

CHAPTER Nursing Care of 6 Clients with Problems of Substance Abuse

LEARNING OUTCOMES

- Explain risk factors associated with substance abuse.
- Recognize the signs and symptoms of potential substance abuse in coworkers.
- Describe common characteristics of substance abusers.
- Classify major addictive substances.
- Explain the effects of addictive substances on physiologic, cognitive, psychologic, and social well-being.
- Support interdisciplinary care for the client with substance abuse problems, including diagnostic tests, emergency care for overdose, and treatment of withdrawal.
- Develop a framework for providing individualized nursing care for clients experiencing problems with substance abuse using the nursing process.

CLINICAL COMPETENCIES

- Assess functional health status of clients with substance abuse.
- Monitor, document, and report physical manifestations of substance abuse.
- Assess for signs of withdrawal and monitor for life-threatening conditions.
- Use evidence-based research to plan and implement nursing care for clients experiencing withdrawal symptoms.
- Derive priority nursing diagnoses from assessment data.
- Formulate appropriate goals and implement individualized nursing interventions for clients with problems of substance abuse.
- Provide skilled nursing care during detoxification period.
- Collaborate with other disciplines when caring for clients with substance abuse problems.
- Educate client about stress management, coping skills, nutrition, relapse prevention, and healthy lifestyle choices.
- Revise plan of care as needed to promote, maintain, or restore functional health status to clients with substance abuse problems.

MEDIA LINK



Resources for this chapter can be found on the Prentice Hall Nursing MediaLink DVD-ROM accompanying this textbook, and on the Companion Website at <http://www.prenhall.com/lemone>

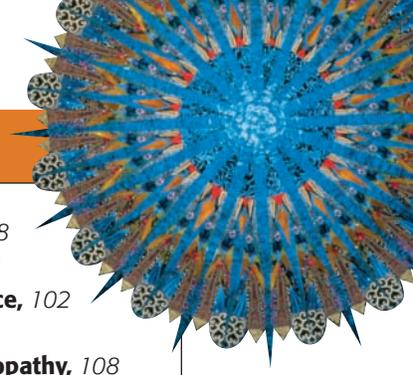


KEY TERMS

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Substance abuse refers to the use of any chemical in a fashion inconsistent with medical or culturally defined social norms despite physical, psychologic, or social adverse effects. Anxiety and depressive disorders frequently occur with substance abuse, and more than 90% of people who commit suicide have a depressive or substance abuse disorder (National Institute of Mental Health, 2004). According to the *Results from the 2004 National Survey on Drug Use and Health: National Findings* (Substance Abuse and Mental Health Services Administration [SAMHSA], 2005), 9.4% of the American population ages 12 or older (22.5 million Americans) reported problems with substance dependence or abuse in 2004.

The *Diagnostic and Statistical Manual of Mental Disorders*, fourth edition, text revision (DSM-IV-TR) (American Psychiatric Association, 2000) includes a classification scheme for distinguishing between substance abuse and substance dependence. **Substance dependence** refers to a severe condition occurring when the use of the chemical substance is no longer under an individual's control for at least 3 months. Continued use of the substance usually persists despite adverse effects on the person's physical condition, psychologic health, and interpersonal relationships. The DSM-IV-TR criteria deal with the behavioral as-

pects and the maladaptive patterns of substance use, emphasizing the physical symptoms of **tolerance** and **withdrawal**. Tolerance is a cumulative state in which a particular dose of the chemical elicits a smaller response than before. With increased tolerance, the individual needs higher and higher doses to obtain the desired effect. When a person is physically addicted to the drug and stops taking it, **withdrawal symptoms** can occur within hours. Withdrawal is an uncomfortable state lasting several days, manifested by tremors, diaphoresis, anxiety, high blood pressure, tachycardia, and possibly convulsions. An overview of the DSM-IV-TR diagnostic criteria for substance abuse and substance dependence is shown in Box 6–1.

The human tendency to seek pleasure and avoid stress and pain is partially responsible for substance abuse. Although far from definite, evidence implicates the endogenous opioid system in the development and maintenance of addictive behaviors. Currently available data suggest that ethanol increases opioid neurotransmission and that this activation is part of the mechanism responsible for its reinforcing effect (Oswald & Wand, 2004). Although most studies have focused on the role of dopamine D(1) and D(2) receptors in sustaining the addictive danger of drugs, recent stud-

BOX 6–1 Substance Abuse versus Substance Dependence

SUBSTANCE ABUSE

Maladaptive pattern of substance use leading to clinically significant impairment or distress, manifested by **one or more** of the following within a 12-month period:

1. Failure to fulfill major role obligations at work, school, and home.
2. Involvement in physically hazardous situations while impaired (driving while intoxicated, operating a machine, exacerbation of physical symptoms such as ulcers).
3. Recurrent legal or interpersonal problems.
4. Continued use despite recurrent social and interpersonal problems.

SUBSTANCE DEPENDENCE

Maladaptive pattern of substance use leading to clinically significant impairment or distress, manifested by **three or more** of the following within a 12-month period:

1. Presence of tolerance to the drug.
2. Presence of withdrawal symptoms.
3. Substance is taken in larger amounts or for longer periods than is intended.
4. Unsuccessful or persistent desire to cut down or control substance use.
5. More time spent in getting, taking, and recovering from the substance. May withdraw from family or friends and spend more time using substance in private.
6. Decline in or absence of important social, occupational, or recreational activities.
7. Continued use of substance despite knowledge of adverse effects.

ies have also shown that the dopamine D(3) receptor is involved in drug-seeking behavior (Heidbreder et al., 2004). The reinforcing properties of drugs can create a pleasurable experience and reduce the intensity of unpleasant experiences.

The craving one has for a particular substance may also be heightened by a phenomenon known as the “kindling” effect. **Kindling** refers to long-term changes in brain neurotransmission that occur after repeated detoxifications (Bayard et al., 2004). Recurrent detoxifications increase neuron sensitivity and are thought to intensify obsessive thoughts or cravings for a substance. Eventually the brain responds spontaneously in a dysfunctional manner even when the substance is no longer being used (Stuart & Laraia, 2005). This phenomenon may explain why subsequent episodes of withdrawal from a substance tend to worsen progressively.

Although there is no greater prevalence of psychiatric illness in substance abusers than in the general population, co-occurring disorders are often present. The term **co-occurring disorders** refers to the coexistence of substance abuse or dependence and a psychiatric disorder in one individual. **Dual diagnosis** and **dual disorder** are older terms that were previously used to describe

individuals with co-occurring disorders. One disorder can be an indication of another, such as the relationship between alcoholism and depression. Alcohol dependence and major depression commonly occur together and research suggests that both illnesses pose a significant risk for the development of the other disorder within 1 year’s time (Gilman & Abraham, 2001). A depressed person may use self-medication in the form of alcohol to treat the depression, or the alcoholic person may become depressed. One study, describing the prevalence and characteristics of co-occurring serious mental illness (SMI) and substance abuse or dependence, found that most common co-occurring disorders in adult mental health clients were (1) alcohol and/or cannabis abuse with psychoses and heroin and/or (2) alcohol abuse or dependence with depression (Virgo et al., 2001). Compared with other SMI clients, those who were dually diagnosed were younger, more often male, in less stable accommodations, more likely to be unemployed, and more likely to have more than one psychiatric diagnosis and personality disorder. They also tended to have more crises and pose greater risk to themselves and others (Virgo et al., 2001). Box 6–2 lists terminology associated with substance abuse.

BOX 6–2 Terminology Associated with Substance Abuse

TERM	DEFINITION	TERM	DEFINITION
Abstinence	Voluntarily going without drugs or alcohol	Korsakoff’s psychosis	Secondary dementia caused by thiamine (B ₁) deficiency that may be associated with chronic alcoholism; characterized by progressive cognitive deterioration, confabulation, peripheral neuropathy, and myopathy
Addiction	A disease process characterized by the continued use of a specific chemical substance despite physical, psychologic, or social harm (used interchangeably with substance dependence)	Physical dependence	A state in which withdrawal syndrome will occur if drug use is discontinued
Codependence	A cluster of maladaptive behaviors exhibited by significant others of a substance-abusing individual that serves to enable and protect the abuse at the expense of living a full and satisfying life	Polysubstance abuse	The simultaneous use of many substances
Co-occurring disorders	Concurrent diagnosis of a substance use disorder and a psychiatric disorder. One disorder can precede and cause the other, such as the relationship between alcoholism and depression	Psychologic dependence	An intensive subjective need for a particular psychoactive drug
Cross-tolerance	Tolerance to one drug confers tolerance to another	Substance abuse	Continued use of a chemical substance in a fashion inconsistent with medical or social norms, for at least 1 month, despite related problems
Delirium tremens	A medical emergency usually occurring 3 to 5 days following alcohol withdrawal and lasting 2 to 3 days. Characterized by paranoia, disorientation, delusions, visual hallucinations, elevated vital signs, vomiting, diarrhea, and diaphoresis	Substance dependence	A severe condition occurring when the use of the chemical substance is no longer under control, for at least 3 months; continued use persists despite adverse effects (used interchangeably with addiction)
Detoxification	The process of helping an addicted individual safely through withdrawal	Tolerance	State in which a particular dose elicits a smaller response than it formerly did. With increased tolerance the individual needs higher and higher doses to obtain the desired response
Dual diagnosis	The coexistence of substance abuse/dependence and a psychiatric disorder in one individual (used interchangeably with dual disorder and co-occurring disorders)	Wernicke’s encephalopathy	Caused by thiamine (B ₁) deficiency, characterized by nystagmus, ptosis, ataxia, confusion, coma, and possible death. Thiamine deficiency is common in chronic alcoholism
Kindling	Brain sensitization to events such as stress, trauma, or the effects of substance use	Withdrawal syndrome	Constellation of signs and symptoms that occurs in physically dependent individuals when they discontinue drug use

RISK FACTORS

Various risk factors help explain why one person becomes addicted while another does not. Genetic, biologic, psychological, and sociocultural factors shed light on how a person may abuse or become dependent on a substance.

- **Genetic factors** include an apparent hereditary factor, especially with alcohol use and dependence. Most of the related genetic research has focused on alcoholism. Evidence supports the D(2) dopamine receptor gene (DRD2 A1 allele) as a genetic marker in adolescent males with increased risk for developing substance use problems (Conner et al., 2005). The discovery in 1990 that the DRD2 A1 allele gene appeared to be associated with alcoholism has led to a growing body of genetic research into substance abuse disorders (Stuart & Laraia, 2005). Women drink less alcohol and have fewer alcohol-related problems than men. In addition, women are less likely to have characteristics associated with heavy drinking including aggressiveness, drinking to reduce distress, and antisocial tendencies (Nolen-Hoeksema, 2004). See the Genetics Consideration box on this page.
- **Biologic factors** were first identified by Jellinek in his *Disease Model of Alcoholism*. He hypothesized that addiction to alcohol may have a biochemical basis and identified specific phases of the disease (Jellinek, 1946). Expanding on Jellinek's early work, researchers have implicated low levels of dopamine and serotonin in the development of alcohol dependence (Czermak et al., 2004; Guardia et al., 2000; Nellisery et al., 2003). Dopamine and dopamine receptor sites are intricately involved in the complex workings between the nervous system and abusive substances. Any drug's ability to

have an impact on the biochemical mechanism of the brain must be able to do so at a receptor site or at a number of receptor sites (Figure 6–1 ■). Most abused substances either mimic or block the brain's most important neurotransmitters at their respective receptor sites. For example, heroin and other opiates mimic natural opiate-like neurotransmitters such as endorphin, enkephalin, and dynorphin. In contrast, cocaine and other stimulants block the reuptake of dopamine, serotonin, and norepinephrine (Stuart & Laraia, 2005).

- **Psychologic factors** attempt to explain substance abuse through a combination of psychoanalytic, behavioral, and family system theories. Psychoanalytic theorists view substance abuse as a fixation at the oral stage of development, whereas behavioral theorists see addiction as a learned, maladaptive behavior. Family system theory focuses on the pattern of family relationships throughout several generations. No addictive personality type has been identified; however, several common factors seem to exist among alcoholics and drug users. Another type of alcoholism may be more environmentally influenced and is linked with onset after the age of 25, inability to stop after one drink, and a passive-dependent personality (Stuart & Laraia, 2005). Many substance abusers have experienced sexual or physical abuse in their childhood and as a result have low self-esteem and difficulty expressing emotions. A link also exists between substance abuse and psychiatric disorders such as depression, anxiety, and antisocial and dependent personalities. The habit of using a substance becomes a form of self-medication

GENETIC CONSIDERATIONS Alcoholic Fathers and Their Sons

Genetic research has determined that children of alcoholics (COAs) are at higher risk for developing substance use problems (Conner et al., 2005). This is primarily true with male relatives. One type of alcoholism seen mostly in the sons of alcoholic fathers is associated with an early onset, inability to abstain, and an antisocial personality (Stuart & Laraia, 2005). Results of one study revealed that adolescent boys of alcoholics with the D(2) dopamine receptor gene (DRD2 A1 allele) tried and got intoxicated on alcohol more often than boys without this genetic marker. In addition, they tried more, and used more substances overall. Boys with the allele developed a more serious tobacco habit and experienced a marijuana high at an earlier age than boys without the allele (Conner et al., 2005).

CRITICAL THINKING IN CLIENT CARE

1. Why is it important to ask your clients if they have a family history of substance abuse?
2. What questions should you ask when assessing for increased risk of substance abuse?
3. Does having a positive family history of substance abuse indicate that a person will develop a substance abuse problem? Why or why not?

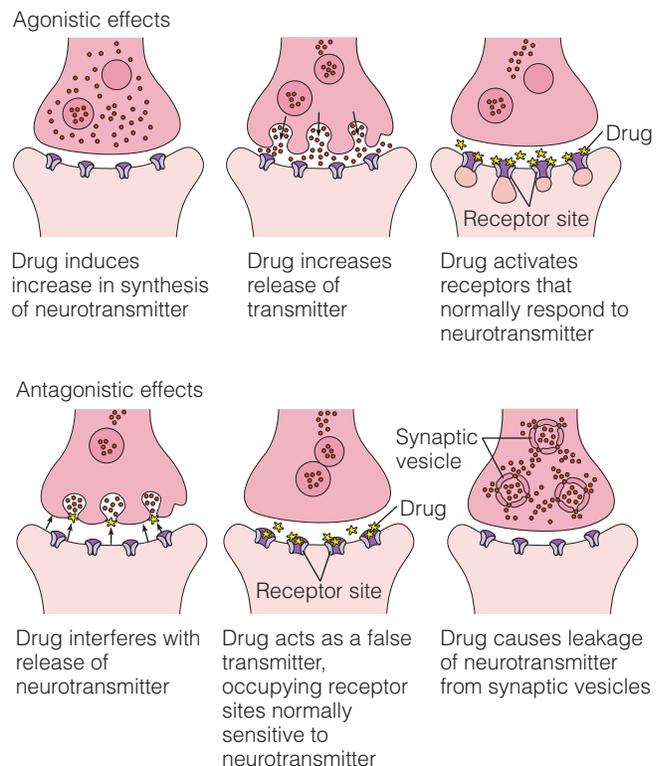


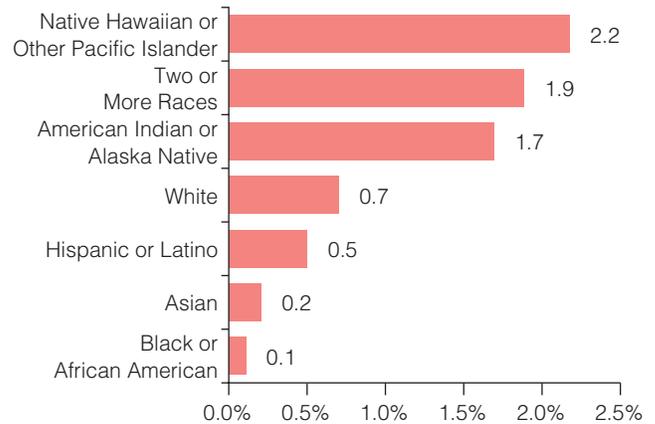
Figure 6–1 ■ Action of abusive substances at brain receptor sites.

FOCUS ON CULTURAL DIVERSITY Substance Use and Ethnicity

Ethnic identity plays a unique role in drug use behavior. Patterns of substance use are influenced by cultural norms and practices, in addition to other environmental and biologic factors. Adolescents in particular are influenced by ethnic and cultural practices. Positive ethnic identity (i.e., strong ethnic affiliation, attachment, and pride) may “protect” adolescents against drug use and help them form resistant behaviors to substance abuse (Marsiglia et al., 2004). A higher number of black and Hispanic children are exposed to alcohol problems in the home than white children (Ramisetty-Mikler & Caetano, 2004). Adolescent use of tobacco, alcohol, and illicit drugs was reportedly different in racial and ethnic groups. On average, Native American high school seniors revealed the highest levels of tobacco, alcohol, and illicit drug use, while Latin American, African American, and Asian Americans showed less drug use (Wallace et al., 2002). Another study reported that Asian American college students had a lower rate of alcohol dependence than Caucasian college students (Luczak et al., 2004). The highest rates of past-year methamphetamine use were found among Native Hawaiians or other Pacific Islanders (2.2%), American Indians or Alaska Natives (1.7%), and persons reporting two or more races (1.9%) (SAMHSA, 2005) (Figure 6–2 ■). Past-year methamphetamine use among whites (0.7%) and Hispanics (0.5%) was higher than among blacks (0.1%) or Asians (0.2%) (Office of Applied Studies [OAS], 2005a). Substance abuse and type 2 diabetes are serious health problems among Native Americans (Leonardson et al., 2005).

Critical Thinking in Client Care

1. You are a school nurse with a large population of Native Americans, Latin Americans, and African Americans in the commu-



Source: SAMHSA, 2002, 2003, and 2004 NSDUH.

Figure 6–2 ■ Methamphetamine use by race/ethnicity: 2002, 2003, and 2004.

nity. An increasing problem with alcohol use and binge drinking among the high school students has become evident. The school superintendent has asked you for ideas to address this problem. How would you respond?

2. You are caring for a 23-year-old Asian American female brought to the emergency room by her boyfriend who tells you they were at a college party where she had alcohol for the first time. She is weak, her face is flushed, and she is vomiting violently. What would you do?

to cope with day-to-day problems, and over time develops into an addiction.

- **Sociocultural factors** often influence individuals' decisions as to when, what, and how they use substances. Ethnic differences in the way alcohol is metabolized may explain why some individuals choose not to drink. It is hypothesized that the Asian population has a deficiency of aldehyde dehydrogenase (ADH), the chemical in the brain that breaks down alcohol acetaldehyde (Cook et al., 2005). A buildup of acetaldehyde in the brain causes toxic symptoms characterized by vomiting, flushing, and tachycardia. Compared to other ethnic groups, Asian Americans report the lowest prevalence of family history of alcoholism (Ebberhart et al., 2003). Caucasians, Hispanics, and African Americans, on the other hand, have sufficient aldehyde dehydrogenase for metabolizing alcohol, and report higher alcoholism rates (Bersamin et al., 2005). Religious background may also correlate with the likelihood that a person will abuse alcohol. Among major religions, people of Jewish faith have the lowest rate of alcoholism while Roman Catholics have the highest rate. See the Focus on Cultural Diversity box above.

Many factors place a person at risk for substance use, abuse, and dependence. No single cause can explain why one individ-

ual develops a pattern of drug use and another person does not. Thorough assessment of these factors is necessary to understand the whole person and plan appropriate interventions.

CHARACTERISTICS OF ABUSERS

As mentioned, no addictive personality type exists; however, many abusers have several characteristics in common. Addictive behavior associated with alcoholism and other substances is characterized by compulsive preoccupation with obtaining the substance, loss of control over consumption, and development of tolerance and dependence as well as impaired social and occupational functioning (Weiss & Porrino, 2002). There is a tendency for drug users to indulge in impulsive, risk-taking behaviors. Abusers often have a low tolerance for frustration and pain. Often, drug users are rebellious against social norms and engage in various antisocial and risky behaviors such as stealing, promiscuity, driving while intoxicated, and violence against others. There is also a tendency toward anxiety, anger, and low self-esteem in substance abusers. Many people have a desire for social acceptance and initiate drug use to “fit in” with a peer group. Others may suffer from social anxiety and need drugs or alcohol to feel less inhibited while interacting with others.

ADDICTIVE SUBSTANCES AND THEIR EFFECTS

Caffeine

Caffeine is a stimulant that increases the heart rate and acts as a diuretic. Although commonly consumed daily in soft drinks, coffee, tea, chocolate, and some pain relievers, an excessive amount of caffeine can cause negative physiologic effects, especially cardiac-related risks. Approximately 300 mg per day is safe for most people, but over 600 mg is considered excessive and not recommended (Kneisl et al., 2004). Individuals with a history of cardiac disease are advised to cut down or eliminate caffeine intake altogether. Caffeine, if consumed in large quantities, can also cause higher total cholesterol levels and insomnia.

Many people in today's society recognize the adverse effects of too much caffeine in the system and voluntarily cut down on caffeine by drinking decaffeinated beverages. A caffeine-addicted person who abruptly withdraws from caffeine will most likely experience headaches and irritability. A rising number of adolescents are developing caffeine dependence by consuming sizable quantities of soft drinks and coffee. In a study investigating caffeine dependence in teenagers, researchers found that 15 out of 36 subjects reported tolerance to caffeine, described withdrawal symptoms after cessation of caffeine intake, reported unsuccessful attempts to control use, and endorsed use despite knowledge of physical or psychologic problems associated with caffeine (Bernstein et al., 2002). These results are significant due to the vast number of teens who consume caffeinated beverages.

Nicotine

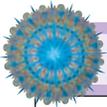
Nicotine is found in tobacco and enters the system via the lungs (cigarettes and cigars) and oral mucous membranes

(chewing tobacco as well as smoking). In low doses, nicotine stimulates nicotinic receptors in the brain to release norepinephrine and epinephrine, causing vasoconstriction. As a result, the heart rate accelerates and the force of ventricular contractions increases. Gastrointestinal (GI) effects include an increase in gastric acid secretion, tone and motility of GI smooth muscle, and promotion of vomiting. Nicotine acts on the central nervous system (CNS) as a stimulant, binding to acetylcholine receptors in the brain and causing the release of dopamine and norepinephrine. Quitting smoking is thought to be difficult because of dopamine release, which, in turn, reinforces the addictive craving for more. Smoking cessation can pose a problem for hospitalized clients. See the Nursing Research: Evidence-Based Practice for Smoking Cessation in Hospitalized Patients box below.

Initially, nicotine increases respiration, mental alertness, and cognitive ability, but eventually it depresses these responses (Kneisl et al., 2004). Moderate doses of nicotine can cause tremors. With high doses, such as acute poisoning from insecticides, convulsions and death can occur.

Tolerance can develop to nausea and dizziness, but not to the cardiovascular effects. Nicotine dependence results from chronic use with withdrawal seen as craving, nervousness, restlessness, irritability, impatience, increased hostility, insomnia, impaired concentration, increased appetite, and weight gain. Gradual reduction in nicotine use seems to prolong suffering. Chronic health problems from smoking have been well established in the form of cancer, heart disease, emphysema, hypertension, and death (Kneisl et al., 2004).

Since the 1990s, smoking rates among adult women have steadily increased. Smoking is now the number one cause of preventable death and disease among women. According to a



NURSING RESEARCH Evidence-Based Practice for Smoking Cessation in Hospitalized Patients

Despite the well-publicized deleterious health effects posed by cigarette smoking and the legally restricted access to cigarettes, smoking remains a persistent problem. Smoking has been banned in stores, malls, hospitals, office buildings, and even a number of restaurants. Admission to the hospital provides an excellent opportunity for nurses to assist patients to quit smoking. Patients in hospitals may find it easier to quit in an environment where smoking is restricted or prohibited. In addition, individuals may be more open to cessation efforts when faced with the risks associated with surgery. In a review of the literature, researchers found that high-intensity behavioral interventions that include at least 1 month of follow-up contact were effective in helping hospitalized patients quit smoking (Rigotti et al., 2005). Healthcare professionals, especially nurses, can be very instrumental in smoking cessation efforts.

Another literature review provided evidence that nursing interventions for smoking cessation have potential benefits (Rice & Stead, 2005). Nicotine replacement therapy (NRT) also increases quit rates with or without additional counseling (Rice & Stead, 2005; Silagy et al., 2005). NRT aims to reduce withdrawal from tobacco products by replacing nicotine in the blood. All forms of NRT, available as chewing gum, skin patches, nose spray, inhalers,

and tablets increase the likelihood that a person will succeed in quitting smoking (Silagy et al., 2005). Effective nursing strategies include asking patients about their tobacco use, counseling those who want to quit, reinforcing cessation efforts, and early follow-up with those who quit smoking. This evidence points to the important role nurses play in encouraging their clients to quit smoking and the need for nurses to incorporate smoking cessation interventions as part of their standard practice.

CRITICAL THINKING IN CLIENT CARE

1. You are caring for a 55-year-old man recently hospitalized for acute angina who asks you what is the best way to stop smoking. What would you do?
2. Why do you think nurses and other healthcare professionals should (or should not) quit smoking?
3. You are caring for a 12-year-old girl who tells you she has smoked cigarettes occasionally and believes it makes her more popular with her older friends. She admits that she knows that smoking is supposed to be bad for you but doesn't see the harm in smoking a few cigarettes every day. How would you respond?

recent report by the surgeon general, far more women are dying of lung cancer than of breast cancer, and around 165,000 women died prematurely from smoking-related diseases such as cancer, stroke and heart disease (U.S. Department of Health and Human Services, 2005). Women are also confronted with unique health concerns from smoking during pregnancy. Secondhand effects from smoking have been demonstrated, especially to fetuses during pregnancy. Smoking during pregnancy leads to increased risks for infants such as low birth weight, spontaneous abortions, perinatal mortality, and sudden infant death.

Cannabis

Cannabis sativa is the source of marijuana. The greatest psychoactive substances are in the flowering tops of the cannabis plant. Marijuana (also known as grass, weed, pot, dope, joint, and reefer) and hashish are the most common derivatives. The psychoactive component of marijuana is an oily chemical known as delta-9-tetrahydrocannabinol (THC). THC activates specific cannabinoid receptors in the brain. Evidence suggests that marijuana may act like opioids and cocaine in producing a pleasurable sensation, probably by causing release of endogenous opioids and then dopamine (Kneisl et al., 2004). Marijuana use can trigger psychosis in schizophrenic clients and, according to recent research, cannabis use may be a risk factor in developing future psychotic symptoms (Ferdinand et al., 2005).

Physiologic effects of cannabis are dose related and can cause an increase in heart rate and bronchodilation in short-term use. Chronic long-term use can lead to airway constriction, bronchitis, sinusitis, asthma, and increased risk for respiratory cancer (Watson et al., 2000). The reproductive system is also affected by marijuana; it causes decreased spermatogenesis and testosterone levels in males and suppresses follicle-stimulating, luteinizing, and prolactin hormones in females, making breast-feeding for new mothers impossible. Birth defects may also be associated with cannabis use. Mari-

juana crosses the placental barrier and is spread to fetal tissues. When a pregnant woman smokes marijuana, she increases the risk of abnormalities in the fetus such as CNS disturbances, low birth weight, decreased length, smaller head circumference, and fetal death (Kneisl et al., 2004). Subjective effects of marijuana include euphoria, sedation, and hallucinations. In addition, chronic use of marijuana can result in amotivational behaviors such as apathy, dullness, poor grooming, reduced interest in achievement, and disinterest. At extremely high doses, tolerance and physical dependence result.

Alcohol

Alcohol is the most commonly used and abused substance in the United States. Alcohol and other CNS depressants act on other neurotransmitters in the brain such as gamma-aminobutyric acid (GABA). GABA is the most prevalent inhibitory neurotransmitter in the brain and has a major role in decreasing neuronal excitability. Alcohol creates an additive effect with GABA, further inhibiting arousal and depressing the autonomic nervous system. This may explain why cross-tolerance effects occur when alcohol and other CNS depressants are used in combination (Vaccaro, 2002). When taken together, alcohol and other CNS depressants such as benzodiazepines and barbiturates can lead to respiratory depression and death.

Two-thirds of the nation's adult population consumes alcohol regularly. An estimated 14 million Americans (approximately 1 in every 13 adults) abuse alcohol or are alcoholic (National Institute on Alcohol Abuse and Alcoholism, 2004).

Although the legal drinking age in all 50 states is 21, many underage people obtain and use alcohol. Of the 14 million adults who abused alcohol in 2003, 95% started drinking alcohol before age 21 (SAMHSA, 2004). During 2004, an estimated 142,701 alcohol-related emergency department (ED) visits were made by patients ages 12 to 20 (OAS, 2006). Table 6-1 lists the top 10 drugs most frequently found in combination with alcohol in ED visits of patients ages 12 to 20.



TABLE 6-1 Top 10 Combination Drugs Found in Alcohol-Related ED Visits

RANK	DRUG	VISITS	PERCENT OF VISITS
	<i>Total alcohol with other drugs</i>	45,282	100%
1	Marijuana	22,244	49%
2	Cocaine	10,066	22%
3	Stimulants (amphetamine/methamphetamine)	3,805	8%
4	Alprazolam	3,057	7%
5	Drug unknown	1,835	3%
6	Ibuprofen	1,585	3%
7	Acetaminophen	1,524	3%
8	Methylenedioxymeth-amphetamine (MDMA)	1,502	3%
9	Acetaminophen-hydrocodone	1,436	3%
10	Heroin	1,323	3%

Source: Office of Applied Studies, SAMHSA, Drug Abuse Warning Network, 2004.

FAST FACTS

Underage Drinking

- The rate of underage drinking remains consistently high (about the same in 2004, 2003, and 2002). Approximately 10.8 million persons ages 12 to 20 reported drinking alcohol in the past month (28.7% of this age group). Of these, nearly 7.4 million were binge drinkers, and 2.4 million were heavy drinkers.
- Among persons ages 12 to 20 in 2004, past-month alcohol use rates were lowest among Asians and highest among whites.
- The highest prevalence of binge and heavy drinking in 2004 was for young adults ages 18 to 25. The peak rate of both measures occurred at age 21.
- Thirty-two and a half million persons ages 12 or older in 2004 drove under the influence of alcohol at least once in the past year.

Source: Results from the National Survey on Drug Use and Health: National Findings (SAMHSA, 2003, 2004, 2005).

Alcohol is absorbed in the mouth, stomach, and digestive tract. The liver metabolizes approximately 95% of the ingested alcohol and the rest is excreted via the skin, kidney, and lungs. Generally, an individual can break down approximately 1 ounce of whiskey every 90 minutes. Factors such as body mass, food intake, and liver function can affect the rate of alcohol absorption.

When used in moderation, certain types of alcohol can have positive physiologic effects by decreasing coronary artery disease and protecting against stroke. However, when consumed in excess, alcohol can severely diminish one's ability to function and will ultimately lead to life-threatening conditions. Chronic use of alcohol can cause severe neurologic and psychiatric disorders. Severe damage to the liver occurs with chronic alcohol abuse, and can progress from fatty liver to other liver diseases such as hepatitis or cirrhosis. Chronic alcoholism is the major cause of fatal cirrhosis. Alcohol causes damaging effects to many other systems including myocardial disease, erosive gastritis, acute and chronic pancreatitis, sexual dysfunction, and an increased risk of breast cancer.

Malnutrition is another serious complication of chronic alcoholism; thiamine (B_1) deficiency in particular can result in neurologic impairments. Thiamine depletion is thought to cause the Wernicke-Korsakoff syndrome observed in chronic alcoholics (Stuart & Laraia, 2005). Severe cognitive impairment is a principal feature of **Wernicke's encephalopathy** and **Korsakoff's psychosis**. Although Wernicke's and Korsakoff's are sometimes considered to be two distinctive disorders, they are actually different phases of the same disease, commonly called Wernicke-Korsakoff syndrome. Wernicke's encephalopathy indicates the "acute" stage of the illness, and Korsakoff's psychosis indicates the "chronic" stage.

Although alcohol is a CNS depressant, it actually disrupts sleep, thus altering the sleep cycle, decreasing the quality of sleep, intensifying obstructive sleep apnea, and reducing total sleeping time. Heavy drinkers have a higher mortality rate and many fatalities occur from alcohol-related accidents. Blood alcohol levels (BALs) are highly predictive of CNS effects. Eu-

phoria, reduced inhibitions, impaired judgment, and increased confidence are seen at 0.05% (Kneisl et al., 2004). The legal level of intoxication in many states is 0.10%, although there is a trend toward lowering the level to 0.08% in other states. Toxic levels in excess of 0.5% can cause coma, respiratory depression, peripheral collapse, and death (Kneisl et al., 2004). Chronic consumption of alcohol produces tolerance and creates cross-tolerance to general anesthetics, barbiturates, benzodiazepines, and other CNS depressants. If alcohol is withdrawn abruptly, the brain becomes overly excited because receptors previously inhibited are no longer inhibited (Bayard et al., 2004). This hyperexcitability manifests clinically as anxiety, tachycardia, hypertension, diaphoresis, nausea, vomiting, tremors, sleeplessness, and irritability. Severe manifestations of alcohol withdrawal include seizures, convulsions, and **delirium tremens (DT)**. Episodes of delirium tremens have a mortality rate of 1% to 5% (Kasser et al., 2004).

CNS Depressants

Central nervous system depressants including barbiturates, benzodiazepines, paraldehyde, meprobamate, and chloral hydrate are also subject to abuse. Cross-dependence exists among all CNS depressants and cross-tolerance can develop to alcohol and general anesthetics. Chronic users of barbiturates require progressively higher doses to achieve subjective effects as tolerance develops, but they develop little tolerance to respiratory depression. The depressant effects related to barbiturates are dose dependent and range from mild sedation to sleep to coma to death. With larger doses over time and a combination of alcohol and barbiturates, the risk of death increases greatly. The risk of accidental overdose and death resulting from barbiturates has resulted in decreased use, yet barbiturates are still clinically useful for seizure disorders and alcohol withdrawal. Benzodiazepines have replaced barbiturates as the drugs of choice for anxiety-related disorders. Benzodiazepines alone are safer than barbiturates, because an overdose of oral benzodiazepines rarely results in death. However, CNS depressants when taken together (for example, alcohol and benzodiazepines) can result in death.

Psychostimulants

Psychostimulants such as cocaine and amphetamines have a high potential for abuse. Euphoria is the main subjective effect associated with cocaine and amphetamines, leading to addiction. **Cocaine** powder has been "snorted" (inhaled through the nostrils) for thousands of years, but a more dangerous method used nowadays is called freebasing. Cocaine base (freebased cocaine, or "crack") is heat stable and is usually "cooked" in a baking soda solution and smoked (freebasing). Cocaine hydrochloride (HCl) is diluted or cut before sale and the pure form ("rocks") is administered intranasally (snorted) or injected intravenously. "Skin popping" is a subcutaneous method many substance abusers are using to administer drugs, perhaps leading to the formation of abscesses under the skin. Mild overdose of cocaine produces agitation, dizziness, tremor, and blurred vision. Severe overdose produces anxiety, hyperpyrexia, convulsions, ventricular dysrhythmias, severe hypertension, and hemorrhagic stroke with possible angina or myocardial infarction (MI).

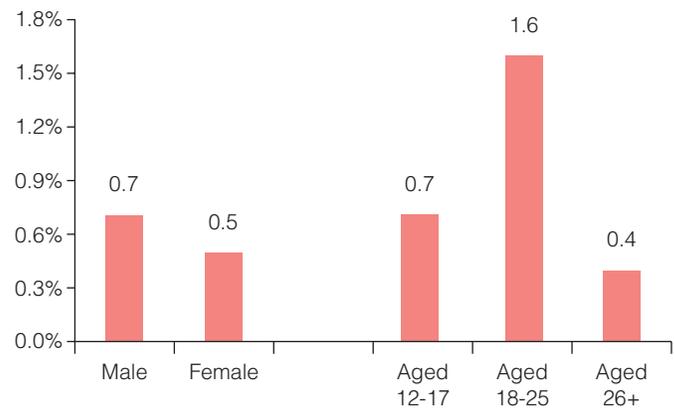
The use of cocaine during pregnancy is especially problematic, because the drug crosses the placenta and enters the fetal bloodstream. Spontaneous abortion, premature delivery, retardation of intrauterine growth, congenital abnormalities, and fetal addiction can result. Long-term intranasal use of cocaine can cause atrophy of the nasal mucosa, necrosis and perforation of the nasal septum, and lung damage. The growing practice of crack cocaine injection requires serious attention, because this new drug use behavior is associated with increased rates of high-risk behaviors. Recent research indicates that injection drug users (IDUs) exhibited significantly higher rates of risky health behaviors. High-risk sexual behaviors were especially prevalent among female crack cocaine injectors. Higher self-reported rates of adverse health outcomes, such as sexually transmitted infections (STIs), hepatitis C, and abscesses among crack injectors, were found, although no differences in rates of HIV infection were self-reported (Buchanan et al., 2006).

Amphetamine use is on the rise and poses a severe health risk to society due to its devastating physical and neurologic consequences, including amphetamine-induced mental disorders. Methamphetamine is illegally manufactured, distributed, and abused and is currently the most widespread amphetamine used in the United States (OAS, 2005a). Methamphetamine is a powerful stimulant drug commonly referred to as *speed*, *crystal*, *crank*, *go*, and, most recently, *ice*, a smokable form of methamphetamine. The manufacture of methamphetamine is a relatively simple process and can be carried out by individuals without special knowledge or expertise in chemistry. Methamphetamine is often taken in combination with other drugs such as cocaine and marijuana and, like heroin and cocaine, can be inhaled, injected, ingested, or smoked.

In 2004, an estimated 1.4 million persons ages 12 or older (0.6% of the population) had used methamphetamine in the past year, and 600,000 persons (0.2% of the population) had used methamphetamine in the past month (OAS, 2005a). The highest rate of methamphetamine use in the past year was found among young adults between the ages of 18 and 25 (1.6%). Methamphetamine use among males (0.7%) was slightly higher than for females (0.5%) (Figure 6-3 ■).

It appears that methamphetamine is an “equal opportunity” drug for addiction without regard to gender, age, race, or sexual preferences. With regard to race or ethnicity, the highest percentage rates of methamphetamine use were found among Native Hawaiians or other Pacific Islanders (2.2%), people reporting two or more races (1.9%), and American Indians or Alaska Natives (1.7%) (OAS, 2005a). The lowest rates of methamphetamine use were among whites (0.7%), Hispanics (0.5%), Asians (0.2%), and African Americans (0.1%).

Methamphetamine use has been linked with HIV infection and high rates of STIs in homosexual, heterosexual, and bisexual men and women all over the United States (AIDS Alert, 2005; Brown et al., 2005; Semple et al., 2004; Shoptaw et al., 2005). Heterosexual men and women displayed severe to moderate depressive symptoms due to perceived stigma associated with methamphetamine use, emphasizing the importance of identifying and treating depression in this population (Semple et al., 2005). An interesting finding from the 2004 *National Survey*

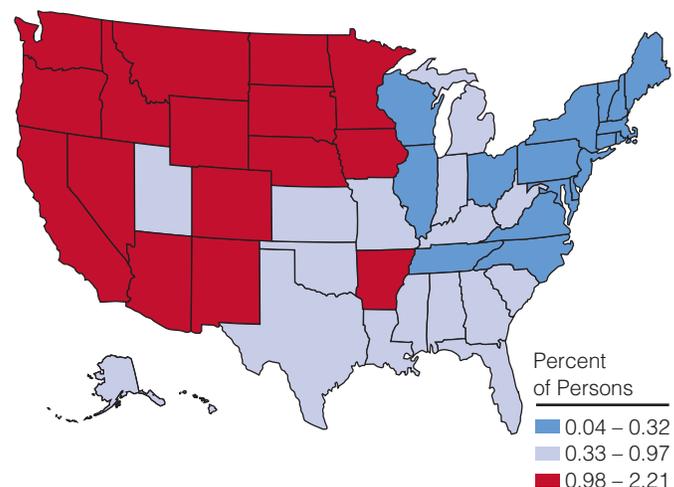


Source: SAMHSA, 2002, 2003, and 2004 NSDUH.

Figure 6-3 ■ Methamphetamine use by gender and age: 2002, 2003, and 2004.

on Drug Use and Health (NSDUH) was that the western half of the United States reported the highest levels of methamphetamine use from 2002 through 2004 (OAS, 2005a). Twelve states including Nevada (2.2%), Wyoming, and Montana (1.5% each) ranked highest for past-year methamphetamine use. Connecticut (less than 0.1%), New York, and North Carolina (0.12% each) were among the states with the lowest rates (Figure 6-4 ■).

Amphetamines cause arousal and an elevation of mood with a sense of increased strength, mental capacity, self-confidence, and a decreased need for food and sleep. Methamphetamine users in treatment have reported physical symptoms associated with the use of methamphetamine including weight loss, tachycardia, tachypnea, hyperthermia, insomnia, and muscular tremors (OAS, 2005a). The behavioral and psychiatric symptoms reported most often include violent behavior, repetitive activity, memory loss, paranoia, delusions of reference, auditory hallucinations, and confusion or fright. A psychotic state with hallucinations and paranoia are common with long-term



Source: SAMHSA, 2002, 2003, and 2004 NSDUH.

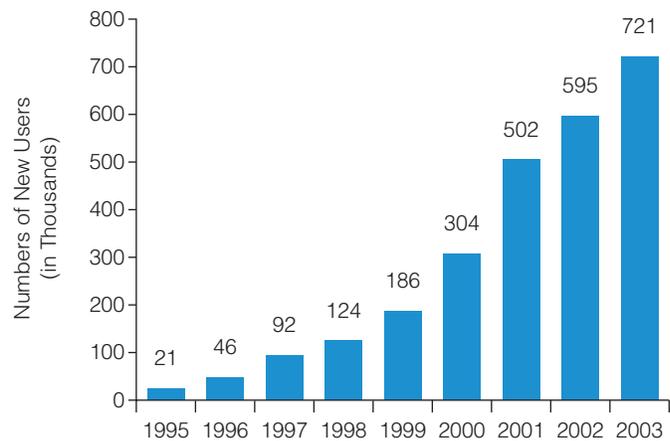
Figure 6-4 ■ Methamphetamine use by state: 2002, 2003, and 2004.

use, requiring treatment similar to other psychotic disorders. The cardiovascular effects of amphetamines are comparable to those of cocaine, including vasoconstriction, tachycardia, hypertension, angina, and dysrhythmias. Tolerance to mood elevation, appetite suppression, and cardiovascular effects develops with amphetamines; however, dependence is more psychologic than physical.

Withdrawal from amphetamines produces dysphoria and craving with fatigue, prolonged sleep, excessive eating, and depression. Although a large number of people cope with amphetamine dependence worldwide, limited evidence exists for effective treatment (Srisurapanont et al., 2005). In a systematic review of treatment measures for amphetamine dependence and abuse, antidepressants provided little benefit concerning amphetamine use. Both biologic and psychosocial treatments should be further investigated (Srisurapanont et al., 2005). Brief cognitive behavioral therapy (CBT) was reported to improve methamphetamine users' attempts to resist the urge to use methamphetamine in stressful interpersonal situations (Yen et al., 2004). A culturally tailored CBT program was more effective than standard CBT in reducing methamphetamine use and high-risk sexual behaviors (Shoptaw et al., 2005).

Opiates

Opiates such as morphine, meperidine, codeine, hydrocodone, and oxycodone are narcotic analgesics. Examples of some common brand names include Vicodin, Percocet, OxyContin, and Darvon. Narcotic analgesics are a type of pain reliever derived from natural or synthetic opiates. A small percentage of individuals are originally exposed to opiates in the context of prescription pain management; however, most people use opiates under social or illicit circumstances. The urban poor constitute the majority of abusers, although opiates are used and abused by people at all socioeconomic levels. The problem of abuse of and addiction to prescribed narcotics has resurfaced as a major issue for the United States in the early 2000s and has worsened during the past few years (Compton & Volkow, 2006). In 2004, the number of new nonmedical users of OxyContin was 615,000, with an average age at first use of 24.5 years (SAMHSA, 2005). Figure 6–5 ■ shows a steady increase in the number of initiates from 1995, when OxyContin was first available, through 2003. This increase in opiate abuse seems to reflect, in part, changes in medication prescribing practices, changes in drug formulations, and fairly easy access via the Internet. Although the use of narcotic analgesics for acute pain management looks benign, long-term use has been associated with significant rates of abuse or addiction. OxyContin is a controlled-released form of oxycodone prescribed for the management of moderate to severe pain. OxyContin diversion and abuse has become a major problem in certain areas of the United States, particularly rural areas and Appalachia (Hays, 2004). A retrospective review of 534 medical records revealed that 27% of patients admitted and discharged from an addiction detoxification unit were dependent on prescription opiate medications (Miller & Greenfeld, 2004). The most frequently mentioned medication was Vicodin (hydrocodone) followed by OxyContin (oxycodone). According to data collected by the



Source: SAMHSA, 2002, 2003, and 2004 NSDUH.

Figure 6–5 ■ Annual numbers of new nonmedical users of OxyContin, 1995–2003.

Drug Abuse Warning Network (DAWN), drug abuse–related emergency department visits involving narcotic analgesics increased 153% in the nation (from 42,857 visits in 1995 to 108,320 ED visits in 2002) (SAMHSA, 2004). The greatest increases during this period occurred for oxycodone (512%), methadone (176%), hydrocodone (159%), and morphine (116%). Illicit or nonmedical use of OxyContin has been widely cited in recent media reports; however, nonmedical use was found in only 0.4% of the population in 2001 and rarely led to the abuse of other drugs (Sees et al., 2005).

Heroin has been abused for many centuries and is usually administered intravenously. It induces a “rush” or “kick” that lasts less than a minute, followed by a sense of euphoria lasting several hours. Tolerance develops to the euphoria, respiratory depression, and nausea but not to constipation and miosis. Physical dependence occurs with long-term use of opiates. Initial withdrawal symptoms such as drug craving, lacrimation, rhinorrhea, yawning, and diaphoresis usually take 10 days to run their course, with the second phase of opiate withdrawal lasting for months with insomnia, irritability, fatigue, and potential GI hyperactivity and premature ejaculation as problems. Methadone is a synthetic opiate used to treat chronic pain and addiction to other opiates. Methadone does not hinder one’s ability to function productively as other narcotics do and is a viable support for withdrawal (Stuart & Laraia, 2005).

Hallucinogens

Hallucinogens are also called psychedelics and include phencyclidine (PCP), 3,4-methylenediosy-methamphetamine (MDMA), D-lysergic acid diethylamide (LSD), mescaline, dimethyltryptamine (DMT), and psilocin. Psychedelics bring on the same types of thoughts, perceptions, and feelings that occur in dreams. PCP (also called angel dust and peace pill) was developed in the 1950s as an anesthetic similar to ketamine, but due to its severe side effects, its development for human use was discontinued. PCP is known for inducing violent behavior and for inducing negative physical reactions such as seizures, coma, and death (OAS,

2005c). The most common route of administration is smoking tobacco, marijuana, or herbal cigarettes laced with PCP powder or the liquid form of PCP.

MDMA, commonly known as Ecstasy, was very popular in the 1980s as a recreational “club drug” associated with dance clubs or “raves” and has reappeared in recent years as a date or rape drug. According to 2003 NSDUH data, approximately 2.1 million persons ages 12 or older (0.9%) used Ecstasy during the past year; however, its use has declined from 3.2 million users in 2002 (SAMHSA, 2005). The rate of past-year Ecstasy use was significantly greater among 18- to 25-year-olds (3.7%) than among 12- to 17-year-olds (1.3%) or persons ages 26 or older (0.3%) (SAMHSA, 2005). Parties where other drugs such as marijuana or alcohol are present may lead to easier access or availability of Ecstasy, thereby increasing the chances for first-time Ecstasy use. One study suggests that cannabis use is a powerful risk factor for subsequent first onset of Ecstasy use (Zimmerman et al., 2005). Another study reported approximately 20% of youths ages 16 to 23 admitted to using one or more of the following drugs: methamphetamine, Ecstasy, LSD, ketamine, GHB (gamma-hydroxybutyrate), and flunitrazepam (Rohypnol) (Wu et al., 2006). Females were more likely than males to report using multiple club drugs. Staying in school and getting married were associated with decreased odds of club drug use. On the other hand, use of club drugs was increased by criminal behaviors and recent alcohol abuse or dependence.

LSD was first used to simulate psychosis. It affects serotonin receptors at multiple sites in the brain and spinal cord. LSD is usually taken orally but can be injected or smoked, as in tobacco- or marijuana-laced cigarettes. The individual’s response to a “trip,” the experience of being high on LSD, cannot be predicted and psychologic effects and “flashbacks” are common. Serotonin imbalance is thought to affect impulse control and may be responsible for uninhibited sexual responses in women who have been given the drug without their knowledge. Other hallucinogens are similar to LSD but with different potency and course of action. Because physical dependence to hallucinogens does not appear to occur, withdrawal symptoms are not present.

Inhalants

Inhalants are categorized into three types: anesthetics, volatile nitrites, and organic solvents. Nitrous oxide (laughing gas) and ether are the most abused anesthetics. Amyl nitrite, butyl nitrite, and isobutyl nitrite are volatile nitrites used especially by homosexual males to induce venodilation and anal sphincter relaxation. Amyl nitrite is manufactured for medical use, but butyl and isobutyl nitrites are sold for recreational use. Other names for butyl and isobutyl nitrites are *climax*, *rush*, and *locker room*. Street names for amyl nitrite are *poppers* or *snappers* (Box 6–3). Brain damage or sudden death can occur the first, tenth, or hundredth time an individual uses an inhalant, resulting in “sudden sniffing death.” This danger makes the use of inhalants more hazardous than some other substances.

Another danger is the wide assortment of organic solvents that are available to and inhaled by young children. Organic solvents are ingested by three different methods: bagging, huff-

BOX 6–3 Common Street Names for Abused Substances

SUBSTANCE	STREET NAME
Alcohol	Booze, brew, spirits, juice, hootch
Amphetamines	Bennies, crystal, crystal meth, crank, dexies, diet pills, dolls, eye-openers, ice, lid poppers, pep pills, purple hearts, speed, uppers
Barbiturates	Barbs, beans, black beauties, blue angels, candy, downers, goof balls, ludes, nebbies, reds, sleepers, tranks, yellow jackets, yellows
Benzodiazepines	Bennies, blues, rainbows, reds, sopors, yellows
Cocaine	Bernice, bernies, big C, blow, Charlie, coke, dust, girl, heaven, jay, lady, nose candy, nose powder, snow, sugar, white lady Crack: Conan, freebase, rock, toke, white cloud, white tornado
Hallucinogens	Acid, big D, blotter, blue heaven, cap D, deeda, flash, L, mellow yellows, microdots, paper acid, sugar, ticket, yello, Ecstasy
Heroin, morphine	H, horse, harry, boy, M, Miss Emma, scag, “shit,” smack, stuff, white junk, white stuff
Marijuana	Acapulco gold, Aunt Mary, broccoli, dope, grass, grunt, hay, hemp, herb, J, joint, joy stick, killer weed, Mary Jane, pot, ragweed, reefer, smoke, weed, “shit”
Opiates	Meperidine (Demerol), hydrocodone (Vicodin), Percocet, oxycodone (OxyContin), and Darvon

ing, or sniffing. *Bagging* involves pouring the solvent in a plastic bag and inhaling the vapor. *Huffing* refers to pouring the solvent on a rag and inhaling. *Sniffing* refers to inhaling the solvent directly from the container. Common organic solvents are toluene, gasoline, lighter fluid, paint thinner, nail polish remover, benzene, acetone, chloroform, and model airplane glue. The effects from inhaling organic solvents are similar to those of alcohol, with prolonged use leading to multiple toxicities and an increased risk for abusing other substances. Children who used inhalants before the age of 14 were twice as likely to initiate opiate use compared to those who had never tried opiates (Storr et al., 2005). There are no antidotes for these inhalants; therefore, management of overdose is supportive.

INTERDISCIPLINARY CARE



Effective treatment of substance abuse and dependence results from the efforts of an interdisciplinary team specializing in the treatment of psychiatric and substance abuse disorders. Therapies may include detoxification, aversion therapy to maintain abstinence, group and/or individual psychotherapy, psychotropic medications, cognitive-behavioral strategies, family counseling, and self-help groups. Clients suffering from substance abuse can

be treated in either inpatient or outpatient settings. A substance overdose is a life-threatening condition that requires emergency hospitalization to stabilize the client medically before implementing any of the interventions mentioned. Several diagnostic tests can provide valuable information about the client's physical condition and set the course for treatment.

Diagnostic Tests

The body fluids most often tested for drug content are blood and urine, although saliva, perspiration, and even hair can be tested. The simplest method of detecting blood alcohol content is by using a Breathalyzer. More invasive procedures such as serum drug levels are useful in the emergency department and other hospital settings to treat drug overdoses or complications. A urine drug screen (UDS) and/or BAL are the main biologic measures for assessment purposes. Urine drug screening (UDS) is noninvasive and the preferred method for detecting substances in the body. Companies often require a UDS of prospective employees before hiring them. In addition, professional and college athletes are now required to submit to random drug testing. Results of UDS are also used within the court system to determine drug use in relation to criminal activity. The length of time that drugs can be found in blood and urine varies according to dosage and metabolic properties of the drug. All traces of the drug may disappear within 24 hours or may still be detectable 30 days later. The psychoactive substance found in marijuana, THC, is stored in fatty tissues (especially the brain and reproductive system) and can be detected in the body for up to 6 weeks (Kneisl et al., 2004).

Knowledge of the BAL is helpful in ascertaining the level of intoxication, the level of tolerance, and whether the person accurately reported recent drinking. At 0.10% (after 5 to 6 drinks in 1 to 2 hours), voluntary motor action becomes clumsy and reaction time is impaired. The degree of impairment varies with gender, weight, and food ingestion. Small women who drink alcohol on an empty stomach will experience intoxication more rapidly than large males who have eaten a full meal. At 0.20% (after 10 to 12 drinks in 2 to 4 hours), function of the motor area in the brain is depressed, causing staggering and ataxia (Kneisl et al., 2004). A level above 0.10% without associated behavioral symptoms indicates the presence of tolerance. A BAL greater than 0.10% (or 0.08% in some states) is considered legal intoxication. High tolerance is a sign of physical dependence. Assessing for withdrawal symptoms is important when the BAL is high. Medications given for treatment of withdrawal from alcohol are usually not started until the BAL is below a set norm (usually below 0.10%) unless withdrawal symptoms become severe. BAL may be repeated several times, several hours apart, to determine the body's metabolism of alcohol and when it is safe to give the client medication to minimize the withdrawal symptoms.

Emergency Care for Overdose

The care of a client who has overdosed on any substance is a serious medical emergency. Respiratory depression may require mechanical ventilation. The client may become severely sedated and difficult to arouse. Every effort must be made to keep the client awake; however, stupor and coma may often re-

sult. A seizure is another serious complication that requires emergency treatment. If the overdose was intentional, the client must be constantly monitored for further signs of suicidal ideation. Never leave an actively suicidal client alone. Signs of overdose and withdrawal from major substances are summarized in Table 6–2 along with recommended treatments.

Treatment of Withdrawal

All CNS depressants, including alcohol, benzodiazepines, and barbiturates, have a potentially dangerous progression of withdrawal. Alcohol and the entire class of CNS depressants share the same withdrawal syndrome. Early signs of withdrawal appear within a few hours following cessation of the drug, peak after 24 to 48 hours, and then rapidly disappear unless the withdrawal progresses to delirium tremens. Severe withdrawal or delirium tremens is a medical emergency that usually occurs 2 to 5 days following alcohol withdrawal and persists for 2 to 3 days. The symptoms of severe withdrawal include disorientation, paranoid delusions, visual hallucinations, and marked withdrawal symptoms. Seizures may also occur, requiring the use of emergency equipment. Treatment of severe withdrawal during detoxification is mostly symptomatic through acetaminophen, vitamins, and medications to minimize discomfort.

In managing alcohol withdrawal, the goal is to minimize adverse outcomes, such as patient discomfort, seizures, delirium and mortality, and to avoid the adverse effects of withdrawal medications, such as excess sedation (Kasser et al., 2004). Close monitoring is essential to ensure protection of the patient. Critical care monitoring may be indicated to manage alcohol withdrawal delirium, particularly when very high doses of benzodiazepines are needed, or when there are significant concurrent medical conditions. Medications such as benzodiazepines are effectively used to minimize the discomfort associated with alcohol withdrawal and prevent serious adverse effects, in particular seizures (Ntais et al., 2005). A symptom-triggered approach to the administration of benzodiazepines during alcohol withdrawal results in less total medication use and requires a shorter duration of treatment (Bayard et al., 2004). The Clinical Institute Withdrawal Assessment for Alcohol (CIWA-Ar) is currently recommended to manage the symptoms of acute alcohol withdrawal (McKay et al., 2004). In a symptom-triggered regimen, medication is given only when the CIWA-Ar score is higher than 8 points (Bayard et al., 2004).

Two unique medications used to treat alcoholism are disulfiram (Antabuse) and naltrexone (ReVia, Depade). Disulfiram is a form of aversion therapy that prevents the breakdown of alcohol, causing physical illness (intense vomiting) if taken while drinking alcohol. All forms of alcohol, including over-the-counter cough and cold preparations, must be avoided. Naltrexone can help reduce the craving for alcohol by blocking the pathways to the brain that trigger a feeling of pleasure when alcohol and other narcotics are used. Because naltrexone blocks opiate receptors, clients should avoid taking any narcotics, such as codeine, morphine, or heroin, while on naltrexone. Clients should also discontinue all narcotics 7 to 10 days before starting on naltrexone. It is also recommended that clients wear a medical alert bracelet stating they are on naltrexone, in case

TABLE 6–2 Signs and Treatment of Overdose and Withdrawal

OVERDOSE			WITHDRAWAL	
DRUG	SIGNS	TREATMENT	SIGNS	TREATMENT
CNS Depressants Alcohol Barbiturates Benzodiazepines	Cardiovascular or respiratory depression or arrest (mostly with barbiturates) Coma Shock Convulsions Death	<i>If awake:</i> Keep awake Induce vomiting Activated charcoal to absorb drug VS q 15 minutes <i>Coma:</i> Clear airway, intubate IV fluids Gastric lavage Seizure precautions Possible hemo or peritoneal dialysis Frequent VS Assess for shock and cardiac arrest	Nausea and vomiting Tachycardia Diaphoresis Anxiety or agitation Tremors Marked insomnia Grand mal seizures Delirium (after 5–15 years of heavy use)	Carefully titrated detoxification with similar drug NOTE: Abrupt withdrawal can lead to death.
Stimulants Cocaine-crack Amphetamines	Respiratory distress Ataxia Hyperpyrexia Convulsions Coma Stroke Myocardial infarction (MI) Death	Antipsychotics Management for: 1. Hyperpyrexia 2. Convulsions 3. Respiratory distress 4. Cardiovascular shock 5. Acidify urine (ammonium Cl for amphetamine)	Fatigue Depression Agitation Apathy Anxiety Sleepiness Disorientation Lethargy Craving	Antidepressants (desipramine) Dopamine agonist Bromocriptine
Opiates Heroin Meperidine Morphine Methadone	Pupil dilation due to anoxia Respiratory depression-arrest Coma Shock Convulsions Death	Narcotic antagonist (Narcan) quickly reverses CNS depression	Yawning, insomnia Irritability Rhinorrhea Panic Diaphoresis Cramps Nausea and vomiting Muscle aches Chills and fever Lacrimation Diarrhea	Methadone tapering Clonidine-naltrexone detoxification Buprenorphine substitution
Hallucinogens Lysergic acid diethylamide (LSD)	Psychosis Brain damage Death	Low stimuli with minimal light, sound, activity Have one person “talk down client,” reassure Speak slowly and clearly Diazepam or chloral hydrate for anxiety	No pattern of withdrawal	
Phencyclidine piperidine (PCP)	Possible hypertensive crisis Respiratory arrest Hyperthermia Seizures	Acidify urine to help excrete drug (cranberry juice, ascorbic acid); in acute stage: ammonium chloride Minimal stimulus Do NOT attempt to talk down, speak slowly in low voice Diazepam or Haldol		
Inhalants Volatile Solvents such as butane, paint thinner, airplane glue, or nail polish remover	Intoxication: 1. Excitation 2. Drowsiness 3. Disinhibition 4. Staggering 5. Lightheadedness 6. Agitation Side effects: 1. Damage to nervous system 2. Death	Support affected systems	No pattern of withdrawal	
Nitrites	Enhance sexual pleasure	Neurologic symptoms may respond to vitamin B ₁₂ and folate		
Anesthetics such as nitrous oxide	Giggling, laughter Euphoria	Chronic users may experience polyneuropathy and myelopathy		

of emergency medical treatment. While on disulfiram or naltrexone, psychosocial treatments such as Alcoholics Anonymous meetings, individual counseling, or group therapy are important, because the desire to “take a break” from treatment can overcome the client’s motivation to continue taking the medication.

Withdrawal symptoms from opiates and stimulants can be very unpleasant but are generally not life threatening. The client experiencing an acute phase of cocaine withdrawal may become suicidal. Common drugs used in the treatment of substance abuse and withdrawal are presented in Table 6–3.



NURSING CARE

Nurses may interact with clients experiencing substance abuse or substance dependence in a variety of settings. The most common setting, of course, is an alcohol and drug abuse (ADA) treatment program where clients are hospitalized for 20 to 30 days for detoxification and inpatient therapy. These clients may be voluntarily admitted but most are court-ordered to undergo treatment after charges of driving under the influence (DUI) or driving while intoxicated (DWI). Clients with substance abuse or dependence have impaired senses and risk-taking behaviors that lead to injuries from falls and accidents requiring medical attention. Therefore, hospital emergency departments as well as medical and surgical units are places where nurses will frequently encounter these clients. Occupational nurses and community health nurses will also interact with substance-abusing clients in employee assistance programs and community health departments. Urgent care, pain clinics, and ambulatory care centers are other settings in which clients with substance abuse disorders will frequently appear for minor health problems associated with chronic disorders related to substance abuse or dependence.

Health Promotion

Nursing care of the client with substance abuse or dependence is challenging and requires a nonjudgmental atmosphere promoting trust and respect. Health promotion efforts are aimed at preventing drug use among children and adolescents and reducing the risks among adults. Adolescence is the most common phase for the first experience with drugs (Stuart & Laraia, 2005), therefore teenagers are a vulnerable population, often succumbing to peer pressure. Healthy lifestyles, parental support, stress management, good nutrition, and information about ways to steer clear of peer pressure are important topics for the nurse to provide in school programs.

Nurses should provide adults with information on healthy coping mechanisms, relaxation, and stress reduction techniques to decrease the risks of substance abuse. Nurses have a responsibility to educate their clients about the physiologic effects of substances on the body as well as ways to manage stress and anxiety. Nurses must encourage and support periods of abstinence while assisting clients to make major changes in lifestyles, habits, relationships, and coping methods. See Meeting Individualized Needs on page 115 for a discussion of older clients with substance abuse problems.

Assessment

A comprehensive approach to the assessment of substance use is essential to ensure adequate and appropriate intervention. Three important areas to assess are a history of the client’s past substance use, medical and psychiatric history, and the presence of psychosocial concerns. Ask questions in a nonthreatening, matter-of-fact manner, phrased as to not imply wrongdoing (Henderson-Martin, 2000). For instance, a nonthreatening question such as “How much alcohol do you

TABLE 6–3 Drugs Used in the Treatment of Substance Withdrawal/Abuse

DRUG	DOSE	PURPOSE
Benzodiazepines		
1. Chlordiazepoxide (Librium)	15–100 mg	Diminishes anxiety and has anticonvulsant qualities to provide safe withdrawal. May be ordered q4h or prn to manage adverse effects from withdrawal, then dose is tapered to zero.
2. Diazepam (Valium)	4–40 mg	
3. Oxazepam (Serax)	30–120 mg	
4. Lorazepam (Ativan)	2–6 mg	
Vitamins		
1. Thiamine (vitamin B ₁)	100 mg/day	Prevents Wernicke’s encephalopathy Corrects vitamin deficiency caused by heavy long-term alcohol abuse
2. Folic acid	1 mg/day	
3. Multivitamins	1 tab/cap daily	
Anticonvulsants		
1. Phenobarbital	30–320 mg	For seizure control and sedation
2. Magnesium sulfate	1 g q6h	Reduces postwithdrawal seizures
Abstinence medications		
1. Disulfiram (Antabuse)	250 mg/day	Prevents breakdown of alcohol Diminishes cravings for alcohol and opioids Decreases alcohol craving Blocks craving for heroin
2. Naltrexone (ReVia)	50 mg/day	
3. Acamprosate (Campral)	666 mg BID	
4. Methadone	40 mg/day	
Antidepressants		
1. Fluoxetine (Prozac)	20–80 mg/day	Enhances and stabilizes mood and diminishes anxiety
2. Sertraline (Zoloft)	50–200 mg/day	

MEETING INDIVIDUALIZED NEEDS **Substance Abuse in the Older Adult**

Substance abuse in older adults is likely to increase over subsequent decades as baby boomers reach retirement age. The number of older adults in need of substance abuse treatment is estimated to increase from 1.7 million in 2001 to 4.4 million in 2020 (Gfroerer et al., 2003). People of any age can have substance abuse problems, but the consequences in older adults can be more critical. Falls and accidents can rob older adults of their independence, and substance abuse increases the risk of falls by affecting alertness, judgment, coordination, and reaction time. In addition, older adults (especially older women) are more likely than younger people to use prescription or over-the-counter medicines, which can be harmful when mixed with alcohol and/or illicit drugs (Lantz, 2005; Simoni-Wastila & Strickler, 2004). Alcohol and drug abuse can also make certain medical problems hard to diagnose, for example, by dulling a pain sensation that might warn of a heart attack.

Although substance abuse and dependence are not as common in older adults as in younger ones, it is less likely to be recognized. Unfortunately, a substance abuse problem in an older adult can be difficult to detect because many of the symptoms of abuse (e.g., insomnia, depression, loss of memory, anxiety, musculoskeletal pain) may be confused with conditions commonly seen in older clients (Lantz, 2005). Healthcare professionals frequently attribute these symptoms to the aging process and fail to

address the misuse and abuse of substances in the elderly. Often, the *symptoms* of substance abuse are treated rather than confronting the abuse itself. Older adults are also at greater risk for numerous physical problems and premature death because alcohol negatively interacts with the natural aging process to increase risks for injuries, hypertension, cardiac dysrhythmias, cancers, gastrointestinal problems, cognitive deficits, bone loss, and emotional challenges, most notably depression (Stevenson, 2005). Because depression and alcohol abuse are the most frequently found disorders in completed suicides, nurses should routinely screen older adults for both substance abuse and mental disorders.

CRITICAL THINKING IN CLIENT CARE

1. You are caring for an 85-year-old man who tells you that since his wife died 6 months ago, he only feels like drinking to dull the pain of her loss. How would you respond?
2. Why do you think nurses and other healthcare professionals often fail to recognize and address substance abuse problems in the older adult?
3. You are caring for an older adult who denies that alcohol has become a serious problem, even though this is the third hospitalization for this client in 6 months due to accidents, falls, and blackouts. What would you do?

BOX 6–4 Examples of Open-Ended Questions for Assessment

- On average, how many days per week do you drink alcohol or use drugs?
- On a typical day when you use drugs or alcohol, how many hits or drinks do you have?
- What is the greatest number of drinks you have had at any one time during the past month?
- What drug(s) did you take before coming to the hospital or clinic?
- How long have you been using the substances?
- How often and how much do you usually use?
- What kinds of problems has substance use caused for you, your family, friends, finances, and health?

drink?” is preferable to the judgmental question, “You don’t drink too much alcohol, do you?” Open-ended questions that elicit more than a simple yes or no answer help to determine the direction of future counseling. Examples of open-ended questions are provided in Box 6–4. Use therapeutic communication techniques to establish trust prior to the assessment process.

History of Past Substance Use

A thorough history of the client’s past substance use is important to ascertain the possibility of tolerance, physical dependence, or withdrawal syndrome. The following questions are helpful in eliciting a pattern of substance use behavior:

- How many substances has the client used simultaneously (**polysubstance abuse** or simultaneous use of many substances) in the past?
- How often, how much, and when did the client first use the substance(s)?
- Is there a history of blackouts, delirium, or seizures?
- Is there a history of withdrawal syndrome, overdoses, and complications from previous substance use?
- Has the client ever been treated in an alcohol or drug abuse clinic?
- Has the client ever been arrested for driving under the influence or charged with any criminal offense while using drugs or alcohol?
- Is there a family history of drug or alcohol use?

Medical and Psychiatric History

The client’s medical history is another important area for assessment and should include the existence of any concomitant physical or mental condition (e.g., HIV, hepatitis, cirrhosis, esophageal varices, pancreatitis, gastritis, Wernicke-Korsakoff syndrome, depression, schizophrenia, anxiety, or personality disorder). Ask about prescribed and over-the-counter medications as well as any allergies or sensitivity to drugs. A brief overview of the client’s current mental status is also significant.

- Is there a history of abuse (physical or sexual) or family violence?
- Has the client ever tried to commit suicide?
- Is the client currently having suicidal or homicidal ideation?

Psychosocial Issues

Information about the client’s level of stress and other psychosocial concerns can help in the assessment of substance use problems.

- Has the client’s substance use affected his or her ability to hold a job?
- Has the client’s substance use affected relationships with spouse, family, friends, or coworkers?
- How does the client usually cope with stress?
- Does the client have a support system that helps in time of need?
- How does the client spend his or her leisure time?

Screening Tools

Several screening tools such as the Michigan Alcohol Screening Test (MAST) (Pokorny et al., 1972) and the Brief Drug Abuse Screening Test (B-DAST) (Skinner, 1982), may help the nurse determine the degree of severity of substance abuse or dependence (Figure 6–6 ■). These screening tools provide a nonjudgmental, brief, and easy method to ascertain patterns of substance abuse behaviors.

- *Michigan Alcohol Screening Test (MAST) Brief Version* is a 10-question, dichotomous, self-administered questionnaire that takes 10 to 15 minutes to complete. An answer of yes to 3 or more questions indicates a potentially dangerous pattern of alcohol abuse.
- *The CAGE questionnaire* (Ewing, 1984), is more useful when the client may not recognize he or she has an alcohol problem or is uncomfortable acknowledging it. This questionnaire is designed to be a self-report of drinking behavior or may be administered by a professional. One affirmative response indicates the need for further discussion and follow-up. Two or more yes answers signify a problem with alcohol that may require treatment.
 - Have you ever felt you should *Cut* down on your drinking?
 - Have people *Annoyed* you by criticizing your drinking?
 - Have you ever felt bad or *Guilty* about your drinking?
 - Have you ever had a drink first thing in the morning (an “*Eye-opener*”) to steady your nerves or to get rid of a hangover?

Brief MAST Scoring Yes to 3 or more indicates alcoholism

1. Do you feel you are a normal drinker?
2. Do friends or relatives think you are a normal drinker?
3. Have you ever attended a meeting of Alcoholics Anonymous?
4. Have you ever gotten in trouble at work because of drinking?
5. Have you ever lost friends or girlfriends/boyfriends because of drinking?
6. Have you ever neglected your obligations, your family, or your work for 2 or more days in a row because of your drinking?
7. Have you ever had delirium tremens (DTs), severe shaking, or heard voices or seen things that were not there after heavy drinking?
8. Have you ever gone to anyone for help about your drinking?
9. Have you ever been in a hospital because of your drinking?
10. Have you ever been arrested for drunken driving or other drunken behavior?

B-DAST The following questions concern information about your involvement with drugs not including alcoholic beverages during the past 12 months.
In the statements, “drug abuse” refers to (1) the use of prescribed or OTC drugs in excess of the directions and (2) any nonmedical use of drugs. The various classes of drugs may include cannabis, solvents, antianxiety drugs, sedative-hypnotics, cocaine, stimulants, hallucinogens, and narcotics. Remember do not include alcoholic beverages.

Have you used drugs other than those required for medical purposes?	Yes ___	No ___
Do you abuse more than one drug at a time?	Yes ___	No ___
Are you always able to stop using drugs when you want to?	Yes ___	No ___
Have you had “blackouts” or “flashbacks” as a result of drug use?	Yes ___	No ___
Do you ever feel bad about your drug abuse?	Yes ___	No ___
Does your spouse (or parents) ever complain about your involvement with drugs?	Yes ___	No ___
Have you neglected your family because of your use of drugs?	Yes ___	No ___
Have you engaged in illegal activities in order to obtain drugs?	Yes ___	No ___
Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs?	Yes ___	No ___
Have you had medical problems as a result of your drug use (e.g., memory loss, hepatitis, convulsions, bleeding, etc.)?	Yes ___	No ___

Scoring: one positive response warrants further evaluation

Figure 6–6 ■ Screening tools for alcohol and drug abuse.

Source: Adapted from “The Brief MAST: A Shortened Version of the Michigan Alcohol Screening Test” by A. D. Pokorny, B. A. Miller, and H. B. Kaplan, 1972, *American Journal of Psychiatry*, 129, pp. 342–345. Copyright 1972 by the American Psychiatric Association; and *Brief Drug Abuse Screening Test (B-DAST)* (p. 363) by H. A. Skinner, 1982, *Langford Lance, England: Elsevier Science Ltd*. Copyright 1982. Both reprinted by permission.

- *Brief Drug Abuse Screening Test (B-DAST)* is a yes/no self-administered questionnaire that is useful in identifying people who are possibly addicted to drugs other than alcohol. A positive response to one or more questions suggests significant drug abuse problems and warrants further evaluation. Because self-report tools are not always answered truthfully, all clients who screen positive for drug addiction should be evaluated according to other diagnostic criteria.

Withdrawal Assessment Tools

Nurses working in medical-surgical units, psychiatric units, and special substance abuse units routinely care for patients experiencing acute alcohol or opiate withdrawal. Several assessment tools are available to determine the severity of withdrawal symptoms and indicate the need for pharmacologic treatment to manage withdrawal symptoms. Examples of withdrawal assessment tools are the revised *Clinical Institute Withdrawal Assessment of Alcohol-Revised (CIWA-Ar)* (Sullivan et al., 1989) and the *Clinical Opiate Withdrawal Scale (COWS)* (Wesson & Ling, 2003).

- The *Clinical Institute Withdrawal Assessment of Alcohol-Revised (CIWA-Ar)* (Sullivan et al., 1989) (Figure 6-7 ■) is used widely in clinical and research settings for initial assessment and ongoing monitoring of alcohol withdrawal signs and symptoms. The CIWA-Ar scale is a validated 10-item assessment tool that can be used to monitor and medicate patients going through alcohol withdrawal. The CIWA-Ar assesses for several alcohol withdrawal symptoms (e.g., high blood pressure, rapid pulse and respirations, tremors, insomnia, irritability, sweating, and convulsions) and results in a score that is used to direct the administration of benzodiazepines or other drugs to relieve associated symptoms of withdrawal and prevent seizures. A score of 8 points or fewer corresponds to mild withdrawal symptoms. Scores of 9 to 15 points indicate moderate withdrawal, whereas a score of 15 or greater denotes severe withdrawal and an increased risk of delirium tremens and seizures.
- *Clinical Opiate Withdrawal Scale (COWS)* (Wesson & Ling, 2003) rates 11 common signs or symptoms of opiate withdrawal. The summed total score of the 11 items can be used to assess the intensity of opiate withdrawal and determine the extent of a patient's physical dependence on opioids. A score of less than 12 on the COWS indicates mild or no opiate withdrawal symptoms, whereas a score of 13 or more indicates moderate to severe withdrawal symptoms.

Nursing Diagnoses and Interventions

The primary nursing diagnoses and interventions for clients with substance abuse problems are listed below. Implications for nursing care in acute and home care settings are combined in this discussion. See the Nursing Care Plan on page 119 for more on the client experiencing withdrawal from alcohol.

Risk for Injury and Risk for Violence

- Assess client's level of disorientation to determine specific risks to safety. *Knowledge of the client's level of cognitive functioning is essential to the development of an appropriate plan of care.*

- Obtain a drug history as well as urine and blood samples for laboratory analysis of substance content. *Subjective history is often not accurate and knowledge regarding substance use is important for accurate assessment.*
- Place client in a quiet, private room to decrease excessive stimuli, but do not leave client alone if excessive hyperactivity or suicidal ideation is present. *Excessive stimuli increase client's agitation.*
- Frequently orient client to reality and the environment, ensuring that potentially harmful objects are stored outside the client's access. *Client may harm self or others if disoriented and confused.*
- Monitor vital signs every 15 minutes until stable and assess for signs of intoxication or withdrawal. *The most reliable information about withdrawal symptoms are vital signs; they provide information about the need for medication during detoxification.*

Ineffective Denial

- Be genuine, honest, and respectful of the client. Keep all promises and convey an attitude of acceptance of the client. *The development of a nonjudgmental, therapeutic nurse-client relationship is essential to gain the client's trust.*
- Identify maladaptive behaviors or situations that have occurred in client's life and discuss how the use of substances may have been a contributing factor. *The first step in combating denial is for the client to recognize the relationship between substance use and personal problems.*
- Do not accept the use of defense mechanisms such as rationalization or projection as the client attempts to blame others or make excuses for his or her behavior. Use confrontation with caring to avoid placing the client on the defensive. *Confrontation interferes with the client's ability to use denial.*
- Encourage client participation in therapeutic group activities such as co-occurring disorder or Alcoholics Anonymous (AA) meetings with other people who are experiencing or have experienced similar problems. *Peer feedback is often more accepted than feedback from authority figures.*

Ineffective Coping

- Establish a trusting relationship. *Trust is essential to the nurse-client relationship.*
- Set limits on manipulative behavior and maintain consistency in responses. *Client is unable to set own limits and must begin to accept responsibility without being manipulative.*
- Encourage client to verbalize feelings, fears, or anxieties. Use attentive listening and validate client's feelings with observations or statements that acknowledge feelings. *Verbalization of feelings helps client to develop insight into behaviors and long-standing problems.*
- Explore methods of dealing with stressful situations other than resorting to substance use. Provide encouragement for changing to a healthier lifestyle. Teach healthy coping mechanisms (e.g., physical exercise, progressive muscle relaxation, deep breathing exercises, meditation, and imagery). *Client needs knowledge about how to adapt to stress without resorting to drug use.*

Clinical Institute Withdrawal Assessment of Alcohol Scale, Revised (CIWA-Ar)

Patient: _____ **Date:** _____ **Time:** _____ (24 hour clock, midnight = 00:00)

Pulse or heart rate, taken for one minute: _____ **Blood pressure:** _____

NAUSEA AND VOMITING -- Ask "Do you feel sick to your stomach? Have you vomited?" Observation.
 0 no nausea and no vomiting
 1 mild nausea with no vomiting
 2
 3
 4 intermittent nausea with dry heaves
 5
 6
 7 constant nausea, frequent dry heaves and vomiting

TACTILE DISTURBANCES -- Ask "Have you any itching, pins and needles sensations, any burning, any numbness, or do you feel bugs crawling on or under your skin?" Observation.
 0 none
 1 very mild itching, pins and needles, burning or numbness
 2 mild itching, pins and needles, burning or numbness
 3 moderate itching, pins and needles, burning or numbness
 4 moderately severe hallucinations
 5 severe hallucinations
 6 extremely severe hallucinations
 7 continuous hallucinations

TREMOR -- Arms extended and fingers spread apart. Observation.
 0 no tremor
 1 not visible, but can be felt fingertip to fingertip
 2
 3
 4 moderate, with patient's arms extended
 5
 6
 7 severe, even with arms not extended

AUDITORY DISTURBANCES -- Ask "Are you more aware of sounds around you? Are they harsh? Do they frighten you? Are you hearing anything that is disturbing to you? Are you hearing things you know are not there?" Observation.
 0 not present
 1 very mild harshness or ability to frighten
 2 mild harshness or ability to frighten
 3 moderate harshness or ability to frighten
 4 moderately severe hallucinations
 5 severe hallucinations
 6 extremely severe hallucinations
 7 continuous hallucinations

PAROXYSMAL SWEATS -- Observation.
 0 no sweat visible
 1 barely perceptible sweating, palms moist
 2
 3
 4 beads of sweat obvious on forehead
 5
 6
 7 drenching sweats

VISUAL DISTURBANCES -- Ask "Does the light appear to be too bright? Is its color different? Does it hurt your eyes? Are you seeing anything that is disturbing to you? Are you seeing things you know are not there?" Observation.
 0 not present
 1 very mild sensitivity
 2 mild sensitivity
 3 moderate sensitivity
 4 moderately severe hallucinations
 5 severe hallucinations
 6 extremely severe hallucinations
 7 continuous hallucinations

ANXIETY -- Ask "Do you feel nervous?" Observation.
 0 no anxiety, at ease
 1 mild anxious
 2
 3
 4 moderately anxious, or guarded, so anxiety is inferred
 5
 6
 7 equivalent to acute panic states as seen in severe delirium or acute schizophrenic reactions

HEADACHE, FULLNESS IN HEAD -- Ask "Does your head feel different? Does it feel like there is a band around your head?" Do not rate for dizziness or lightheadedness. Otherwise, rate severity.
 0 not present
 1 very mild
 2 mild
 3 moderate
 4 moderately severe
 5 severe
 6 very severe
 7 extremely severe

AGITATION -- Observation.
 0 normal activity
 1 somewhat more than normal activity
 2
 3
 4 moderately fidgety and restless
 5
 6
 7 paces back and forth during most of the interview, or constantly thrashes about

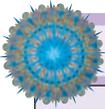
ORIENTATION AND CLOUDING OF SENSORIUM -- Ask "What day is this? Where are you? Who am I?"
 0 oriented and can do serial additions
 1 cannot do serial additions or is uncertain about date
 2 disoriented for date by no more than 2 calendar days
 3 disoriented for date by more than 2 calendar days
 4 disoriented for place/or person

Total **CIWA-Ar** Score _____
 Rater's Initials _____
 Maximum Possible Score 67

The *CIWA-Ar* is not copyrighted and may be reproduced freely. This assessment for monitoring withdrawal symptoms requires approximately 5 minutes to administer. The maximum score is 67 (see instrument). Patients scoring less than 10 do not usually need additional medication for withdrawal.

Figure 6–7 ■ Assessment tool for alcohol withdrawal.

Source: From "The Revised Clinical Institute Withdrawal Assessment for Alcohol scale (CIWA-Ar)" by J. T. Sullivan, K. Sykora, J. Schneiderman, C. A. Naranjo, & E. M. Sellers, 1989, *British Journal of Addictions*, 84, 1353–1357. Reprinted by permission.



NURSING CARE PLAN A Client Experiencing Withdrawal from Alcohol

George Russell, age 58, fell at home and broke his arm. His wife took him to the ER and an open reduction internal fixation (ORIF) of his right wrist was performed under general anesthetic in the operating room. He was admitted to the postoperative unit for observation following surgery because he required large amounts of anesthesia during the procedure.

Mr. Russell has a ruddy complexion and looks older than his stated age. He discloses that he was laid off from his factory job 2 years ago and has been working odd jobs until last week when he was hired by a local assembly plant. His father was a recovering alcoholic and his 30-year-old son has been treated for alcohol abuse in the past. Mr. Russell states that he knows alcoholism runs in the family, but he feels that he has his drinking under control. However, he cannot remember the events that led up to his fall and how he might have broken his arm.

ASSESSMENT

During the nursing assessment, Mr. Russell is hesitant to provide information and refuses to make eye contact. Prior to his operation, a BAL was drawn because the ER nurse detected alcohol on his breath. His BAL was 0.40% which is five times the legal limit for intoxication in many states. His vital signs are within the upper limits of normal, but he is confused and disoriented with slurred speech and a slight tremor of the hands. He is 6 feet tall and weighs 140 pounds. His total albumin is 2.9 mg and he has elevated liver enzymes. His wife states that he rarely eats the meals she prepares because he is usually drinking and has no appetite for food.

DIAGNOSES

- *Ineffective Individual Coping* related to possible hereditary factor and personal vulnerability
- *Risk for Injury* related to aggressive behavior, unsteady gait, and impaired motor responses
- *Ineffective Denial* related to inability to recognize maladaptive behaviors caused by substance use
- *Imbalanced Nutrition: Less than Body Requirements* related to anorexia manifested by decreased weight and low serum protein levels

EXPECTED OUTCOMES

- Client will express his true feelings associated with using alcohol as a method of coping with stressful situations.
- Client will identify three adaptive coping mechanisms he can use as alternatives to alcohol in response to stress.
- Client will verbalize the negative effects of alcohol and agree to seek professional help with his drinking.

- Client will be free of injury as evidenced by steady gait and absence of subsequent falls.
- Client will gain 1 lb (0.45 kg) per week without evidence of increased fluid retention. Serum albumin levels will return to normal range.

PLANNING AND IMPLEMENTATION

- Establish trusting relationship with client and spend time with him discussing his feelings, fears, and anxieties.
- Consult with a physician regarding a schedule for medications during detoxification and observe for signs of withdrawal syndrome.
- Explain the effects of alcohol abuse on the body and emphasize that prognosis is closely associated with abstinence.
- Teach a relaxation technique that the client feels is useful.
- Provide community resource information about self-help groups and, if client is receptive, a list of meeting times and phone numbers.
- Consult with a dietitian to determine number of calories needed to provide adequate nutrition and realistic weight gain. Document intake, output, and calorie count.
- Consult with physician to begin vitamin B₁ (thiamine) and dietary supplements.

EVALUATION

Mr. Russell was discharged from the postoperative unit without complications. He successfully underwent detoxification and contacted the Employee Assistance Program at his new place of employment. He was on medical leave while his arm completely healed and now attends Alcoholics Anonymous meetings 5 days a week. He reports that he enjoys taking long walks with his wife in the warm weather and that his appetite has returned. He has gained 10 pounds in the past 6 weeks and feels physically better than he has in many years.

CRITICAL THINKING IN THE NURSING PROCESS

1. Explain why it would be important to include questions about Mr. Russell's medication history and his use of other medications during the initial nursing assessment.
2. Mr. Russell asks you to explain the risks of taking disulfiram (Antabuse). What should you tell him?
3. Develop a care plan for Mr. Russell for the nursing diagnosis of *Imbalanced Nutrition: Less than Body Requirements*. Why is this necessary?

See Evaluating Your Response in Appendix C.

Imbalanced Nutrition: Less than Body Requirements

- Administer vitamins and dietary supplements as ordered by physician. *Vitamin B₁ is necessary to prevent complications from chronic alcoholism such as Wernicke's syndrome.*
- Monitor lab work (e.g., total albumin, complete blood count, urinalysis, electrolytes, and liver enzymes) and report significant changes to physician. *Objective laboratory tests provide necessary information to determine the extent of malnourishment.*

- Collaborate with dietitian to determine number of calories needed to provide adequate nutrition and realistic weight gain. Document intake, output, and calorie count. *Weight loss or gain is important assessment information so that an appropriate plan of care can be developed.*
- Teach the importance of adequate nutrition by explaining the Food Guide Pyramid (see Chapter 2) and relating the physical effects of malnutrition on body systems. *Client may have inadequate knowledge of proper nutritional habits.*

Chronic Low or Situational Low Self-Esteem

- Spend time with client and convey an attitude of acceptance. Encourage client to accept responsibility for own behaviors and feelings. *An attitude of acceptance enhances self-worth.*
- Encourage client to focus on strengths and accomplishments rather than weaknesses and failures. *Minimize attention to negative ruminations.*
- Encourage participation in therapeutic group activities. Offer recognition and positive feedback for actual achievements. *Success and recognition increase self-esteem.*
- Teach assertiveness techniques and effective communication techniques such as the use of “I feel” rather than “You make me feel” statements. *Previous patterns of communication may have been aggressive and accusatory, causing barriers to interpersonal relationships.*

Deficient Knowledge

- Assess client’s level of knowledge and readiness to learn the effects of drugs and alcohol on the body. *Baseline assessment is required to develop appropriate teaching material.*
- Develop teaching plan that includes measurable objectives. Include significant others, if possible. *Lifestyle changes often affect all family members.*
- Begin with simple concepts and progress to more complex issues. Use interactive teaching strategies and written materials appropriate to the client’s educational level. Include information on physiologic effects of substances, the propensity for physical and psychologic dependence, and the risks to a fetus if the client is pregnant. *Active participation and handouts enhance retention of important concepts.*

Disturbed Sensory Perceptions

- Observe for withdrawal symptoms. Monitor vital signs. Provide adequate nutrition and hydration. Place on seizure precautions. *These actions provide supportive physical care during detoxification.*
- Assess level of orientation frequently. Orient and reassure client of safety in presence of hallucinations, delusions, or illusions. *Client may be frightened.*
- Explain all interventions before approaching client. Avoid loud noises and talk softly to client. Decrease external stimuli by dimming lights. *Excessive stimuli increase agitation.*
- Administer prn medications according to detoxification schedule. *Benzodiazepines help to minimize the discomfort of withdrawal symptoms.*

Disturbed Thought Processes

- Give positive reinforcement when thinking and behavior are appropriate or when client recognizes that delusions are not based in reality. *Drugs and alcohol can interfere with client’s perception of reality.*
- Use simple, step-by-step instructions and face-to-face interaction when communicating with client. *Client may be confused or disoriented.*
- Express reasonable doubt if client relays suspicious or paranoid beliefs. Reinforce accurate perception of people or situations. *It is important to communicate that you do not share that false belief as reality.*

- Do not argue with delusions or hallucinations. Convey acceptance that the client believes a situation to be true, but that the nurse does not see or hear what is not there. *Arguing with the client or denying the belief serves no useful purpose, because delusions are not eliminated.*
- Talk to client about real events and real people. Respond to feelings and reassure client that he or she is safe from harm. *Discussions that focus on the delusions may aggravate the condition. Verbalization of feelings in a nonthreatening environment may help the client develop insight.*

Using NANDA, NIC, and NOC

Charts 6–1, 6–2, and 6–3 show links between NANDA, NIC, and NOC when caring for the client with a substance abuse problem.

Community-Based Care

The community provides many options for treating substance abuse including a mixture of individual, group, and family therapy. Medical detoxification can occur in hospitals, psychiatric units, special substance abuse units, methadone clinics, or outpatient settings. Less restrictive environments include residential rehabilitation programs, halfway houses, and partial hospitalization programs. These programs provide structured environments for the recovering substance abuser while maintaining a viable presence in the community. In addition, clients

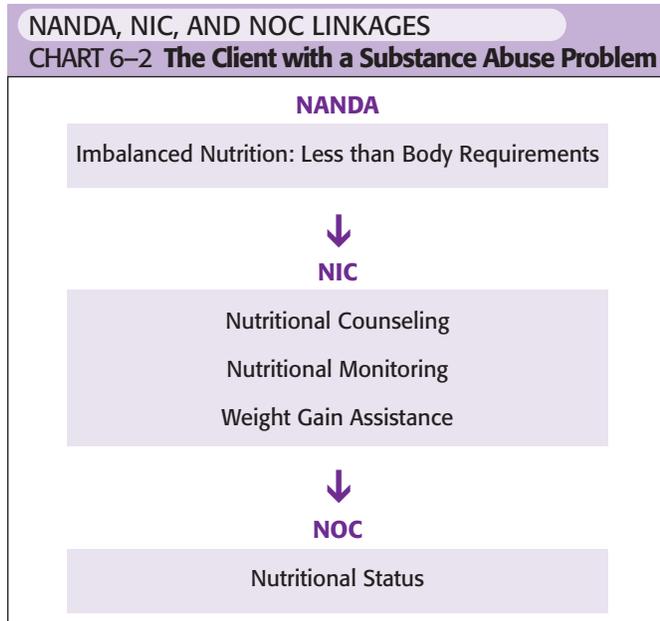
NANDA, NIC, AND NOC LINKAGES

CHART 6–1 The Client with a Substance Abuse Problem

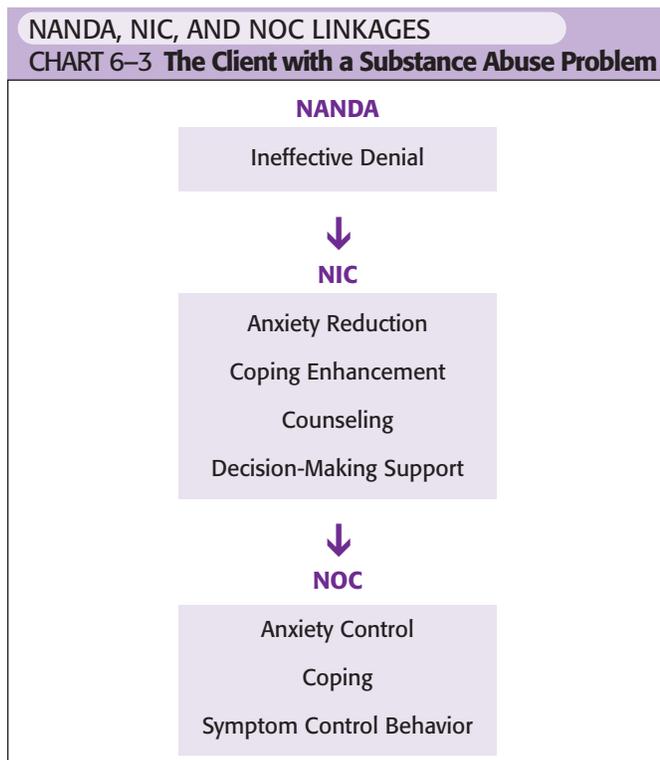


Data from NANDA’s *Nursing Diagnoses: Definitions & Classification 2005–2006* by NANDA International (2003), Philadelphia; *Nursing Interventions Classification (NIC)* (4th ed.) by J. M. Dochterman & G. M. Bulechek (2004), St. Louis, MO: Mosby; and *Nursing Outcomes Classification (NOC)* (3rd ed.) by S. Moorhead, M. Johnson, and M. Maas (2004), St. Louis, MO: Mosby.

can obtain vocational counseling, become involved in self-help groups such as Alcoholics Anonymous or Narcotics Anonymous, and receive drug and health education.



Data from *NANDA's Nursing Diagnoses: Definitions & classification 2005–2006* by NANDA International (2003), Philadelphia; *Nursing Interventions Classification (NIC)* (4th ed.) by J. M. Dochterman & G. M. Bulechek (2004), St. Louis, MO: Mosby; and *Nursing Outcomes Classification (NOC)* (3rd ed.) by S. Moorhead, M. Johnson, and M. Maas (2004), St. Louis, MO: Mosby.



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Teaching the client and family includes:

- The negative effects of substance abuse including physical and psychological complications of substance abuse
- The signs of relapse and the importance of after-care programs and self-help groups to prevent relapse
- Information about specific medications that help to reduce the craving for alcohol (naltrexone [ReVia]) and maintain abstinence (disulfiram [Antabuse]), including the potential side effects, possible drug interactions, and any special precautions to be taken (e.g., avoiding over-the-counter medications such as cough syrup that may have alcohol content)
- Ways to manage stress including techniques such as progressive muscle relaxation, abdominal breathing techniques, imagery, meditation, and effective coping skills.

In addition, suggest the following resources:

- Alcoholics Anonymous, Narcotics Anonymous, and other self-help groups
- Employee assistance programs
- Individual, group, and/or family counseling
- Community rehabilitation programs
- National Alliance for the Mentally Ill.

PRACTICE ALERT

Clients are at highest risk for relapse within the first few months after stopping the abused substance. An acronym that can assist the client in recognizing behaviors that lead to relapse is **HALT**: **h**ungry, **a**ngry, **l**onely, and **t**ired. Nurses should emphasize the importance of a balanced diet, adequate sleep, healthy recreation activities, and a caring support system to prevent relapse.

IMPAIRED NURSES

Healthcare providers are as susceptible as anyone else to developing substance abuse. By the very nature of their roles, dentists, pharmacists, physicians, and nurses are in frequent contact with drugs and are at high risk for substance abuse problems. One study exploring family history of alcohol and drug use in healthcare professionals found that nurses reported a higher prevalence of alcoholism in their families than dentists and physicians (Kenna & Wood, 2005). However, no significant differences were found in healthcare professionals' drinking levels. As a rule, nurses experience many pressures in the workplace and have easy access to drugs. Trinkoff and colleagues (2000) found that nurses reported higher substance use if they had easy access to prescription drugs, increased role strain, and close social connections with substance abusers. Two factors, stronger religious practices and treatment for depressive symptoms, were associated with reduced substance abuse. Substance abuse and dependence can lead to impaired professional practice; therefore, nurses must act responsibly when coworkers display signs of substance abuse. Healthcare professionals have a higher risk for opiate abuse than other professionals due to the high accessibility of opiates in their line of work (Trinkoff et al., 2000). If colleagues are showing signs of a substance abuse problem, information about impaired nurse programs is available through state boards of nursing to help individual nurses. Warning signs of impaired nurses in the workplace are listed in Table 6–4.

TABLE 6–4 **Warning Signs of Impaired Nurses in the Workplace**

AT-RISK SITUATIONS	OBSERVABLE WARNING SIGNS
Easy access to prescription drugs	Inaccurate narcotic counts or frequent missing drugs Clients complain of ineffective pain control, deny receiving pain meds Excessive “wasting” of drugs Volunteering to give medications to clients Frequent trips to the bathroom
Role strain	Frequent tardiness or absenteeism, especially before and after scheduled days off Haphazard, shoddy charting Client care judgment errors Unorganized, erratic behavior; unkempt appearance
Depression	Irritability, unable to focus or concentrate Abrupt mood swings Isolating self, taking long breaks Apathetic, depressed, lethargic Unexplained absences from assigned unit
Signs of alcohol or drug use	Smell of alcohol on breath Excessive use of perfumes, mouthwash, or mints Slurred speech, flushed face, reddened eyes, unsteady gait Wearing long sleeves in hot weather to cover up arms
Signs of withdrawal	Tremors, restlessness, sweating Watery eyes, runny nose, stomachaches

EXPLORE MEDIA LINK

Prentice Hall Nursing MediaLink DVD-ROM



Audio Glossary
NCLEX-RN® Review

Animation
Cocaine

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NCLEX-RN® Review
Care Plan Activities
Alcohol Withdrawal
Tobacco Cessation

Case Study: Alcohol Withdrawal
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CHAPTER HIGHLIGHTS

- Substance abuse is the unsanctioned use of any chemical despite adverse effects on the individual’s physical, psychological, interpersonal, or social health.
- Substance dependence occurs when control over the chemical substance is lost and the individual must use increasing amounts to produce the desired effect (tolerance) and must use the substance to avoid or relieve uncomfortable symptoms (withdrawal).
- Combinations of genetic, biologic, psychological, and sociocultural factors contribute to substance abuse or dependence. Addictive behavior has been linked to biochemical changes in dopamine and serotonin brain levels as well as heredity, ethnic differences, and peer pressure. Thorough assessment of individual risk factors is necessary to plan and deliver appropriate nursing interventions.
- Adolescents are particularly influenced by society and peers to use substances; predominantly tobacco, alcohol, and illicit drugs. A positive ethnic identity and family environment act as “protective” deterrents for substance use.
- Substance abusers have common characteristics including risk-taking behavior, low tolerance for frustration or pain, compulsive preoccupation with the substance, anxiety, anger, and low self-esteem. Stress management, anger control, social support, and counseling are helpful strategies to avoid substance abuse and dependence.
- Alcohol is the most commonly used and abused substance; however, polysubstance abuse is frequent in many individuals. Substances such as marijuana, cocaine, and methamphetamine are often used in conjunction with alcohol. Prescription anti-anxiety agents have been abused in the past; and there is a growing trend in prescription narcotic analgesic abuse.

- Nursing care of clients experiencing substance abuse problems includes health promotion efforts to prevent substance abuse: comprehensive physical, spiritual, and psychosocial assessment; and interventions for the human responses of ineffective coping and denial, imbalanced nutrition, low self-esteem, disturbed thought processes, disturbed sensory perception, and risk for injury or violence.
- Nurses are susceptible to substance abuse due to pressures in the workplace and easy access to drugs. Nurses need to assess their response to stress and seek early treatment for depressive symptoms to avoid impaired professional practice.

TEST YOURSELF NCLEX-RN® REVIEW

- 1 What is the minimum level of alcohol in the blood for an individual to be considered intoxicated?
 1. 0.05%
 2. 0.08%
 3. 0.50%
 4. 1.00%
- 2 Which of the following questions is *most* appropriate when interviewing the client who is suspected of alcohol abuse problems?
 1. "Typically, how many days per week do you drink alcoholic beverages?"
 2. "Have you been drinking lately?"
 3. "You don't drink much alcohol, do you?"
 4. "Has your drinking caused a lot of problems between you and your spouse?"
- 3 What is the rationale behind ordering thiamine (vitamin B₁) for a person with a history of chronic alcoholism?
 1. to prevent acute pancreatitis
 2. to prevent cirrhosis of the liver
 3. to prevent hepatic encephalopathy
 4. to prevent Wernicke's encephalopathy
- 4 Which of the following substances present the highest medical danger during withdrawal?
 1. CNS stimulants and amphetamines
 2. opiates and marijuana
 3. alcohol and CNS depressants
 4. amphetamines and hallucinogens
- 5 What is the rationale for prescribing disulfiram (Anatabuse) for a person who suffers from alcohol abuse?
 1. to decrease the discomfort of withdrawal symptoms
 2. to decrease the pleasant, reinforcing effects of alcohol
 3. to prevent the breakdown of alcohol, thereby inhibiting impulsive drinking
 4. to block the signs and symptoms of alcohol withdrawal
- 6 Which is NOT a warning sign of substance abuse in the nurse?
 1. impaired motor coordination, slurred speech, bloodshot eyes
 2. unkempt appearance; disorganized, erratic behavior
 3. clients consistently report effective pain control
 4. frequent absenteeism or tardiness, unexplained absences from the unit
- 7 Which of the following statements is FALSE?
 1. Smoking is the leading known cause of preventable death and disease among women.
 2. The smoking rates for women have steadily declined since the 1950s.
 3. Women who smoke during pregnancy have a higher risk for spontaneous abortions.
 4. Women who smoke have an increased risk for stroke and heart disease.
- 8 Which statement by the client illustrates an understanding of your teaching regarding naltrexone (ReVia)?
 1. "I should read labels of over-the-counter cold medicines to make sure they don't have alcohol."
 2. "I should stop taking all pain medications before starting on naltrexone."
 3. "I should go to my Narcotics Anonymous meetings for 1 month, then I can stop going."
 4. "I should wear a medical alert bracelet that states I'm taking naltrexone."
- 9 Which of the following is a realistic goal for a client with substance abuse?
 1. The client will identify ways to deal with stressful situations instead of resorting to substance use.
 2. The client will refrain from using substances until craving for the substance has been eliminated.
 3. The client will focus on negative aspects of past behaviors and interpersonal relationships.
 4. The client will be able to use alcohol or drugs in moderation.
- 10 An appropriate nursing diagnosis for a client with substance abuse problems is:
 1. *Imbalanced Nutrition: Greater than Body Requirements* related to food intake in excess of energy expenditure
 2. *Excess Fluid Volume* related to increased intake of vitamins and dietary supplements
 3. *Ineffective Denial* related to inability to recognize maladaptive behaviors related to substance use
 4. *Disturbed Thought Processes* related to infectious process and pain

See Test Yourself answers in Appendix C.

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