

# SUBSTANCE USE DISORDERS

## Introduction

### Causes and Risk Factors

### Diagnostic Categories

*Substance Dependence*

*Substance Abuse*

### Comorbidity

### Assessment

### Evidence-based Treatments

*Psychological Treatments*

*Pharmacological Treatments*

### Unproven Treatments

### Cultural Considerations

## Introduction

It is not uncommon for adolescents to experiment with a variety of substances. However, studies have shown that children who experiment with substances at a young age are more likely to use other drugs later in life (Focus Adolescent Services, 2000). For example, an estimated 40 percent of youth who begin drinking at or before the age of 14 years will become dependent on alcohol (Schneider Institute for Health Policy, 2001). Some adolescents' exposure may be limited to experimentation, but others may develop a dependency, potentially experiment with other dangerous drugs, and even cause significant harm to themselves and others.

In a national survey conducted in 2003, half of all high school seniors reported that they had tried illicit drugs at least once (Snyder & Sickmund, 2006). The survey also revealed that 41 percent of 10<sup>th</sup> grade students and 23 percent of 8<sup>th</sup> grade students had tried illegal drugs. Marijuana was the most frequently-used drug, as reported by 46 percent of the 12<sup>th</sup> grade students participating in the survey. More than three-quarters of these students also reported experimenting with alcohol: recent heavy drinking was reported by 28 percent of seniors, 22 percent of 10<sup>th</sup> graders, and 12 percent of 8<sup>th</sup> graders. Another survey conducted by the U.S. Substance Abuse and Mental Health Services Administration (SAMHSA) examined the past year and lifetime prevalence rates for alcohol use among youth ages 12 to 17 (National Survey on Drug Use and Health, 2007). Table 1 outlines prevalence rates.

Table 1

### Substance Use Prevalence Rates among Youth Ages 12 to 17

Substance	Past Year Prevalence Rate by Percent	Lifetime Prevalence Rate by Percent
Alcohol	31.8	39.4
Cigarettes	15.7	23.7
Marijuana	12.5	16.2
Inhalants	3.9	9.6
Cocaine	1.5	2.1
Ecstasy	1.3	1.8
LSD	0.5	0.8

Source: SAMHSA, National Survey on Drug Use and Health, 2007.

These findings are alarming because substance use among youth has been associated with a number of negative consequences, including physical aggression, academic and occupational problems, delinquency and criminal behavior, developmental problems, and long-term health problems

(U.S. Department of Health and Human Services, 2007). In addition, children and adolescents who become chronic substance users often develop psychological or social problems. Studies of males entering the juvenile justice system confirm the link between substance use and crime (Gehshan, 2000). Complicating matters even further is the fact that many adolescents who abuse substances have a diagnosable mental health disorder. According to the National Comorbidity Study, 41 to 65 percent of individuals with a lifetime substance abuse disorder also have a lifetime history of at least one mental health disorder and about 51 percent of those with one or more lifetime mental health disorders also have a lifetime history of at least one substance use disorder (U.S. Department of Health and Human Services, 1999). These rates are highest in the 15 to 24 year-old age group (Kessler et al., as cited by the U.S. Department of Health and Human Services). One theory suggests that individuals in this age group may abuse drugs in an effort to self-medicate for a co-occurring mental disorder. In 2004, it was estimated that 1.4 million youth nationwide were in need of substance abuse treatment and fewer than 10 percent of them received services (Hills, 2007).

Substance use is frequently perceived differently than substance abuse. In the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR)*, substance-related disorders include substance dependence and substance abuse (American Psychiatric Association [APA], 2000). Substance abuse is defined as a maladaptive pattern of substance use manifested by recurrent and significant adverse consequences related to the repeated use of substances (APA). This section will utilize both terms as each was used in the literature.

## Causes and Risk Factors

There are a number of factors that place youth at a higher risk for substance use. One study identified several of the risk factors for adolescent substance use (Vega, Zimmerman, Warheit, Apospori & Gil, 1993):

- perceived peer substance use;
- peer approval;
- low family pride;
- delinquency;
- willingness to engage in non-standard behavior;
- family substance use problems; and
- parent smoking.

Buu and her colleagues (2009) examined the long-term effects of family and neighborhood risk factors on adolescent substance use. The study found that parental substance use disorders, family socioeconomic status, family mobility, neighborhood residential instability, and neighborhood environmental change placed adolescents at risk for developing substance use disorders. Having a mental health disorder has also been found to place youth at a higher risk for developing a substance use disorder (Bukstein, 1998).

A youth's vulnerability to substance use is also increased by their social development and peer influences. Accordingly, a child or adolescent who is highly susceptible to these factors has a greater risk of developing a substance use disorder (Leshner, 2001). These risk factors may differ significantly during different phases of the youth's development. Parental and peer influences are often critical in early phases of substance use, while the influence of peers may increase as the child gets older (SAMHSA, 1999). Recent studies have also revealed an association between higher levels of substance use and an adolescent's pubertal stage (not necessarily chronological age) because adolescents entering puberty at an earlier age also enter the risk period earlier (Patton et al., 2005).

Another major risk factor for adolescent substance abuse is the presence of childhood conduct problems (Brook et al., as cited by Kamon, Budney & Stanger, 2005). Substance abuse and conduct problems share important risk factors, including family conflict, poor parental monitoring, parental substance use, academic problems, and association with deviant peers (Anderson and Henry, Brook et al., as cited by Kamon, Budney & Stanger). More than half of adolescents with substance abuse problems also experience conduct problems, which can make treatment for substance abuse particularly challenging (Kaminer et al., as cited by Kamon, Budney & Stanger).

A core concept has evolved, based on scientific study which suggests that addiction is a brain disease that develops over time as a result of the initially voluntary behavior of substance use. Long-term substance use causes profound changes in brain structure and function, which result in uncontrollable compulsive drug or alcohol craving, seeking, and substance using (Leshner, 2001). Recent studies have also shown that one form of substance abuse—binge drinking—damages the adolescent brain more than the adult brain. Examination of differences in the effects of alcohol on receptor activity in the hippocampus of adolescents and adults reveals the impact of alcohol on these age groups (White, 2004). These differences suggest that adolescents are more vulnerable than adults to the impact of alcohol on learning and memory. Heavy drinking in early or middle adolescence, with resulting cortical damage, can lead to diminished control over cravings for alcohol and to poor decision-making (White). Thus, addiction must be viewed as a multifaceted disease.

Studies have also linked a gene to alcohol addiction. The CREB gene, so-named because it processes a protein called CREB, is involved in the process of alcohol tolerance, dependence, and withdrawal symptoms (Davis, 2004). Studies have linked this gene to anxiety-like behaviors and preference to alcohol. There is also data which supports the notion that some individuals who abuse alcohol have brain chemistries which predispose them to drinking (Personal Communication with Dr. Anita Everett, Former Inspector General for the Commonwealth of Virginia, July 2002). According to Leshner (2001), an individual who abuses substances over time loses substantial control over his or her voluntary behavior. For many individuals, these behaviors are truly uncontrollable, just like the behavioral demonstration of other brain diseases. Thus, once an individual is addicted to a substance, the nature of the illness does not vary significantly from other brain diseases.

## Diagnostic Categories

According to the *DSM-IV-TR*, there are two categories of substance use disorders, substance dependence and substance abuse (APA, 2000). A child or adolescent can be diagnosed with substance dependence for all classes of substances, except for caffeine, and can be diagnosed with substance abuse for all substances, except for caffeine and nicotine. These categories are discussed below.

### **Substance Dependence**

Substance dependence is a "...cluster of cognitive, behavioral, and physiological symptoms indicating that the individual continues to use the substance despite significant substance-related problems" (APA, 2000). Recurrent substance use associated with substance dependence can lead to withdrawal and tolerance, which are two symptoms of physiological dependence. Tolerance is the need for larger amounts of the substance to achieve the desired intoxication effects, and withdrawal is an intense and unpleasant cluster of symptoms which has physiological and cognitive symptoms associated with it. Withdrawal symptoms generally vary across substances. Youth who suffer from substance dependence often use the substance because they are trying to avoid or relieve themselves of the withdrawal symptoms, despite the negative consequences. Hence, according to the APA, substance dependence is a maladaptive pattern of substance use that leads to clinical significant impairment or distress which includes three or more of the following:

- symptoms occurring anytime within a 12-month period;
- tolerance;
- withdrawal;
- taking larger quantities of substance over a longer period than intended;
- persistent and possibly unsuccessful efforts to cut down or control substance use;
- significant amounts of time spent obtaining, using, or recovering from the effects of the substance;
- important social, occupational, or recreational activities are reduced or no longer participated in because of the substance use; and
- continues use of the substance despite recognizing the role of substance use in persistent or recurrent physical or psychological problems.

## **Substance Abuse**

The second category of substance use disorders is substance abuse, which is similar to substance dependence, but does not require as many symptoms and may be less severe (APA, 2000). Substance abuse is a maladaptive pattern of substance use that leads to clinically significant impairment or distress and includes one or more of the following symptoms exhibited within the past year, as outlined by the APA:

- a failure to fulfill obligations at work, school or home;
- the youth engages in recurrent use of substance in situations that can be physically harmful (e.g., driving a vehicle while under the influence of the substance);
- recurrent legal problems related to substance use (e.g., arrested for public intoxication);
- continued substance consumption, regardless of recurrent or persistent interpersonal or social problems which are caused or exacerbated by substance use (e.g., violent arguments with significant other); and
- these symptoms must have never met the criteria for substance dependence for the class of substance (APA).

## **Comorbidity**

Mental disorders commonly found among children and adolescents diagnosed with a substance use disorder include conduct disorder (CD), oppositional defiant disorder (ODD), attention deficit hyperactivity disorder (ADHD), major depressive disorder (MDD), dysthymic disorder, bipolar disorder, generalized anxiety disorder (GAD), social phobia, posttraumatic stress disorder (PTSD), and bulimia nervosa (Bukstein, 1998). According to Kessler et al. (1996), data from this study indicates that, in nearly 90 percent of individuals with both mental health and substance use disorders, the mental disorder develops before the substance use disorder. Moreover, children will often be diagnosed with a mental health disorder in their pre-teen or early teen years, with the median age being age 11. The substance use disorder has been found to develop a few years later, between the ages of 17 and 21. It is important to note that a diagnosis does not ensure that youth will abuse alcohol or other drugs, but the high statistical coincidence occurring in these two conditions is significant.

According to epidemiologic data, 9 percent of adolescent females and 20 percent of adolescent males meet the adult diagnostic criteria for an alcohol use disorder (Cohen et al., 1993). Among adolescents and young adults with a substance abuse disorder, 41 to 65 percent also have a mental health disorder (U.S. Department of Health and Human Services, 1999). Overall, the lifetime co-occurrence of mental and addictive disorders has been estimated at approximately 50 percent (Kessler et al., 1996).

In recent years, evaluations of youth with co-occurring substance abuse and mental health disorders reveal very distinct patterns. Adolescents with co-occurring disorders typically have an earlier onset of substance use, engage in substance use more frequently, use substances for longer periods, and have greater rates of family, school, and legal issues (Hills, 2007). As noted by the President's New Freedom Commission on Mental Health, if either the substance abuse or the co-occurring disorder remains untreated, both usually worsen (2003). Additional complications often arise, including the risk for other medical problems, unemployment, homelessness, incarceration, suicide, and separation from families and friends (New Freedom Commission on Mental Health).

This comorbidity and lack of adequate treatment have significant clinical implications. First, these children and adolescents are particularly vulnerable to relapses and rehospitalization (Mueser, Drake & Miles, 1997). Studies have found that the most common cause of psychiatric relapse today is the use of alcohol, marijuana, and cocaine; conversely, the most common cause of relapse of substance use is an untreated psychiatric disorder (SAMHSA, 1997). In addition, individuals with co-occurring disorders exhibit greater depression and suicidality, violence, and noncompliance with medications and other treatments (Mueser, Drake & Miles). They also face greater difficulties with social problems, such as housing instability and homelessness, increased family burden, and increased vulnerability to HIV infection (Mueser, Drake & Miles). Thus, in order to ensure more positive outcomes, it is important that service providers recognize that adolescents with a co-occurring mental health disorder have special needs and may require a greater number of interventions and community resources.

## Assessment

As stated earlier, a large number of adolescents experiment with alcohol and other drugs before becoming adults (Bukstein, 1998). However, in order to receive a diagnosis of substance use disorder, these youth must demonstrate significant levels of impairment in their daily lives, such as poor social relationships, declining academic performance, or chronic substance-related absences, suspensions, or expulsions from school (Bukstein).

When assessing youth suspected of co-occurring disorders, the primary goal is to determine whether substance use also exists and whether it fits the criteria set forth in *DSM-IV-TR* for substance use disorders (Bukstein, 1998). This can be assessed using diagnostic instruments, such as the Kiddie-Schedule for Affective Disorders and Schizophrenia and Lifetime Version or the Diagnostic Interview Schedule for Children. These diagnostic interviews use *DSM-IV* criteria to collect extensive information about substance related symptoms. This determination should also be based on a comprehensive developmental, social and medical history. Evaluators should obtain the necessary information from a variety of sources, including the youth, parents, family members, school personnel, previous treatment records, and perhaps other involved agencies (SAMHSA, 1997).

Once clinicians have established that the youth is using substances, they must then determine the nature of the use pattern. As set forth in the *DSM-IV-TR*, there are two categories of substance use disorders. The first diagnosis—substance abuse—is ascribed to a child or adolescent when their repeated use of alcohol or other drugs leads to physical, emotional, or social problems, but does not include compulsive use or addiction. The second category—substance dependence—is diagnosed when a child or adolescent persists in using alcohol or other drugs, despite symptoms of tolerance and withdrawal, or attempts to control the use. Information regarding patterns of use, including age of onset, progression of use for specific substances, frequency, and variability of use, and the types of substances used, is necessary in making this diagnosis (Bukstein, 1998).

Because the most common feature of substance use disorders in adolescents is impairment in psychosocial and academic functioning, the evaluator must determine whether the symptoms the youth displays are attributable to the substance use, are the result of preexisting or current problems, or are a combination of both (Bukstein, 1998). During the preliminary evaluation, clinicians should routinely screen for any co-occurring mental disorders. In addition, the assessment should also attempt to identify other social and environmental factors, such as family or academic problems, which may affect the child's or adolescent's functioning.

Recognition of co-occurring substance use and mental health disorders is often difficult, and clinicians will have to keep in mind several issues when conducting the evaluation. First, the youth may display denial, distortion, and minimization when discussing substance use; therefore, the details provided by them may not be reliable. Furthermore, in cases of co-occurring mental health disorders, the reasons for the distressing symptoms and behaviors may not be fully understood by the youth and their family. Therefore, the information provided during the evaluation may not be particularly revealing (Bukstein, 1998). Moreover, reports of substance use may be distorted by the cognitive and emotional aspects of any underlying mental health disorder, further decreasing the validity of self-reporting (Mueser, Drake & Miles, 1997).

Clinicians must also consider that youth with co-occurring mental health and substance use disorders often present different symptoms than substance abusers who do not have a mental health disorder (Mueser, Drake & Miles, 1997). They may use lower amounts of alcohol and/or drugs and experience different consequences from use. Furthermore, some research shows that the youth who are dually-diagnosed with both a substance use and mental health disorder are less likely to develop dependence and tend to report less subjective distress resulting from their use (Mueser, Drake & Miles). Based on these differences, standard instruments may not identify the substance use disorder in these youth and the clinician may have to rely primarily on clinical interviews and patient histories.



There are a number of assessment tools specifically designed to measure diagnostic criteria for substance use disorders, the nature of substance use, and impairment in functioning among adolescents:

- Adolescent Diagnostic Interview (ADI; Winters & Henly, 1993) is a structured interview which assesses *DSM-IV* criteria for substance use disorders and measures the adolescent's level of functioning across several domains (e.g. peers, school behavior, and home behavior). The test-retest and interrater reliability is well-established for this instrument (Winters, 1999).
- Adolescent Drug Abuse Diagnosis (ADAD; Friedman & Utada, 1989) instrument is a structured comprehensive interview that assesses substance use and nine life problems and can be used for both treatment planning and assessing behavioral change over time. It has good interrater reliability and good test-retest reliability. It also has adequate external validity for most of the nine life problems scales (Winters, 1999).
- Adolescent Self-Assessment Profile (ASAP; Wanberg, 1992) is a self-report instrument that provides a differential assessment for an adolescent's substance use and psychosocial adjustment. It can be used in treatment to assess behavior and adjustment changes across time, and it has excellent reliabilities and good content and construct validity (Winters, 1999).
- American Drug and Alcohol Survey (ADAS; Oetting, Beauvais & Edwards, 1985) is a self-report instrument that assesses levels of substance use. This instrument can assess the magnitude of substance use among youth and is most useful at the local level.
- Chemical Dependency Assessment Profile (CDAP; Harrell, Honaker & Davis, 1991) is a multiple-choice and true-false self-report measure that assesses history of chemical use, patterns of use, reinforcement mechanisms, perception of situational stressors, and attitudes related to treatment, self-concept, and interpersonal relations. Psychometric properties for this measure could not be found (Winters, 1999).
- Juvenile Automated Substance Abuse Evaluation (JASAE; ADE, Inc., 1987) is a computer-assisted screening and assessment instrument that assesses substance use and abuse among juveniles, as well as attitude and life stressors. It is a brief assessment and is often used in conjunction with more extensive interviews. Construct validity and one month test-retest reliability has been established (Miller, 1999; Winters, 1999).
- Personal Experience Inventory (PEI; Winters & Henly, 1989) is a comprehensive assessment that assesses substance use and related problems, problem severity, and psychosocial risk factors. The scales have been found to be reliable and valid for assessing substance use disorders in African American, Latino, Asian American, and Native American populations (Winters, 1999).

Table 2 lists the assessment tools which may be used for substance use disorder.

*Table 2*

### **Suggested Assessment Tools for Substance Use Disorder**

<b>Name of Measure</b>	<b>Measure Type</b>	<b>Who Completes</b>	<b>Generated Information</b>
Kiddie-Schedule for Affective Disorders (K-SADS) and Schizophrenia and Lifetime Version	Clinical Interview	Clinician with Youth and Parent	Diagnosis
Diagnostic Interview Schedule (DISC)	Clinical Interview	Clinician with Youth and Parent	Diagnosis
Adolescent Diagnostic Interview (ADI)	Clinical Interview	Youth	Diagnosis
Adolescent Drug Abuse Diagnosis (ADAD)	Clinical Interview	Youth	Symptom ratings
Adolescent Self-Assessment Profile (ASAP)	Self-Rating Scale	Youth	Symptom ratings
American Drug and Alcohol Survey (ADAS)	Self-Rating Scale	Youth	Symptom ratings
Chemical Dependency Assessment Profile (CDAP)	Self-Rating Scale	Youth	Symptom ratings
Juvenile Automated Substance Abuse Evaluation (JASAE)	Self-Rating Scale	Youth	Symptom ratings
Personal Experience Inventory (PEI)	Self-Rating Scale	Youth	Symptom ratings

Sources: Commission on Youth Graphic of citations provided in text.

## Evidence-based Treatments

Numerous methods are used to treat children and adolescents with a substance use disorders. For this review, evidence-based treatments are divided into three categories: What Works, What Seems to Work, and What Does Not Work. These treatments, which are discussed in the following paragraphs, are also outlined in Table 3.

Table 3

### Summary of Treatments for Substance Use Disorder

<b>What Works</b>	<b>Description</b>
Cognitive Behavioral Therapy (CBT)	A structured therapeutic approach that involves teaching youth about the thought-behavior link and working with them to modify their thinking patterns in a way that will lead to more adaptive behavior in challenging situations.
Family Therapy	A family-based therapy aimed at providing education, improving communication, and functioning among family members, and reestablishing parental influence through parent management training.
Multisystemic Therapy (MST)	An integrative, family-based treatment with a focus on improving psychosocial functioning for youth and families.
<b>What Seems to Work</b>	<b>Description</b>
Behavioral Therapies	Behavioral therapies focus on identifying specific problems and areas of deficit and working on improving these behaviors.
Motivational Interviewing	A brief treatment approach aimed to increase motivation for behavior change. It is focused on expressing empathy, discrepancies, avoiding argumentation, rolling with resistance, and supporting self-efficacy.
Some Medications	Psychopharmological medication can be used for detoxification purposes, as directed by a doctor. Medication may also be used to treat co-existing mental health disorders.
<b>What Does Not Work</b>	<b>Description</b>
Interpersonal and Psychodynamic Therapies	Interpersonal and psychodynamic therapies are methods of individual counseling that are often incorporated into the treatment plan and focus on unconscious psychological conflicts, distortions, and faulty learning.
Client-centered Therapies	A type of therapy focused on creating a non-judgmental environment, such that the therapist provides empathy and unconditional positive regard. This facilitates change and solution making on behalf of the youth.
Psychoeducation	Programs aimed at educating youth on substance use and may cover topics like peer pressure and consequences of substance use.
Project CARE	A program aimed at raising awareness about chemical dependency among youth through education and training.
Twelve-step Programs	A twelve-step program that uses the steps of Alcoholics Anonymous as principles for recovery and treating addictive behaviors.
Process Groups	A type of psychotherapy that is conducted in a small group setting. Groups can be specialized for specific purposes and therapy utilizes the group as a mechanism of change.

Sources: Commission on Youth Graphic of citations provided in text.

## ***Psychological Treatments***

Numerous psychological treatments are used to treat youth with substance use disorders. These are discussed below.

Cognitive Behavioral Therapy – The goal of Cognitive Behavioral Therapy (CBT) is the identification and modification of maladaptive thinking patterns to reduce negative thoughts, feelings, and behavior. For substance abusers, the focus of this intervention is generally relapse prevention (National Institute on Drug Abuse [NIDA], 1999). CBT can help the adolescent develop greater self-control, identify environmental and internal triggers leading to relapse, and develop strategies for dealing with stressors, triggers, and lapses into substance use. The role of clinicians is to aid the youth in anticipating the problems that they are likely to meet and to help them to develop effective coping strategies. CBT also includes elements directed toward substance use, such as relapse prevention, but also addresses social skills, anger control, and problem-solving (*Journal of the American Academy of Child and Adolescent Psychiatry*, 2005).

Several research studies support CBT as effective in treating a wide range of substance use disorders (Miller & Wilbourne, 2002; Stephens, Roffman & Curtin, 2000; Waldron, Slesnick, Brody, Turner & Peterson, 2001). Studies have also indicated that CBT has positive effects with adolescents treated for mental health disorders such as depression (Bukstein, 1998). In addition, studies have shown that CBT is effective for adolescents who have been diagnosed with conduct disorder and co-occurring substance abuse disorders (Kazdin, as cited by the *Journal of the American Academy of Child and Adolescent Psychiatry*, 2005).

Family Therapy – Although family therapy is considered an important modality in the treatment of adolescents with substance use disorders (Bukstein, 1998), clinicians and consumers should be aware that family therapy is a very broad term that encompasses a large number of treatment programs. Not all of these family therapies have been tested with children and adolescents with substance use disorder. Thus, it is important and relevant to ask “what kind of family therapy” when family therapy is recommended. Common elements across most family therapies include:

- (a) engagement of the family (versus working with the child alone);
- (b) focus on education about substance use and abuse;
- (c) emphasis on communication skills to improve family functioning; and
- (d) to reestablish parental influence through parent management training (Bukstein, 1998).

One program with empirical support is Multidimensional Family Therapy (MDFT), an outpatient, family-based treatment for adolescents with serious substance abuse issues (Liddle, 2009). This approach views drug use in terms of network of influences (individual, family, peer, community) and encourages treatment across settings in multiple ways. Sessions may be held in a clinic, home, court, school, or other community locations. For the child or adolescent, the emphasis of treatment is on skill-building, and the treatment plan often incorporates developmental tasks such as decision-making, negotiation, problem-solving skills, vocational skills, communication, and dealing with stress (Liddle, 2009). Parallel sessions are held with family members, in which parents examine their parenting style, learn to distinguish influence from control, and learn to have a positive and developmentally appropriate influence on their child. Research supports the use of this type of therapy for adolescents with substance use disorders (Friedman, Terras & Kreisher, 1995; Schmidt et al., 1996; NIDA, 1999).

A method of strategic family therapy has also been tested and found effective with substance using adolescents. Szapocznik et al. (1989) tested their strategic model against usual methods. The model included educational information for the parents and youth, communication skills training, and cultural training to integrate a family’s cultural practices into treatment.

Multisystemic Therapy – One promising intervention program for youth with co-occurring substance use and mental health disorders is Multisystemic Therapy (MST). MST aims to address the multifaceted nature of antisocial behavior at the individual, family, and community levels (Ouimette, 2007). This form of therapy is intended to address serious antisocial behavior in children and adolescents who abuse substances. Therapeutic efforts target the child’s behavior within the context of the family environment, the school environment, and the neighborhood and community (NIDA, 1999).



Treatment occurs in each of the child's natural settings. Research has shown that MST significantly reduces adolescent drug use during treatment and for at least six months after treatment (NIDA). It has also been found to reduce the number of juvenile incarcerations and out-of-home placements (NIDA).

MST is associated with significant, long-term reduction of aggressive behaviors in chronic and violent juvenile offenders (Henggeler & Brondino, 2002). Several research studies have reported that MST is associated with decreases in arrest and substance use rates (Borduin, Henggeler, Blaske & Stein, 1990; Borduin et al., 1995). Clinical trials indicate that MST is an effective intervention for substance-abusing youth, particularly for marijuana abstinence (Henggeler & Brondino).

Behavioral Therapies – Behavioral therapies with research support include goal monitoring, contingency management, and skill-building approaches. The underlying goal of a goal monitoring approach is to allow the youth and the treatment provider to identify specific problems and areas of deficit and to work on improving these behaviors (Bukstein, 1998). Therapeutic activities are then designed to achieve these goals and may include fulfilling specific assignments, rehearsing desired behaviors, and recording and reviewing progress (NIDA, 1999). Contingency management (CM) interventions are sometimes used separately or in conjunction with a goal monitoring approach. In CM approaches, positive reinforcers are provided at intervals based on specific behaviors from the youth. Both goal monitoring and CM approaches are often incorporated into inpatient, residential, or partial hospitalization programs (Bukstein).

In community-based care, caregivers are taught to monitor goals and/or more effectively manage contingencies. Research shows that, when consistently applied, this type of therapy helps adolescents become drug-free and increases their ability to maintain abstinence after treatment ends (Azrin et al., 1996; NIDA, 1999). Participants have also been found to show improvement in areas such as employment, school attendance, family relationships, depression, and institutionalization (NIDA).

Substance use prevention, treatment, and rehabilitation often include assistance in developing needed skills and functions that were passed by while the child was struggling with the substance use disorders (SAMHSA, 1997). Skill development is also included in many cognitive-behavioral approaches to substance use (Bukstein, 1998). The general focus of treatment includes educating the youth with relapse prevention skills, substance refusal skills, resisting peer pressure, assertiveness skills, communication skills, problem-solving, anger control, and leisure time management. Whereas it is frequently incorporated in treatment plans, research supporting skill-building alone is not supported by research. However, given the empirical support for CBT, there is more confidence in skill-building approaches than some other approaches.

Motivational Interviewing – Motivational interviewing is a brief treatment approach that aims to increase motivation for behavior change in addicted and related problematic behaviors. It is based on five core principles, including the expression of empathy, highlighting discrepancies, avoiding argumentation, rolling with resistance, and supporting self-efficacy (Evans et al., 2005). Motivational approaches are accepting of ambivalence and uncertain motivation, and work on exploring these ambivalences. There has been ample support for the efficacy of motivational interviewing in treating substance use disorders among adults (Burke, Arkowitz & Menchola, 2003). Research examining motivational interviewing among youth has found support for the efficacy of motivational interviewing in reducing substance related behaviors (Monti et al., 1999).

Individual Psychotherapy – CBT, behavioral therapies, and motivational interviewing approaches are sometimes provided on an individual basis. Interpersonal therapy and psychodynamic therapies are methods of individual counseling that are often incorporated into the child or adolescent's treatment plan. These two types of therapy assume that substance use symptoms and behaviors are the result of unconscious psychological conflicts, distortions, and faulty learning (APA, 2006). Although the effectiveness of these two forms of treatment is suggested from case reports, no controlled studies support the use of these methods in treating substance use disorders among children and adolescents (Bukstein, 1998).

## **Pharmacological Treatments**

Psychopharmacological medication can be used in the treatment of substance use disorders and may be used in the initial stages of treatment for detoxification purposes, as directed by a physician. When medication is utilized for the treatment of a co-occurring mental health disorder, a cautious approach, as well as an integrated treatment strategy, is crucial.

Medical detoxification is a form of pharmacotherapy that is used to treat any withdrawal effects by substituting a legal drug for an illicit one during prolonged periods of abstinence (Bukstein, 1998). This approach is most frequently used for chronic abusers of highly addictive substances such as opium (i.e., methadone treatment) (Bukstein). Research has shown that detoxification will not by itself change long-term drug use and must be incorporated into a long-term treatment plan (NIDA, 1999). Furthermore, it is important to note that substitutions, such as methadone, are infrequently used in children and adolescents and often limited by law (Bukstein). Detoxification should be reserved for only the most severely dependent adolescents who have been resistant to other forms of treatment (Bukstein).

Medication may also be used to treat co-occurring mental health disorders and is often an important treatment element. However, NIDA recommends that medication should be pursued only as a last resort in this population, as substance use disorders may increase the potential for misuse and overdose (1999). Further, medications should be prescribed only to those children and adolescents who displayed psychiatric symptoms prior to the substance use or only if the symptoms are present during periods of abstinence (NIDA). A definitive assessment requires that the youth abstain from the use of substances for a specified period, typically several weeks. Finally, if medication is prescribed, it is critical that the youth's physician closely monitors the medication regimen with the awareness that the youth may still be using other illicit substances.

Children and adolescents diagnosed with a co-occurring mood disorder, ADHD, severe aggressive behavior or an anxiety disorder are most frequently prescribed medication (Bukstein, 1998). Research is being conducted on the effectiveness of medications in adolescents with co-occurring substance use and mental health disorders. Clinical trials with pemoline and bupropion for ADHD and fluoxetine for depression have shown promise (*Journal of the American Academy of Child and Adolescent Psychiatry*, 2005). Pemoline has shown promise in safely treating youth with ADHD and co-occurring substance use (Riggs, 2003). Pemoline is considered a significant treatment option for ADHD because of its low abuse potential and once-per-day dosing (Riggs). More recently, a trial of a stimulant medication demonstrated the efficacy of medication improving ADHD symptoms in adolescents with comorbid ADHD and substance abuse disorder. This study also demonstrated that medication treatment of ADHD alone, without specific substance abuse disorder or other psychosocial treatment, did not decrease substance use (*Journal of the American Academy of Child and Adolescent Psychiatry*).

Preliminary trials with lithium and selective serotonin reuptake inhibitors (SSRIs) produced considerable improvements in adolescents with substance abuse disorders and comorbid mood disorders (*Journal of the American Academy of Child and Adolescent Psychiatry*, 2005). Preliminary data shows that SSRIs are safe for treating adolescents with depression, even if they are still using substances (Riggs, 2003).

One controlled study was conducted to ascertain the effectiveness of lithium for adolescents with bipolar disorder and co-occurring substance use disorder. Lithium was found to be effective in stabilizing mania, even that which is accompanied by on-going substance use (Riggs, 2003). However, it was not effective in treating the substance use or in inducing abstinence. It is important that the adolescent receive concurrent treatments for substance use and bipolar disorder (Riggs).

## **Unproven Treatments**

Some commonly used pharmacological agents, such as psychostimulants and benzodiazepines, have well-founded abuse potential (*Journal of the American Academy of Child and Adolescent*

*Psychiatry*, 2005). Alternative agents to psychostimulants should be considered because they have lower potential for abuse.

Benzodiazepines, typically prescribed for anxiety, are usually contraindicated in the presence of a substance use disorder due to their addictive properties (SAMHSA, 1997). Tricyclic antidepressants are contraindicated for the treatment of depression or ADHD in adolescents who engage in substance use, particularly marijuana, because of the risk of death in the event of an overdose (Riggs, 2003).

The following information is from the 2007 Biennial Report of the Hawaii Department of Health (Chorpita & Daleiden, 2007). For the treatment of substance abuse, studies have found no support for the following treatments: Client-Centered Therapy, Education, Group Therapy, Project CARE, or the Twelve-Step Program. Moreover, these findings also indicate that Group Therapy and Project CARE treatment approaches may negatively affect treatment outcomes for substance abuse.

## **Cultural Considerations**

Research indicates that there may be ethnic differences in risk factor profiles and that cultural differences should be taken into account when considering how risk factors predict substance use problems (Vega et al., 1993). In addition, research cited by Walton (2001) suggests that females may enter substance abuse treatment with unique needs. They present symptoms of greater psychological distress, such as low self-esteem and depression, and are much more likely to report prior physical and/or sexual abuse than their male counterparts. These issues must be effectively addressed within the context of treatment in order to improve outcomes.

Walton (2001) also cites research which has found that females and minorities often enter treatment with fewer financial resources and positive social supports. Studies have found that many African Americans are at a higher risk of relapse because they may often face more difficult social situations following treatment, such as high-stress and low-support environments.

## **Sources**

ADE, Inc. (1987). *Juvenile Automated Substance Abuse Evaluations (JASAE)*. Clarkston, MI: ADE, Inc.

American Psychiatric Association (APA). (2000). *Diagnostic and statistical manual of mental disorders* (4<sup>th</sup> ed., text rev.) (DSM-IV-TR). Washington, DC: Author.

American Psychiatric Association (APA) (2006). *APA practice guidelines for the treatment of psychiatric disorders compendium 2006*, Edited by J. McIntyre, S. Charles and D. Anzina. APA Press.

Azrin, N., Acierno, R., Kogan, K., Donohue, B., Besalel, V., McMahon, P. (1996). Follow-up results of supportive versus behavioral therapy for illicit drug use. *Behaviour Research and Therapy*, 34 (1), 41-46.

Borduin, C., Henggeler, S., Blaske, D., & Stein, R. (1990). Multisystemic treatment of adolescent sexual offenders. *International Journal of Offender Therapy and Comparative Criminology*, 35, 105-114.

Borduin, C., Mann, B., Cone, L., Henggeler, S., Fucci, B., Blaske, D., & Williams, R. (1995). Multisystemic treatment of serious juvenile offenders: Long-term prevention of criminality and violence. *Journal of Consulting and Clinical Psychology*, 63, 569-578.

Bukstein, O. (1998). Summary of the practice parameters for the assessment and treatment of children and adolescents with substance use disorder. *Journal of the American Academy of Child and Adolescent Psychiatry*, 36 (suppl), 140S-156S.

Burke, B., Arkowitz, H., & Menchola, M. (2003). The efficacy of motivational interviewing: A meta-analysis of controlled trials. *Journal of Consulting and Clinical Psychology*, 60, 9784-9979.

- Buu, A., Dipiazza, C., Wang, J., Puttler, L., Fitzgerald, H., & Zucker, R. (2009). Parent, family, and neighborhood effects on the development of child substance use and other psychopathology from preschool to the start of adulthood. *Journal of Studies on Alcohol and Drugs*.
- Chorpita, B., & Daleiden, E. (2007). *2007 Biennial Report: Effective Psychosocial Interventions for Youth with Behavioral and Emotional Needs*. Child and Adolescent Mental Health Division, Hawaii Department of Health.
- Cohen, P., Cohen, J., Kasen, S., Velez, C., Hartmark, C., Johnson, J., et al. (1993). An Epidemiological Study of Disorders in Late Childhood and Adolescence—I. Age- and Gender-Specific Prevalence. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, *34*, 851-867.
- Davis, J. (2004). Researchers identify alcoholism gene. *WebMD Medical News*. [Online]. Available: <http://www.webmd.com/mental-health/news/20040526/researchers-identify-alcoholism-gene>. [May 2013].
- Evans, D., Foa, E., Gur, R., Hendin, H., O'Brien, C. Seligman, M., & Walsh B. (2005). *Treating and preventing adolescent mental health disorders: What we know and what we don't know*. New York, Oxford University.
- Focus Adolescent Services. (2000). *Drugs and Teen Substance Abuse*. [Online]. Available: <http://www.focusas.com/SubstanceAbuse.html>. [May 2013].
- Friedman, A., Terras, A., & Kreisher, C. (1995). Family and client characteristics as predictors of outpatient treatment outcome for adolescent drug abusers. *Journal of Substance Abuse*, *7*, 345-356.
- Friedman, A., & Utada, A. (1989). A method for diagnosing and planning the treatment of adolescent drug abusers: The Adolescent Drug Abuse Diagnosis (ADAD) Instrument. *Journal of Drug Education*, *19* (4), 285-312.
- Gehshan, S. (2000). *Substance Abuse Treatment in State Children's Health Insurance Programs*. Washington, DC: National Conference of State Legislatures,
- Harrell, T., Honaker, L., & Davis, E. (1991). Cognitive and behavioral dimensions of dysfunction in alcohol and polydrug abusers. *Journal of Substance Abuse*, *3*, 415-426.
- Henggeler, S., & Brondino, M. (2002). Four-year follow-up of Multisystemic Therapy with substance-abusing and substance-dependent juvenile offenders. *Journal of the American Academy of Child and Adolescent Psychiatry*, *41*, 868-874.
- Hills, H. (2007). *Treating adolescents with co-occurring disorders*. Florida Certification Board/Southern Coast ATTC Monograph Series # 2.
- Journal of the American Academy of Child and Adolescent Psychiatry*. (2005). Practice Parameter for the Assessment and Treatment of Children and Adolescents with Substance Use Disorders, *44* (6), 609-621.
- Kamon, J., Budney, A., & Stanger, C. (2005). A contingency management intervention for adolescent marijuana abuse and conduct problems. *Journal of the American Academy of Child and Adolescent Psychiatry*, *44* (6), 513-521.
- Kessler, R., Nelson, C., McGonagle, K., Edlund, M., Frank, R., & Leaf, P. (1996). The epidemiology of co-occurring addictive and mental disorders in the national comorbidity survey: implications for prevention and service utilization. *American Journal of Orthopsychiatry*, *66*, 17-31.
- Leshner, A. (2001). Addiction is a brain disease-and it matters. *Issues in Science and Technology*, 17-19.

- Liddle, H. (2009). Treating adolescent substance abuse using Multidimensional Family Therapy. In J. R. Weisz & A. E. Kazdin (Eds.). *Evidence-based psychotherapies for children and adolescents* (2<sup>nd</sup> ed.). New York: Guilford Press.
- Miller, G. (1999). *Learning the language of addiction counseling*. Boston: Allyn & Bacon.
- Miller, W., & Wilbourne, P. (2002). Mesa Grande: A methodological analysis of clinical trials of treatments for alcohol use disorders. *Addiction*, 97 (3), 265-277.
- Monti, M., Colby, S., Barnett, N. et al. (1999) Brief intervention for harm reduction with alcohol-positive older adolescents in a hospital emergency department. *Journal of Consulting and Clinical Psychology*, 67 (6), 989-994
- Mueser, K., Drake, R., & Miles, K. (1997). The Course and Treatment of Substance Use Disorder in Persons with Severe Mental Illness. In Onken, L.S., Blane, J.D., Genser, S., & Horton, A.M. (Eds.), *Treatment of Drug-Dependent Individuals with Comorbid Mental Disorders*. National Institute on Drug Abuse Research Monograph 172: U.S. Department of Health and Human Services.
- National Clearinghouse for Alcohol and Drug Information. (1993). *Treatment of Adolescents with Substance Use Disorders, updates TIP 4*. Substance Abuse & Mental Health Services Administration (SAMHSA).
- National Institute on Drug Abuse (NIDA). (1999). *Principles of Drug Addiction Treatment: A Research-Based Guide*. National Institute of Health.
- New Freedom Commission on Mental Health. (2003). *Achieving the Promise: Transforming Mental Health Care in America. Final Report*. DHHS Pub. No. SMA-03-3832. Rockville, MD.
- Oetting, E., Beauvais, F., & Edwards, R. (1985). *The American drug and alcohol survey*. Ft. Collins, CO: Rocky Mountain Behavioral Science Institute, Inc.
- Ouimette, P. (2007). *Co-Occurring Mental Health & Substance Abuse Disorders*. Washington State University Spokane, the Washington Institute for Mental Illness Research & Training. [Online]. Available: <http://www1.dshs.wa.gov/pdf/hrsa/mh/cobestpract.pdf>. [September 2010]. *Not available May 2013*.
- Patton, G., McMorris, J., Taumbaurou, W., Hemphill, S., Donath, S., & Catalano, R. (2005). Puberty and the onset of substance use and abuse. *Journal of the American Academy of Child and Adolescent Psychiatry*, 44 (5), 460.
- Riggs, P. (2003). Treating adolescents for substance abuse and comorbid psychiatric disorders. *Science & Practice Perspectives*. University of Colorado School of Medicine.
- Schmidt, S., Liddle, H., & Dakof, G. (1996). Effects of Multidimensional Family Therapy: Relationship of Changes in Parenting Practices to Symptom Reduction in Adolescent Substance Abuse. *Journal of Family Psychology*, 10, 1-16.
- Schneider Institute for Health Policy (2001). Substance abuse: The nation's number one health problem. *Robert Wood Johnson Foundation*. [Online]. Available: <http://www.rwjf.org/en/research-publications/find-rwjf-research/2001/02/substance-abuse.html>. [May 2013].
- Snyder, H., & Sickmund, M. (2006). *Juvenile Offenders and Victims: 2006 National Report*. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention.



- Stephens, R., Roffman, R., & Curtin, L. (2000). Comparison of extended versus brief treatments for marijuana use. *Journal of Consulting and Clinical Psychology* 68, 898-908.
- Substance Abuse and Mental Health Services Administration (SAMHSA). (1997). National Advisory Council. *Improving Services for Individuals at Risk of, or with, Co-Occurring Substance-Related and Mental Health Disorders: A SAMHSA Conference Report and a National Strategy*. U.S. Department of Health and Human Services. [Online]. Available: <http://oas.samhsa.gov/nsduh/2k7nsduh/2k7Results.pdf>. [May 2013].
- Substance Abuse and Mental Health Services Administration (SAMHSA). (1999). *The Relationship between Mental Health and Substance Abuse among Adolescents*. Office of Applied Studies. U.S. Department of Health and Human Services.
- Substance Abuse and Mental Health Services Administration (SAMHSA) (2007). *National Survey on Drug Use and Health, 2007*. [Online]. Available: <http://oas.samhsa.gov/nsduh/2k7nsduh/2k7Results.pdf>. [May 2013].
- Szapocznik, J., Rio, A., Murray, E., Cohen, R., Scopetta, M., Rivas-Vazquez, A., Hervis, O., Posada, V., Kurtines, W. (1989). Structural family versus psychodynamic child therapy for problematic Hispanic boys. *Journal of Consulting and Clinical Psychology*, 57, 571-578.
- U.S. Department of Health and Human Services. (1999). *Mental Health: A Report of the Surgeon General*. Rockville, MD.
- U.S. Department of Health and Human Services (2007). *The Surgeon General's Call to Action to Prevent and Reduce Underage Drinking*. U.S. Department of Health and Human Services, Office of the Surgeon General.
- Vega, W., Zimmerman, R., Warheit, G., Apospori, E., & Gil, A. (1993). Risk factors for early adolescent drug use in four ethnic and racial groups. *American Journal of Public Health February*, 3 (2).
- Waldron, H., Slesnick, N., Brody, J., Turner, C., & Peterson, T. (2001). Treatment outcomes for adolescent substance abuse at 4- and 7-month assessments. *Journal of Consulting and Clinical Psychology*, 69, 802-813.
- Wanberg, K. (1992). *Adolescent Self Assessment Profile*. Arvada, CO: Center for Alcohol/Drug Abuse Research and Evaluation.
- Walton, M. (2001). Diversity in Relapse Prevention Needs: Gender and Race Comparisons Among Substance Abuse Treatment Patients. *American Journal of Drug and Alcohol Abuse*, 27, 225-240.
- White, A. (2004). *Alcohol and the Adolescent Brain*. Department of Psychiatry, Duke Medical Center. [Online]. Available: <http://www.duke.edu/~amwhite/Adolescence/adolescent5.html>. *Not available July 2010*.
- Winters, K. (1999). *Screening and assessing adolescents for substance use disorders. Treatment Improvement Protocol (TIP) Series 31*. Rockville, MD: Substance Abuse and Mental Health Services Administration.
- Winters, K., & Henly, G. (1989). *Personal Experience Inventory (PEI) Test and Manual*. Los Angeles, CA: Western Psychological Services.
- Winters, K., & Henly, G. (1993). *Adolescent Diagnostic Interview Schedule and Manual*. Los Angeles, CA: Western Psychological Services.



## **Additional Resources**

*Stop Underage Drinking*, a Portal of Federal Resources  
Underage Drinking Prevention: Resources for Town Hall Meetings  
<http://www.mentalhealthamerica.net>

Substance Abuse and Mental Health Services Administration (SAMHSA). (1997). National Advisory Council. *Improving Services for Individuals at Risk of, or with, Co-Occurring Substance-Related and Mental Health Disorders: A SAMHSA Conference Report and A National Strategy*. U.S. Department of Health and Human Services.

Virginia Governor's Office for Substance Abuse Prevention (GOSAP)  
*A Parent's Guide to Underage Drinking*  
<http://www.publicsafety.virginia.gov/UnderAgeDrinking.pdf>

## **Organizations**

### **Mid-Atlantic Addiction Technology Transfer Center (ATTC)**

VCU Department of Psychiatry  
P.O. Box 980469 — Richmond, VA 23298-0469  
[http://www.attcnetwork.org/regcenters/index\\_midatlantic.asp](http://www.attcnetwork.org/regcenters/index_midatlantic.asp)

### **National Alliance for the Mentally Ill (NAMI)**

Colonial Place Three, 2107 Wilson Boulevard, Suite 300 — Arlington, VA 22201-3042  
<http://www.nami.org>

### **National Institute on Alcohol Abuse and Alcoholism (NIAAA)**

6000 Executive Boulevard, Willco Building — Bethesda, MD 20892-7033  
<http://www.niaaa.nih.gov>

### **National Institute on Drug Abuse (NIDA)**

6001 Executive Boulevard — Bethesda, MD 20892-9561  
<http://www.drugabuse.gov>

### **Mental Health America (MHA)**

2000 North Beauregard Street, 6th Floor — Alexandria, VA 22311  
<http://www.mentalhealthamerica.net>

### **Substance Abuse and Mental Health Services Administration (SAMHSA)**

U.S. Department of Health and Human Services  
5600 Fishers Lane — Rockville, MD 20857  
<http://www.samhsa.gov>

### **Virginia Department of Behavioral Health and Developmental Services (DBHDS)**

Office of Substance Abuse Services — P.O. Box 1797 — Richmond, VA 23219  
<http://www.dbhds.virginia.gov/OSAS-default.htm>

### **Virginia Governor's Office for Substance Abuse Prevention (GOSAP)**

P.O. Box 1475 - 202 North Ninth Street, Fourth Floor — Richmond, VA 23219  
<http://www.gosap.governor.virginia.gov>