

5

Substance Use Disorders in Adolescence

Rebecca Hall and Anna Lembke

“Crash Kills 8 Contra Costa Youths. Two injured as pickup, 4-wheel-drive vehicle collide; beer containers found at accident scene.” Eight young teenagers and adults from the age of 15 to 21 were killed in a head-on collision when they swerved into oncoming traffic while traveling about 60 mph, none of them wearing seat belts. One victim’s brother was stunned: “I don’t know how it happened. We always have a designated driver. It was a freak accident. I love my brother, man. I loved all of them. They were good people.”

Adolescent alcohol and drug use is a major public health problem in the United States. Drugs and alcohol contribute to a range of negative developmental outcomes, including mental health disorders, dropping out of school, delinquency, and incarceration. In 2010, 22% of drivers who were involved in a fatal car crash between the ages of 15 and 20 had been drinking alcohol, with motor vehicle fatalities comprising over

one-third of all deaths age 12 to 19. Substance use is also associated with attempted and completed suicide—the third leading cause of death in this age group.

Health care providers play a key role in the prevention and treatment of adolescent substance use problems. In this chapter we provide a brief overview of the epidemiology, risk factors, natural history, screening, diagnosis, and treatment of substance use disorders. We define substances as any and all drugs of abuse, including alcohol.

ADAPTIVE SIGNIFICANCE

Humans are well versed in learning what behaviors improve their odds of survival. By activating neuroreceptors in the brain, these survival behaviors become associated with emotions that motivate us to either repeat or avoid them. In addition to the basic human necessities that stimulate this reward system—food, sex, warmth, positive social interactions—certain plants and chemicals have the same neurologic effect, causing the brain to develop a need so strong for these substances that it can eclipse all else. Chemicals that can “hijack” the brain in this way are considered substances of abuse.

EPIDEMIOLOGY

For most adults with substance use disorders, the problem began as teenagers or young adults. Approximately 8.5% of people in the United States are addicted to drugs or alcohol, and 6% of adolescents aged 12 to 17 have a substance use disorder. Forty-nine percent of graduating high school seniors have used an illicit drug at some time in their lives.

Between ages 12 to 17, American Indian and Alaska Native youths have the highest rate of substance use, followed by mixed race youths, white youths, Hispanic youths, black youths, and Asian youths.

Alcohol is the most commonly used substance by adolescents—69% of graduating high school seniors have had at least one alcoholic drink, and 54% of seniors have been drunk at least once. Those enrolled in college full time are more likely to drink alcohol and binge drink than those not in college. Though cigarette use has declined since the mid-1990s, it is also

still an area of concern: 40% of adolescents have smoked a cigarette by their senior year, and 17% of seniors report being current smokers.

Marijuana is the most commonly used drug among youth. In 2012 one in 15 high school seniors reported using marijuana every day, or nearly every day. Synthetic marijuana (Spice or K-2) is created in the laboratory to mimic chemicals in the cannabinoid family, and is used by 4.4% of eighth graders, 8.8% of 10th graders, and 11.3% of 12th graders.

Choice of substance typically varies by demographic and age. College students, for example, most commonly present with alcohol use disorders, marijuana use disorders, nicotine use disorders, and/or cocaine use disorders, while the top three substances of abuse for eighth graders are marijuana, inhalants, and synthetic marijuana. As teens get older they are more likely to use all categories of substances except for inhalants, which is the only category with a reverse pattern, declining in use after eighth grade. This may reflect the availability of inhalants for younger teens, which are often over the counter household products like nail polish remover, glue, gasoline, whipped cream dispensers, butane, and solvents.

In the past decade, nonmedical use of prescription drugs was the fastest rising category of abused drugs among youth, particularly the nonmedical use of pain relievers, such as hydrocodone products (e.g., Vicodin) and oxycodone products (e.g., Percocet). In 2012, 14.8% percent of high school seniors misused a prescription drug. Adolescents most often get these drugs from a friend or family member's prescription.

CARDINAL SYMPTOMS

Drug use typically progresses in stages, from less serious substances to more serious, and from legal to illegal. Experimentation is the first stage of use. A teen experimenting with a substance does so in a recreational circumstance to learn what intoxication feels like, but without the intention of continuing. Experimental use should not be condoned or trivialized by adults. Alcohol and cigarettes are often tried first, followed by marijuana and cocaine, hallucinogens, heroin, and opioids. The next stage is limited use, during which a teen uses substances for pleasure when available and in relatively low-risk, predictable situations, such as on weekends with friends. This stage is

followed by problematic use. A teen using a substance problematically does so in high-risk situations, for emotional regulation purposes, or his use is associated with a negative event like being suspended from school or being arrested. During this stage the teen may begin to have family conflicts, academic problems, and peer group changes. Next is a substance use disorder. Once a teen reaches this stage, the substance use has become a significant problem, interfering with functioning. This stage is characterized by out of control use, compulsive use, and continued use despite consequences. The earlier teens begin experimenting with substances and the faster they move through these stages, the more at risk they are for developing a substance use disorder. The following case example illustrates this progression.

Case Study 1: Sally

Fifteen-year-old Sally moved from the Midwest to California with her mother after her parents divorced. Her mother's time was consumed with settling into a new job and a new city, and Sally was often left on her own. Prior to the move, Sally had been using alcohol and marijuana on weekends with friends, and she was smoking about a pack of cigarettes per day. Sally had a difficult time fitting in at her new school, until she met Joe. They started dating, and she began drinking with him at parties. They started smoking marijuana together as well. Joe then introduced her to crack cocaine, and then she experimented with crank. Along the way she tried PCP and LSD, but did not like them enough to continue. She was now using cocaine regularly. Her grades started to drop, and she developed nasal lesions. Despite her awareness that cocaine was affecting her health and academics, she felt unable to reduce her use. Sally had progressed to a substance use disorder.

DIAGNOSIS

If a patient screens positive for risky substance use, how can we differentiate risky use from a substance use disorder? We use *DSM* criteria to make this distinction. The revised edition of the *DSM* published in 2013 (*DSM-5*)

combined substance abuse and substance dependence into the single diagnosis of substance use disorder, which is measured on a continuum, with the added qualifiers of mild, moderate, and severe. Each substance is addressed separately, and called a use disorder. For example, addictive behavior involving alcohol is called an alcohol use disorder (*DSM-5* diagnostic codes: mild 305.00, moderate 303.90, and severe 303.90).

The *DSM-5* defines a substance use disorder as involving two or more of the following symptoms within a 12-month period: (1) attempting to cut back on substance use without success, (2) consuming more of the substance than planned, (3) spending a lot of time and energy getting, consuming, and recovering from using the substance, (4) experiencing intense desire to consume the substance, often referred to as *craving*, (5) failing to fulfill major life obligations due to substance use, (6) continuing to use the substance despite consequences, (7) giving up or reducing important activities due to substance use, (8) using in dangerous situations, (9) developing tolerance, and (10) experiencing withdrawal.

According to the *DSM-5* guidelines, if the patient endorses two or three items on the list, then she has a mild substance use disorder, four or five items and she has a moderate substance use disorder, and six or more items and she has a severe substance use disorder. Clinically, a more severe substance use disorder can take a variety of forms depending on which criteria the patient meets.

Although the *DSM* does not use specifiers for quantity or frequency of substance use, there is an ever-growing body of evidence demonstrating that the higher the quantity and/or frequency of alcohol use, the higher the risk of poor health outcomes, such as gastrointestinal-related illness, pancreatic disease, liver disease, trauma, and death.

Developmental differences between adults and children must be taken into account when applying these diagnostic criteria to young people. Because alcohol is illegal for those under 21, when adolescents drink alcohol it requires a level of energy and effort to obtain that adults do not face. This factor can skew criteria like “spending a significant amount of time obtaining the substance.” Adolescents also usually drink less often than adults, but do more binge drinking. Withdrawal and tolerance can be problematic diagnostic criteria, because withdrawal typically does not

occur until after years of use, and some adolescents will bypass the tolerance phase by jumping straight to drinking larger amounts.

We also need to take social and environmental pressures into account when assessing young people. Rather than compulsive use, substance use in an adolescent may be more an indicator of an inability to resist social and peer pressures. This is true for all patients, but adolescents are particularly vulnerable to social and environmental pressures. Many of the diagnostic criteria therefore assume a different meaning in this population, and the particular nuances of this age group should be evaluated when considering a substance use disorder diagnosis.

RELATED DIAGNOSES TO BE RULED OUT AND CONCURRENT PATHOLOGY

One of the major challenges in diagnosing a substance use disorder is differentiating it from primary mental disorders. Psychiatric symptoms caused by substance use can mimic primary mental disorders, which often do also occur concurrently. Robust scientific evidence also demonstrates that substances can cause psychiatric disorders. For example, cannabis can trigger an acute psychotic state, and frequent, heavy cannabis use is associated with a higher risk of psychosis, such as schizophrenia. However, it is still unclear if marijuana can induce a psychotic disorder that would not have developed otherwise. Refer to Chapter 13, Schizophrenia, Psychosis, and Autism Spectrum Disorders, for more information.

On the other hand, having a mental illness other than addiction is predictive of having a co-occurring substance use disorder. In a study of 992 adolescents in drug treatment programs, 64% had at least one comorbid mental disorder, most often disruptive behavior disorders (Chapter 2). Other commonly co-occurring disorders are mood disorders (Chapters 7 and 8), anxiety disorders (Chapter 6), ADHD (Chapter 3), bulimia nervosa (Chapter 12), and learning disabilities (Chapter 4). Youth with substance use problems are also at greater risk for suicidal behaviors (Chapter 10).

One way to understand the high rates of comorbidity between substance use disorders and other mental illnesses is the self-medication hypothesis, which states that efforts to “treat” the underlying psychiatric

disorder lead to substance abuse. Although having a mental illness may indeed be a risk factor for developing a substance use disorder, it is only one of many risk factors (see later section on lifetime trajectory), and the self-medication hypothesis should be invoked cautiously in clinical practice. Encouraging the “self-medication” justification for substance use can further a patient’s denial and lead to overdiagnosis of primary mental disorders and undertreatment of substance use disorders. Adolescents are aware that using substances will elicit disapproval. Presenting their substance use as a reaction to sadness, rather than their sadness as a reaction to their substance use, can be an effort to avoid judgment or to rationalize substance use in their own minds. In general, clinical attention should be paid to both disorders concurrently.

The following case illustrates the dilemma of differentiating a primary psychiatric disorder from substance-induced symptoms.

Case Study 2: Charles

Charles, an 18-year-old Asian American male, began drinking alcohol and smoking marijuana when he was 15. Over the next 2 years his drinking increased, and he began using cocaine. He entered our clinic as a college freshman, where he lived in a fraternity and “partying” with friends represented the majority of his social life. He reported that he looked forward to little else throughout the week.

At the first visit, Charles stated that his drinking had increased over the past 6 months. At times he would intend to drink only one or two alcoholic beverages, but once he started drinking he was unable to stop. He often drank until he blacked out. Despite attempts to curtail his binge drinking, he was not able to cut back. He currently used marijuana a few times per month. He stopped using cocaine a month ago, prior to which he had been using heavily on weekends. He typically smoked a few cigarettes per day, and an entire pack when drinking alcohol.

Charles was originally referred to us by the campus health center, where he had presented with complaints of depression, anxiety, and

sleep disturbances that had persisted for the previous 3 months. He reported that the past few weeks had been particularly difficult, with increased levels of sadness and often sleeping until the middle of the day. He had begun to have academic difficulties and thoughts of suicide.

Charles also reported mood swings, in which he would feel energetic and increasingly talkative for a few days at a time. During these periods he slept very little and engaged in risky behaviors, like unprotected sex. His last episode like this was 1 month ago.

When asked about his history of mood swings, Charles reported that his moodiness began in high school. However, his ups and downs did not affect his academics or overall functioning at that time. Charles stated that he believed that he had begun drinking alcohol in order to “self-medicate” his depressive symptoms.

Charles clearly meets the criteria for alcohol use disorder, nicotine use disorder, and possibly cocaine use disorder and marijuana use disorder, reporting symptoms such as craving substances, taking more than intended, an inability to reduce use, significant amount of time spent using, failing to fulfill academic obligations, risky behavior while using, and possibly experiencing withdrawal symptoms. The question this case poses is: “Does Charles, in addition to having a substance use disorder, also have a mood disorder?”

Charles’ history of depression and hypomania suggest a bipolar affective disorder. However, many teenagers experience some mood fluctuations during high school, and given that Charles did not experience any impairment in functioning during that time, these ups and downs may have been within the normal limits. His substance use history indicates that these symptoms may actually be substance induced, rather than a primary mental disorder. For example, 1 month prior to his first visit with us, he stopped cocaine and simultaneously began feeling more depressed. Ergo, withdrawal from the cocaine could be the cause of his current depressive symptoms. His last use also coincided with feeling hypomanic, suggesting that intoxication with cocaine or alcohol could be to blame for Charles’ manic symptoms.

An observed prospective period of abstinence is the best way to differentiate a substance-induced psychiatric disorder from an independently occurring psychiatric disorder in the context of substance abuse. The *DSM-5* recommends that a patient be abstinent from substances for a minimum of 4 weeks in order to determine if psychiatric symptoms are substance-induced.

Clinicians must often make a treatment plan without knowing if the symptoms are substance-induced or due to a primary mental disorder. A lifetime timeline can be helpful in this process, which includes the major life events, such as academic performance, major family events, trauma, the onset of substance use, and the onset of psychiatric symptoms. Insurance limitations can complicate this process, as sometimes treatment for a substance use disorder is only covered if the patient also has a primary mental disorder. However, inaccurate diagnoses motivated by these insurance policies ultimately do not benefit the patient or our understanding of these disorders.

LIFETIME TRAJECTORY OF SUBSTANCE USE DISORDER

Understanding social, environmental, and familial contexts is crucial in understanding why an adolescent uses substances, and in turn, how to create an effective treatment plan. For a more complete discussion of different theories of what contributes to the progression of substance use, please refer to the *Handbook of Developmental Psychiatry* (Steiner, 2011).

Access to substances is the biggest risk factor for adolescents and the strongest determinant for what substances they choose. Perceived risk is also an important risk factor. The high prevalence rate of both marijuana and prescription drug use may be reflective of the belief that these substances are safer than other drugs. Because these drugs are also used for medical purposes, many teens use these substances under the false impression that they are not dangerous.

Age of onset of substance use is another important risk factor for developing a substance use disorder. Those who use alcohol at age 14 or younger are more than 7 times as likely to develop alcohol use disorder as an adult. Other risk factors in youth for developing a substance use disorder

include early aggressive behavior and impulsivity, lack of emotional regulation, lack of parental supervision and monitoring, parental and peer substance use, and poverty.

Protective factors include individual self-control; good parental monitoring; academic competence; school anti-drug use policies; and strong parental, community, and neighborhood attachment. Charles, who we introduced earlier in the chapter, illustrates how developmental factors can contribute to substance use in teens.

Case Study 2 Continued: Charles' Developmental History

Charles grew up in an upper-middle-class home. His home life was tumultuous, with a father who abused alcohol and a mother who suffered from an eating disorder. Both worked long hours, and Charles was often home alone. His parents argued regularly throughout his childhood and were in the process of separating. School had always been Charles' source of relief from the anxiety of his home life. He excelled academically and had a large peer group, including a girlfriend, with whom he drank alcohol and experimented with drugs. Now in college, Charles spends as much time as he can in the dorms with his friends in order to avoid home, including during school vacations.

A variety of factors contributed to a developmental pathway that resulted in Charles' addictive behavior, including limited parental monitoring and a stressful home life that may have impacted his ability to develop coping skills or regulate his emotions. His primary social support was a deviant peer group, which in combination with his parents' addictive behavior, likely normalized his own substance use. The most notable protective factor in Charles' history is his academic achievement. Understanding the factors that may have led to his substance use disorder allows us to develop a stronger case conceptualization and will help to guide treatment decisions aimed at getting Charles back on a positive developmental pathway.

EVIDENCE-BASED TREATMENT INTERVENTIONS

The adolescent substance use disorders treatment guidelines recommended by the American Academy of Child and Adolescent Psychiatry in 2005 are now considered outdated. However, practice parameters can be a useful tool and providers should keep track of any updated guidelines. (http://www.aacap.org/AACAP/Resources_for_Primary_Care/Practice_Parameters_and_Resource_Centers/Practice_Parameters.aspx)

Prevention Programs

Effective prevention programs should aim to both address the developmental factors and change long-term problematic environmental conditions. School-based prevention programs are a worthwhile endeavor, given that a young person spends a significant amount of her daily life at school. Addressing adolescent psychopathology also helps to prevent early onset of substance use.

Despite the billions of dollars that have been spent on substance use prevention programs, studies have shown that life-skills training and drug refusal skills programs are not overwhelmingly effective. When the typical adolescent is bombarded with hours of TV, media, and video games that promote drugs and alcohol, combined with parental/peer modeling, it is no wonder that programs that last only a few hours do not exert a significant effect on his substance use.

Pharmacotherapy and Other Biologically-Based Interventions

Pharmacotherapy has been used to treat substance use disorders in adults, however, there is a significant lack of pharmacotherapy research on substance use disorders in adolescents. Our treatment discussion here, therefore, focuses on behavioral and psychosocial interventions. That being said, evidence is beginning to show that treating co-occurring psychiatric disorders pharmacologically improves substance use treatment. Clinicians should be aware that substance use can increase the chances of overdose with some psychotropic medications. If there are concerns of potential abuse of these medications, adult supervision of the medication administration should be considered. The current emphasis on concurrent,

integrated treatment is in contrast to the former widely held belief that substance use disorders should be treated first, followed by treatment for any residual disorders, or vice versa.

Psychosocial Treatment

A substantial amount of research is currently being undertaken to develop treatments for alcohol use disorders among adolescents, including guided self-change therapy, brief motivational therapy, cognitive behavioral therapy, and family therapy. So far, social-based treatments that focus on family and school environments are the most effective for adolescents with substance use disorders. Involving the family is crucial—family therapy has been shown to be more effective than couples therapy, individual therapy, family psychoeducation, peer counseling, life-skills training, education, and disciplinary actions. Work with families should be approached with a “nonblaming” attitude, rather than confrontation. This stance reduces the chance that families and patients will give up on treatment. Family therapy that involves the community is also an effective strategy.

Opinions on group treatment programs remain divided, as there is evidence that group programs can negatively affect outcome by introducing the patient to a deviant peer group. This is especially true in youths with a co-occurring conduct disorder, which is quite common in this population. Other studies show that group treatment programs can be beneficial. With more deviant youth, however, it may be more beneficial to consider other treatment options, such as family-based treatment.

Motivational interviewing, a nonauthoritarian technique that encourages an adolescent to assume responsibility for her actions and teaches how to make positive changes, has shown evidence for reducing problems related to alcohol use and can be administered in the primary care setting. We provide more discussion about this technique in the following Clinical Practice section.

CLINICAL PRACTICE: PRACTICE-BASED EVIDENCE

Screening

Screening, brief intervention, and referral to treatment (SBIRT) for substance use is recommended for all adolescents. Many resources exist in

journals, books, and online for how to conduct SBIRT with adolescents. To highlight some of those details here, the CRAFFT is a six-item questionnaire that screens adolescents aged 14 to 21 for risky alcohol and drug use. It can be a helpful way for a primary care physician to determine if a more in-depth conversation about substance use is warranted. Those who have a score of 2 or more are high risk and should receive follow-up assessment. Administering the survey on paper or by interview without a parent or guardian present can maximize honest responses.

Interview and Assessment

Many of our patients arrive at our clinic seeking help for problems other than substance use, such as depression and/or anxiety. They are most often referred to us from the inpatient service, student mental health service providers who suspect a substance use disorder, or they are brought to the clinic by their parents. Helping these patients to understand that they have a problem with substance use can be a significant challenge. They can be resistant to the idea that their symptoms are related to their substance use, or that their substance use is an issue. This resistance must be managed carefully, and the first interview is an important step.

We first gather a detailed history, including history of any substance use, behavioral addictions (gambling/sex), current and past nonaddiction psychiatric issues, a complete review of medical systems, psychiatric evaluation, developmental/social history, family substance use, and family psychiatric history. We use CURES (Controlled Substance Utilization Review and Evaluation System), which is the California prescription drug monitoring program, to access a patient's controlled substance history. This system allows us to know what controlled substances are being prescribed to the patient by other providers, as a way of screening for a possible prescription drug use problem. Also, if the patient reports high-risk sexual behaviors, we offer testing for HIV and other STIs and provide education on safer sex practices.

The way in which this information is gathered can be quite important. Due to the tendency for patients to justify their substance use with "self-medication" language, it can be useful to first focus on the patient's

substance use history and gather a detailed account of age of onset, any patterns of remission and relapse, past treatments, and any periods of sobriety before discussing the patient's psychiatric history. When both areas have been independently explored, we then discuss any possible relationship between substance use and psychiatric symptoms. By separating these two lines of questioning, the clinician is able to gain a more accurate picture.

Confidentiality issues must be addressed at the initial interview. Adolescents will be more likely to be honest about their substance use if they know that the information will not be shared. They should be assured confidentiality except when there is a threat of harm to self or others. Reporting and informed consent laws vary from state to state, and the clinician should consider both local and federal laws before initiating any treatment plan. Adolescents should be encouraged to inform their parents of their substance use.

Treatment Contracting

Once we have finished the initial assessment, we will involve the patient in discussing which diagnostic criteria are relevant to her and what treatment will be agreed on. If the patient is particularly resistant to the idea that she may have a substance use disorder, we will temporarily withhold any definitive diagnosis and suggest that the patient try a trial period of abstinence in order to give us both more information. We then go over the results together. This maintains a collaborative approach and minimizes the tendency for patients to lie about their substance use.

Treatment

We encourage a therapeutic alliance that emphasizes listening and collaboration, rather than paternalism or blaming. We find that when working with adolescent patients, it is very important not to re-create the didactic relationship that they may have with concerned parents or teachers. Rather than insist that they should not use substances, which can trigger resistance, we ask the patient to think through what the pros and cons of their

substance use are, and adopt a “wondering aloud” approach. We are looking for the patient to think about what impact his substance use has had on his life. It is important to listen carefully to what the patient believes are positive outcomes from his substance use, as this will then open up the conversation about what may be negative about his substance use.

We then move into a discussion about what factors may be contributing to the substance use. Social factors are often big players in adolescent substance use. These are important to address in order to maximize the patient’s chances of recovery. When substance use is a major shared activity with friends, it can be a frightening thing for a young person to abstain. Removing the common activity can weaken those relationships. We encourage having an open conversation with patients about how abstinence would affect their relationships and ask them to think through which of their friends and/or family might be supportive of stopping or reducing substance use. This conversation should include suggestions about what organizations or communities do not emphasize substance use, such as athletics, study groups, or religious groups.

It is also important to address the issue of normalization. When an adolescent is embedded in a social network that uses substances, it can create the feeling that drinking alcohol or using drugs is not a big deal.

Normalization combined with low perceived risk makes marijuana use disorder an especially tricky problem to address with adolescents—we often hear patients say, “everyone does it, and it’s not even illegal in some states.” We handle this situation by educating on the dangers of marijuana, explaining that although it may be legal in some states, the bottom line is that it is still an illegal substance in California. We help the patient to understand that although it may seem like everyone else uses substances, too, this is not actually the case. Often, a patient is quite surprised that they consume significantly more than the average adolescent their age.

When initiating a treatment plan, we encourage both abstinence from substance use and reduction. If a patient is resistant to the idea of stopping his substance use altogether, we focus on changing behaviors to minimize harm and the consequences from using substances, like encouraging cutting back or trying edibles instead of smoking marijuana. In addition

to reducing harm, small steps like these can allow the patient to begin to see the positive effects of reducing his substance use, which fosters motivation to take more steps toward the ultimate goal of abstinence. With this approach, concrete progress points and goals should be discussed.

Withdrawal symptoms, such as delirium tremens and seizures, can be a real barrier to abstinence for some patients. We warn patients of the possibility of withdrawal symptoms and use the Clinical Institute Withdrawal Assessment for Alcohol Scale, Revised (CIWAR) to assess a patient's risk of developing alcohol withdrawal syndrome. Those who experience troublesome side effects as they abstain or reduce their substance use may benefit from medication to ease the process. This can help patients stay motivated. If outpatient medication is not sufficient, we may recommend hospitalization during acute withdrawal.

Toxicology screens can be helpful in some circumstances, but the results should be used as a discussion point, not as a definitive data point around which decisions are made. An agreement about the confidentiality of results needs to be made with the adolescent before testing. Some families will use home toxicology screens as part of a contract to stay sober. However, if a patient tests positive during treatment, we would use this information as the beginning of a conversation about what is going on, not as data for incrimination. These tests give limited information, as they are not 100% accurate and do not give any information about when a substance was taken.

Psychiatric symptoms must be continually monitored throughout treatment. Patients find it reassuring to learn how substance use can cause psychiatric symptoms and how abstinence can resolve these symptoms. Often by providing this education, we are able to avoid prescribing medication. If psychiatric symptoms persist beyond a 4-week trial period of abstinence, a primary mood disorder and the appropriate treatment should be considered. If a patient enters our clinic already on medications for a mental disorder but is still experiencing psychiatric symptoms, we will avoid making any adjustments to medication until after the 4-week period of sobriety or reduction.

Let us return to the case of Charles to illustrate how we approach the treatment process in our clinic.

Case Study 2 Continued: Charles' Treatment

The first step in the treatment plan for Charles was a period of abstinence. This was necessary in order to tease out the causal effects of his mood problems and substance use on each other. Charles agreed to abstain from alcohol, nicotine, and drugs for a trial period. We prescribed him desyrel, a nonaddictive sleep aid, to address his sleeping problems and to help alleviate withdrawal symptoms. Charles began to see improvement in his sleep and mood within 2 weeks. He reported that he was drinking significantly less alcohol and had stopped using drugs. He had limited his nicotine use to a few cigarettes per week. Charles had been surprised to discover that his friends were supportive of his decision to stop using substances. We encouraged Charles to stay on his path of substance reduction, with the goal of abstaining from alcohol, drugs, and nicotine altogether.

Four weeks later, Charles again began having problems with insomnia and low mood. Neither issue was as troublesome as it had been when he initially came to the clinic, but he was getting increasingly more depressed. He maintained that he had not been using alcohol or any substances. Enough time had passed since Charles began abstaining from substance use that we felt comfortable starting him on a trial of antidepressant therapy. Charles' sleep and mood both improved with the antidepressant, and he continued to limit his substance use, drinking alcohol occasionally and using nicotine in moderate amounts. We referred him to psychotherapy and skills training to further address his problems with mood regulation. Charles has continued to do well.

12-Step Groups

Some patients have a more difficult time reducing their substance use than Charles did. When a patient makes an effort to reduce use but does not successfully abstain from substance use during the agreed trial period, we will begin to introduce the idea of a 12-step program, such as Alcoholics

Anonymous (AA), SMART Recovery, or Secular Organization for Sobriety. The latter two are self-help groups that do not have spiritual components, which some patients are more comfortable with. We also remind patients who claim that AA is “too religious” that the program is spiritual rather than religious, and that those with a variety of beliefs, including atheists and agnostics, attend. We continue to work with patients as they go through 12-step programs, incorporating the language of these programs into our discussions and monitoring the patient’s progress about how the program is going. For a more in-depth description of these self-help groups, please refer to *Circles of Recovery*.

Levels of Care

Like so many other medical centers and clinics, our clinic does not have a dedicated substance use disorder program, and in treating substance use we often utilize external referral services. The Substance Abuse and Mental Health Services Administration maintains a treatment facility locator on its website (<http://www.samhsa.gov/treatment/index.aspx>).

There are varying levels of treatment options depending on the severity of the case and the patient’s needs. Outpatient treatment is best for those with mild to moderate substance use who have a supportive home environment. These patients live at home and may still be able to attend school or go to work. These services can be delivered from a variety of different locations, from a physician’s office to a substance use specialty clinic. Outpatient treatment services are typically provided less than 9 hours per week.

The next level of care is intensive outpatient, which is similar to outpatient treatment, but services are provided 9 or more hours per week. This will be appropriate for patients with more complex cases but who still have a supportive home environment. Patients receiving intensive outpatient treatment will also continue to live at home and go to school and/or work.

Partial hospitalization, or day treatment, is a type of outpatient care for patients who require more services due to the severity of their substance use or serious comorbid health problems, including mental health. These

services are offered 20 or more hours per week (8 to 9 hours per day, up to 7 days per week). These patients have a supportive home environment and continue to live at home, but they typically spend a significant amount of daily time in treatment, which can limit the ability to work or go to school.

Inpatient/residential detoxification is a short-term program that provides medical management of withdrawal symptoms. Patients discharged from a detoxification program then move on to an outpatient or residential treatment program.

Residential nonhospital treatment offers services that are provided in a 24-hour live-in setting. These services are offered at differing levels of care depending on the severity of substance use disorder and/or other health problems. Acute residential treatment lasts days to weeks and focuses on stabilizing patients before they enter a more long-term residential program. Patients reside at acute or long-term facilities with other people in treatment and have 24-hour access to professional support. This option is best for those with more severe disorders, other serious medical conditions, or for those who require a safe and stable living environment.

Medically managed intensive inpatient treatment offers 24-hour in-hospital treatment by a physician. This will be appropriate for those with severe medical conditions, including mental health, who need constant care or supervision. Sometimes this is a consequence of their substance use, such as injuries from a car accident while driving under the influence; infections; or heart, lung, or liver disease. Patients receiving this level of care live at the hospital until they can be transferred safely to a different treatment setting or until the completion of treatment. Rachel is an example of a teen who benefited from a medically managed intensive inpatient program.

Case Study 3: Rachel

Rachel was an attractive 17-year-old Caucasian girl. She was admitted to the hospital for severe knee abscesses, which were a consequence of daily intravenous use of heroin. She was hospitalized on the medical unit for treatment of her abscesses, where she also required psychiatric

consultation and a one-to-one around the clock sitter due to withdrawals from the heroin. As she improved, she was transported to and from the medical unit and the psychiatric unit for group treatment. She was then transferred to the medical/psychiatric unit where she could receive psychiatric treatment, medical management for withdrawals, and continued care for her abscess.

Finally, therapeutic boarding schools are residential educational programs that offer constant professional support for students. They are highly structured and provide individual and group therapy for students with substance use disorders or other mental health problems.

Aftercare

Ongoing assessment and follow-up care after the initial acute treatment phase is crucial. Substance use disorders are often chronic disorders that continue to require attention and involve periods of relapse and remission. Aftercare services can improve the chances that an adolescent remains sober and provide support if the patient relapses. This often takes the form of an ongoing 12-step program. Co-occurring mental health problems should also be monitored on an ongoing basis.

PROGNOSIS AND OUTCOMES

We cannot know if an adolescent will stop using substances or learn to control their use on her own, but we do know that without treatment an adolescent with a substance use disorder is more at risk for academics issues, legal problems, health consequences, and more problematic substance use as an adult. We therefore recommend treating these disorders.

Substance use disorders cannot be cured, but with treatment they can be successfully managed. When determining the definition of success, abstinence should not be considered the only standard. In comparison with adults, adolescents have lower rates of total abstinence in the year after treatment. Learning to limit use, decreasing risky behaviors, and improved

functioning are all positive outcomes. Factors that improve outcome are continued attendance at support groups, parental support, and involvement with a peer group that does not use substances.

A LOOK INTO THE FUTURE

Among those who work with adolescents, there is an inherent tension between viewing substance use as a normal part of growing up and as a problematic disorder. What is needed is an integrated approach—both an understanding of the normal developmental spectrum and of symptomatic behavior. Experimenting with substances is a common phase of adolescence, but when it becomes a habit that interferes with functioning, what began as experimentation has transitioned into a dangerous disorder that puts the adolescent at risk for a host of negative outcomes. It is therefore crucial for substance use screening to be incorporated into the routine care of all adolescents.

Looking toward the future, many leaders in the field of addiction are promoting the conceptualization of addiction as a pediatric disorder, based on the numerous risk factors that come into play in childhood and adolescence, and the fact that most addicts began using substances before the age of 18. With this new conceptualization, addiction leaders are recommending much earlier and more aggressive interventions for adolescents who use substances of any kind, even if they do not demonstrate the stigmata of addiction. Some are even suggesting that intervention should occur even in the absence of substance use if there is a strong family history of substance use, in particular if there is a parent or grandparent with addiction, since data show that having a parent or grandparent with addiction increases the risk of developing a substance use disorder fourfold. What would this intervention look like? It might take the form of more intensive psychoeducation around risk factors for addiction, and cautioning young people to avoid any kind of substance use if they have lots of risk factors for addiction, for example, a co-occurring mental illness such as ADHD and a biological relative with addiction.

The danger of this approach is to overpathologize. But perhaps an overly reductionistic approach to the problem might be warranted to stave off the loss of more lives to the scourge of addiction.

CROSS-REFERENCING

Due to the overlap between these disorders, readers interested in adolescent substance use disorders are encouraged to cross-reference the following chapters: Bipolar and Mood Disorders in Adolescents; (Chapter 8), Anxiety Disorders, Tics, and Trichotillomania; (Chapter 6), and Attention-Deficit Attention Disorder (ADHD) (Chapter 3).

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