



Department of  
**Mental Health &  
Substance Abuse Services**



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**Substance Use Best Practice Tool  
Guide**

**DEFINING SUBSTANCE  
USE DISORDERS**

Division of Clinical Leadership in Collaboration with the  
Division of Substance Use Services

## Defining Substance Use Disorders

Substance use (SU) is a more comprehensive term than drug use that encompasses not only use of drugs, but excessive or illegal use or misuse of any substance. Many of the substances being excessively, illicitly, or inappropriately used had their legal acceptability stripped as information regarding their unpleasant and/or dangerous effects were amassed. Some substances retained their legal status but carry warning labels about their deleterious side effects. Some substances have always been illegally produced and marketed, only available on the black market. Many legal substances are traded on the black market as well (Casey, 1978). Resources such as the Diagnostic and Statistical Manual, Fifth Edition (DSM-5) and the Treatment Episode Data Set (TEDS) are commonly used to define substance use disorders (SUDs). The DSM-5 manual provides the standard classification of behavioral health disorders for professionals across the country (American Psychiatric Association Web site, n.d.; NIDA, 2014). It focuses on diagnoses. TEDS, on the other hand, is an admissions-based system.

### Diagnostic and Statistical Manual (DSM)-5: Substance Use Disorders (SUDs) Classifications

As the standard classification of mental disorders, including substance-related disorders, the intent of the DSM was to be applicable in a wide array of contexts and for use by diverse clinicians and researchers of many different orientations (e.g., psychodynamic, biological, behavioral, cognitive, interpersonal, or family/systems). This most recent version, the DSM-5, has been designed for use across clinical settings (outpatient, inpatient, partial hospital, clinic, private practice, primary care, and consultation-liaison), with community populations. It can be used by a wide range of health and behavioral health professionals, including psychiatrists and other physicians, psychologists, nurses, social workers, occupational and rehabilitation therapists, and counselors. The DSM is also a necessary tool for collecting and communicating accurate public health statistics (American Psychiatric Association Web site, n.d.). The fifth edition of the Diagnostic and Statistical Manual (DSM-5) includes a wealth of changes to definitions of psychiatric disorders, including substance-related disorders. For example, there is no more distinction between abuse and dependence in the DSM-5 (American Psychiatric Association, 2013; Grohol, 2013). The categories of substance abuse and substance dependence were combined into a single overarching disorder known as substance use disorders (SUDs) (MDHS/ADAD, 2013). Moreover, the threshold for substance use disorders (SUDs) is now at least two (2) criteria. In the DSM-IV-TR, one or more criteria were required for a diagnosis of abuse and at least three (3) criteria were necessary for a diagnosis of dependence. Craving (a strong desire/urge to use a substance) was added as a criterion and “recurrent legal problems” was deleted. In addition, criteria for SUDs are accompanied by criteria for intoxication. Polysubstance dependence, caffeine use disorder\*, and the physiological subtype have also been deleted. (\*Caffeine use disorder is included in Section III of the DSM-5 so that further research to support it as a clinically significant disorder is encouraged.) Cannabis withdrawal and caffeine withdrawal were added as new diagnoses. Severity was defined by three (3) categories: mild (two to three criteria); moderate (four to five criteria); and severe (at least six criteria). Even the title for the disorder was expanded to include addictive disorders (American Psychiatric Association, 2013;

Grohol, 2013). However, this discussion will focus solely on SUDs and omit substance-induced disorders and addictive disorders.

Substance use disorders (SUDs) per the DSM-5 comprise a cluster of physiological, cognitive, and behavioral symptoms which indicate an individual continues to use a substance despite substantial substance-related problems. A salient feature of SUDs is the underlying change in brain pathways that may continue to be evident well after detoxification, particularly when the SUD is severe. The diagnosis of SUD can be applied to nine (9) classes of drugs: 1) Tobacco; 2) Cannabis; 3) Inhalants;

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4) Stimulants; 5) Opioids; 6) Alcohol; 7) Hallucinogens; 8) Sedatives, hypnotics, and anxiolytics; and 9) Other/Unknown substances. These substances may be obtained over the counter, by prescription, and/or illegally. Behavioral effects of brain changes from use of these substances may become manifest in repeated relapses, as well as intense drug cravings, when people with SUD are

exposed to substance-related stimuli (American Psychiatric Association, 2013).

Criterion A, which encompasses four (4) groupings, contains the primary behaviors to be considered in relation to use of the substance. These groupings address impaired control, social impairment, risky use, and pharmacological criteria. Criteria 1-4 cover impaired control over substance use, Criteria 5-7 focus on social impairment, Criteria 8-9 deal with risky use of the substance, and Criteria 10-11 constitute pharmacological criteria. It should be noted that withdrawal symptoms vary significantly across the classes of substances so separate criteria sets for withdrawal are provided for each class. Clinicians are also admonished not to count symptoms of withdrawal and tolerance that occur during appropriate medical treatment involving prescribed medications when diagnosing an SUD (American Psychiatric Association, 2013).

## **Tobacco Use Disorders (TUDs).**

In the DSM-5, tobacco use disorders (TUDs) are displayed under the heading Tobacco-Related Disorders. These disorders are common in persons who use smokeless tobacco and cigarettes daily. The disappearance of nausea and dizziness after repeated intake, along with more intense effect of tobacco the first time it is used during the day, exemplifies tolerance to the substance. For many persons with the disorder, tobacco relieves or helps with avoidance of withdrawal symptoms that may occur after stopping use. Cravings are often reported when individuals do not smoke for several hours. Some individuals spend excessive amounts of time using tobacco, as can be evidenced by chain-smoking. There are also times when individuals forego important occupational, social, or recreational activities because they take place in tobacco use-restricted areas. Persons with TUD rarely fail to fulfill major role obligations such as work or home responsibilities, and neither do they spend inordinate amounts of time trying to procure tobacco. They may have persistent interpersonal or social problems or engage in use that is physically hazardous, e.g., smoking in bed

or around flammable materials. Those who endorse these criteria may have a more severe TUD (American Psychiatric Association, 2013).

Cigarettes comprise the most commonly used tobacco product, representing more than 90 percent of nicotine/tobacco use. In the United States, slightly more than one fifth of adults are current cigarette smokers, less than five percent use smokeless tobacco, and less than one percent engage in tobacco use in cigars and pipes. Among adults 18 years of age and older, the 12-month prevalence of nicotine prevalence (DSM-IV) is 13 percent, with similar rates across gender. Prevalence of current nicotine dependence is higher among Native American and Alaska Natives than among Whites (23 percent versus 14 percent). Lower prevalences are found for African Americans (10 percent) and Asian Americans/Pacific Islanders and Hispanics (six percent each).

Experimentation involving tobacco use typically begins in adolescence and around 20 percent are smoking at least monthly by the age of 18 years. A majority of these individuals, though, become daily tobacco users. Moreover, a large portion of persons have met current TUD criteria by late adolescence. While more than 80 percent attempt to quit at some time, 60 percent relapse within a week. Further less than five percent are able to remain abstinent for life. Persons with externalizing personality traits such as young people with conduct disorder or adults with anxiety disorder are more likely to initiate tobacco use, as well as continue use and develop TUD. It appears that persons with low educational levels and low incomes are more likely to begin tobacco use and less likely to quit. There is also a genetic component to TUD (American Psychiatric Association, 2013).

Medical consequences of tobacco use typically shows up when users are in their 40s, becoming progressively more debilitating over time. Most of the medical conditions result from exposure to tars, carbon monoxide, and other non-nicotine components of tobacco. Fifty percent of smokers who fail to quit will die early from a tobacco-related illness. Present evidence suggests that long-term use of nicotine medications do not cause medical harm (American Psychiatric Association, 2013).

## **Cannabis Use Disorders.**

The DSM-5 lists this disorder under the heading Cannabis-Related Disorders. It includes problems associated with substances derived from the cannabis plant and synthetic compounds that are chemically similar. The concentrated extraction known as hashish is also included. The potency of cannabis varies greatly, ranging from one to 15 percent in usual cannabis plant material 10 to 20 percent in hashish. However, a steady increase in potency has been observed in seized cannabis over the last 20 years. Sometimes cannabis use disorder is the sole diagnosis involving cannabis users. Frequently, though, cannabis use disorders (CUD) show up concurrently with other substance use disorders, e.g., alcohol use disorder, etc.). When polysubstance use is involved, symptoms related to cannabis use may be minimized. People who report using cannabis persistently typically report behavioral and pharmacological tolerance to most effects,

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though tolerance is lost when cannabis use is stopped for at least several months, e.g. (American Psychiatric Association, 2013).

Some individuals with CUD spend many hours each day under the influence while use throughout the day may take place over a period of months or years for others. Even those who use less frequently may still experience recurrent problems related to school, work, family, and other important activities. A common feature of CUD includes arguments with parents or significant others over the use of cannabis in the home or in the presence of children that result in impaired family functioning. Moreover, persons with CUD may keep using despite knowing about the psychological and physical problems linked with its use.

Often noted is the fact that cannabis use contributes to the worsening of symptoms in persons diagnosed with other mental disorders as well as other increased psychological and/or physiological problems such as difficulty sleeping, change in mood, etc. Also some users of cannabis resort to minimization of the frequency and/or amount of their use, so it is extremely important to be cognizant of common symptoms and signs pointing to the disorder. Similar to other substances, experienced cannabis users develop pharmacological and behavioral tolerance, making it difficult to detect when they are indeed under the influence. Nevertheless, signs of acute and chronic use comprise yellowing of finger tips, chronic cough, red eyes, odor from the substance on clothing, the burning of incense, and exaggerated impulse/craving for certain foods, sometimes at strange times of the day or night (American Psychiatric Association, 2013).

Without a doubt, cannabinoids, and particularly cannabis, are the most widely used illegal psychoactive substances in the United States. The 12-month prevalence rate is about 1.5 percent among adults at least 18 years of age and 3.4 percent among 12-to-17-year olds. Rates are higher among males than females across adults and young people. As expected, the highest 12-month prevalence rates are for 18 to 29 year olds, with the lowest rates for persons 65 years of age and older. For adults, Native Americans and Alaska Natives demonstrate the greatest 12-month prevalence (3.4 percent). Rates are also highest among Native Americans and Alaska Natives (7.1 percent) for 12-to-17-year olds (American Psychiatric Association, 2013).

Onset of CUD happens most frequently during adolescence or young adulthood. Cannabis use disorder (CUD) typically develops over time, where pervasive patterns show gradual increases in amount and frequency. Among one of the first substances that young people try, the belief that cannabis is not as harmful as tobacco or alcohol likely contributes to its increased use. Moreover, it has been suggested that trends in onset rates be regularly re-evaluated in light of use and availability of “medical marijuana”. Clearly the best predictor of CUD is early onset cannabis use (i.e., use before the age of 15 years). This early use correlates highly with externalizing behaviors, especially conduct disorder (American Psychiatric Association, 2013).

The distinction between problematic and nonproblematic use of cannabis can be extremely difficult to make, especially when people report using a variety of substances, including cannabis. It is also true that acute adverse reactions to cannabis should be distinguished from the symptoms of major depressive disorder, bipolar disorder, delusional disorder, panic disorder, or schizophrenia. Chronic cannabis use can lead to a lack of motivation that resembles dysthymia. Of course, urine tests can be helpful in making the diagnosis (American Psychiatric Association, 2013).

Synthetic marijuana, otherwise known as Spice, K2, Skunk, or Moon Rocks, has been soaring in popularity in recent years. It has been marketed as a safer alternative to traditional marijuana, but the drug is dangerous and can be deadly. Since 2009, these drugs have killed more than one thousand Americans, many of them high school students. The psychoactive ingredients in synthetic marijuana bind to the brain's CB1 receptors and are very likely to cause everything from seizures to psychosis because of its potency (Brodwin, 2015).

The Drug Enforcement Administration (DEA) in the United States Department of Justice issued a statement prohibiting the production, possession, and sale of any of the five different chemicals that are used to produce fake marijuana. This action also made byproducts such as K2 and Spice illegal. Makers of synthetic marijuana frequently and rapidly change up the specific ingredients and produce the drug in such massive quantities, making drug enforcement tough (Brodwin, 2015).

## **Inhalant Use Disorders (IUDs).**

Inhalant-Related Disorders is the header that captures Inhalant Use Disorder (IUD) in the DSM-5. Inhalants can be defined as chemical vapors that individuals inhale on purpose to get “high” (NIDA for Teens, 2012). The National Survey on Drug Use and Health (NSDUH), administered to persons 12 years of age and older regarding their use of specific substances in the past month as well as the past year, defines inhalants as ‘liquids, sprays, and gases that people sniff or inhale to get high or to make them feel good.’ These substances are legal, harmless when used as intended, and found in many typically used products such as glue and spray paint (The NSDUH Report, March 2014). Many problems associated with the use of other substances can be manifested in inhalant use. Mild withdrawal and tolerance are each reported by close to 10 percent of people who use inhalants. Among adults reporting previous episodes of anhedonia or low mood, inhalant use disorder (IUD) is associated with past suicide attempts (American Psychiatric Association, 2013).

When all Americans 18 years of age and older are considered, prevalence for IUD is 0.02 percent. It increases to 0.1 percent for persons in the 18-29 year-old age group and nears one half of one percent for American youth ages 12-17 years. IUD in adults includes almost no females and is comprised of predominantly European Americans. In adolescents, prevalence is highest in Native Americans. Prevalence of IUD declines after adolescence, often remitting in early adulthood (American Psychiatric Association, 2013). Adolescent trends showed encouraging rates of decline between 2002 and 2012. In fact, past year inhalant use among 12- to 17-year-olds has been on the

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decline since 2006. Moreover, 2012 reflected the lowest rate in any year from 2002. Rates for male adolescents (12 to 17 years) also showed statistically significant declines compared to the 2011 rate (The NSDUH Report, 2014).

Among the most commonly used inhalants for 12 to 17 year olds include shoe polish, glue, gasoline, and spray paints. Nearly 20 percent of the young people who use inhalants develop IUD. Call to poison centers for intentional abuse of inhalants tend to spike for people around 14 years of age. If the IUD extends into adulthood, there are typically severe

problems for the individual, including suicidal ideation with attempts, antisocial personality disorder, and SUDs (American Psychiatric Association, 2013).

There are numerous signs and symptoms that may lead clinicians to consider the “IUD” diagnosis. In some instances, criteria for inhalant use disorder cannot be met, i.e., less than two criteria are present. Moreover, symptoms associated with IUD can manifest while using other substances, especially sedating substances such as alcohol, barbiturates, etc., hence making it difficult to diagnose the inhalant use disorder (IUD). Further, people with IUD may present with symptoms of neoplastic, metabolic, infectious, or toxic disorders that impair peripheral or central nervous system function or disorders that have damaged other organs such as renal damage. It should be noted that individuals can show inhalant intoxication and use without meeting criteria for IUD. However, IUD should not be considered as a diagnosis when there has been continuous/repeated exposure to inhalants but history or individual reports do not support intentional inhalant use (American Psychiatric Association, 2013).

In general, people with IUD who are receiving clinical care have many other substance use disorders. In adults, IUD typically co-occurs with antisocial personality disorder. Comorbidity in adolescents is linked to conduct disorder (American Psychiatric Association, 2013).

## Stimulant Use Disorders.

The header Stimulant-Related Disorders includes stimulant use disorders (StUDs) in the DSM-5. Amphetamine and amphetamine-type stimulants as well as substances with similar effects though structurally different (e.g., methylphenidate) fall under the category of StUDs. The substances are most often taken through the mouth or intravenously, but other routes of administration might also be used. Tolerance develops with repeated use; however, onset of StUDs tends not to be overly rapid (e.g., within a week). Violent or aggressive behavior tends to be common when high doses are taken.

Higher-dose use may also be linked to the psychotic episodes and paranoid ideation that resemble schizophrenia as well as anxiety that resembles generalized anxiety disorder or panic disorder.

People with StUD commonly develop conditioned responses to substance-related stimuli, e.g., craving at the sight of any white powderlike substance. It is these responses that contribute to relapse, are extremely hard to quench, and continue well after detoxification (American Psychiatric Association, 2013).

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As with many SUDs, prevalence rates for StUDs of the amphetamine type are highest in Native Americans and Alaska Natives (0.6 percent) among adults. On the other hand, Whites and African Americans demonstrate the highest prevalence rates (0.3 percent) among 12 to 17 year olds. Prevalence rates for cocaine-based StUDs tend to show similar patterns. Native Americans demonstrate the highest rates (0.8 percent) for adults. For 12 to 17 year olds, Hispanics, Whites,

Pacific Islanders tend to exhibit comparable rates (0.2 percent). Surprisingly, StUD involving cocaine is virtually nonexistent for adolescent Native Americans and Alaska Natives. Regardless the type of StUD, 12-month prevalence rates are higher among young adults in the 18 to 29 year age range (American Psychiatric Association, 2013).

Stimulant use disorders (StUDs) occur at all levels of society. However, first regular use (based on data from individuals in treatment) tends to occur around 23 years of age. The average age increases to 31 years for primary methamphetamine treatment admissions (American Psychiatric Association, 2013). Use tends to be related to the perceived need for performance enhancement at work, athletics, or school or for weight control. Chronic daily use can involve low or high doses, but higher dosages tend to accompany longer periods of use. StUD develops more rapidly and takes on greater severity when the stimulants are taken intravenously or smoked (American Psychiatric Association, 2013).

In particular, the effects of stimulants should be distinguished from the symptoms of generalized anxiety disorder, panic disorder, schizophrenia, and depressive/bipolar disorders. The clinical picture of StUDs can also look like intoxication with phencyclidine or synthetic ‘designer drugs’. Often StUDs co-occur with other SUDs involving substances with soporific properties. Users of amphetamine-type stimulants generally use cannabis while cocaine users prefer alcohol. StUD can be linked to gambling disorder, antisocial personality disorder, attention-deficit/hyperactivity disorder, and posttraumatic stress disorder. Persons seeking treatment for cocaine-related problems many times present with cardiopulmonary problems, with the most common being chest problems (American Psychiatric Association, 2013).

Synthetic stimulants are on the rise as substances of use/misuse, especially in areas throughout Florida, Ohio, Texas, and Tennessee. The schedule I controlled substance,  $\alpha$ -PVP ( $\alpha$ -pyrrolidinovalerophenone) and known on the street as “flakka” or “gravel”, is the new culprit. The drug can be eaten injected, snorted, or vaporized in e-cigarettes. It is easily purchased over the Internet and has been nicknamed “\$5 insanity” because it’s cheap and precipitates bizarre behaviors in its users. User experiences range from hallucinations, paranoia, agitation, and bizarre behaviors to delusions of extraordinary strength. When delirious the user may become a danger to others as well as to himself/herself. He/she will usually vigorously struggle, with consequences including seizures, arrhythmias, and death. That is why healthcare providers and law enforcement have been admonished to be cautious when restraining individuals that have used this drug (McMillen, 2015). Users refer to flakka as “meth on steroids” (Little, 2015).

Bath salts or synthetic cathinones are another amphetamine-like stimulant. Many of the behaviors reported with flakka are associated with bath salts. These drugs are typically taken orally, inhaled, or injected. The worst outcomes have been linked to snorting the drug or through needle injection. Furthermore, these drugs contain a lot of unknown ingredients (NIDA, 2012b). In our country, bath salts have been linked to an alarming number of visits to emergency departments and/or calls to poison control centers (NIDA, 2012b; RxList, 2013).

## **Opioid Use Disorders.**

These disorders are shown under the header Opioid-Related Disorders in the DSM-5 (American Psychiatric Association, 2013). Opioids are medications used to eliminate pain. Substances such as



codeine, hydrocodone, oxycodone, and morphine fall within this drug class (NIDA, 2013). Opioids are often purchased on the illicit market but may also be obtained via prescription. In some cases, the prescription is legitimate but in other cases, prescriber name and/or dosage amount have been altered. Opioid Use Disorders (OUDs) comprise signs and symptoms of prolonged, compulsive self-administration of opioids that are used in doses much larger than needed for a particular medical condition or for which there is no legitimate medical use purpose. Withdrawal tends to

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It has been reported that the increased (opioid) abuse coincides with the availability of high purity heroin and the controversial campaign against the undertreatment of pain (Preda, 2014).

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accompany abrupt discontinuation of opioids (American Psychiatric Association, 2013).

Use and abuse of opioids have risen markedly in our country. It has been reported that the increased (opioid) abuse coincides with the availability of high-purity

heroin and the controversial campaign against the undertreatment of pain. The problem is dramatically illustrated by the following statistics.:

Americans consume:

- Approximately **80** percent of the world's opioid supply but comprise less than **five** percent of the world's population.
- **99** percent of the world's hydrocodone supply.
- About **67** percent of the world's illicit drugs (Preda, 2014).

Prevalence rates tend to be higher for males than females, 3 to 1 for opioids involving heroin and 1.5 to 1 for opioids excluding heroin. However, female adolescents have a greater likelihood of developing OUDs than males. Community 12-month prevalence rates for adults (at least 18 years of age) are almost 0.4 percent. The rates are lower among adolescents in the community population (ages 12-17). Overall, the rate for adolescents is around 1.0 percent, with rates for heroin use substantially lower (less than 0.1 percent). Prevalence of OUD tends to decrease with age, though there is overrepresentation among adult Native Americans (1.25 percent). It should be noted that 12-month prevalence rates for OUDs may be underestimated because of the high number of persons with the disorder that are incarcerated (American Psychiatric Association, 2013).

OUD typically becomes problematic in the late teens or early 20s (American Psychiatric Association, 2013). Two thirds of teens and young adults who use prescription opioids get them from

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family and friends, often for free when sharing medication or without their families or friends knowing (NSDUH, 2011). In general, OUD continues for many years once developed, despite brief periods of abstinence. Relapse following abstinence is quite common, even in treated populations. Only about 20 to 30 percent of persons with OUD demonstrate long-term abstinence. Military service personnel are the exception. For example, better than 90 percent of the opioid users that served in the military in Vietnam achieved abstinence after they returned home. Unfortunately, many of these military service personnel also experienced increased rates of amphetamine or alcohol consumption use disorder, along with elevated rates of suicidality. Early death and symptom remission after 40 years of age contribute to the decrease in prevalence in later years. Nevertheless, many persons with OUD continue to meet criteria for the disorder for decades (American Psychiatric Association, 2013).

Unlike most other substances of abuse, opioids are less likely to produce symptoms of mental disturbance. Viral (e.g., hepatitis C virus, HIV, etc.) and bacterial infections are commonly associated with OUDs, especially when the substances are injected. Persons with OUD are further at risk for the development of mild to moderate depression (e.g., dysthymia), at minimum, as well as the more severe major depressive disorder (MDD). Individuals with OUD also have insomnia. Antisocial personality disorder occurs with greater frequency in persons with OUD as well as posttraumatic stress disorder. A history of conduct disorder in youth is a significant marker for OUD in adulthood (American Psychiatric Association, 2013).

## **Alcohol Use Disorders.**

Alcohol use disorders (AUDs) are found under the heading Alcohol-Related Disorders in the DSM-5. They are associated with problems related to other substances, in most instances, because alcohol is either used to substitute for the other substances when they are not available or to assuage the unwanted effects of the other substances. Repeated intake of high doses of alcohol especially affects the gastrointestinal tract, the central and peripheral nervous systems, and the cardiovascular system. There is also an increased rate of completed suicide and suicidal behavior in persons with these disorders (American Psychiatric Association, 2013).

There are three flavors of the disorder--mild, moderate and severe, and a total of 11 possible symptoms associated with the disorder. Two symptoms are necessary for the disorder to be classified as mild, four symptoms must be present for a moderate specifier, and at least six symptoms are needed to achieve a severe specifier. Persons showing tolerance and withdrawal are presenting with a mild alcohol use disorder. If individuals drink only in a binge-like manner such that tolerance and withdrawal do not develop to a level that either can be counted, the presentation falls in the moderate range. Binge-like drinking where tolerance and withdrawal are counted results in a more severe presentation of the disorder (Gitlow, 2013).

Not surprising, alcohol use disorder (AUD) is a very common disorder. The 12-month prevalence in the United States is estimated to be 8.5 percent among adults at least 18 years of age and 4.6 percent among 12-to-17-year olds. Rates are higher among adult men than adult women and lowest among persons at least 65 years of age. For adults, Native Americans and Alaska Natives demonstrate the greatest 12-month prevalence (12.1 percent). Rates are highest among Hispanics

and Native Americans and Alaska Natives (6.0 percent and 5.7 percent respectively) for 12-to-17-year olds American Psychiatric Association, 2013).

AUD has a variable course. A person may decide to stop drinking, likely in response to a crisis, with weeks of abstinence and limited periods of controlled/nonproblematic drinking. However, consumption is likely to escalate once drinking is resumed and severe problems will again re-appear. In young people, conduct disorder typically co-occurs with AUD (American Psychiatric Association, 2013).

Differential diagnosis of AUD includes nonpathological use of alcohol; sedative, hypnotic, or anxiolytic use disorder; and conduct disorder in childhood /adult antisocial personality disorder. Schizophrenia, antisocial personality, and bipolar disorders are linked to markedly increased rate of AUD. Depressive disorders and several anxiety disorders are also possibly related to AUD (American Psychiatric Association, 2013).

## **Hallucinogen-Related Disorders, Specifically Phencyclidine Use Disorders.**

Under hallucinogens, this section will focus specially on phencyclidine use disorders (PUDs). Substances associated with PUDs consist of phencyclidine (often referred to as angel dust or PCP) as well as less potent, similarly acting compounds such as cyclohexamine, dizocilpine, and ketamine. Showing up as street drugs in the 1960s, these substances produced feelings of separation from the body and mind in low doses, and coma/stupor at higher doses. PUDs take eight (8) days or more to be totally eliminated from the body. However, the hallucinogenic effects may last for weeks in certain individuals and episodes resembling schizophrenia may become persistent (American Psychiatric Association, 2013).

Prevalence estimates for phencyclidine use disorder (PUD) are less firm than for other substances. Nearly 2.5 percent of the population reports ever using phencyclidine. Rates range from less than 0.5 percent for adolescents 12 to 17 years old to about 3.0 percent for adults at least 26 years of age. A spike occurred in past-year use and ever used categories for 12<sup>th</sup> graders. It should also be noted that persons admitted to substance use treatment facilities with phencyclidine as their primary substance tended to be younger and less educated than admissions for other

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substance use. Moreover, admissions with phencyclidine as the primary are more likely found in the Northeast and West region of the United States (American Psychiatric Association, 2013).

It will be important to distinguish the effects of phencyclidine from those of other substances. However, phencyclidine is often an additive to substances such as cocaine and cannabis. In addition, it will be paramount that clinicians be able to discern whether behaviors associated with

other psychiatric disorders occurred before the intake of phencyclidine (American Psychiatric Association, 2013).

## **Sedative, Hypnotic, and Anxiolytic Use Disorders.**

Sedative, hypnotic, and anxiolytic use disorders (SHAUDs) are displayed under the header Sedative-, Hypnotic-, or Anxiolytic-Related Disorders in the DSM-5. Among the substances linked to SHAUDs are carbamates, barbiturates and barbiturate-like hypnotics, and benzodiazepines and benzodiazepine-like drugs. This class of substances includes practically all prescription antianxiety medications as well as all prescription sleeping pills. The substances can be obtained legally or illegally. Misuse may occur through overuse of the substance alone or in conjunction with other substances, e.g., methadone. As with other substances that might be available through prescription, it is necessary to determine whether they were appropriately prescribed and used. Tolerance to brain stem depressant effects will develop much more slowly. Sudden onset hypotension and respiratory depression that may lead to death can occur as the individual increases intake of the substance to achieve euphoria and/or other desired effects (American Psychiatric Association, 2013).

The 12-month prevalences tend to be slightly higher for males in adulthood but higher for females among the 12 to 17 year olds. Native Americans and Alaska Natives have the greatest 12-month prevalence (0.8 percent) as adults. Whites have the greatest rates (0.3 percent) for adolescents 12 to 17 years of age (American Psychiatric Association, 2013).

The typical course of SHAUD involves young people in their teens or early 20s who expand their occasional illegal use to the point at which they develop problems that meet criteria for diagnoses. Another less traveled clinical course involves a prescription from a physician, usually to treat insomnia, anxiety, or somatic complaints. As the need for higher doses develops, individuals begin to self-administer to the point that substance-seeking behavior becomes the norm (American Psychiatric Association, 2013).

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It is important that SHAUD be differentiated from alcohol use disorder (AUD). It is also possible that some features of SHAUD may be the result of prior head trauma (e.g., subdural hematoma) or another medical condition (multiple sclerosis, e.g.). Finally, be clear that continued use of these drugs over four weeks is rarely indicated (American Psychiatric Association, 2013).

## Other/Unknown Substance Use Disorders.

Other (or Unknown) Substance-Related Disorders is the header for other (or unknown) substance use disorder (O/U SUD) in the DSM-5. Substances associated with these disorders do not readily fit into a class of drugs that are the focus of this section. In many cases, the substances are unrelated to the standard drug classes. For example, cortisol, antiparkinsonian medications, anabolic steroids, anti-inflammatory drugs, nitrous oxide, etc. are captured in this class. Also included are substances which cannot be identified either by the individual or because they are sold under fake names. O/U SUDs are mental disorders for which repetitive use of unknown and/or other substances continues, even when the person knows the substance(s) creates serious problems for him or her. The

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Support for an “other/unknown substance use disorder” diagnosis may be based on a person’s statement that the substance is not from one of the nine classes of drugs (American Psychiatric Association, 2013).

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problems must be reflected in the diagnostic criteria. Support for an O/U SUD diagnosis may be based on a person’s statement that the substance is not from one of the nine classes of drugs. Symptom characteristics can also suggest an unidentified substance. Moreover, suicide risks may be as prominent as with known substances. However, there is no evidence of unique risk

factors associated with the anonymity/uncertainty of the substance(s) linked to the disorder (American Psychiatric Association, 2013).

Prevalence data are limited but estimations suggest rates are lower than for any of the known substance classes. Course of development is not singly focused either. More often than not, O/U SUD gets re-classified once the other or unknown substance has been identified (American Psychiatric Association, 2013).

O/U SUD as a diagnosis in adolescence may be more difficult to assign because much of the use does not meet the standard of two or more criteria in the past year. Consistent with use of other substances, use of other/unknown substances typically does not occur in a vacuum. Most often these substances are taken concurrently with other substances. Thus, it becomes very important to inquire regarding symptoms that persist when some of the other substances are not being used. O/U SUD should be distinguished from sleep disorder, major/mild neurocognitive disorder, psychotic disorder, delirium, anxiety disorder, depressive disorder, or sexual dysfunction. Medical disorders may also be present with O/U SUD (American Psychiatric Association, 2013).

## Substance Use Disorders (SUDs) in Treatment Episode Data Set (TEDS)

The Treatment Episode Data Set (TEDS) yields information on the demographic and substance abuse characteristics of admissions to treatment of persons ages 12 and older for abuse of alcohol and/or drugs in facilities that report to individual State administrative data systems. Our state’s alcohol and drug information system, Tennessee Web-based Information Technology System, is

affectionately known as TN WITS (Personal communication, July 7, 2014). TEDS is not a measure of the number of individuals that have been admitted to treatment. Instead TEDS is an admission-based system. This means that persons who have been admitted three times within a calendar year would be counted as three admissions (SAMHSA/CBHSQ, 2013).

Demographic information is comprised of variables such as transaction type (i.e., whether admission; transfer, or discharge); type of service; whether the substance is a primary, secondary or tertiary problem; previous treatment history as well as the frequency of use, route of administration, and age of first use; and typical demographics such as age, ethnicity, race, employment, gender, and education. Substance problems can be reported for any of the following drugs at the primary, secondary, and/or tertiary level (SAMHSA/CBHSQ, 2013):

### 1. Alcohol (SAMHSA/CBHSQ, 2013)

Alcohol consumption is a leading culprit in mortality and morbidity related to both unintentional and intentional (i.e., violence-related) injuries (Cherpitel, 2013).

Tennessee's drunk driving statistics provide data on persons in an alcohol-related crash but not driving a motor vehicle at the time. In 2012, slightly better than one third of fatalities involved alcohol-related crashes and nearly 85 percent of the crashes involved blood alcohol concentration levels at or greater than the legal limit (i.e., 0.08) (alcoholalert.com, n.d.).

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It has only been since the second half of the 20<sup>th</sup> century that the negative consequences of alcohol use during pregnancy have been known (Kvigne, Leonardson, Borzelleca, & Welty, 2008; Warren, Hewitt, & Thomas, 2011). In the late 19<sup>th</sup> century, physicians prescribed alcohol to reduce morning sickness and the difficulties of childbirth for pregnant women. By the 1940s, it was believed that alcohol use during pregnancy was not harmful to the fetus. Alcohol has also been used by physicians to delay the onset of labor (Kvigne et al., 2008). However, the detrimental effects of alcohol use during pregnancy are now known and all advisories warn against its use by pregnant women in any amount (CDC, 2005; Ismail, Buckley, Budacki, Jabbar, & Gallicano, 2010).

The cerebral cortex, hippocampus, and cerebellum are especially vulnerable to damage from alcohol abuse. This means possible damage to problem solving and decision-making, memory, and movement coordination (NIDA, 2010).

### 2. Barbituates such as phenobarbital, pentobarbital, secobarbital, amobarbital, etc. (SAMHSA/CBHSQ, 2013)

Barbituates are sedatives that can be helpful with sleep problems, anxiety, and some seizures. Not taking these medications as prescribed can lead to addiction. High doses can negatively impact your breathing, particularly if used when drinking alcohol (Smith, 2013).

3. **Benzodiazepines** include alprazolam, temazepam, triazolam, clonazepam, flunitrazepam, prazepam, oxazepam, diazepam, lorazepam, chlordiazepoxide, halazepam, flurazepam, clorazepate, and other unspecified benzodiazepines (SAMHSA/CBHSQ, 2013). Xanax (alprazolam) and valium (diazepam) are perhaps the two most well-

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**Increases in emergency department visits were associated with non-medical use of alprazolam (SAMHSA, 2014).**

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known examples (Smith, 2013).

Non-medical use of alprazolam (Xanax) was associated with increases in emergency department (ED) visits from 2005 to 2010. While visits in 2011 remained stable, alprazolam was the most commonly prescribed psychiatric medication that year and the 13<sup>th</sup> most commonly sold medication in 2012 (SAMHSA, 2014). A good proportion of the ED visits involved a combination of alprazolam with another drug, often a pain reliever like oxycodone (SAMHSA/CBHSQ, 2013).

Alprazolam slows down movement of chemicals in the brain that may become unbalanced to reduce nervous tension, i.e., anxiety. The medication may be habit-forming and should never be purchased from vendors outside of the United States or on the Internet. There is evidence that medications distributed from the Internet may not be distributed by a licensed pharmacy and/or may contain dangerous ingredients. Tested samples of Internet-purchased alprazolam have been found to contain haloperidol (Haldol). In particular, persons with a history of drug/alcohol addiction, depression, or suicidal thoughts/behaviors should avoid taking alprazolam (Drugs.com, 2012).

#### 4. Cocaine/crack (SAMHSA/CBHSQ, 2013)

Referred to as the “wonder drug” in its early years of appeal in the United States, cocaine was originally freely available in saloons, from mail-order vendors, and even in grocery stores. It was often included in soda pop and some wines before its ill effects were known. President William Taft identified cocaine as “Public Enemy No. 1” and Congress, in 1914, passed the Harrison Act, tightly regulating the distribution and sale of the drug. Its appeal declined dramatically by the late 1950’s, but soon reappeared in the 1960’s (Das, 1993).

Because it is short-acting, cocaine can lead abusers to “binge”, i.e., to ingest the drug numerous times in a single session. Abuse can result in severe medical consequences related to the digestive system, respiratory system, nervous system, and the heart (NIDA, 2010).

## 5. Heroin (SAMHSA/CBHSQ, 2013)

A powerful opiate that produces feelings of relaxation and euphoria, it slows respiration. Its use has also been associated with increased risk of serious infectious diseases such as human immunodeficiency virus infection and acquired immune deficiency syndrome (HIV/AIDS) and hepatitis C, especially when taken intravenously (NIDA, 2010). U. S. physicians used opium as a therapeutic agent for multiple purposes, including to reduce spasms from tetanus. Heroin was synthesized from morphine in the late 1800's and produced commercially by a pharmaceutical company. The plan was for heroin to replace morphine use medicinally but it too was highly addictive and classified as an illegal drug (MethOIDE, n.d.)

Heroin use is on the increase, especially among prescription opioid users and young people. The drug is dangerously addictive, which increases overdose risk. Moreover, users have no control over the purity of the drug injected into their systems and/or its possible contamination with other drugs such as fentanyl. There are further reports that heroin laced with the elephant-tranquilizer carfentanil is being sold on the streets. Carfentanil is 10,000 times more potent than morphine and an analogue of fentanyl (Kounang & Marco, 2016). Thus, the heroin user can never be sure of the amount of active drug(s) being taken. Nationally heroin use has spread into the small towns and suburbs (Volkow, 2014). In Tennessee, heroin use is largely an urban problem.

## 6. Inhalants such as paint thinner, chloroform, ether, nitrous oxide, glue, gasoline, etc. (SAMHSA/CBHSQ, 2013).

These are volatile substances often found in a number of household products. They induce mind-altering effects and are extremely toxic. Inhalants can damage the brain, heart, lungs, and kidneys. Healthy persons can succumb to heart failure and death within minutes of even a single session of prolonged sniffing of an inhalant (NIDA, 2010).

## 7. Marijuana/hashish including THC as well as any other *cannabis sativa* preparations (SAMHSA/CBHSQ, 2013).

One of the most frequently abused illegal substances, marijuana impairs learning and short-term memory, coordination, and the ability to focus attention. It can also increase heart rate, harm the lungs, and exacerbate the risk of psychosis in persons with an underlying vulnerability (NIDA, 2010).

Both marijuana and hashish come from the Cannabis plant. Marijuana, often referred to as “weed”, looks like a greenish herbal mixture. Hashish is typically smoked and has a very pungent, recognizable odor. The drug (hashish) is made from the resin of the plant, which is dried into blocks. The texture of hashish can range from dry and hard like a piece of fudge to moist and pliable like plasticine. Its appearance is so varied that novice users are commonly duped into purchasing licorice or other inexpensive, benign substances that look similar (Hartney, n.d.).



## 8. Methamphetamine (SAMHSA/CBHSQ, 2013)

Methamphetamine is the only illegal substance that can easily be concocted from ingredients that were legally obtained. On the street, it may be referenced as crank, black beauties, bikers' coffee, ice, or meth, among other names (ACOG, 2011; NIDA, 2013). Discovered in Japan in 1919, it could be injected but smoking methamphetamine created the same effects as injecting. In this country, it rose to popularity in California through motorcycle gangs. Today anyone who can read a recipe can manufacture it (Methamphetamines.com, 2013).

Methamphetamine is more potent than amphetamine, its parent compound, with a half-life around 12 hours compared to 60 minutes for cocaine, for instance. It can be ingested orally or anally, injected, smoked, or snorted, but the injected or smoked high is more intense. Short-term, it is associated with increased energy and wakefulness as well as decreased appetite. Meth used can result in hypertension, seizures, even risk of the human immunodeficiency virus (HIV) due to increased sexual activity. Addiction, confusion, memory loss, weight loss, "meth mouth" (severe dental problems), depression, and violent behavior have been linked to long-term use of methamphetamine (ACOG, 2011; NIDA, 2013).

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Users of methamphetamine have elevated levels of psychiatric symptoms and psychological problems (Wright, Schuetter, Fombonne, Stephenson, & Haning III, 2012).

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The age of new methamphetamine users, on average, in 2012 was 20 years (NIDA, 2013). In general, users of methamphetamine have elevated levels of psychiatric symptoms and psychological problems (Wright, Schuetter, Fombonne, Stephenson, & Haning III, 2012).

## 9. Non-prescription methadone (SAMHSA/CBHSQ, 2013)

Non-prescription methadone involves using methadone inappropriately, a reality linked to one in three overdose deaths from prescription painkillers. Methadone is long-acting and can continue to circulate through a person's system after the pain-relieving effects have worn off. Methadone diversion might occur through individuals who have received take-home doses. The drug could end up in the hands of a current methadone client, thereby making his or her daily dosage higher than prescribed, or someone else looking for a "high" (CNN, 2012).

## 10. Other amphetamines such as MDMA, phenmetrazine, amphetamines, and other unspecified amines and related drugs (SAMHSA/CBHSQ, 2013)

Amphetamines are powerful stimulants that can produce alertness and feelings of euphoria. MDMA, also known as ecstasy, produces mind-altering and stimulant effects. It can elevate body temperature, heart rate, blood pressure, and heart wall stress. Ecstasy may additionally be toxic to nerve cells (NIDA, 2010).

First synthesized in 1887 by Edeleanu, a Romanian chemist, amphetamines increase attention and wakefulness and decrease fatigue and appetite. Use may lead to aggressiveness, irritability, delusions of grandeur, superiority, paranoia, power, and psychosis with delusions and hallucinations. Withdrawal symptoms may include somnolence and profound fatigue, which can last for months in heavy and/or chronic users. Abstinence may be associated with suicidal ideation, agitation, and severe anxiety. Users of amphetamines rapidly develop dependence and tolerance. Chronic users may require 10 to 25 tablets in order to achieve effects similar to 2 to 3 tablets for novice users. Polydrug use is also a problem common among amphetamine-users. Reports from the United Nations show amphetamines as the second most commonly abused illegal drug in the world after cannabis, particularly in developing regions of the world (Oei et al., 2012).

Prognosis is bleak for users of amphetamines because many of them fail to perceive their drug of choice as a problem. Thus people who use amphetamines are not likely to engage or stay in treatment. They tend to self-detoxify with legal and illegal substances (Oei et al., 2012).

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Prognosis is bleak for users of amphetamines because many fail to perceive their drug of choice as a problem (Oei et al., 2012).

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Promising research using other stimulants as substitutes to reduce cravings and withdrawal symptoms, akin to the concept of methadone use for opioid dependence is on

the horizon. Users of amphetamines who were treated with modafinil, sought counseling, and did not use other agents demonstrated significant reductions in systolic blood pressure and weight gain. Some antidepressants (e.g., fluoxetine) are showing promise as well but tend to be effective when the user is a male who actively seeks intensive counseling (Oei et al., 2012).

11. **Other hallucinogens** including DMT, STP, LSD, mescaline, peyote, hallucinogens, psilocybin, etc. (SAMHSA/CBHSQ, 2013)

LSD is one of the most potent of the perception-altering drugs of abuse in the United States. Its effects are unpredictable and abusers may “see” vivid images and colors, feel sensations, and hear sounds that seem real but are really nonexistent. Sometimes abusers have traumatic experiences and emotions that last for several hours. Short-term effects might include loss of appetite; sleeplessness; dry mouth; tremors; and increased body temperature, blood pressure, and heart rate (NIDA, 2010).

12. **Other non-barbiturate sedatives or hypnotics** such as ethchlorvynol, methaqualone, chloral hydrate, glutethimide, etc. (SAMHSA/CBHSQ, 2013)

These drugs were developed in the 1950s and later, designed to replace barbiturates in many areas of non-medical and medical use. Most of these sedatives were introduced as “non-barbiturates” to indicate their distinction with barbiturates. However, these “newer” sedatives showed to be much more like barbiturates than was originally realized (Drugtext.org, 2011).

13. **Other non-benzodiazepine tranquilizers**, for example, ambien, lunesta, etc. (SAMHSA/CBHSQ, 2013)

Non-benzodiazepines are sleep medications that are also known as “Z-drugs”. First produced in the late 1980s, they tended to have fewer side effects than benzodiazepines. These medications are potentially addictive and usually prescribed for only a short term, one week to 10 days, but definitely not longer than four weeks (Harding, 2014).

14. **Other opiates and synthetics** including codeine tramadol, meperidine, oxycodone, buprenorphine, hydrocodone, hydromorphone, pentazocine, opium, propoxyphene, morphine, and any other drugs with morphine-like effects (SAMHSA/CBHSQ, 2013)

Opioid drugs such as OxyContin, morphine, and Vicodin, have legitimate medical uses. However their nonmedical use and/or abuse can result in the same harmful consequences as abusing heroin (NIDA, 2010).

In the nineteenth century, pain relievers such as morphine and heroin were deemed as helpful in everyday life. However, people were not initially aware of the adverse effects associated with these and similar substances, especially the abuse potential (Musto, 1991). Over the past several decades, however, flexibility in laws governing the prescribing of opioids for the treatment of chronic non-cancer pain is said to have caused the dramatic increases in opioid use. Moreover, opioid analgesics are now responsible for more deaths than the number of deaths from heroin and cocaine combined or from both motor vehicle crashes and suicide (Manchikanti et al., 2012).

In May 2015, the Tennessee Bureau of Investigation (TBI) issued a warning about the opiate fentanyl being sold online as oxycodone. The pills looked like 33 mg Oxycodone, were the same size, and also featured with the signature A/215 stamp characteristic of oxycodone. However, these pills contained fentanyl, a pain killer that is 50 times more potent than heroin which can be deadly in high doses. The pills had been purchased from an online pharmacy and sold as oxycodone. TBI advised individuals with legitimate need for prescription pain relievers to obtain their medications through a licensed pharmacy and to avoid online purchase of prescription medicines. The TBI indicated that online purchases, while convenient, are not a safe alternative because there is no assurance regarding the quality or the actual ingredients (WRCB Staff, 2015).

15. **Other stimulants**, for example, methylphenidate (SAMHSA/CBHSQ, 2013).

Methylphenidate continues to be the most commonly prescribed medication for ADHD in young people around the world (Karla, et al., 2010).

16. **Over-the-counter medications** such as cough syrup, aspirin, sleep aids, diphenhydramine and other antihistamines, and any other legally obtained nonprescription medication (SAMHSA/CBHSQ, 2013)

17. **Phencyclidine (PCP)** (SAMHSA/CBHSQ, 2013)

Originally developed as an intravenous anesthetic, its medical use was discontinued due to the side effects of delirium and confusion. On the “black” market, the drug contains a number of contaminants that change its pure form in color and consistency. The liquid form is most frequently dissolved in ether. Phencyclidine is generally sprayed onto leafy material such as parsley, oregano, mint, or marijuana for smoking. Among its street names on the black market include Hog, Wick, Rocket Fuel, Embalming Fluid, Lovely, and Angel Dust (Drugs.com, 2014a).

18. **Other** includes substances such as GHB/GBL, diphenylhydantoin/phenytoin, ketamine, etc. (SAMHSA/CBHSQ, 2013).

Medications in this category might be used for a variety of purposes, many legitimate. For example, GHB or gamma Hydroxybutyric acid was approved for medical use in the treatment of particular sleep disorders. The “street” version, however, is used for its euphoria and relaxation properties. In its typical liquid form, the drug is mixed with alcohol (NIDA InfoFacts, n.d.). Like ecstasy, GHB is very popular with club-goers and individuals that frequent “rave parties” (Gavin, 2014).

Diphenylhydantoin/phenytoin is used to prevent and control seizures. These medications reduce the spread of seizure activity in the brain. Sometimes they may be referred to as antiepileptic or anticonvulsant drugs (Web MD, n.d.). Ketamine, on the other hand, is an anesthetic that works to inhibit painful sensations in the brain. It is recommended that a responsible adult monitor and assist individuals receiving ketamine for up to 24 hours (Drugs.com, 2014b).

Many prescription medications that are increasingly being abused and/or used for nonmedical purposes are covered across various drug categories in TEDS. Among the most commonly abused classes include painkillers, sedatives, and stimulants. Disturbing aspects include the increased prevalence of teenagers and young adults in abuse of these medications, as well as the misperception that they are safe to take because they were prescribed by physicians. This misconception holds even when prescription medications are used illegally (NIDA, 2010).

## WHO MAY HAVE A Substance Use Disorder (SUD)?

Substance use constitutes one of this country’s most challenging problems. It is an equal opportunity destroyer, affecting individuals from all income levels, geographic areas, racial groups and ethnicities, ages, and genders (NIDA, n.d.). Males and females can have substance use disorders. Substance use disorders can affect persons with mental health disorders as well as individuals without such disorders. People living in the South, North, East, or West can have a SUD. Individuals below the age of 18 years, between 18 and 64 years of age, or 65 years of age and over can have a substance use disorder (SUD). Substance use disorders (SUDs) can affect anyone of any racial or ethnic group. Individuals from low-, middle-, and high-income families can have a SUD. Professional and nonprofessional people can have a SUD. Substance use disorders (SUDs) can affect individuals from all walks of life. Substance use does not discriminate. It intersects with,

and contributes to, many of the challenges that we face as a state and a nation, including poverty, mental illness, school failure, criminal activity, and a number of health problems (Zobeck, 2014).

Besides people themselves having a SUD, many individuals have family and/or friends that have a substance use disorder (SUD). There are individuals who reside in communities where substance issues are very problematic. Substance use issues are more prevalent than many people think and not just a problem of the poor and marginalized. A host of other factors besides poverty play into substance use (National Poverty Center, 2004).

Combined 2008 to 2012 National Survey on Drug Use and Health (NSDUH) data showed that people with employment can have a substance use disorder (SUD). Per that data set, slightly more than half the adults (i.e., ages 18 to 64) with SUDs had full-time employment. However, substance use appeared to, in part, be a function of whether employers had written substance use policies. For example, full-time adult workers that used substances were more likely to work for an employer with no written policy about employee substance use. Female workers were more likely to report working for an employer that provided substance use policies and programs than males. However, male workers were more likely to indicate receiving educational information from their employer (SAMHSA/CBHSQ, 2014).

## **Does Substance Use Disorder involve Drugs or Narcotics?**

Drugs are substances intended for use in the diagnosis, mitigation, prevention or cure of disease in animals or humans, and any substances other than water, food, or oxygen that are intended to influence the body or mental function of animals or humans. Scientists define drugs as substances that influence neurological or biological states in humans or animals. Therefore, drugs can be synthetic, such as sedatives or amphetamines, or organic, such as tetrahydrocannabinol (THC) found naturally in marijuana. They can be swallowed, smoked, taken as a suppository, applied to the skin, inhaled through the nostrils, or injected with a needle. By statute, narcotics have been defined as drugs that dull the senses and frequently become addictive after prolonged use (TheFreeDictionary, n.d.).

Federal and state laws in this country commonly distinguish narcotics from drugs. Thus, they are regulated through the United States Food and Drug Administration (FDA). In the legal system, the term narcotics refers to illegal drugs that have a high potential for abuse (Knouff, n.d.). The Feds and most states use a classification system to control the use of dangerous drugs. This system consists of schedules which include both illicit and harmful legal drugs (TheFreeDictionary, n.d.).

Drugs considered controlled substances under the Controlled Substances Act (CSA) are divided into five schedules at the Federal level. Lower numbered schedules are considered the most dangerous drugs while schedules carrying higher numbers are considered to be the least dangerous (CriminalDefenseLawyer.com, n.d.; LawUpdater.com, 2016). Placement in a schedule is based on whether the drugs have currently accepted medical use in treatment in the United States, their relative abuse potential, and their likelihood of causing dependence when abused. Definitions of each schedule and example substances are listed below (DOJ/DEA/ODC, n.d.).

## **Controlled Substance Schedules – Federal.**

### **Schedule I**

- Substances have no accepted medical use in the United States currently, lack accepted safety for use under medical supervision, and have high potential for abuse.
- Examples of substances include, but are not limited to, heroin, lysergic acid diethylamide (LSD), 3,4-methylenedioxymethamphetamine ("Ecstasy"), and marijuana (cannabis) (DOJ/DEA/ODC, n.d.).

### **Schedule II/IIN (2/2N)**

- These substances have high potential for abuse that may lead to severe physical or psychological dependence.
- Substance examples include, but are not limited to, hydromorphone (Dilaudid®), oxycodone (OxyContin®, Percocet®), meperidine (Demerol®), methadone (Dolophine®), and fentanyl (Sublimaze®, Duragesic®). Hydrocodone, morphine, and codeine are examples of other Schedule 2 narcotics. Schedule 2N stimulants include, but are not limited to, methylphenidate (Ritalin®) and amphetamine (Dexedrine®, Adderall®). Pentobarbital is an example of other Schedule II substances (DOJ/DEA/ODC, n.d.).

### **Schedule III/IIIN (3/3N)**

- The potential for abuse for substances in this schedule are less than substances in Schedules I or II but abuse may lead to high psychological dependence or low to moderate physical dependence.
- Schedule III narcotics examples include, but are not limited to, buprenorphine (Suboxone®) and products containing not more than 90 milligrams of codeine per dosage unit (Tylenol with Codeine®). Schedule IIIN non-narcotics include, but are not limited to, anabolic steroids such as Depo®-Testosterone, e.g. (DOJ/DEA/ODC, n.d.).

### **Schedule IV**

- These substances have a lower potential for abuse relative to substances in Schedule III.
- Schedule IV substances include, but may not be limited to, alprazolam (Xanax®), diazepam (Valium®), lorazepam (Ativan®), carisoprodol (Soma®), tramadol (Ultram®) and triazolam (Halcion®) (DEA/OD/ODE, 2014; DOJ/DEA/ODC, n.d.).

### **Schedule V**

- Substances in this schedule consist primarily of preparations containing limited quantities of certain narcotics and have a low potential for abuse relative to substances listed in Schedule IV.
- Schedule V examples include, but may not be limited to, cough preparations that contain no more than 200 milligrams of codeine per 100 milliliters or per 100 grams (Robitussin AC®, Phenergan with Codeine®) (DOJ/DEA/ODC, n.d.).

## **Controlled Substance Schedules – Tennessee.**

### **Schedule I**

- Substances have no accepted medical use in treatment in the United States currently or lack accepted safety for use in treatment under medical supervision, and have high potential for abuse.
- Examples of substances include, but are not limited to, opiates and their isomers, esters, ethers, salts, etc., including acetylmethadol; opium derivatives like codeine methylbromide; hallucinogenic substances; depressants like methcathinone; and stimulants such as fenethyline (Tennessee Statutes, n.d.).

### **Schedule II**

- These substances have high potential for abuse that may lead to severe psychic or physical dependence or they have accepted medical use in treatment in the United States currently or accepted medical use with severe restrictions currently.
- Substance examples include, but are not limited to, those with chemical synthesis or vegetable origin such as oxymorphone and opium extracts; opiates such as carfentanil and remifentanil; stimulants like methylphenidate; depressants like secobarbital; and immediate precursors to phencyclidine (PCP), e.g. (Tennessee Statutes, n.d.).

### **Schedule III**

- These substances have accepted medical use in treatment in the United States currently and the potential for abuse for substances in this schedule are less than substances in Schedules I and II. Additionally, abuse of the substances may lead to high psychological dependence or low to moderate physical dependence.
- Examples of substances include, but are not limited to, stimulants such as phendimetrazine; depressants like amobarbital; nalorphine; narcotic drugs with material, compound, mixture, or preparation containing buprenorphine or its salts, e.g.; and anabolic steroids such as boldenone (Tennessee Statutes, n.d.).

### **Schedule IV**

- These substances have a low potential for abuse relative to substances in Schedule III, accepted medical use in treatment in the United States currently, and abuse may lead to limited psychological or physical dependence relative to substances in Schedule III.
- Schedule IV substances include, but may not be limited to, narcotic drugs consisting of not more than one milligram of difenoxin and not less than 25 micrograms of atropine sulfate per dosage unit; depressants such as diazepam; fenfluramine; stimulants like modafinil; and other substances such as pentazocine (Tennessee Statutes, n.d.).

### **Schedule V**

- These substances have a low potential for abuse relative to substances in Schedule IV, accepted medical use in treatment in the United States currently, and limited psychological or physical dependence liability relative to substances in Schedule IV.
- Schedule V examples include, but may not be limited to, narcotic drugs, including those containing nonnarcotic active medicinal ingredients and stimulants such as pyrovalerone along with its salts, isomers, and salts of the isomers, e.g. (Tennessee Statutes, n.d.).

### **Schedule VI**

- Substances in this schedule do not fit in Schedules I through V, in the opinion of the commissioner of mental health and substance abuse services in agreement with the commissioner of health.
- Substances included in this schedule consist of marijuana; tetrahydrocannabinoids; and synthetic equivalents (Tennessee Statutes, n.d.).

### **Schedule VII**

- Substances in this schedule do not fit in Schedules I through VI.
- Schedule VII includes butyl nitrite and any of its isomers (Tennessee Statutes, n.d.).

## **Degrees of Substance Use/Helpful Tips**

There are people who drink alcohol every day and swear they can quit any time they want to. Is this a person who is still in control of his/her substance use or is it an excuse? What about people who use drugs other than or in addition to alcohol recreationally on a daily basis? Where do they fit? Do they have a problem? The four degrees of drug use indicated below may provide helpful common sense distinctions about whether help should be considered.



### **1. Experimentation All Alone**

This may be the first way that individuals enter into drug use. Sometimes the individual is curious about a particular drug's effects. Some persons succumb to the pressures of others. While seemingly a harmless entry into substance use, one use can result in harm, especially when the individual makes poor decisions under the influence such as drinking and driving, e.g. For an individual who is predisposed to addiction, one use can set into motion a pattern of substance abuse and dependency.

### **2. Social Use**

The social substance user consumes substances in social situations, generally to fit in, relax, or have fun. Again, though seemingly innocent compared to the solitary substance use, social use more often than not leads to greater degrees of substance use. It is very possible for the social user to cross the line into substance abuse if he or she continues to use even in the face of negative consequences.

### **3. Binge Use**

This use is often associated with drinking but can also apply to use of other substances. It involves periodic use that might be categorized as heavy use. Bingeing may encompass only one to two days of substance use per week but in excessive amounts. Such use establishes a problematic pattern. Lots of bad things happen when individuals choose to binge.

### **4. Substance Abuse and Addiction**

Whether the use is referenced as abuse, dependence or addiction, substance use that interferes with work, health, relationships, career, finances, or other areas of life, it poses a significant problem. Additional signs of addiction include:

- Trying to control the substance use unsuccessfully
- Using substances in dangerous situations (e.g., before driving)
- Spending a great deal of time finding, using and recovering from the effects of substances
- Withdrawing from family and friends or giving up other activities to use substances
- Needing more of a substance to get the same high (i.e., tolerance)
- Experiencing withdrawal symptoms when trying to quit (Sack, 2014)

Substance use can become all-consuming and difficult to overcome, even with help.

- ✓ Even with medication assistance, only 20 to 50 percent of people with SUDs remain abstinent during the first year of treatment (Khodabandeh, Kahani, Shadia, & Abdollahi, 2012).

- ✓ Between 2007 and 2010, slightly more than 12 percent of people seeking treatment for alcohol or illicit drug abuse were deterred because they were concerned that the community would view them in a negative light (Recovery Month, 2014).
- ✓ Relapse is an unavoidable phenomenon in the course of substance use treatment (Khodabandeh et al., 2012).

## References

- alcoholalert.com. (n.d.). Tennessee drunk driving statistics. Retrieved February 21, 2015, from <http://www.alcoholalert.com/drunk-driving-statistics-tennessee.html>.
- American College of Obstetricians and Gynecologists. (2011). Methamphetamine abuse in women of reproductive age. Committee opinion No., 479. *Obstetrics & Gynecology*, 117, 751-755.
- American Psychiatric Association. (2013). Diagnostic statistical manual of mental disorders (5<sup>th</sup> ed.). Arlington, VA: Author.
- American Psychiatric Association Web site. (n.d.) Retrieved February 18, 2015, from <http://www.psychiatry.org/practice/dsm>.
- Brodwin, E. (2015, May 28). Production of a dangerous street drug called ‘moon rocks’ is soaring and the DEA can’t keep up. Retrieved May 29, 2015, from <http://www.businessinsider.com/what-is-synthetic-marijuana-2015-5>.
- Cable News Network (CNN). (2012, July 3). Methadone tied to one-third of prescription painkiller deaths. Retrieved October 2, 2014, from <http://thechart.blogs.cnn.com/2012/07/03/methadone-tied-to-one-third-of-prescription-painkiller-deaths/>.
- Centers for Disease Control and Prevention (CDC) Web site. (2005). Advisory on alcohol use in pregnancy. Retrieved June 10, 2014, from <http://www.cdc.gov/ncbddd/fasd/documents/surgeongenbookmark.pdf>.
- Cherpitel, C.J. (2013). Focus on: The burden of alcohol use—trauma and emergency outcomes. *Alcohol Research: Current Review*, 35(2), 150-154.
- Clark, E. (1978). History of drug use and drug users in the United States. In *Facts about Drug Abuse - Participant Manual*. Publication No. 79-FADA-041. Gaithersburg, MD: The National Drug Abuse Center for Training Resource and Development.
- CriminalDefenseLawyer.com. (n.d.). Tennessee sale of a controlled substance laws. Retrieved October 3, 2014, from <http://www.criminaldefenselawyer.com/resources/criminal-defense/drug-charges/sale-controlled-substance-tennessee>.

- Das, G. (1993). Cocaine abuse in North America: A milestone in history. *Journal of Clinical Pharmacology*, 33(4), 296-310.
- Drug Enforcement Administration, Office of Diversion, Control, Drug & Chemical Evaluation Section (DEA/OD/ODE), (2014, July). Tramadol. Retrieved June 11, 2016, from [http://www.deadiversion.usdoj.gov/drug\\_chem\\_info/tramadol.pdf](http://www.deadiversion.usdoj.gov/drug_chem_info/tramadol.pdf).
- Drugs.com. (2012). Alprazolam. Retrieved July 2, 2014 from <http://www.drugs.com/alprazolam.html>.
- Drugs.com. (2014a). Phencyclidine. Retrieved October 1, 2014, from <http://www.drugs.com/phencyclidine.html>.
- Drugs.com. (2014b). Ketamine. Retrieved October 1, 2014, from <http://www.drugs.com/cdi/ketamine.html>.
- Drugtext.org. (2011, January 4). Minor tranquilizers and non-barbiturate sedative-hypnotics. Retrieved October 2, 2014, from <http://www.drugtext.org/Le-Dain-Final-Report/a8-minor-tranquilizers-and-non-barbiturate-sedative-hypnotics.html>.
- Gavin, M.L. (2014, January). What you need to know about drugs: GHB. Retrieved October 1, 2014, from [http://kidshealth.org/kid/grow/drugs\\_alcohol/ghb.html](http://kidshealth.org/kid/grow/drugs_alcohol/ghb.html).
- Gitlow, S. (2013, June 7). Commentary: DSM-5: New addiction terminology, same disease. Retrieved August 22, 2014, from <http://www.drugfree.org/join-together/commentary-dsm-5-new-addiction-terminology-same-disease/>.
- Grohol, J.M. (2013). DSM-5 Changes: Addiction, Substance-Related Disorders & Alcoholism. *Psych Central*. Retrieved February 20, 2014, from <http://pro.psychcentral.com/2013/dsm-5-changes-addiction-substance-related-disorders-alcoholism/004370.html>.
- Harding, M. (2014, October 22). Benzodiazepines and Z drugs. Retrieved October 29, 2014, from <http://patient.info/health/benzodiazepines-and-z-drugs>.
- Hartney, E. (n.d.). Types of marijuana. Retrieved October 9, 2014, from <http://addictions.about.com/od/legalissues/tp/Types-Of-Marijuana.htm>.
- Ismail, S., Buckley, S., Budacki, R., Jabbar, A., & Gallicano, G.I. (2010). Screening, diagnosing and prevention of fetal alcohol syndrome: Is this syndrome treatable? *Developmental Neuroscience*, 32, 91-100. doi: 10.1159/000313339
- Karila, L., Weinstein, A., Aubin, H., Benyamina, A., Reynaud, M., & Batki, S.L. (2010). Pharmacological approaches to methamphetamine dependence: A focused review. *British Journal of Clinical Pharmacology*, 69(6):578-592. doi: 10.1111/j.1365-2125.2010.03639.x

- Khodabandeh, F., Kahani, S., Shadnia, S., & Abdollahi, M. (2012). Comparison of the efficacy of methadone maintenance therapy vs narcotics anonymous in the treatment of opioid addiction: A 2-year survey. *International Journal of Pharmacology*, 8(5), 445-449.
- Knouff, G. (n.d.). Classes of narcotics. Retrieved January 18, 2015, from [http://www.ehow.com/list\\_5919323\\_classes-narcotics.html](http://www.ehow.com/list_5919323_classes-narcotics.html).
- Kounang, N. & Marco, T. (2016, August 25). Heroin laced with elephant tranquilizer hits the streets. *CNN*. Retrieved August 29, 2016 from <http://www.cnn.com/2016/08/24/health/elephant-tranquilizer-carfentanil-heroin/index.html>.
- Kvigne, V.L., Leonardson, G.R., Borzelleca, J., & Welty, T.K. (2008). Characteristics of grandmothers who have grandchildren with fetal alcohol syndrome or incomplete fetal alcohol syndrome. *Maternal Child Health Journal*, 12, 760-785. doi: 10.1007/s10995-007-0308-y
- LawUpdater.com. (2016, March 5). Does outlawing controlled substances only create a larger black market? Retrieved June 11, 2016, from <http://www.lawupdater.com/wp/2016/03/05/does-outlawing-controlled-substances-only-create-a-larger-black-market/>.
- Little, K. (2015, August 25). Greeneville jail escapee among latest sentenced in 'gravel' drug conspiracy. Retrieved August 26, 2015, from [http://www.greenevillesun.com/news/local\\_news/greeneville-jail-escapee-among-latest-sentenced-in-gravel-drug-conspiracy/article\\_641c6c56-5054-5985-aabf-4b1183fa65c0.html](http://www.greenevillesun.com/news/local_news/greeneville-jail-escapee-among-latest-sentenced-in-gravel-drug-conspiracy/article_641c6c56-5054-5985-aabf-4b1183fa65c0.html).
- Manchikanti, L., Helm II, S., Fellows, B., Janata, J.W., Pampati, V., Grider, J.S., & Boswell, M.V. (2012). Opioid epidemic in the United States. *Pain Physician*, 15(3 Suppl), ES9-38.
- McMillen, M. (2015, May 21). \$5 insanity: What you should know about flakka. Retrieved December 1, 2015, from [http://www.medscape.com/viewarticle/854616\\_print](http://www.medscape.com/viewarticle/854616_print).
- McQueen, J. (2013, September). Mental and substance use disorders: Fast facts. Retrieved January 18, 2015, from <https://www.recoverymonth.gov/sites/default/files/toolkit/2016/mental-substance-use-disorders-fast-facts.pdf>.
- Methamphetamine and Other Illicit Drug Education (MethOIDE). (n.d.) Origin and history. The University of Arizona. Retrieved February 21, 2015, from <http://methoide.fcm.arizona.edu/infocenter/index.cfm?stid=174>.
- Methamphetamines.com. (2013, March 8). Methamphetamine history. Retrieved February 17, 2015, from <http://methamphetamines.com/methamphetamine-history.html>.
- Minnesota Department of Human Services, Alcohol and Drug Abuse Division (MDHS/ADAD). (2013, March). Minnesota's model of care for substance use disorder. Retrieved May 15, 2014, from <http://www.leg.state.mn.us/docs/2013/mandated/130622.pdf>.
- Musto, D.F. (1991). Opium, cocaine, and marijuana in American history. *Scientific American*, 20-27.

- National Institute on Drug Abuse (NIDA). (n.d.). Faces of addiction. Retrieved November 14, 2014, from <http://archives.drugabuse.gov/about/welcome/aboutdrugabuse/faces/>.
- National Institute on Drug Abuse. (2010). *Drugs, brains, and behavior: The science of addiction*. Bethesda, MD: Author.
- National Institute on Drug Abuse (NIDA). (2012a, November). Understanding drug abuse and addiction: DrugFacts. Retrieved January 16, 2015, from [http://www.drugabuse.gov/sites/default/files/drugfacts\\_understanding\\_addiction\\_final\\_0.pdf](http://www.drugabuse.gov/sites/default/files/drugfacts_understanding_addiction_final_0.pdf).
- National Institute on Drug Abuse (NIDA). (2012b, November). Understanding drug abuse and addiction: DrugFacts: Synthetic Cathinones (“bath salts”). Retrieved December 13, 2015, from <http://www.drugabuse.gov/publications/drugfacts/synthetic-cathinones-bath-salts>.
- National Institute on Drug Abuse (2013, September). NIDA research report series: Methamphetamine. Retrieved July 10, 2014, from NIDA Web site: <http://www.drugabuse.gov/sites/default/files/methrrs.pdf>.
- National Institute on Drug Abuse (NIDA) InfoFacts. (n.d.). Rohypnol and GHB, #13556. Retrieved October 1, 2014, from <http://www.streetdrugs.org/ghb/>.
- National Poverty Center. (2004). Substance abuse and welfare reform. *Policy Brief*, 2, 1-4.
- Oei, J.L., Kingsbury, A., Dhawan, A., Burns, L., Feller, J.M., Clews, S., ... & Abdel-Latif, M.E. (2012). Amphetamines, the pregnant woman and her children: A review. *Journal of Perinatology*, 32, 737-747.
- Preda, A. (2014). Opioid abuse. *Medscape Reference*. Retrieved November 10, 2014, from <http://emedicine.medscape.com/article/287790-overview>.
- Robinson, L., Smith, M. & Saison, J. (2014, December). Drug abuse and addiction: Signs, symptoms, and help for drug problems and substance abuse. Retrieved January 7, 2015, from <http://www.helpguide.org/articles/addiction/drug-abuse-and-addiction.htm>.
- RxList. (2013, September 17). Bath salts" drugs were involved in nearly 23,000 emergency department visits in one year. Retrieved August 24, 2015, from <http://www.rxlist.com/script/main/art.asp?articlekey=173703>.
- Sack, D. (2014). The 4 degrees of drug use. *Psych Central*. Retrieved January 17, 2015, from <http://blogs.psychcentral.com/addiction-recovery/2014/04/the-4-degrees-of-drug-use/>.
- Smith, M.W. (2013, December 23). Commonly abused prescription and OTC drugs. Retrieved October 1, 2014, from [http://www.webmd.com/mental-health/addiction/ss/slideshow-commonly-abused-drugs?ecd=wnl\\_emw\\_100114&ctr=wnl-emw-100114\\_ld-stry&mb=3d627qPXF3E1PU3grm9oCOHnVev1imbCHsEQ5QEZAiE%3d](http://www.webmd.com/mental-health/addiction/ss/slideshow-commonly-abused-drugs?ecd=wnl_emw_100114&ctr=wnl-emw-100114_ld-stry&mb=3d627qPXF3E1PU3grm9oCOHnVev1imbCHsEQ5QEZAiE%3d).

- Substance Abuse and Mental Health Services Administration (SAMHSA). (2014, May 22). Emergency departments see increased visits involving the nonmedical use of sedative alprazolam. Rockville, MD: SAMHSA.
- Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality (SAMHSA/CBHSQ). (2013). Treatment episode data set (TEDS): 2001-2011: State admissions to substance abuse treatment services. BHSIS Series S-68, HHS Publication No. (SMA) 14-4832. Rockville, MD: Substance Abuse and Mental Health Services Administration.
- Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality (SAMHSA/CBHSQ). (2014, August 7). 10.8 full-time workers have a substance use disorder. Rockville, MD: SAMHSA/CBHSQ.
- Tennessee Statutes. (n.d.). Tennessee statutes and codes: Title 39, chapter 17, part 4: Drugs. Retrieved November 25, 2014, from <http://statutes.laws.com/tennessee/title-39/chapter-17/part-4>.
- TheFreeDictionary. (n.d.). Drugs and narcotics. Retrieved October 3, 2014, from <http://legal-dictionary.thefreedictionary.com/Drugs+and+Narcotics>.
- United States Department of Justice, Drug Enforcement Administration, Office of Diversion Control (DOJ/DEA/ODC). (n.d.). Controlled substance schedules. Retrieved November 25, 2014, from <http://www.deadiversion.usdoj.gov/schedules/index.html#define>.
- Web MD. (n.d.). Diphenylhydantoin. Retrieved October 1, 2014, from <http://www.webmd.com/drugs/2/drug-58059/diphenylhydantoin-oral/details>.
- Wilsnack, S.C., Wilsnack, R.W., & Kantor, L.W. (2013). Focus on: Women and the costs of alcohol use. *Alcohol Research: Current Reviews*, 35(2), 219-228.
- WRCB Staff. (2015, May 14). TBI warns about counterfeit oxycodone pills. Retrieved June 1, 2015, from <http://www.wsmv.com/story/29066318/tbi-warns-about-counterfeit-oxycodone-pills>.
- Wright, T.E., Schuetter, R., Fombonne, E., Stephenson, J., & Haning III, W.F. (2012). Implementation and evaluation of a harm-reduction model for clinical care of substance using pregnant women. *Harm Reduction Journal*, 9(5), 1-10.
- Zobeck, T. (2014, March 7). How much do Americans really spend on drugs each year? Retrieved March 14, 2014 from <http://www.whitehouse.gov/blog/2014/03/07/how-much-do-americans-really-spend-drugs-each-year>.

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