfunctions and this leads to an overvaluing of drug related reinforcers and an undervaluing of natural reinforcers” (Atkinson, 2016, p. 28). Furthermore, there is evidence that marijuana might decrease neural response in the nucleus accumbens, which in turn may increase the risk of further drug use and addiction (Martz et al., 2016). Some research suggests that the genetic risk for cannabis addiction may link to genes like *ELTD1* on chromosome 1, *GABRA2* on chromosome 4, and *CNRI* on chromosome 6 (Agrawal et al., 2008).

Physical Impacts (Long-Term Use)

There are several unhealthy consequences to using cannabis products regularly and frequently over a prolonged period. Because the potency (percentage of THC) in cannabis is variable over both time and across regions, it is impossible currently to accurately predict what potency (combined with what percentage of CBD) will lead to health consequences and addiction, and over what duration of time, compared to which will not cause negative consequences (Asbridge et al., 2014). Pearson (2019) meta-analyzed 19 studies that examined the relationship between cannabis use and negative consequences. He found that cannabis use “had a medium-sized association with consequences” (from abstract). Due to the heterogeneity of the studies, however, Pearson was unable to isolate these negative impacts. He concluded that additional studies need to be conducted with additional indicators.

Abusing smoked cannabis long term is as bad or worse for one’s lungs compared with cigarette smoking. The carcinogens and the tars increase the likelihood for not only lung cancer but also for neck and head cancers (Milkman & Sunderwirth, 2010). One of the problems with cannabis is that it burns 16 times hotter than tobacco (Smith, 2013). Compared to tobacco, cannabis smoke also produces twice as many mutagens, which are substances that create permanent changes in genetic material (Smith, 2013).

Marijuana smoke contains at least 50% more carcinogens than tobacco products. Cannabis smokers also absorb approximately four times more tar into their lungs and experience about an 8% greater risk of developing lung cancer than those who don’t smoke (Balkin, 2015). Like tobacco smokers, those who smoke cannabis experience similar degrees of pulmonary problems (Hart & Shytle, 2011). These include reduced lung capacity, chronic cough, increased mucus in the lungs (Balkin, 2015), and wheezing (Zvolensky et al., 2011). Other severe respiratory diseases can occur, too, the most frequent of which is chronic bronchitis (Zvolensky et al., 2011). About 74% of those who smoke cannabis also smoke tobacco (Kosten et al., 2014), and there is evidence that smoking tobacco increased the potential for cannabis addiction (Englund et al., 2017).

Birth defects are likelier in children born to mothers who have abused cannabis (Salhab, 2017), resulting in neurophysiological and behavioral disorders (Atkinson, 2016). When a fetus is exposed to cannabis, it becomes at increased risk of placental abruptions, premature births, and lower birth weight (Rastegar & Fingerhood, 2016).

Long-term studies have shown that cannabis abuse creates cognitive deficits, including delayed processing speed, judgment, reduced problem-solving ability, decreased attentional capability, poorer working memory, learning difficulties, and reduced impulse control (Atkinson, 2016; Balkin, 2015). It remains unclear whether cognitive functions ever return completely to preuse levels following long-term abstinence, however (Balkin, 2015). A longitudinal study found that users who began abusing cannabis in adolescence experienced neuropsychological deficits that did not restore following cessation (Rastegar & Fingerhood, 2016). The cognitive impairments are known to exist for months and even years after quitting cannabis (Zvolensky et al., 2011). Long-term users experience difficulties with executive functioning such as the ability to solve problems, make decisions, and think abstractly (Csiernik, 2016). Cannabis affects “our most valued human faculties – the

abilities to test reality, reason, control our impulses, set priorities, relate to others, and reach our goals” (Atkinson, 2016, p. 11).

Although regular users of cannabis experience poorer academic performance, it is unclear if factors other than cannabis use are to blame (Englund et al., 2017). Cannabis can create an overfocus on insignificant things, and impaired judgment can make it difficult to refocus on other matters (Atkinson, 2016). As noted earlier, regarding cognitive effects, CBD can reverse some of the negative impacts of THC (Englund et al., 2017). Although longitudinal studies have revealed a reduction in IQ scores in heavy cannabis users (Atkinson, 2016), the studies upon which this finding is based are confounded with small numbers of participants (Englund et al., 2017). Other longitudinal studies have suggested that reduced IQ scores may be due to other factors (Englund et al., 2017).

Regular users also experience decreased energy, immune system deficiencies, increased likelihood of having endocrine problems, decreased sperm production, inhibited ovulation, and decreased fertility (Csiernik, 2016).

Over time, the brain becomes increasingly unresponsive to the effect of naturally occurring reinforcers such as employment, cannabis, and social aspects of life (Atkinson, 2016). Deficits in psychosocial functioning are postulated to occur because of cannabis’s effect on cognition and motivation (Atkinson, 2016). One’s ability to experience pleasure can be affected by long-term use of cannabis (Balkin, 2015). Physical coordination can also be affected (Balkin, 2015; Pintori et al., 2017). One of the signs that someone may be misusing marijuana includes animated behavior and talking loudly (Smith, 2013). Poor academic and work performance are also correlated with regular cannabis use (Kosten et al., 2014).

High-potency cannabis use and the onset of mental illness, particularly schizophrenia, are strongly correlated as well (Hamilton, 2017; Kosten et al., 2014). This is currently an area of deep controversy. The question is whether the relationship is only correlational or if it is also causal. In other words, which comes first: Does cannabis use *cause* psychosis, or does psychosis lead one to want to use cannabis? (Zvolensky et al., 2011). Most people who use cannabis do not develop psychotic disorders, and many psychotic individuals have never used cannabis (Curran et al., 2016). We know that cannabis can catalyze a psychotic reaction for those predisposed to it (Hart & Shytle, 2011; Rastegar & Fingerhood, 2016), and we also know that individuals living with schizophrenia are likelier to relapse if they use cannabis (Englund et al., 2017). Furthermore, interventions targeted at helping psychotic individuals refrain from cannabis use have been unsuccessful (Englund et al., 2017). We also know that, the earlier one uses it, the earlier the psychotic disorder manifests in those predisposed, and that effect has been most pronounced in women compared with men (Agabio, Campesi, Pisanu, Gessa, & Franconi, 2016). Nonetheless, the type of cannabis used might make a difference as well. Self-reported use of hash, even when used daily, is not associated with an increased risk of psychosis, whereas self-reported daily use of “skunk weed” and “negligible amounts of cannabidiol (CBD) is associated with a fivefold greater chance of having schizophrenia” (Curran et al., 2016). A major concern and ongoing controversy relate to the impact that cannabis use has on the brain’s development during adolescence. Chronic users who begin using cannabis in adolescence may experience changes to the structure and functions of their brains (e.g., smaller volume of cortical gray matter and reduced activation in prefrontal brain regions), thus creating indefinite learning and

memory problems (Balkin, 2015; Kosten et al., 2014; Trull et al., 2016). A particular concern is expressed in the literature for those using cannabis regularly before the age of 17 (Kosten et al., 2014). For example, research has demonstrated that decreased processing speed and impaired executive function remain for at least 3 years following cannabis cessation in younger users (Meruelo, Castro, Cota, & Tapert, 2017). Other findings conclude that cannabis has a harmful effect on prospective memory in young adults, yet many may remain unaware of this impact (Bartholomew, Holroyd, & Heffernan, 2010).

Is cannabis a “gateway drug” to use of harder drugs? Research does support the idea that some cannabis users segue into harder drugs, particularly heavy users and those who begin using in adolescence (Curran et al., 2016; Holley, 2009). As in the research concerning psychosis, causality is undetermined. Those who have a dealer for cannabis usually have access to harder drugs so that access may be the determining factor.

The “reverse gateway” is also possible, meaning that cannabis users may segue into using tobacco products (Curran et al., 2016). Beyond the gateway theory, regular use of cannabis is strongly correlated with cannabis dependence (Kosten et al., 2014). Daily use of high-potency cannabis is most strongly correlated with addiction (Balkin, 2015; Englund et al., 2017).

Dependency on cannabis develops within 5 years for about 50% of cannabis users (Atkinson, 2016). For those who become addicted, most have used almost every day for 10 years or more, and on average have tried to quit six times (Sparks, 2016). Half of individuals with CUD who decide to stop using will reinstate use within 2 weeks, and, of the other half, about half will relapse within a year (Balkin, 2015). “In fact, more people fail at abstaining from smoking marijuana than any other illegal drug *combined*” (DeRamus, 2011, p. 11).

Withdrawal begins occurring 4–8 hours after abrupt termination and typically lasts 3–4 weeks (Csiernik, 2016). Cognitive impairments for adults who stop using cannabis cease after 4–6 weeks (Curran et al., 2016). The cannabis withdrawal syndrome affects about 50% of daily users (Curran et al., 2016). Withdrawal symptoms may include insomnia and sleep disturbances with vivid dreaming, decreased appetite, aches and pains, headache, fever, anxiety, shakiness, sweating, dysphoria, anger, irritability, drug craving, and aggressive behavior in some cases (Atkinson, 2016; Csiernik, 2016; Hart & Shytle, 2011; Rastegar & Fingerhood, 2016). Additional withdrawal symptoms include a general “blah” feeling and “inner unrest” (Hanson, 2009, p. 111). The most typical symptom of quitting cannabis is having difficulty sleeping (Sparks, 2016). The worse the withdrawal effects experienced by an individual, the greater the likelihood of relapse (Atkinson, 2016). Withdrawal effects from synthetic cannabinoids may include anxiety, irritability, diarrhea, insomnia, tremor, profuse sweating, and tachycardia (Pintori et al., 2017).

Mental, Emotional, and Spiritual Impacts

Most of the mental effects, which are largely physical manifestations resulting from the frequent use of cannabis, were covered in the previous section about physical effects. One potentially positive effect noted in recent research is that chronic cannabis use blunts one’s reaction to stress, and there is speculation as to whether this may reduce one’s vulnerability to stress or reduce stress-related disorders (Cuttler et al., 2017). At the same time, regular marijuana

use can increase one’s reactivity to stress and irritability (Volkow et al., 2014).

Chronic use of cannabis is associated with hostility and anxiety disorders (Curran et al., 2016; Trull et al., 2016). Although there are statistical correlations between cannabis use and depression (Curran et al., 2016), the strength of these associations is somewhat weak (Zvolensky et al., 2011). Cannabis can create apathy and emotional lability (particularly flat affect) together with an inability to control emotions and behavior (Csiernik, 2016).

A PsycINFO search reveals the dearth of peer-reviewed journal articles and books when “cannabis” and “spirituality” are used as search terms: One of each were found. A two-volume book, edited by Ellens (2014), reviews how ayahuasca, cannabis, LSD, peyote, and psilocybin have been used historically and in several religions to achieve altered states. A recent edited book by Gray (2016) “explores the use of marijuana in a wide range of spiritual practices, including meditation, yoga, chanting, visualization, shamanism, group ceremonies, work with other entheogens, and as a creative aid” (book description on the Amazon website).

Dr. Sona Patel (2017), in her website, wrote about the role that marijuana and spirituality have played in our cultural history. She reported that marijuana and cannabis had been used in religious ceremonies for either hundreds or thousands of years. Patel provided information about the use of cannabis for medical and religious reasons in ancient India, Africa, China, Central Asia, Europe, and the Middle East. Currently, cannabis is also used in religious ceremonies in India, Jamaica, and in other parts of South and North America.

The only peer-reviewed published empirical study on PsycINFO is by Baker, Sellman, and Horn (2007). They stated that they conducted the first study, and arguably the only published study, to look at the spiritual experiences, beliefs, and practices of New Zealanders entering substance abuse treatment. Of the 90 admittees included in their research, 93%, 63%, and 34% were alcohol, cannabis, or other drug dependent, respectively. Consequently, there was an overlap of addictions in the sample. Most participants stated that they were spiritual but not religious, and most reported having a life-altering or religious experience before admission. Older individuals were most likely to be affiliated with a religion and to be affiliated with 12-step meetings.

Although a website includes the statement that cannabis can help people “awaken from illusion and get ‘real’” (*Cannabis and spirituality*, n.d.), this seems hardly likely for someone who has become addicted. As written in Chapter 1, addicted individuals become selfish, self-centered individuals over time as their drug or behavior becomes the most important “god” to them. Furthermore, anecdotally at least, daily and chronic use of cannabis may affect one’s ability to be fully present and emotionally available to a partner or a loved one.

Psychosocial Impacts (Relationships, Career/Work, Legal, Financial)

The greatest negative psychosocial impacts reportedly occur with adolescent heavy cannabis users, which includes a gateway effect into the use of harder drugs, quitting school early, cognitive impairments, increased risk for psychosis, and increased risk for addiction and suicide attempts (Hall, 2015; Silins et al., 2014). When asked about substances that have caused adverse consequences, a study of 7437 American high school students found

that, compared to alcohol, cannabis users found they experienced less energy and interest, diminished school or work performance, and reported more relationship problems with teachers or supervisors (Palamar et al., 2014). In a sample of 110 Swiss adolescents (aged 12–19), cannabis dependence was associated with dysfunctional coping strategies and disrupted peer relationships (Cascone, Zimmermann, Auckenthaler, & Robert-Tissot, 2011). Frequent use of marijuana doubles a teenager's risk of experiencing anxiety and/or depression, and, in turn, depressed adolescents are at least twice as likely to become addicted to cannabis (DeRamus, 2011).

For some at least, marijuana use interferes with workplace productivity (Zvolensky et al., 2011). A 39-year longitudinal study from Sweden (Danielsson, Agardh, Hemmingsson, Allebeck, & Falkstedt, 2014) found that, in their country, those who began using cannabis heavily since adolescence were 30% more likely to be on a disability pension (available to those between ages 16 and 65 compared to those who had not used cannabis more than 50 times in total. Finally, risky sexual behavior is also associated with cannabis use (Agrawal et al., 2016).

Working With Diverse Populations

Sex Differences

Many sex differences have been found in research focused on SUDs, although few differences have been found with cannabis use (Agabio et al., 2016). Males are more likely to use cannabis than females (although the gap is lessening), and they are more likely to abuse and become addicted (Tartaglia, Miglietta, & Gattino, 2017). When women become addicted to cannabis, they also seek treatment at younger ages compared to men (Agabio et al., 2016).

Cannabis is the most frequently used illicit drug by pregnant women (Morris, 2015). Women who began using as teenagers are more likely to report engaging in repeated unprotected sex than nonusers and those who began using cannabis after their teenage years (Agrawal et al., 2016). Nonaddicted women who begin using at younger ages also predicts poorer memory, a finding not found in nonaddicted men (Curran et al., 2016). There is also a neurological difference in that women users have a larger right amygdala compared to female controls, whereas men users have a smaller prefrontal cortex compared to male controls (Agabio et al., 2016).

Adolescents and Youth

Adolescence is a vulnerable time for developing an SUD (Winters & Lee, 2008), and it is also a time when the brain may be more vulnerable to the effect of drugs (Curran et al., 2016). About 17% of adolescent cannabis users will develop CUD by age 24, and half of these teenagers will be dependent within 5 years of beginning use (Atkinson, 2016). By contrast, Atkinson (2016) stated that the median age for becoming an alcoholic is double this (i.e., within about 10 years).

Although cannabis use has been decreasing among adolescents over the past few years (Keyes, Wall, Feng, Cerda, & Hasin, 2017), it remains common in youth, and it is associated with inattentiveness, increased levels of depression, and suicide risk (Osuch, Vingilis, Ross, Forster, & Summerhurst, 2013). In many American inner-city schools, marijuana has become a more popular drug than alcohol, with some beginning use as early as age 12 (Maharajh et al.,

2014). Depressive symptoms are more common when cannabis is used early and used continuously (Andrade & de Lima Argimon, 2008). Teenagers and young adults who are frequent users of marijuana are also more likely to experience increases in negative affect (Ross et al., 2018). Greater use of alcohol and marijuana is associated with worse academic performance in high school for all youth, especially for non-White youth (D'Amico et al., 2016).

A sample of 2120 adolescents (940 cannabis users, 1180 non-users) in the Netherlands found that cannabis use at age 16 predicted psychosis 3 years later, and a reverse relationship was also found (i.e., psychosis vulnerability at age 13 predicted cannabis use 3 years later; Griffith-Lendering et al., 2013). Furthermore, those who begin using at earlier ages continue to show decreased processing speed and diminished executive functioning 3 years later (Meruelo et al., 2017).

But it is not just early use that produces long-standing deficits. Beginning cannabis use later in adolescence or early adulthood is associated with several adverse outcomes later, including “poor educational outcome, lower income, greater dependency on social assistance, unemployment, and lower relationship and life satisfaction” (Csiernik, 2016, p. 184). Because their mesolimbic systems respond especially well to reward and their prefrontal cortexes are not fully developed, adolescents are at high risk of impulsive decision-making (Atkinson, 2016). Furthermore, it is speculated that the damage to an adolescent's IQ caused by regular and heavy cannabis use is permanently lowered by 5–8 IQ points (similar to those exposed to high levels of lead; Atkinson, 2016).² Cannabis use in adolescence negatively affects episodic memory (Duperrouzel et al., 2019).

Dorard et al. (2017) found that, with 120 youth ages 14–25 (mean age = 17.9 years; 95 males, 25 females) who were receiving treatment as outpatients for cannabis dependence, 35% were alexithymic with the analysis, showing that their greatest difficulty was in describing feelings together with high trait anxiety (Dorard et al., 2017). Adolescent cannabis users are more likely to have a higher body mass index than nonusers, and this is not explained by other factors such as depression, race, ethnicity, IQ, nicotine use, or alcohol use (Ross, Graziano, Pacheco-Colon, Coxe, & Gonzalez, 2016).

High school students who score high on trait impulsivity and have a history of behavioral addictions are more likely to use tobacco, alcohol, or marijuana (Chuang et al., 2017). A large-scale study ($N = 6496$) found that use of these three substances is also associated with the use of prescription opioids in 18- to 25-year-old men. Marijuana use was only associated with subsequent abuse of prescription opioids in young women (Fiellin, Tetrault, Becker, Fiellin, & Hoff, 2013). *Mulling* (i.e., adding tobacco to joints) is a common practice among young cannabis users and should be considered when working with adolescents (Belanger, Akre, Kuntsche, Gmel, & Suris, 2011).

Withdrawal symptoms are also common with adolescents receiving outpatient treatment. Of 90 adolescents in one clinic who reported cannabis as their drug of choice, 40% experienced withdrawal symptoms (Greene & Kelly, 2014).

Race and Ethnicity

The population of racial and ethnic groups is growing faster in the United States compared to Whites (Wu, Zhu, & Swartz, 2016).

²For more information concerning the neuroscience regarding cannabis' effects on adolescents, see Meruelo et al. (2017).

Research has found that adolescents who are immigrants or born to immigrants are at increased risk of substance use (Chedebois et al., 2009). Black-White youth are less likely to use substances compared to either Black or White youth (Goings, Butler-Bente, McGovern, & Howard, 2016). Several studies have found that Hispanic adolescents report greater usage of most major drugs compared to non-Hispanic White and African American teenagers (Cardoso, Goldbach, Cervantes, & Swank, 2016; Suerken et al., 2014; Unger, Schwartz, Huh, Soto, & Baezconde-Garbanati, 2014). The reasons for this finding include discrimination, immigration, community violence, and poverty (Cardoso et al., 2016). Recent research has suggested a moderating variable: The parent-adolescent relationship between Hispanic youth has a greater impact on alcohol and marijuana use compared with non-Hispanic White youth (Moreno, Janssen, Cox, Colby, & Jackson, 2017).

African American youth (ages 12–18) are most likely to use marijuana and alcohol concurrently, followed next by White youth, whereas other racial and ethnic minority teenagers are most likely to only use marijuana (Banks, Rowe, Mpofu, & Zapolski, 2017). When looking at cannabis use only, research has found that non-White individuals are most likely to become regular users of cannabis compared to Whites (Pacek, Mauro, & Martins, 2015; Wu et al., 2016). A study of past 30-day prevalence between 1999 and 2012 found that cannabis use was lowest among Asians and highest among Native Americans (Johnson et al., 2015). Native Americans are also likely to begin using substances earlier than other youth (Stanley & Swaim, 2015).

Early use and regular use has been found to lead to greater suicidality among Mexican adolescents. In a study of 1071 adolescents in Mexico, those who used cannabis from an early age (before age 15) and those who used heavily for the past 12 months were more likely to think about and attempt suicide compared to noncannabis users (Borges, Benjet, Orozco, Medina-Mora, & Menendez, 2017).

Nonpsychiatric Disabilities

As noted previously, cannabis products have been found useful in treating or ameliorating some medical disorders. Both adults (Glazier & Kling, 2013) and youth (Maharajh et al., 2014) with disabilities report higher levels of cannabis use than those who are not disabled. Adolescents who live in residential care facilities and those with behavioral problems are also more at risk of SUDs, found in one study to result from deviant peer affiliations (Kepper, van den Eijnden, Monshouwer, & Vollebergh, 2014).

Another study found that youth with mobility issues, learning problems, and emotional disabilities were more likely to use marijuana. What distinguished them from other peers was greater exposure to risk factors concomitant with fewer protective factors (Blum, Kelly, & Ireland, 2001).

Lesbian, Gay, Bisexual, and Transgender (LGBT)

It has long been established that LGBT adolescents and adults use substances more than those who do not define as LGBT (Gonzalez, Gallego, & Bockting, 2017; Lowry, Johns, Robin, & Kann, 2017; Mereish, Goldbach, Burgess, & DiBello, 2017). The

reasons for this increased use are related to psychosocial stress caused by discrimination, harassment, victimization, prejudice, and internalized homophobia (Goldbach, Schrage, Dunlap, & Holloway, 2015; Gonzalez et al., 2017; Lowry et al., 2017).

Regarding cannabis specifically, lesbian, gay, and bisexual adolescents use marijuana more than heterosexual teenagers (Goldbach et al., 2015). Sexual minority women are more likely to use cannabis than heterosexual women, which has been explained due to higher levels of exposure to trauma and posttraumatic disorder (Dworkin, Kaysen, Bedard-Gilligan, Rhew, & Lee, 2017). Cannabis use among bisexual women in a Canadian study was five times higher than Canadian women in general (Robinson, Sanches, & MacLeod, 2016). Bisexual men are also much more likely to use marijuana than gay and heterosexual men (Parnes, Rahm-Knigge, & Conner, 2017). Transgender men report significantly higher rates of cannabis use than transgender women (Gonzalez et al., 2017).

War Veterans

Recent research has found that past-year cannabis use among American veterans is about 9%; older and female veterans had lower rates compared to males (Davis, Lin, Ilgen, & Bohner, 2018). Overall their past-year usage rates compare to that of the U.S. general population. However, the rate of those who used MM over the past year was more than double that of the general population (Davis et al., 2018). Reasons for medical use of cannabis include sleep-related issues and pain management (Davis et al., 2018). The adolescent children of veterans are more likely to use cannabis compared to nonveteran teenage children (Lipari et al., 2017).

Cannabis use is substantially associated with mental health problems in veterans, including suicidality (Kimbrel et al., 2017). Veterans experiencing major depressive disorder (Metrik et al., 2016) and/or posttraumatic stress disorder (PTSD) also remain at high risk of developing CUD (Gentes et al., 2016; Metrik et al., 2016). For veterans in residential care, those who continue using cannabis are likely to experience less respite from PTSD symptoms compared to nonusers (Bonn-Miller, Boden, Vujanovic, & Drescher, 2013). A study based on 341 veterans with PTSD found that the diagnosis itself was significantly associated with greater use of marijuana and depressants as compared to the use of cocaine and amphetamines (Calhoun et al., 2000).

Medications and Other Relevant Physical Interventions

Before looking at the medications that can be used to help with CUD and/or withdrawal, it is important to note that cannabis has been used in a harm reduction approach as a safer alternative for those using drugs that cause greater sequelae, including alcohol (Maharajh et al., 2014). Subbaraman (2014), however, suggested that recommending this for alcohol substitution is premature given what we currently know. Some MM users have been able to replace prescription medications with cannabis products (Lucas & Walsh, 2017). Inpatient hospitalization for CUDs remains rare although somewhat more common with adolescents who may be admitted for 1–2 weeks (Balkin, 2015).

One common antidepressant that has been found to worsen the symptoms of cannabis withdrawal is bupropion (Wellbutrin) (Hart & Shytle, 2011). The FDA has not yet approved any medication for CUD (National Institute on Drug Abuse, 2017; Sparks, 2016). Because sleep problems are common in cannabis withdrawal, sleep aids are sometimes prescribed such as Ambien (Zolpidem), buspirone (BuSpar), and gabapentin (Horizant, Neurontin). If sleep improves, these medications may indirectly improve executive functioning. Also being studied currently are the nutritional supplement N-acetylcysteine and chemicals called FAAH inhibitors. Other substances that will soon be studied are called allosteric modulators. These modulators may inhibit THC's rewarding effects (National Institute on Drug Abuse, 2017).

Other drugs that have some empirical support for helping cannabis withdrawal include fluoxetine, nefazodone (Sparks, 2016), Sativex, dronabinol (Marinol), nabilone (Cesamet), dexanabinol

(Salhab, 2017), rimonabant, lithium (Elkashef & Montoya, 2012), nefazodone, naltrexone, and divalproex (Hart & Shytle, 2011). Perhaps most surprising is that orally administered THC has been used to decrease the physiological and subjective effects of cannabis withdrawal (Hart & Shytle, 2011).

DeRamus (2011) recommended taking omega-3 fatty acids, although the source of this information appears to be anecdotal. For psychotic adolescents who use cannabis, a recent study found that clozapine reduced cannabis use compared to those with no medication (Tang, Ansarian, & Courtney, 2017). D'Souza et al. (2019) found evidence that a fatty acid (i.e., amide hydrolase inhibitor, PF-04457845) reduced cannabis withdrawal symptoms in men. Bhardwaj et al. (2018) reported that "the cannabis extract nabiximols (Sativex) effectively suppresses [sic] withdrawal symptoms and cravings in treatment resistant cannabis dependent individuals" (p. 1).

INSIDE AN ADDICTED PERSON'S MIND

Rock, Age 19

As you might have guessed, I was not born with the name Rock. When I was really high one night, I began focusing on the character of Dwayne Johnson in the 2017 movie *Baywatch*. I knew as I watched that I wanted to be like him, so the next day I legally changed my name. Perhaps that sounds impulsive, but it completely made sense when I did it.

My parents were furious, but they live in Chicago, and I'm in Las Vegas. They took offense that I changed my name from Bert, which was my grandfather's name. I don't care. I had lots of conflicts with them growing up. They didn't understand my stoner friends. They thought I was going to hell because of these guys. Well, I didn't go to hell; instead, I went to Vegas. I love the bright lights, the sounds, because everything comes alive after I smoke a few joints. Truthfully, I smoke up all the time, even during breaks at work. The high is all I look forward to most days.

I love to walk around shirtless everywhere, and, even though I get a lot of disapproving looks, I don't give a shit. I'm young, cute, and most chicks think I'm hot. The other day a good-looking babe came up to me with that look of knowing. She was pissed when I looked distant and acted unfamiliar. She raged at me, screaming, "I CAN'T BELIEVE I EVER

SLEPT WITH YOU!" It didn't phase me I thought: I was too stoned to care. Today, like yesterday, was about me and only me.

Despite my nonchalance, however, I couldn't get her off my mind. Why couldn't I remember her? Am I sleeping too much or not eating properly? Is pot affecting my memory? Is my job at Jack in the Box causing me too much stress? I think more about that, going into the many burgers I cook every day for ungrateful customers, the attitude I get from my boss who says I always seem stoned and to smarten up or I will get fired. This job is getting to me! The stress is overwhelming; I don't know why I put up with this crap. Focus, my only focus is on my stress, my job, my finances, my memory, my . . . **SHEBANG!**

I wake up days later, a coma I was told, by a nurse standing over me. I had walked off a curb without looking first. My legs are in casts, elevated from the bed. One arm is also in a cast. She speaks up and says, "You're lucky, Rock. Dr. Gilbertson said you will recover fully. How do you feel?"

I don't answer immediately. Everything seems weird; I feel waves of warmth in my body, I feel weightless, I feel euphoric and itchy at the same time. I reply, "I need a joint . . . I need a joint right now." The nurse chuckles, "It's just the morphine. Often people say odd things when they are on it." My anger goes to 10 immediately,

(Continued)

(Continued)

and I yell at the top of my lungs, "I'M NOT PHUCKING KIDDING!!! BRING ME MY POT!!!" The nurse immediately changes her attitude, tells me such language will not be tolerated and walks away. I lie there, becoming increasingly irritable. How dare she act that way!

Commentary

At age 19, Rock's use of cannabis is already problematic, and he can already be diagnosed as having CUD (American Psychiatric Association [APA], 2013). Whether his use can be classified as an addiction remains unclear, however. What we do know from Rock's presentation is that he has become a regular heavy user, and he experiences the following symptoms: (a) episodic memory deficits, (b) concentration

difficulties, (c) loss of peripheral awareness (i.e., over-focus on a current thought), (d) relationship issues with family, (e) employment problems, (f) reduced inhibitions, and (g) quick temper/irritability.

Discussion

1. Do you know of anyone who you suspect has become dependent on cannabis? If "yes," which symptoms noted in the commentary apply to him or her?
2. Does this person have symptoms that are not listed in the commentary? If so, what are they?
3. If you were Rock's counselor, how would you go about helping him?

Specific Counseling Considerations

ROLEPLAY SCENARIOS

Roleplay in dyads with one of you acting as the counselor and the other as the counselee. If roleplay is not possible, work individually in writing out a list of your suggestions.

Roleplay #1

Pedro, a 15-year-old Hispanic adolescent, born and raised in Miami, is brought to you by his parents, José and Georgina. They are deeply concerned about Pedro's constant use of marijuana. According to José, Pedro is always high: morning, noon, and night. Pedro hangs out with a gang of Hispanic youth, all of whom spend their time together getting high and partying until late hours. Georgina recently found a large stash of marijuana in Pedro's bedroom and now believes that he is dealing. Pedro has also missed a great deal of school, and, in all endeavors, he is reportedly unmotivated and apathetic. He is now meeting with you alone, and it becomes immediately apparent that he is not interested in talking about his pot use or his life with you.

Roleplay #2

Christina, age 37, is a single White woman who has come to you because she has recently lost her job as a legal secretary. After 8 years at the law firm, she feels resentful and harbors deep animosity and resentment toward her employer.

When asked about what led to her dismissal, Christina shows you a letter from the firm outlining their reasons. It appears Christina was fired for unprofessional conduct, as outlined in the following areas:

1. She had become slow and inefficient in her work.
2. She often seemed distracted.
3. She had become impatient and short-tempered with clients.
4. She had become forgetful and was missing deadlines, placing lawyers in an awkward position when meeting with clients.

During your assessment, you find out that Christina has been struggling in several areas of her life. She blames these difficulties on her father's death a few months earlier, but, through careful probing, you discover that her problems began closer to a year ago when she started smoking hash most nights with her roommate. When you bring this to Christina's attention, she becomes immediately snarky with you and demeaning, saying that you have no idea about how helpful smoking hash has been to her, particularly in dealing with her father's death.

HOW WOULD AN ADDICTION COUNSELOR HELP THIS PERSON?

You are working as a professional counselor. Danny is a 35-year-old African American man who has worked at a bank since graduating from college 11 years ago. Danny tells you that he had become a “raging” alcoholic during college and continued until his parents helped get him admitted to a treatment center 4 years ago. He still attends the odd AA meeting but increasingly finds that he doesn’t relate well to the others there. More than one other member has suggested that Danny look at his use of high-potency marijuana as they believe he has simply transferred his addiction from alcohol to cannabis. Danny is annoyed with these comments, which he interprets as all-out accusations. As you discover, Danny has used cannabis products since he was 14 years old, and he does not see any problem with

continuing to use. You notice he coughs every few minutes, and you detect a wheezing sound as he breathes.

Danny tells you that his boss sent him to you after two customers recently complained that he smells like pot when they are at the counter. He reassures you that he has never smoked pot at work, but he does smoke up almost continuously from when he gets home from work until he retires to bed. “Pot helps me relax and then fall asleep,” Danny states. Without pot, Danny believes he would strongly desire to begin drinking again. When questioned, you find out that he indeed had a relapse with alcohol after he tried quitting cannabis 2 years ago. Back then, the relapse lasted 2 weeks, and he only regained control after he began smoking cannabis again.

Remember to view clients within their environmental contexts, keeping in mind societal, parental/familial, cultural/spiritual, and peer influences. Specifically, become aware of the impact that the following influences have and continue to have in your clients’ lives: race, language, religion and spirituality, gender, familial migration history, sexual/affectional orientation, age and cohort, physical and mental capacities, socioeconomic situation and history, education, and history of traumatic experience.

1. What defines this person’s environment, past and present?
2. Who is this person sitting in front of me, taking into account environmental and personal characteristics?
3. What defines the problem that he or she is presenting within their multicultural milieu?

Goals and Goal Setting

Understanding one’s reasons for using cannabis together with the degree of addiction will help the counselor and client decide collaboratively what an appropriate goal looks like. Some heavy cannabis users can reduce their use with little to no difficulty. Many regular users of cannabis do want to quit. In 1998, 35% of admissions in U.S. public treatment facilities were for marijuana problems (Zvolensky et al., 2011). The most frequently mentioned reason provided of adults who want to quit is worry regarding one’s physical and psychological health (Zvolensky et al., 2011).

As Dahl (2015) noted, some individuals incorporate cannabis use into their identity. A cannabis identity may represent a desired representation as an unrestrained, independent, and free-thinking individual. A cannabis addict, however, has an identity that is likely in need of repair (Dahl, 2015). This may follow an inability to cut down usage together with resultant negative consequences.

If a harm reduction approach is taken, risks are reduced if

1. Delaying usage until early adulthood.
2. Using safer forms of inhalation (e.g., vaporizers).
3. Using less potent varieties of marijuana.
4. Avoid driving after use for 3–4 hours.
5. Abstaining altogether if at higher risk of problems (e.g., family history of psychosis, cardiovascular problems, being pregnant) (Crépault, 2014).

Stages of Change Strategies

The processes of change mentioned are based on those outlined by Connors, DiClemente, Velasquez, and Donovan (2013) and Prochaska, Norcross, and DiClemente (1994). The definitions for the various processes can be found in Chapter 6. Besides these processes, other strategies are included that have separate citations.

The University of Rhode Island Change Assessment Scale (URICA) is a helpful scale for determining where the client is currently at regarding the stages of change model. There are 24-, 28-, and 32-item versions of the scale.

A 24-item version is published for alcohol or drug problems. The scale, however, is generic and can be easily adapted for use with other addictions. It is available with norms as a free download from https://www.guilford.com/add/miller11_old/urica.pdf.

Specific precontemplation strategies.

Please visit the section of this chapter called Relevant Mutual Support Groups, Websites, and Videos for free or low-cost information and resources that may help someone move out of precontemplation.

Given the continuing legalization of cannabis throughout the United States and other countries, convincing regular heavy users that they have become “addicted” is arguably a challenging task. One book that is an easy read and provides in layperson’s terms a personal and professional look at cannabis addiction is by Tony DeRamus (2011; see reference list) called the *Secret Addiction*. Free information is also available from his website at <http://www.secretaddiction.org/>.

There are many documentaries, videos, and movies about cannabis. A note of caution, however: Many of these resources are as political as they are educational, espousing the medical benefits of cannabis more than looking at the harmful consequences, or otherwise promoting its use. Here are a few that provide a more balanced perspective:

1. The Best Marijuana Documentary (approx. 1 hr. 44 min.). Available from https://www.youtube.com/watch?v=MESZh-_uyUQ
2. Negative Effects of Cannabis Documentary (approx. 35 min). Available from <https://www.youtube.com/watch?v=uhRoIUaiZbs>
3. Full CNN Documentary Weed Parts 1–3 (2013–2015; approx. 2 hrs. 9 min.). Available from https://www.youtube.com/watch?v=PRLYV0_6zY8
4. Marijuana Documentary, HD Documentaries 2017 (approx. 45 min). Available from <https://www.youtube.com/watch?v=96vWCn2O7i4>
5. In Pot We Trust (approx. 1 hr. 27 min.). Available from <https://www.youtube.com/watch?v=Gps3-ySZ-zY>

Specific contemplation strategies.

As is true for every addiction, motivational interviewing (MI) (as exemplified later in this chapter) is an effective method for helping bring clients to the next stage. As feeling ambivalent is a marked emotion for most unrecovered addicts, the following method may be helpful in beginning a dialogue about harm reduction or abstaining. This method is adapted from Hill (2014).

Decision-making chart.

1. In the second column, list the benefits and drawbacks associated with the use of your substance.
2. In the third column, give each benefit a score of 1 to 10, based on how much that benefit means to you. Do not give any two benefits the same weighting. Also do this for

the drawbacks using scores of –1 to –10, based on how negative these consequences are to you. Again, do not give two drawbacks the same weighting.

3. In the fourth column, first decide what percent of reduction you would need to attain to return your use to a healthy or at least nondetrimental level. Rewrite your score for how much it would change if you reduced your use to that level. You can use a zero if you believe the benefit or drawback will be at that level.
4. In the fifth column, write down how each score would change if you abstained from the substance.

Ask in session or have clients ask themselves the following questions:

1. Is reducing use an option for you? What evidence do you have that this is a viable option? What evidence do you have that this is *not* a viable option for you? What specific steps would you need to take to reduce your use to the specified level?
2. Is abstaining a better or needed choice for you? What evidence do you have for or against choosing this option?
3. How do these results fit for you? What was surprising? Which choice makes the most sense to you?

Specific preparation strategies.

As DeRamus (2011) pointed out, sometimes the obvious needs to be stated with addicts. If one is keeping weed or paraphernalia in the house, one is likely not serious about quitting. In the preparation stage, everything related to cannabis needs to be eliminated permanently. If the dealer’s number is not memorized, clients should delete this number and tell others who know it not to remind them of the number under any circumstances. The client should ask cannabis-using significant others to avoid indulging while in one’s presence and to not offer or provide cannabis to the client under any circumstance. It might be easier to simply avoid having contact with some individuals who are strong triggers for using for a period of time. On the other hand, clients may have ignored or shunned people in their lives during their cannabis using periods (DeRamus, 2011), so now is a good time for them to reconnect to these people and let them know of the impending change.

Many users falsely believe that cannabis makes them more creative and funnier: That is simply not true (DeRamus, 2011). Users should remind themselves that much of their cannabis use created illusory benefits. Although music and meals might have seemed enhanced in some way, the memory of these experiences is fainter or nonexistent a few days or even hours later.

This is a helpful time for clients to begin attending a mutual support group such as Narcotics Anonymous or, if available in one’s city, Marijuana Anonymous meetings. Continuing to learn about cannabis addiction is also recommended during this stage. Other ideas for *before* their chosen quit day (i.e., preparation strategies) can be found in Appendix B.

Specific action strategies.

Balkin (2015) stated that there are two primary methods that appear most helpful in treating CUDs. First, there is motivational enhancement therapy (MET; manual written by Miller, Zweben,

Example of Decision-Making Chart				
#	Value	Continue Using at Current Level	Reduce Use by 90%	Completely Abstain
BENEFITS				
1	Relaxation	8	2	0
2	Escapism	6	2	0
3	More talkative	3	2	0
4	Mood improvement/ euphoria	10	2	0
5	Enjoy with friends	2	1	0
Total		29	9	0
DRAWBACKS				
6	Motivation problems	-8	-1	0
7	Memory deficits	-2	0	0
8	Pressure from spouse	-10	-3	0
9	Irritability	-6	0	0
10	Increased impulsiveness	-9	0	0
11	Emotional availability	-7	-1	0
Total		-42	-5	0
GRAND TOTAL		-13	4	0

DiClemente, & Rychtarik, 1999, available at no cost at <https://pubs.niaaa.nih.gov/publications/ProjectMatch/match02.pdf>. MET is a manualized two- to five-session method of providing MI. Second, Balkin included cognitive-behavioral therapy (CBT) as helpful. A systematic review found that CBT may be superior to MI, but results were inconclusive (Chatters et al., 2016).

Many individuals with CUDs find ways to quit on their own without outside help (Feingold, Fox, Rehm, & Lev-Ran, 2015), but clearly this is not attainable by all. While providing promising outcomes, Balkin (2015) cautioned counselors that 50% of individuals who begin treatment for cannabis relapse within 2 weeks, and half of the half who are successful short term would relapse within a year. In total, only 10%–30% who begin treatment will be still abstaining after 12 months. Finally, Balkin recommended that using the previous two approaches together with a 12-step program may be most effective and efficient (a 12-step facilitation manual written by Nowinski, Baker, & Carroll, 1999, is also available at no cost from <https://pubs.niaaa.nih.gov/publications/ProjectMatch/match01.pdf>).

Walther, Gantner, Heinz, and Majic (2016) concluded from the literature that systemic multidimensional family therapy was beneficial for heavy-use younger teenagers who also have comorbid psychiatric conditions. Wittenauer, Ascher, Briggie, Kreiter, and Chavez (2015) suggested, with caution due to limited evidence, that mindfulness and yoga may have value in helping adolescents stop using cannabis.

Providing vouchers for abstinence (a contingency management technique) proved helpful for adult cannabis users who quit over both the short term and during follow-up, particularly when used in combination with CBT (Chatters et al., 2016). A thorough review of the literature in both English and German languages found that what most stood out regarding determinants of cannabis dependence was a wide range of comorbid mental disorders (Schlossarek et al., 2016), suggesting that comorbid conditions will need to be treated concurrently with cannabis dependence for many addicts. In one study, a four-session treatment protocol for cannabis users was more effective when the program was offered over 3 months instead of 1 month (Jungerman, Andreoni, & Laranjeira, 2007).

When individuals quit using cannabis, they become less likely to use other substances. They are also more likely to have relied on positive social influences and to have made use of mutual support groups (Hodgins, Kim, & Stea, 2017).

DeRamus (2011) cautioned that nearly everyone who stops using cannabis continues thinking about it. He tells those who decide to quit that thinking about use is not a problem, so long as the user does not act on these desires. DeRamus also offered many suggestions to cannabis users who are quitting in the areas of actions, thoughts, lifestyle, social interactions and environment, and suggestions for high-risk situations (pp. 124–127). These are summarized in the following (mostly quoted):

Actions.

1. Avoid or escape from situations that make you want to smoke marijuana.
2. Delay decisions to give in to temptation.
3. Change your physical position (e.g., don't stay in the same place; stand, stretch, walk around).
4. Carry things to put in your mouth.
5. Carry objects to fiddle with.
6. Have a distracting activity available.

Thoughts.

1. Self-talk (e.g., remind yourself of your reasons for quitting).
2. Imagery and visualization (e.g., imagine the health benefits of having quit smoking marijuana).
3. Thought-stopping.
4. Distraction.

Lifestyle.

1. Exercise or take a brisk daily walk.
2. Practice relaxation or meditation techniques regularly.
3. Pray lots.
4. Take up a hobby or restart an old hobby you used to enjoy.
5. Drink less coffee, switch to decaf, drink herbal teas.
6. Engage in an enjoyable activity several times a week.
7. Change routines associated with smoking marijuana.

Social interactions and environment.

1. Remove smoking paraphernalia.
2. Go to places where it's difficult to get high.
3. Spend time with friends who don't smoke.
4. Learn to be appropriately assertive.

Specific suggestions for some common high-risk situations.

1. Tension relief and negative emotions. Develop relaxation techniques, exercise, write down your feelings, or talk to a friend or counselor.
2. Anger, frustration, and interpersonal conflict. Learn to handle situations directly.
3. Fatigue and low energy. Do muscle relaxation, take a brisk walk, etc.
4. Insomnia. Don't fight it. Instead, get up and do something constructive.

5. Timeout. Take breaks from what you are doing to help avoid fatigue.
6. Self-image. Create a new image (e.g., get a haircut, buy different clothes).
7. Social pressure. Remember your commitment not to use cannabis. Walk away from users if necessary.
8. Situations involving alcohol. Be especially careful if you decide to keep drinking after quitting cannabis.
9. Cravings and urges. Break the chain of responding to them. In other words, don't give in.

When tempted to use again, DeRamus (2011) suggested creating a *love list*, which is a list of things the cannabis user loves about not using any more. Some examples that DeRamus offered (pp. 153–154) include the following:

Example of a love list.

- I love not having the munchies.
- I love being a better parent.
- I love not having the secret from people who don't smoke.
- I love saving money for other things that are important to me.
- I love remembering.
- I love keeping my word to friends and family.
- I love breathing easier; each breath makes my lungs cleaner.
- I love speaking in sentences without forgetting what I was saying.
- I love having time to think and ponder about humans and our souls.
- I love feeling better about myself.
- I love being free.
- I love that I LOVE being free.

Other ideas for *beginning* their chosen quit day (i.e., action strategies) can be found in Appendix B.

Specific maintenance strategies and relapse prevention.

Note: Maintenance strategies and relapse prevention is also, for many, partly facilitated by regular attendance at relevant mutual support groups. A list of such mutual support groups and helpful websites is found in an upcoming section entitled Relevant Mutual Support Groups, Websites, and Videos.

Given the high relapse rates for cannabis users and those who become addicted (Balkin, 2015), maintenance strategies and relapse prevention are important. DeRamus (2011) stressed that the user must not let ANYTHING become a reason to use again. He suggested that in helping to prevent relapse, users should avoid 15 things (most of which are emotions). His list (pp. 199–201) includes exhaustion, dishonesty, impatience, argumentativeness, depression, frustration, self-pity, cockiness, complacency, expecting too much from others, letting up on disciplines, wanting too much,

forgetting gratitude, it can't happen to me, and omnipotence. Given that tiredness and negative emotions occur in all of us under the right circumstances, a better strategy than avoidance is likely to learn how to manage and cope when these occur. Learning emotional regulation might be advisable as well (Kabat-Zinn, 2013).

The counselor should help the client anticipate likely problems that may occur following a quit attempt and learn to anticipate and cope with high-risk situations. Cravings can be monitored and recognized early so that skills and coping strategies can be implemented (Sparks, 2016). Sleep deprivation can lead to relapse and, given that sleep difficulties are a common withdrawal symptom, medications and behavioral methods for sleep should be considered (Ara, Jacobs, Bhat, & McCall, 2016). Other ideas for relapse prevention can be found in Appendix C.

Motivational Interviewing

As stated earlier, MET, (manual written by Miller et al., 1999, available at no cost at <https://pubs.niaaa.nih.gov/publications/ProjectMatch/match02.pdf>) has demonstrated effectiveness. It is entrenched in the transtheoretical model. W. R. Miller (as cited in Balkin, 2015) outlined five essential principles of MET: (a) display empathy, (b) create discrepancies, (c) avoid arguments, (d) allow resistance to occur, and (e) support the client's self-efficacy. Labeling the client is also avoided. It is a positive sign when clients present an increase in both positive self-statements and desire to change. MET is most efficacious when combined with other methods such as CBT (Balkin, 2015).

Here is a sample transcript of what the end of session 2 might look like in MET. Session 3 is not scheduled until week 6, and session 4 is scheduled at week 12. (Pertaining to Chapter 7's description of MI, the following is an example of the process called *focusing*.)

- Client:* You have certainly helped me see how cannabis has been hurting me for the past 10 years. I'm not sure if I am an addict, however, and I wonder if I can just cut back my use.
- Counselor:* Robert, we are nearing the end of our session. Let me take a few minutes to summarize our discussion before we book our next session for a month from now. Last session you told me that you are concerned that you might be addicted to cannabis because you have struggled with cutting down your use for the past 6 months. As you might recall, I mentioned that, in my approach, I avoid labels, as these are sometimes not helpful for people. Regardless, you have described both today and last session that you have lost your motivation for all kinds of fun activities that you used to engage in. You have on numerous occasions found yourself being forgetful of important tasks such as locking the front door when you leave home and leaving a reefer burning in various places around your home. Despite your many attempts to cut down on your cannabis use, you believe that cutting back might still be possible for you. Is that an accurate recap?
- Client:* Yes, you certainly have put that together nicely. Do you think I should abstain at this point?
- Counselor:* You still believe that I could answer that for you.

- Client:* I guess I just want your opinion.
- Counselor:* I suspect that you believe my opinion might sway your decision. How might that actually do a disservice to you, Robert?
- Client:* Well, I guess I could blame you if I was not successful in quitting.
- Counselor:* That strikes me as a possibility. Would you book your next appointment with the receptionist before you leave?
- Client:* I will. Thank you, Dr. Michaels. I appreciate your believing in me.

Insight-Oriented Interventions

There is a scarcity of psychoanalytic research concerning cannabis smokers. The little research that exists focuses on substance abuse in general (Hachet, 2005, 2006). Reasons for this include (a) addiction specialists minimize the importance of cannabis abuse, (b) the area lacks political interest, (c) psychodynamics are overridden by legislative concerns, and (d) most psychoanalysts pay little attention to patients using cannabis (Hachet, 2005, 2006).

One study advanced the use of an insight-adherence-abstinence model in helping young psychotic individuals, many of whom presented with cannabis abuse (Miller, McCormack, & Sevy, 2008). Insight-oriented approaches may have many applications with addicted cannabis users given the high psychiatric comorbidity in this population. Currently, however, research is lacking.

Spiritual Interventions

The ritualistic use of cannabis was a significant role in a number of well-known religions in the ancient world, including Hinduism, Taoism, Judaism, Christianity, and Buddhism (Bennett, 2014). Although religions can certainly promote drug use for ceremonial purposes, having spiritual beliefs has a strong effect on reducing drug involvement when use is deemed unacceptable. Several studies have shown a strong correlation between religiosity and lower rates of cannabis use in adolescents (Chu, 2007; Nguyen, 2017; Varma, Moore, Cataldi, Estoup, & Stewart, 2017). Nguyen (2017) computed statistics based on 12,984 adolescents from the 2013 National Survey on Drug Use and Health data. Nguyen found that religious girls use both alcohol and marijuana less than do religious boys. Religion also played a role in reducing use among African American youth but not in Asian American youth. Another study found that young Latino adults were less likely to use substances if they practiced religion publicly (Escobar & Vaughan, 2014). Although there remains a dearth of studies espousing the benefit of spiritual interventions, it would appear from correlational research that such may be helpful for at least religiously oriented cannabis users.

Cognitive-Behavioral Therapy

CBT can be facilitated using the triple column technique. It can be used both by counselors in their work with clients and by clients alone. The full instructions for using the technique are found in Chapter 6. The following are some of the cognitions that can be problematic for clients with this addiction (these are based on the five maladaptive schemas found by Grebot, Dardard, & Briet, 2016).

In a French study of maladaptive schemas in 199 undergraduate students, participants were divided into four groups: cannabis-dependent users ($N = 24$), cannabis abusers ($N = 40$),

Automatic Thought or Belief	Questioning It	Healthier Thought or Belief
I feel emotionally deprived and lacking.		Once I am clean, I will become more emotionally available. I can create deeper relationships with others.
Too many important people have abandoned me in my life.		I can focus my attention on close friends and/or an intimate partner. If I do get rejected, I will survive and work on becoming a stronger person.
I have a hard time trusting other people.		I will give significant others the benefit of the doubt. People will prove their trustworthiness to me over time, and vice versa.
I am impulsive and struggle with controlling my actions.		Once I am clean, I will become less impulsive. I will regain control over my behavior.

Automatic Thought or Belief	Questioning It	Healthier Thought or Belief
I feel powerless in life; other people seem to have more control over their life circumstances.		Once I am clean, I will find it easier to set goals and stick to them. I will embrace my personal power.

cannabis nonproblematic users ($N = 52$), and healthy control subjects ($N = 83$). Compared to the other three groups, cannabis-dependent users had significantly higher scores in the overall number of maladaptive schemas. These schemas were particularly notable in five areas: emotional deprivation, abandonment, mistrust/abuse, insufficient self-control, and subjugation. They were also more likely to use two “immature” psychological defense mechanisms (i.e., autistic fantasy, projection) (Grebott, Dardard, & Briet, 2016).

CBT allows counselors to not only help clients change their thoughts but it is also helpful in teaching social skills (Balkin, 2015). It will be important to teach *cannabis refusal skills*, which are skills needed to refuse cannabis when offered. The skill set includes both verbal and nonverbal communication: learning to say “NO” and meaning it, in other words. Part of this teaching is helping clients to refuse pot and not feel guilty about doing so. Roleplaying is helpful in teaching refusal skills. Another important set is to help clients identify high-risk situations and ways to deal with these assertively, teach coping strategies for dealing with urges, encourage social support, and manage feelings in a healthy manner (Balkin, 2015). Monitoring cravings, moods, and behaviors is also important in CBT (Sparks, 2016). The intent is to teach the client enhanced self-control and problem-solving strategies (Sparks, 2016).

RELEVANT MUTUAL SUPPORT GROUPS, WEBSITES, AND VIDEOS

Mutual Support Groups

For the Addicted Individual

1. Marijuana Anonymous (MA). <https://www.marijuana-anonymous.org/>

Quoted from website:

Marijuana Anonymous is a fellowship of people who share our experience, strength, and hope with each other that we may solve our common problem and help others to recover from marijuana addiction. The only requirement for membership is a desire to stop using marijuana. There are no dues or fees for membership. We are self-supporting through our own contributions. MA is not affiliated with any religious or secular institution or organization and has no opinion on any outside controversies or causes. Our primary purpose is to stay free of marijuana and to help the marijuana addict who still suffers achieve the same freedom. We can do this by practicing our suggested

Twelve Steps of recovery and by being guided as a group by our Twelve Traditions. Marijuana Anonymous uses the basic 12 Steps of Recovery founded by Alcoholics Anonymous, because it has been proven that the 12 Step Recovery program works!

2. SMART Recovery—Self-Management and Recovery training. <http://www.smartrecovery.org/>

Quoted from website:

SMART Recovery is the leading self-empowering addiction recovery support group. Our participants learn tools for addiction recovery based on the latest scientific research and participate in a world-wide community which includes free, self-empowering, science-based mutual help groups.

For the Partner and/or Family

These groups are intended to help family members refrain from behaviors that may trigger the addict. They also target

underlying maladaptive thoughts and behaviors of the co-addict. Lastly, they focus on facilitating spiritual growth.

Marijuana Anonymous (MA). <https://www.marijuana-anonymous.org/>

Quoted from website:

As the addict approaches their bottom and their disease worsens, family members and friends have a tendency to enable the addict, allowing them to postpone the ultimate repercussions of their using. Understandably, loved ones try to ease the suffering the addict may be feeling because of loyalty, love, caring, and a sense of responsibility. Family and friends may give money (which likely goes to buying more marijuana), buy food, pay rent and bills, bail them out of jail, etc. By trying to save the addict from him or herself, you are doing both yourself and the addict a disservice.

Websites

1. Learn About Marijuana. <http://learnaboutmarijuana.org/index.htm>
2. Marijuana Addiction Today. <https://www.psychologytoday.com/blog/our-empathic-nature/201205/marijuana-addiction-today>

3. 10 Common Marijuana Addiction Symptoms. <https://www.addictions.com/marijuana/10-common-marijuana-addiction-symptoms/>
4. Addictions and Recovery.org. <https://www.addictionsandrecovery.org/>
5. Many great resources are available from <https://cannabissupport.com.au/shop/clinicians/>

Videos

To view these videos, search their titles on YouTube.

1. *Dr. Gabor Maté - Cannabis and Addiction.*
2. *Marijuana: A Second Class Addiction.* David Goldenkranz.
3. *Is marijuana addiction serious or real? Why I quit marijuana and the weed withdrawal symptoms.* Cg Kid.
4. *Why Quitting Marijuana Is Difficult for Some People (psychological addiction).* Tristan Weatherburn.
5. *The Truth About Smoking Cannabis | BBC Documentary.*

RELEVANT PHONE APPS

Generic Addiction Apps

Note: Generic apps are described in Chapter 6.

This list is not exhaustive. New apps are continually being developed. Do an Internet search to find out the latest apps available. Most are for specific addictions, but some, such as these four, are generic.

1. I Am Sober. <https://play.google.com/store/apps/details?id=com.thehungrywasp.iamsober>
2. Sober Time. <https://play.google.com/store/apps/details?id=com.sociosoft.sobertime>
3. Pocket Rehab: Get Sober & Addiction Recovery. <https://play.google.com/store/apps/details?id=com.getpocketrehab.app>
4. Loop Habit Tracker. <https://play.google.com/store/apps/details?id=org.isoron.uhabits>

Specialized Apps

1. Marijuana Anonymous. https://play.google.com/store/apps/details?id=org.marijuana_anonymous.MA_Mobile&hl=en_US

Quoted from website:

This is the official 12 Step recovery app of Marijuana Anonymous. Anyone with a desire to stop using

marijuana will benefit from the useful tools and resources included. If you encounter problems with this app, please contact us so we may work with you to get the app running. We're here to help.

This app contains a lot of information on the addiction including: (a) general information on what marijuana addiction looks like, (b) what Marijuana Anonymous can do to help in one's recovery, (c) what to expect in an online meeting, (d) a discussion of the 12 Step Program, (e) a chat line for member support, and (f) a sobriety date counter and more. It's a very useful app and easy to use.

2. Quit Cannabis.

For android: <https://play.google.com/store/apps/details?id=com.applikey.quitcannabis>

For iphone: <https://itunes.apple.com/us/app/quit-cannabis/id1050636063?mt=8>

Quoted from website:

Quit Cannabis is an app that contains much more than the simple title can reflect. It is motivating program that will encourage you to quit smoking cannabis and tobacco, and continue moving in the right direction.

Features:

Health – shows what happens to your body without cannabis and tobacco

Statistics – shows time since quit

- shows life gained
- shows money saved from weed and cigarettes
- shows avoided joints, cigarettes and tar

Motivation – informative articles with useful methods and techniques to help you quit your habit

Motivator Alarm – notifies you at your desired time with the daily motivational quote.

When beginning this app, the user is queried about their cannabis (or other substance) use. The app calculates how much time has elapsed since you began using the substance as well as the health benefits of quitting, money saved, and life gained. It does not require you to keep a daily log of your substance usage or adjust health benefits accordingly. It includes some motivational articles. It does not provide the opportunity to chat about your progress and hurdles with other people experiencing the same addiction.

3. Dependn' – Quit weed, tobacco and alcohol
<https://itunes.apple.com/us/app/dependn-quit-weed-tobacco-alcohol-stop-drinking-smoking/id1093903062?mt=8>

Quoted from website:

Dependn' is the only iPhone app which has been created by and for doctors and patients. Start monitoring your addictions now, and track your progress! The app can be used for any form of addiction (alcohol, tobacco, cannabis, antidepressants, sex, video games, etc).

Dependn' is a very basic app used to track your substance use and show progress being made in overcoming your addiction. Data can be exported if you choose to do so. The drawback with this app is that it does not provide any background information on the addiction or possible strategies one could use.

JOURNALS AND CONFERENCES

Journals

1. *Cannabis and Cannabinoid Research*. This new journal is “a peer-reviewed journal entirely dedicated to the scientific, medical, and psychosocial exploration of clinical cannabis, cannabinoids, and the endocannabinoid system” (Piomelli, 2016, p. 1). Visit <http://www.liebertpub.com/overview/cannabis-and-cannabinoid-research/633/>
2. *IACM-Bulletin*. Published by the International Association for Cannabis as Medicine (IACM). Quoted from website: “The IACM-Bulletin is a FREE bi-weekly e-mail newsletter, covering news topics on all aspects of Cannabis as medicine.” Visit <http://www.cannabis-med.org/english/bulletin/iacm.php>
3. *Cannabinoids*. Published by the International Association for Cannabis as Medicine (IACM). Quoted from website: “CANNABINOIDS is a peer-reviewed online journal of the [IACM. It] intends to become an important source of information on medical and scientific aspects of cannabis and the cannabinoids in the web and to inform the readers up to date on issues under discussion.” Visit <http://www.cannabis-med.org/index.php?tpl=cannabinoidslist&lng=en>
4. *International Journal of Medical Cannabinoids*. This journal looks at current research in basic science and the clinical use of cannabinoids. Quoted from website: It “is a peer-reviewed, professional journal that addresses all aspects of the safe use and management of cannabinoids in medical practice. The Journal provides guidance to physicians and healthcare professionals on how to safely prescribe and responsibly manage this emerging therapeutic class.” Visit <http://www.wmpllc.org/ojs-2.4.2/index.php/IJMC/index>

5. *Journal of Cannabis Therapeutics*. This journal was only published between 2001 and 2004. It contained high-quality research looking at the experimental and clinical use of cannabis.

Conferences

Several conferences have recently become popular regarding cannabis. Below are just a few possibilities to consider attending.

1. *World Medical Cannabis Conference and Expo*. Check website for current details.
2. *Emerald Conference*. Quoted from website: “The Emerald Conference is the most technical and comprehensive science conference in the cannabis industry. [It] is devoted to the free exchange of ideas and fresh insights on topics like cannabis analytical testing, inter-lab comparisons, extraction, and industry best practices. Whether you are a clinician, testing lab owner, cultivator, extractor & producer professional, policy maker, dispensary operator, or an analytical chemist, the Emerald Conference will educate and illuminate with an atmosphere of collaboration and partnership.” Visit <https://www.theemeraldconference.com/>
3. *Institute of Cannabis Research*. Check website for current details.
4. *International Cannabinoid Research Society*. Visit <http://www.icrs.co/>
5. *The Semi-Annual Crypto Cannabis Conference*. For details visit <https://www.cryptocannabisconference.com/>

COUNSELING SCENARIO

As you are reading, imagine that you are the client in this scenario. Note the areas in which the session could be improved on the part of the counselor.

Your name is Christina, a 28-year-old Pacific Islander working as a waitress at Denny's restaurant. You are finding it difficult to stay motivated toward your goal of returning to school to become a dentist. Since high school, you have partied more than any of your friends, and, although most of them have gone on to college and university, you have worked at minimum wage jobs. You are tired of how poor you are all the time, so you go to a counselor at a free counseling agency. You decide you will begin by disclosing your daily use of hashish.

- You: I am beginning to wonder if my use of hashish is interfering with my motivation to become a dentist. I just can't seem to get going on my dreams.
- Counselor: Well, Christina, I can tell you that hashish is not your problem at all. I have been smoking weed for more than 25 years. The only issue I've ever had with it is that some mornings I feel a bit groggy, but this wears off after I get moving. If you're unmotivated, I think you best appraise your "dream" and adjust it: Make it more realistic for yourself.
- You: But I got good marks in high school. I know I have the brains to do dentistry.
- Counselor: Doesn't matter. You don't have the necessary discipline.
- You: I thought my daily ingestion of hashish might have something to do with my lack of motivation. Do you honestly not think this could be interfering?
- Counselor: Let me ask you something that will help answer your question: Are you usually so high that you hallucinate and see stuff that just isn't there? It's happened to me a few times, but I just blame that on the quality of pot I get from my dealer sometimes.
- You: I can't say I've ever hallucinated from hash at all!
- Counselor: I didn't think so. That's why I know you should stop blaming cannabis for your lack

of drive, motivation, and desire to become a dentist. It is time you take full responsibility for your inaction.

- You: This is *not* what I expected to hear from you!
- Counselor: I know. A lot of young people, like yourself, want to blame everything that's bad on either their parents or their substance use. Heck, even on mushrooms you can get through school if you want to! I used it nearly every weekend for 3 years of graduate training, and, if anything, it helped me feel passionate about becoming a counselor.
- You: Hum, I guess I have been doing that. Thank you for your time.
- Counselor: No problem. Next time we meet, let's begin some career counseling. Perhaps a career like becoming a dental assistant would be more suitable for you.
- You: Really? That is what you think I would be well suited for? I don't think you know me at all!

From the Client's Perspective

1. How would you feel if your counselor minimized the impact of your drug use? What would you feel if a counselor unilaterally decided to downsize your career aspirations?
2. What is missing for you in this dialogue?
3. What would you find more helpful from a counselor in this scenario?

From the Counselor's Perspective

1. What is interfering with developing a working alliance?
2. Going back to the Common Counseling Mistakes list in Chapter 6, which mistakes is the counselor making with Christina?
3. When is it appropriate, if ever, for a counselor to unilaterally decide on the treatment goals for a client?
4. What strategies should counselors use when a client's problem mimics their unresolved issues?

INDIVIDUAL EXERCISES

1. Spend time thinking about people you know who use cannabis. What qualities do you ascribe to cannabis users? Does everyone you know who uses cannabis have these qualities?
2. Do you know anyone who uses cannabis heavily and regularly? If so, spend some time talking to this person about their use. What motivates him or her to continue using? What concerns does she or he have about quitting?
3. Watch the movie *Up in Smoke* (1978), starring Tommy Chong and Cheech Marin. In what ways does the movie accurately portray marijuana smokers? In what ways is it not accurate?

CLASSROOM EXERCISES

1. Have the class split into two based on each student's honest opinion: those who believe that cannabis is a harmful drug that should be carefully regulated on one side and those who believe that cannabis should be fully legalized or decriminalized with little to no government intervention on the other. At the end of the debate, have a member of each team write the key points on the board supporting that team's perspective.
2. Divide the class into four or more groups. Each group is given the task of finding either a brief video exalting the effects of cannabis or a brief video that rebukes it. Show the videos in class or assign watching them as homework. Then discuss the content of these videos.
3. Invite one or more speakers to your class who belong to one of the cannabis advocacy groups, such as the National Cannabis Industry Association, the Drug Policy Alliance, Americans for Safe Access, Marijuana Policy Project, or the Multidisciplinary Association for Psychedelic Studies. Have students prepare in advance some questions for the speakers.

CHAPTER SUMMARY

Although DSM does not use the term cannabis addiction, it does contain a diagnosis for problematic cannabis use called CUD. Studies suggest, however, that a percentage of users do become dependent on cannabis. Cannabis becomes increasingly important to addicts, it changes their mood to help them cope, they require increasing amounts of the substance, if they stop they experience withdrawal symptoms, excessive use and its sequelae create conflicts with significant others, and relapse is exceedingly common for those trying to quit.

Cannabis has an insidious effect on regular heavy users, so much so that changes (e.g., increased impulsivity, lowered

inhibitions, memory deficits, diminished problem-solving abilities and goal-setting capability, difficulty remembering the best word choice in a conversation, decreased motivation) are often not acknowledged or dismissed as negligible (i.e., denial of consequences). As is true for other addicts, responsibility for the problem and its consequences is often projected onto others.

The best treatments for cannabis addiction include CBT and MET, which is a variant of MI. There is currently no approved medication to assist with either withdrawal from cannabis or to reduce urges/cravings.

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