

Fetal Alcohol Spectrum Disorders

Competency-Based Curriculum Development Guide

for Medical and Allied Health Education and Practice



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention
National Center on Birth Defects and
Developmental Disabilities

FASD Regional Training Centers

National Organization on Fetal
Alcohol Syndrome (NOFAS)



Competency III: Models of Addiction

The health care student or provider will be able to apply concepts and models of addiction to women of childbearing age, including those who are pregnant, to provide appropriate prevention services, referral, and case management.

Learning Goals

(Learning objectives for each goal can be found at the end of this section.)

- III-A Explain past and current models of alcohol use.
- III-B Describe the categories of alcohol use in women.
- III-C Describe stages of alcohol use, dependence, and addiction.
- III-D Explain the stages of change in alcohol use.
- III-E Address co-occurring psychiatric disorders related to alcohol use.
- III-F Recognize characteristics of alcohol-dependent families.

Content Outline for Competency III

- I. Past and current models of alcohol use
- II. Categories of alcohol use in women
- III. Stages of alcohol use, dependence, and addiction
 - A. Medical criteria for alcohol use disorders
 - B. Stages of use
- IV. Stages of change in alcohol use
- V. Alcohol and co-occurring psychiatric disorders
- VI. Characteristics of alcohol-dependent families
 - A. Role of genetics
 - B. Family factors that might contribute to alcohol use

Also included in this section are:

- Suggested learning activities.
- References and additional readings/resources.
- Chart of all learning goals and objectives for this competency.

I. Past and Current Models of Alcohol Use

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Alcohol-related problems have been defined in many ways through history, depending on the political and social times. How we conceptualize a problem greatly influences how we treat it. While the most accepted model in the science community is a biomedical model, other models still have many proponents and provide alternative perspectives about how people think about and address alcohol issues. Some models were more prevalent historically, and some are still prevalent today. It should be noted that all of these models still might be used by some professionals today (Center for Substance Abuse Treatment, 1999; Rogers & McMillin, 1988).

1. **Moral model.** One of the first models of alcoholism, the moral model emphasized a personal choice as a cause of the problem. Here, someone who is alcohol dependent, typically referred to as “alcoholic” in this model, chooses whether to drink or to abstain. Proponents of the moral model see the alcoholic individual as unable or unwilling to “do the right thing” and as making choices in violation of societal norms and morals. Health care professionals and families who adhere to this model believe that the person doesn’t have the moral strength to resist alcohol’s temptation. Treatment consists of the individual’s recognizing the “sinfulness” of his or her state, asking for help, accepting punishment from the moral authorities and, once forgiven, being allowed back into society. No treatment, per se, is prescribed in this model. Punishment of the alcoholic behavior is important. The sole blame for alcoholism is on the alcohol-dependent individual.
2. **Sociocultural models.** A number of similar models promote the belief that alcohol (and drug) abuse is facilitated by society. Influencing factors include a lack of economic opportunity and positive role models in some geographic regions or among some groups of people. Additionally, in this model, social norms marginalize people who use drugs and abuse alcohol, and such marginalization leads to alcohol and drug peer networks that then provide social reinforcement. Treatment involves education, economic opportunity, and reintegration back into society.
3. **Psychological models.** A variety of related models are based on the idea that heavy drinking is promoted from observing others. Children, therefore, learn that drinking is an effective means of dealing with stress or enjoying social situations. Drinking is viewed as a way to numb emotional pain or achieve pleasure. Proponents of this model are likely to view alcohol and other substance use problems as indicative of a lack of other coping skills to deal with stress. Treatment involves learning positive coping skills, reducing stressors, and resolving other psychological and emotional problems.

The conditioning model, a cousin of the psychological models, purports that people learn to drink because it is reinforced. In the conditioning model, treatment relies on classical conditioning (usually aversive therapies) in which drinking is punished and abstaining is rewarded.

4. **Addictive disease model.** This model is sometimes confused with the biomedical model. The addictive disease model promotes the idea that addiction is a primary disease that is

progressive and incurable. The disease exists because of biological, personality, and spiritual dysfunction. A loss of control over alcohol and denial that one has an alcohol problem are indicators of the disease. Abstinence is the necessary first step for treatment. The Alcoholics Anonymous approach to treatment is based on this model. Other options include outpatient and residential detoxification.

5. **Biomedical model.** This model is most widely supported by the scientific literature. It is based on the idea that alcohol dependence is a brain disorder, related to dysfunction of neurotransmitters (most likely a mixture of dopamine, serotonin, GABA, and glutamate). There is both a genetic and environmental basis for dependency. Alcohol (and other drugs) is abused because it stimulates the reward pathway in the brain. Proponents of this approach might think abstinence is advisable but not see it as necessary for all people with dependency, favoring instead a harm-reduction approach, drug substitution, craving reduction medication, and brief psychotherapy, such as motivational interviewing and cognitive behavioral approaches.

Table 3.1 provides a definition of alcoholism developed by the Joint Committee to Study the Definition and Criteria for the Diagnosis of Alcoholism of the National Council on Alcoholism and Drug Dependence and the American Society of Addictive Medicine. Table 3.2 outlines the addictive disease process.

Table 3.1. Definition of Alcoholism

“Alcoholism is a primary, chronic disease with genetic, psychosocial, and environmental factors influencing its development and manifestations. The disease is often progressive and fatal. It is characterized by continuous or periodic impaired control over drinking, preoccupation with the drug alcohol, use of alcohol despite adverse consequences, and distortions in thinking, most notably denial.”

“Primary” refers to the nature of alcoholism as a disease entity in addition to and separate from other pathophysiological states that may be associated with it.

“Primary” suggests that alcoholism, as an addiction, is not a symptom of an underlying disease state.

“Disease” means an involuntary disability. It represents the sum of the abnormal phenomena displayed by a group of individuals. These phenomena are associated with a specified common set of characteristics by which these individuals differ from the norm, and which places them at a disadvantage.

“Often progressive and fatal” means that the disease persists over time and that physical, emotional, and social changes are often cumulative and may progress as drinking continues. Alcoholism causes premature death through overdose; through organic complications involving the brain, liver, heart, and many other organs; and by contributing to suicide, homicide, motor vehicle crashes, and other traumatic events.

“Impaired control” means the inability to limit alcohol use or to consistently limit on any drinking occasion the duration of the episode, the quantity consumed, and/or the behavioral consequences of drinking.

“Preoccupation” in association with alcohol use indicates excessive, focused attention given to the drug alcohol, its effects, and/or its use. The relative value thus assigned to alcohol by the individual often leads to a diversion of energies away from important life concerns.

“Adverse consequences” are alcohol-related problems or impairments in such areas as physical health (e.g., alcohol withdrawal syndromes, liver disease, gastritis, anemia, neurological disorders); psychological functioning (e.g., impairments in cognition, changes in mood and behavior); interpersonal functioning (e.g., marital problems and child abuse, impaired social relationships); occupational functioning (e.g., school or job problems); and legal, financial, or spiritual problems.

“Denial” is used here not only in the psychoanalytic sense of a single psychological defense mechanism disavowing the significance of events, but more broadly to include a range of psychological maneuvers designed to reduce awareness of the fact that alcohol use is the cause of an individual’s problems rather than a solution to those problems. Denial becomes an integral part of the disease and a major obstacle to recovery.

This definition was prepared by the Joint Committee to Study the Definition and Criteria for the Diagnosis of Alcoholism of the National Council on Alcoholism and Drug Dependence and the American Society of Addiction Medicine. Approved by the Boards of Directors of the National Council on Alcoholism and Drug Dependence, Inc. (February 3, 1990) and the American Society of Addiction Medicine (February 25, 1990).

Table 3.2. Addictive Disease Process

Addictive disease process is a chronic, primary progressive disease characterized by:

- A. Craving and compulsion.
- B. Loss of control.
- C. Continued use despite adverse consequences.

A. Craving and Compulsion

- Mildest form of craving is vivid dreams about the pleasures of use.
- More pronounced craving—thinking about how nice the drug was.
- Preoccupation on planning the next opportunity to use the drug (unable to stay in the now).
- Actual physical hunger for the drug (withdrawal).

B. Loss of Control

- Amount: Becomes increasingly less able to predict the amount of drug one will use once started. Has difficulty “saving” some of the drug for later use. As disease progresses, larger amounts of drug are needed to satisfy increasing desire.
- Time and place: Finds it difficult to confine use to times and place.
- Duration of episode: May use drug until it’s all gone, which prevents other activities, i.e., missing time from work and neglecting obligations, family and/or financial.

C. Continued Use Despite Adverse Consequences

- May affect areas of life: legal, family, health, occupational, sexual, social.
- Drug use patterns:
 1. Variety of drugs.
 2. Alternating drug of choice.
 3. Over lifetime, progression towards more severe involvement.

Since the addictive disease process is both chronic and progressive, one assumes that it will continue to grow steadily if it is not arrested.

Source: Mitchell, K. T. (2003, September). Presented at “Hope for Women in Recovery: Understanding and Addressing the Impact of Prenatal Alcohol Exposure,” Baltimore, Maryland.

II. Categories of Alcohol Use in Women

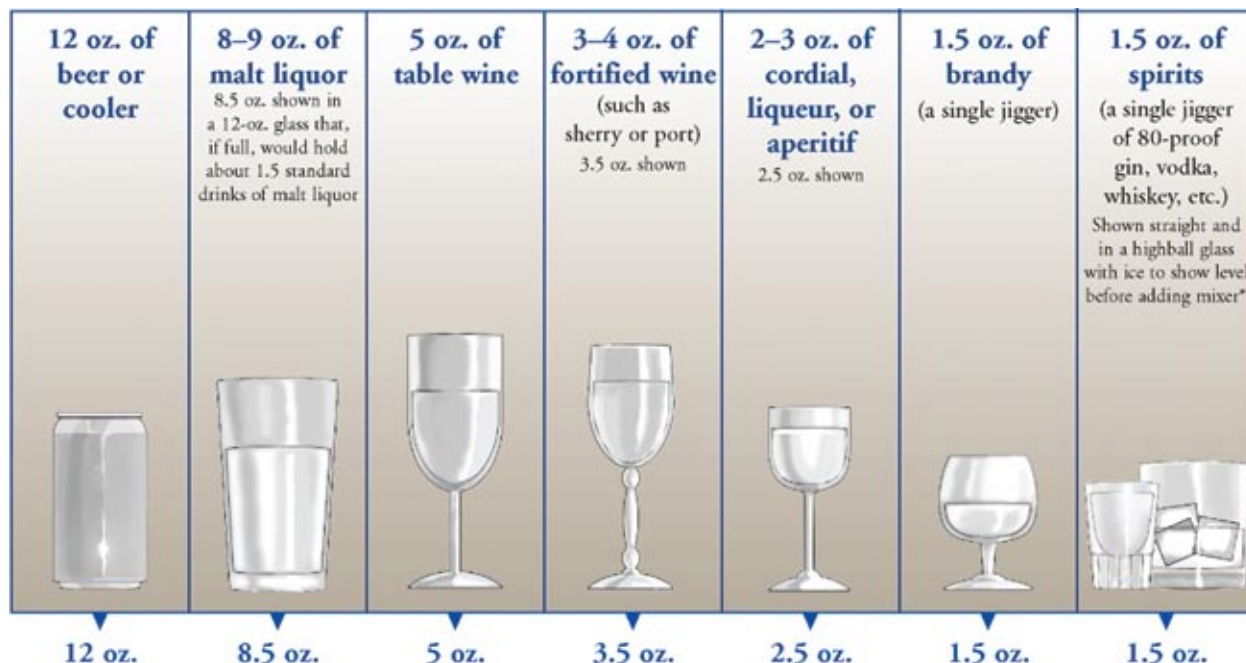
Susan Adubato, PhD; Kathleen Mitchell, MHS, LCADC; and Tara Rupp

More than half of all women of childbearing age (18–44 years) report some alcohol use, and one in eight reports binge drinking in the past month (Centers for Disease Control and Prevention [CDC], 2002). Many of these women are sexually active and are often not taking effective measures to prevent pregnancy. These women are at high risk for an alcohol-exposed pregnancy (AEP) as they might continue drinking early in pregnancy at levels that are harmful to the fetus (U. S. Department of Agriculture & U.S. Department of Health and Human Services, 2000).

Although most women reduce alcohol consumption after learning that they are pregnant (CDC, 1995), in the United States, 10% of pregnant women report consuming any alcohol and 2%–4% report binge drinking (Tsai & Floyd, 2004; Substance Abuse and Mental Health Services Administration [SAMHSA], 2002). In these findings, binge drinking was defined as consuming five or more drinks on any one occasion. More recently, the definition of binge drinking for women has been changed to four or more drinks on any one occasion (National Institute on Alcohol Abuse and Alcoholism [NIAAA], 2005).

Traditionally, all drinks have been considered equivalent in terms of the amount of absolute alcohol. A standard drink contains about 14 grams (about 0.6 fluid ounces) of pure alcohol, which is equivalent to one 12-ounce beer or wine cooler, one 5-ounce glass of wine, or 1.50 ounces of 80-proof distilled spirits. However, people buy many alcoholic drinks in containers that hold multiple standard drinks. For example, malt liquor is often sold in 16-, 22-, or 40-ounce containers that hold between two and five standard drinks, and table wine is typically sold in 25-ounce (750 ml.) bottles that hold five standard drinks. Figure 3.1 shows approximate standard drink equivalents of common alcoholic drinks.

Figure 3.1. Standard Drink



Source: National Institute on Alcohol Abuse and Alcoholism. (2005). *Helping Patients Who Drink Too Much: A Clinician's Guide*. Bethesda, MD: U.S. Department of Health and Human Services. NIH Pub. No. 07-3769.

Women fall into one of the following categories with regard to alcohol use (NIAAA, 1999):

1. **Abstainers.** Do not consume any alcohol at all or less than 1 drink per month.
2. **Low-risk drinkers.** Consume 1–2 standard drinks per day, three or fewer times per week. Their use of alcohol does not affect their health and it does not result in negative consequences. They do not use alcohol before driving, when pregnant, when breastfeeding, or with certain medications.
3. **At-risk drinkers.** Consume 7–21 standard drinks per week; consume more than 3–4 standard drinks per occasion, or drink in high-risk situations.
4. **Problem drinkers.** Consume more than 21 standard drinks per week and might experience negative consequences from such drinking (behavioral, family, medical, mental health, employment, social, legal, etc.).
5. **Alcohol-dependent drinkers.** Cannot stop drinking once they start. They experience repeated negative consequences from such drinking (behavioral, family, medical, mental health, employment, social, legal, etc.). Heavy drinking leads to a physical need for alcohol.

Tables 3.3 and 3.4 show diagnostic criteria and sample assessment questions for alcohol abuse and alcohol dependence, respectively (more information will be found under DSM-IV criteria, in the next section).

Table 3.3. Alcohol Abuse: Diagnostic Criteria with Sample Questions for Assessment

One or more of the following occurring at any time in the same 12-month period (all questions prefaced by “In the past 12 months...”):

Failure to fulfill major role obligations at work, school, or home because of recurrent drinking

- Have you had a period when your drinking—or being sick from drinking—often interfered with taking care of your home or family? Caused job troubles? School problems?

Recurrent drinking in hazardous situations

- Have you more than once driven a car or other vehicle while you were drinking? Or after having had too much to drink?
- Have you gotten into situations while drinking or after drinking that increased your chances of getting hurt—like swimming, using machinery, or walking in a dangerous area or around heavy traffic?

Recurrent legal problems related to alcohol

- Have you gotten arrested, been held at a police station, or had any other legal problems because of your drinking?

Continued use despite recurrent interpersonal or social problems

- Have you continued to drink even though you knew it was causing you trouble with your family and friends?
- Have you gotten into physical fights while drinking or right after drinking?

Source: National Institute on Alcohol Abuse and Alcoholism. (2005). *Helping Patients Who Drink Too Much: A Clinician's Guide*. Bethesda, MD: U.S. Department of Health and Human Services. NIH Pub. No. 07-3769.

Table 3.4. Alcohol Dependence: Diagnostic Criteria with Sample Questions for Assessment

Three or more of the following, occurring at any time in the same 12-month period (all questions prefaced by “In the past 12 months...”):

Tolerance

- Have you found that you have to drink much more than you once did to get the effect you want? Or that your usual number of drinks has much less effect on you than it once did?

Withdrawal syndrome or drinking to relieve withdrawal

- When the effects of alcohol are wearing off, have you had trouble sleeping? Found yourself shaking? Nervous? Nauseated? Restless? Sweating or with your heart beating fast? Have you sensed things that aren’t really there? Had seizures?
- Have you taken a drink or used any drug or medicine (other than over-the-counter pain relievers) to keep from having bad after-effects of drinking? Or to get over them?

Impaired control

- Have you more than once wanted to stop or cut down on your drinking? Or tried more than once to stop or cut down but found you couldn’t?

Drank more or longer than intended

- Have you had times when you ended up drinking more than you meant to? Or kept on drinking for longer than you intended?

Neglect of activities

- In order to drink, have you given up or cut down on activities that were important or interesting to you or gave you pleasure?

Time spent related to drinking or recovering

- Have you had a period when you spent a lot of time drinking? Or being sick or getting over the bad after-effects of drinking?

Continued use despite recurrent psychological or physical problems

- Have you continued to drink even though you knew it was making you feel depressed or anxious? Or causing a health problem or making one worse? Or after having a blackout?

Source: National Institute on Alcohol Abuse and Alcoholism. (2005). *Helping Patients Who Drink Too Much: A Clinician’s Guide*. Bethesda, MD: U.S. Department of Health and Human Services. NIH Pub. No. 07-3769.

III. Stages of Alcohol Use, Dependence, and Addiction

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A. Medical Criteria for Alcohol Use Disorders

The American Medical Association recognized alcoholism as a disease in 1956. According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), as many as 90% of the adults in the United States have had some experience with alcohol. Of these adults, 60% of men and 30% of women have had one or more “alcohol-related adverse life event,” such as missing work due to a hangover or driving while intoxicated (American Psychiatric Association [APA], 2000).

Following are the DSM-IV (APA, 2000) criteria for alcohol-related disorders. It should be noted that in addition to these criteria, generic aspects of substance abuse and dependence can be found in the DSM-IV criteria for those specific issues (Table 3.5).

303.90 — Alcohol Dependence. Individuals with alcohol dependence continue to consume alcohol, regardless of adverse consequences, usually to avoid or relieve the withdrawal symptoms. Approximately 5% of the individuals with alcohol dependence will experience true alcohol withdrawal and its complications. A primary mental disorder should be considered when symptoms persist.

305.00 — Alcohol Abuse. When individuals abuse alcohol, many facets of their lives can be affected. They might experience problems in school or with their job performance; neglect the care of their family; put themselves in hazardous situations, such as driving while intoxicated or using machinery while drunk; and face legal problems as a result of their continued drinking. If an individual experiences tolerance, withdrawal, or compulsive behavior as well, one should consider a diagnosis of alcohol dependence.

303.00 — Alcohol Intoxication. Here, the essential feature is the presence of “significantly maladaptive behavioral or psychological changes...” (APA, 2000, p. 196) that develop during, or shortly after, the use of alcohol. Instances of sexually inappropriate behavior, impaired judgment, or social functioning also are evident. See Table 3.6 for full diagnostic criteria. Evidence of use is usually obtained by the smell of alcohol on the person’s breath, doing a blood and urine toxicology analysis, and taking a history of use.

291.81 — Alcohol Withdrawal. Here, the essential feature is withdrawal symptoms that develop after one stops heavy and prolonged alcohol use. Table 3.7 presents the full criteria. If hallucinations or illusions are also observed, one can specify “with perceptual disturbances.” Symptoms usually are relieved by the consumption of alcohol, or any other “brain depressant.” The symptoms are evident usually within 4–12 hours of cessation of alcohol use, but can last for days. Because of the short half-life of alcohol, withdrawal usually peaks by day 2 and will be markedly improved by the fourth or fifth day. After initial withdrawal, however, some physiological symptoms, such as insomnia and anxiety, can last for months. Dramatic symptoms, such as delirium, usually occur in only 5% of individuals with alcohol withdrawal.

Table 3.5. Alcohol-Induced Disorders

291.0	Alcohol Intoxication Delirium
291.0	Alcohol Withdrawal Delirium
291.2	Alcohol-Induced Persisting Dementia
291.1	Alcohol-Induced Persisting Amnestic Disorder
291.5	Alcohol-Induced Psychotic Disorder, with Delusions Specify if: With Onset During Intoxication/With Onset During Withdrawal
291.3	Alcohol-Induced Psychotic Disorder, with Hallucinations Specify if: With Onset During Intoxication/With Onset During Withdrawal
291.89	Alcohol-Induced Anxiety Disorder Specify if: With Onset During Intoxication/With Onset During Withdrawal
291.89	Alcohol-Induced Mood Disorder Specify if: With Onset During Intoxication/With Onset During Withdrawal
291.89	Alcohol-Induced Sexual Dysfunction Specify if: With Onset During Intoxication
291.89	Alcohol-Induced Sleep Disorder Specify if: With Onset During Intoxication/With Onset During Withdrawal
291.9	Alcohol-Related Disorder Not Otherwise Specified

Source: American Psychiatric Association (2000). *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR)*. Washington, D.C.: American Psychiatric Association.

Table 3.6. Diagnostic Criteria for 303.00 Alcohol Intoxication

- A. Recent ingestion of alcohol.
- B. Clinically significant maladaptive behavioral or psychological changes (e.g., inappropriate sexual or aggressive behavior, mood liability, impaired judgment, impaired social or occupational functioning) that developed during, or shortly after, alcohol ingestion.
- C. One (or more) of the following signs, developing during, or shortly after, alcohol use:
 - slurred speech
 - incoordination
 - unsteady gait
 - nystagmus
 - impairment in attention or memory
 - stupor or coma
- D. The symptoms are not due to a general medical condition and are not better accounted for by another medical disorder.

Source: American Psychiatric Association (2000). *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR)*. Washington, D.C.: American Psychiatric Association.

Table 3.7. Diagnostic Criteria for 291.81 Alcohol Withdrawal

- A. Cessation of (or reduction in) alcohol use that has been heavy and prolonged.
- B. Two (or more) of the following, developing within several hours to a few days after criterion A:
 - autonomic hyperactivity (e.g., sweating or pulse rate greater than 100)
 - increased hand tremor
 - insomnia
 - nausea or vomiting
 - transient visual, tactile, or auditory hallucinations or illusions
 - psychomotor agitation
 - anxiety
 - grand mal seizures
- C. The symptoms in Criterion B cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.
- D. The symptoms are not due to a general medical condition and are not better accounted for by another medical disorder.

Specify if: With Perceptual Disturbances

Source: American Psychiatric Association (2000). *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR)*. Washington, D.C.: American Psychiatric Association.

B. Stages of Use

There is a definite pattern of symptoms and progression of alcohol abuse and addiction, in terms of increasing dysfunction. The following presents the three primary stages of alcohol use, dependence, and addiction (See also Table 3.8).

1. **Tolerance.** Tolerance is the ability to drink without becoming intoxicated. Alcohol tolerance usually indicates the presence of alcoholism, or eventually becoming alcoholic—although not everyone with high tolerance will become an alcoholic. It represents the physical adaptation to the intoxicating properties of alcohol. The development of alcohol tolerance has relatively nothing to do with a person’s weight. Tolerance progressively increases in that it takes more and more alcohol to give the same result. In this stage, the use of alcohol usually is socially motivated, and the individual seeks psychological relief by drinking. The “advantage” of tolerance is that it allows the alcoholic to hide the extent of his or her drinking after the appearance of the second stage.
2. **Physical dependency.** Physical dependence on alcohol motivates the large bulk of alcoholic drinking. Once withdrawal begins, the alcoholic drinks more to alleviate or eliminate the symptoms. When one drinks continually, for no reason other than to drink, it is the physical dependency, and the last drink has “worn off.” In this stage, an individual might experience blackouts, sneak drinks, gulp down alcohol, and feel guilty about drinking.
3. **Major organ change.** Major organ change is seen when alcohol has done measurable damage to the body. It can be an enlarged liver, kidney and pancreas problems, and a whole range of alcohol-related health problems. The effects of alcohol on organs are the most debilitating of any substance. Physical damage plays a key role in alcoholic behavior and in the progression of alcoholism.

Treatments. Many options for treatment exist, depending on the stage of the alcohol use. Alcohol dependence is usually treated through withdrawal and detoxification, followed by further interventions to maintain abstinence. Severity of withdrawal symptoms increases with each withdrawal episode. Severe withdrawal occurs in 2%–5% of all heavy drinkers and chronic alcoholics. It could last for 3–7 days. Death, which occurs in less than 1%, occurs when there is cardiovascular collapse or concurrent infection. The use of benzodiazepines and phenobarbital reduces the risk of seizures when individuals are medically withdrawn. Individuals are usually admitted to a hospital or treatment center for detoxification. Long-lasting neurobiologic effects contribute to the persistence of the craving. Relapse can be triggered at any stage of the recovery by internal or external factors. Thus, health care providers must help the individual understand, anticipate, and prevent relapse.

Other interventions used include:

- Alcoholics Anonymous and 12-step facilitation therapy—12 steps to work through during recovery (Alcoholics Anonymous, 2007).
- Cognitive-behavior therapy—teaches individuals, through role-play and rehearsal, to recognize and cope with situations for relapse, and how to cope with cravings (Center for Substance Abuse Treatment, 1997, 2005).

- Motivational enhancement therapy (MET)—motivates patients to use their own resources to change their behavior. This is considered brief intervention and works best with social drinkers (Center for Substance Abuse Treatment, 1999, 2005).
- Pharmacotherapy—use of anticraving medications (e.g., acamprosate and naltrexone), aversive medications (e.g., disulfiram) and medications to treat the co-morbidities (e.g., Prozac) (National Institute on Alcohol Abuse and Alcoholism [NIAAA], 2005). Other compounds, currently approved for other medical issues, are being tested in clinical trials and have so far shown some efficacy as treatment for alcohol dependence. Further outcomes are pending (Johnson et al., 2007).

A 2006 randomized controlled trial comparing various combinations of drug therapy (acamprosate and naltrexone), behavior therapy, or both, showed that patients with alcohol dependency had better outcomes if given naltrexone (100 mg/day), behavioral intervention, or both. Acamprosate showed no evidence of efficacy, even with behavioral therapy. No combination was better than treatment with naltrexone alone or behavioral therapy alone, in the presence of medical management. These findings suggest that treatment for alcohol-dependent individuals could be delivered in the primary care setting (Anton et al., 2006).

Table 3.8. Primary Stages of Alcohol Use, Dependency, and Addiction

Stage 1 Tolerance (Early)	Stage 2 Physical Dependency (Middle)	Stage 3 Major Organ Change (Late)
Occasional use	A.M. use, daily use	Maintenance use
One drug, two gateway drugs (nicotine, alcohol, marijuana)	Variety of drugs	Multiple drug addiction
Tolerance	Increased tolerance	Change in tolerance
Occasional hangover	Withdrawal headaches, nausea	Migraine, vomiting
Anxiousness	Irritability, mood swings, paranoia	Mood disorder, paranoid disorders
Disrupted sleep patterns	Sleeplessness	Insomnia
Mild depression	Depression, institutions, psychiatric diagnosis, Rx	Suicidal ideation or attempts
Colds, infections	Disease pathology developing	Major organ damage
Increased sexual pleasure (reduced inhibitions)	Sexual problems	Impotence or sexual dysfunction
Mild tremors or shakes	Intention tremors	DTs (delirium tremors)
Vivid dreams	Nightmares	Night sweats
Memories of how nice the use was	Preoccupation, craving	Compulsion, use despite consequences
Occasional blackouts (memory loss)	Development of blackout patterns	Longer, more frequent duration of memory loss (weeks or months)
Outside Influences		
Family problems	School or work problems	Loss of job, family, school
In trouble with the law (close calls)	DWI/DUI possession	Incarceration
Source: Mitchell, K. (2000). Adapted from Rogers, C. R., & McMillin, C. S. (1988). <i>Don't help: A positive guide to working with the alcoholic</i> . Seattle: Madrona Publishers.		

IV. Stages of Change in Alcohol Use

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Much has been written about success and failure rates in helping patients change, identifying barriers to change, and improving outcomes. The stages of change model described below is an outgrowth of the smoking cessation research.

Behavior change is not a single, discrete event. Few people have an epiphany event that readily changes their behavior. Behavior change is seen as a process, with identifiable stages. One can take action at any point in the process to assist in change. This model shows that a person's behavior occurs gradually, with the individual moving from an uninterested/unaware state to deciding to change to making the necessary actions to maintain the new behavior. Relapses often occur and are part of the overall process.

The stages of change, as pertains to drinking, are as follows (Center for Substance Abuse Treatment, 1999; Zimmerman, Oslen, & Bosworth, 2000):

1. **Precontemplation.** In this stage, the woman does not even consider changing. She is still in denial of her drinking problem and will probably not seek advice. Typically, someone else perceives the alcohol problem in the woman; the woman herself does not. She will likely resist suggestions to change in this stage.

Goal: The woman will begin to think about change. Here, the intervention must concentrate on trying just to engage the woman, increase belief that change is possible, address safety concerns, provide needed services, find the woman's strengths and capacity for change, and raise her awareness of the problem. Other models that could be helpful at this stage include motivational interviewing, Locus of Control, and the Health Belief Model (Glanz, Rimer, & Viswanath, 2008).

2. **Contemplation.** Here the woman has some awareness of her drinking problem but might be ambivalent about changing. She might reject change because she will need to give up enjoyable behavior. She might feel more of a sense of loss than perceived gain. Here, the woman needs to assess barriers to change (time, expense, hassle, fear, "I know I should stop drinking but...") as well as the beneficial results of the change.

Goal: The woman will examine benefits and barriers. In this stage, the intervention must tip the balance in favor of change, giving reasons to change and risks of not changing, and strengthening the woman's sense of self-efficacy for change. She must self-assess values, strengths, and needs. Sometimes there is a coerced action to change. Successful treatment models for this stage include motivational interviewing/person-centered approach, positive reinforcement, asking open-ended questions to elicit self-motivational statements and goal-setting.

3. **Preparation.** Here the woman is ready to change and prepares to make a specific change. Changes might start small, growing as her determination to change increases. This is a window of opportunity when the woman has resolved her ambivalence enough to make the change.

Goal: In this stage, the intervention must assist the woman in matching appropriate and effective strategies. One should explore various options and their benefits and consequences. Set specific goals, steps to the goals, and resources that will be needed. Another treatment approach is cognitive-behavioral therapy.

4. **Action.** Now the woman is ready to engage in new behavior that will bring about the elimination of her alcohol use. Any action taken should be praised because it demonstrates a desire for and effort to change.

Goal: In this stage, intervention should assist the woman in looking at her addiction and in identifying coping strategies to change, replace, or avoid triggers that lead to alcohol use. One can help the woman try out some strategies and evaluate their effectiveness. Steps taken should be small and incremental. Reward any small step of change, and estimate success. Other treatments include cognitive-behavioral therapies and a 12-step program.

5. **Maintenance/Relapse.** Here, the woman tries to sustain changes accomplished in the previous stage. This stage, obviously, is the hardest, because it involves incorporating the changes “over the long haul.” Discouragement over occasional slips might stop progress, and the woman might want to give up. This is a natural part of the process.

Goal: In this stage, one reviews goals, coping strategies, progress, and overall health and well-being. Constructing relapse roadmaps and crisis plans for relapse, identifying warning signs of possible relapse, and connecting the woman to support systems are crucial to this stage of change. One must understand that maintaining the new behavior occurs over time. Family members need to be an integral part of this process. Other treatment models include motivational interviewing, 12-step programs, and cognitive-behavioral therapies.

V. Alcohol and Co-Occurring Psychiatric Disorders

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Interest in the co-occurrence of alcohol use and psychiatric disorders is growing. If an individual has one or more disorders relating to alcohol use (or any substance use) and one or more mental disorders, they are said to have a co-occurring disorder. The diagnosis of the psychiatric disorder must be established independently, and not just a cluster of symptoms relating to the alcohol use. The term for “substance abuse,” as well as any mental disorder, refers to all disorders described in the DSM-IV (Center for Substance Abuse Treatment, 2005).

Following are some findings relating to co-occurring disorders and alcohol use:

- Among adults with serious mental illness, 23.2% were alcohol dependent or abused alcohol (SAMHSA, 2003).
- In the 2002 National Survey on Drug Use and Health, serious mental illness was correlated with binge drinking (defined at the time as five or more drinks on one occasion). Among adults with serious mental illness, 28.8% reported binge drinking (SAMHSA, 2003).
- The National Comorbidity Study, conducted from 1990 to 1992, found that among survey respondents who said they had lifetime alcohol abuse or dependence, 53% also had one or more lifetime mental disorders (U.S. Department of Health and Human Services, 1995).
- Alcohol abuse is associated with 25%–50% of suicides; a co-morbidity of alcoholism and depression increases suicide risk (Center for Substance Abuse Treatment, 2005).
- The most common co-morbidities for women who drink are anxiety and mood disorders (Enoch & Goldman, 2002).
- Symptoms such as anxiety, agitation, and paranoia can be either manifestations of alcohol intoxication or symptoms of withdrawal (APA, 2000).
- Depression, anxiety, and insomnia usually either precede or accompany alcohol dependence (Flynn, Craddock, Luckey, Hubbard, & Dunteman, 1996).
- Alcohol dependence might be associated with mood disorders, anxiety disorders, and schizophrenia (APA, 2000).
- Antisocial personality disorder might also be associated with alcohol-related disorders (Flynn et al., 1996). This co-occurrence will increase the likelihood of criminal behavior. The DSM-IV reports that more than half of all murderers and their victims are believed to have been intoxicated with alcohol at the time of the murder (APA, 2000).
- Among adolescent alcohol users, one might find conduct disorder and repeated antisocial behavior, as well as depression and suicide, eating disorders, and hormonal differences (Center for Substance Abuse Treatment, 2005).

A thorough assessment of both the alcohol use and the mental disorder should be made to ensure proper intervention. Interventions might include psychopharmacology, individual or group counseling, cognitive-behavioral therapy, motivational enhancement therapy, family interventions,

12-step programs, and case management. Interventions might include outpatient or inpatient programming. Dual-diagnosis enhanced programs integrate the substance abuse and mental health treatment services (American Society of Addiction Medicine, 2001). Any intervention should be targeted at the management and resolution of acute symptoms, relapse, and long-term care. One also needs to remember cultural factors that might enhance or impede the assessment and intervention.

The Treatment Improvement Protocol (TIP) Series 42, *Substance Abuse Treatment for Persons with Co-Occurring Disorders*, provides a comprehensive overview, reference, and intervention protocol for best practices with treating individuals with co-occurring disorders (Center for Substance Abuse Treatment, 2005).

VI. Characteristics of Alcohol-Dependent Families

Susan Adubato, PhD; Kathleen Mitchell, MHS, LCADC; and Tara Rupp

The role that families have in the development of an addiction, specifically alcoholism, in an individual seems intuitive. Many factors related to family life have been shown to influence addictive behavior, including stress; observance of domestic violence between family members; experience of abuse by a parent, sibling, or other relative; isolation; genetics; and the existence of alcoholism in the family. These factors might be specific and obvious or ill-defined and subtle. Often it is difficult to identify a problem and facilitate assistance for an individual because of denial among family members.

A. Role of Genetics

Certain factors are unchangeable and therefore are not focused on when attempting to create services or educational programs for alcohol addiction. However, it is important to acknowledge and understand the role of these factors to fully appreciate the possible components at work in addiction development.

An individual's genes can determine the possible effects of alcohol, and further, the possibility of developing alcohol addiction. Genes can determine how an individual's body metabolizes alcohol. The slower alcohol is metabolized, the quicker the effects of the alcohol can be experienced and vice versa (International Center for Alcohol Policies, 2001). Furthermore, genes can affect an individual's alcohol tolerance, ability to process the alcohol, and risk of alcoholism or alcohol addiction.

Enzymes called alcohol dehydrogenase (ADH) and aldehyde dehydrogenase (ALDH) are found in the liver and help the alcohol eventually metabolize into carbon dioxide and water. In people with certain genotypes, these enzymes are less active or less efficient; these gene variants can be more prevalent in certain populations (e.g., some Asian ethnicities) (International Center for Alcohol Policies, 2001). People with deficiencies of ADH and ALDH might be more susceptible to the effects of alcohol.

Genes linked with alcohol tolerance and dependence are typically inherited. One study suggests that an estimated 5%–10% of females and 25% of males who have relatives who are alcoholics will develop alcohol dependence themselves. This study suggests that alcoholism can be passed down from generation to generation. It also suggests that (depending on an individual's genes) males and females can experience the effects of alcohol differently. It is important to note, however, that genetics are but one of the factors that can determine an individual's risk of alcoholism. Many other factors contribute to the development of alcohol dependence (International Center for Alcohol Policies, 2001).

B. Family Factors That Might Contribute to Alcohol Use

A parent's consumption of alcohol is thought to be associated with a child's initiation and continuation of alcohol consumption. A study on heritability and alcoholism found that "early use of alcohol in mothers...was associated with a significant increase in both sons' and daughters' risk of alcohol use by age 14" (McGue, Iacano, Legrand, & Elkins, 2001, p. 1166).

Maternal alcohol consumption and behavior can increase the risk of alcohol use by her children. Alcoholism in a parent can cause negative social and emotional consequences that last into adulthood and can increase the risk of alcohol misuse (Table 3.9).

Parental attitudes about drinking alcohol are also associated with whether a child will initiate and continue to drink. “Children who were warned [of the negative effects of] alcohol by their parents and children who reported being closer to their parents were less likely to start drinking” (NIAAA, 1997).

One study showed that higher levels of emotional abuse, parental alcoholism, constant parental conflict, and being made to feel unwanted or unloved can lead to alcohol addiction. The women in the study, who were recovering alcoholics, experienced more aversive childhood experiences than the general population (Harmer, Sanderson, & Mertin, 1999).

A parent’s or caregiver’s lack of involvement or negative involvement in a child’s life (especially in the formative years) can also lead to alcoholism. A lack of involvement can include lack of support, monitoring, and communication; negative involvement includes harsh, inconsistent discipline, and hostility or rejection. It is important to note that not only direct and obvious abuse, such as physical and sexual abuse, is included here. A child’s feeling neglected by his or her parent because of insufficient attention is also a risk factor for alcoholism (NIAAA, 1997).

Family atmosphere can affect the age at which an individual will initiate alcohol consumption. The earlier the initiation of alcohol use, the more likely that individual will develop an abusive relationship with alcohol (Kosterman, Hawkins, Guo, Catalano, & Abbott, 2000). In addition, teens whose families provide them with strong social support are less likely to use alcohol, according to one study (Mason & Windle, 2001).

Table 3.9. The 13 Characteristics of Adult Children of Alcoholics

Adult children of alcoholics

1. Guess at what normal behavior is.
2. Have difficulty following a project through from beginning to end.
3. Lie when it would be just as easy to tell the truth.
4. Judge themselves without mercy.
5. Have difficulty having fun.
6. Take themselves very seriously.
7. Have difficulty with intimate relationships.
8. Overreact to changes over which they have no control.
9. Constantly seek approval and affirmation.
10. Usually feel that they are different from other people.
11. Are super responsible or super irresponsible.
12. Are extremely loyal, even in the face of evidence that the loyalty is undeserved.
13. Are impulsive. They tend to lock themselves into a course of action without giving serious consideration to alternative behaviors or possible consequences. This impulsivity leads to confusion, self-loathing, and loss of control over their environment. In addition, they spend an excessive amount of energy cleaning up the mess.

Source: Woititz, J.G. (1990). *The 13 characteristics of adult children*. Retrieved August 17, 2007, from <http://www.drjan.com/13char.html>.

Suggested Learning Activities

- Lead a group discussion about alcoholism and related characteristics.
- Set up a debate on similarities and differences of various categories of alcohol use.
- Use a case study of a woman that illustrates the addictive disease process.
- Have small groups generate a list of questions for screening of alcohol use and determining need for referral.
- Create an activity matching drinking descriptions to types of drinks.
- Use mini-case studies or scenarios of women for group discussion of types of drinkers.
- Have groups develop real-life cases/scenarios for the various components of alcohol use.
- Use case studies or short scenarios of women in various stages of change to highlight differences among stages.
- Ask learners to work individually or in small groups on an activity designed to illustrate stages of change. Have each individual work on a situation and identify the various stages of addressing a problem. Have them relate it to an alcohol-related scenario.
- Use case studies of women in various stages of change and have the group select what stage each woman is in and give a rationale for the selection.
- Use case studies that illustrate various psychiatric co-morbidities.
- Discuss when and to whom to refer women exhibiting co-morbidities.
- Discuss how alcohol use and dependency interrelate with family and other relationships.

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Learning Goals and Related Objectives

Goal III-A: Explain past and current models of alcohol abuse

Learning Objectives

Level 1 The learner will be able to...	Level 2 The learner will be able to...	Level 3 The learner will be able to...
<ul style="list-style-type: none"> ▪ Describe some of the historical alcohol use models. (K) ▪ Describe alcohol use based on various models. (S) 	<ul style="list-style-type: none"> ▪ Identify various models used historically (moral, sociocultural, psychological, addictive disease, biomedical). (K) ▪ Identify cultural biases in the use of various models. (K) ▪ Implement knowledge of models in current practice. (S) 	<ul style="list-style-type: none"> ▪ Explain to other health professionals the limitations of historical models of alcohol dependency. (K)

A=Attitude-based objective; K=Knowledge-based objective; S=Skill-based objective

Level 1. Medical and allied health students or professionals who need basic background information on FASDs for their education, work, or both.

Level 2. Medical and allied health practitioners who need to use the information to provide services.

Level 3. Medical and allied health professionals who educate and train other professionals about FASDs.

Goal III-B: Describe the categories of alcohol use in women

Learning Objectives

<p>Level 1 The learner will be able to...</p>	<p>Level 2 The learner will be able to...</p>	<p>Level 3 The learner will be able to...</p>
<ul style="list-style-type: none"> ▪ Describe different types of drinkers (abstainers, low-risk drinkers, at-risk drinkers, problem drinkers, alcohol-dependent drinkers). (K) ▪ Explain how to assess women for different categories of alcohol use. (K) ▪ Identify accurately the categories of alcohol use. (S) ▪ Demonstrate the ability to ask appropriate questions pertaining to alcohol use in pregnant women to categorize types of drinkers. (S) ▪ Effectively categorize women according to their drinking patterns. (S) 	<ul style="list-style-type: none"> ▪ Explain how categories of alcohol use might change throughout pregnancy. (K) ▪ Demonstrate in-depth knowledge of five patterns of alcohol consumption in pregnant women (from no consumption of alcohol at all to the inability to stop drinking once started). (K) ▪ Explain the concept of underreporting of alcohol use and how it varies across individuals. (K) ▪ Conduct comprehensive interviews to classify types of drinkers and patterns of alcohol use. (S) 	<ul style="list-style-type: none"> ▪ Analyze new research and information, which will further develop the ability to secure needed information about drinking patterns. (K) ▪ Explain in depth the most current theories of addiction. (K) ▪ Demonstrate to other practitioners how to use appropriate questions that identify types of drinking patterns. (S) ▪ Demonstrate how to ask questions in a matter-of-fact, nonjudgmental, and empathic way. (S) ▪ Advise other health care professionals on how to overcome possible barriers during interviews. (S)

A=Attitude-based objective; K=Knowledge-based objective; S=Skill-based objective

Level 1. Medical and allied health students or professionals who need basic background information on FASDs for their education, work, or both.

Level 2. Medical and allied health practitioners who need to use the information to provide services.

Level 3. Medical and allied health professionals who educate and train other professionals about FASDs.

Goal III-C: Describe stages of alcohol use, dependence, and addiction

Learning Objectives

<p>Level 1 The learner will be able to...</p>	<p>Level 2 The learner will be able to...</p>	<p>Level 3 The learner will be able to...</p>
<ul style="list-style-type: none"> ▪ Describe how increased alcohol use might lead to physical, psychological, and lifestyle changes. (A) ▪ Identify features of physical, psychological, and lifestyle changes indicative of increased alcohol use. (K) ▪ Describe the most current medical criteria for alcohol use disorders. (K) ▪ Use most current nomenclature for identifying stages of alcohol misuse. (S) 	<ul style="list-style-type: none"> ▪ Explain how issues such as tolerance and dependency are part of the progression of alcoholism. (A) ▪ Explain how individuals from different cultures and economic backgrounds might view alcohol use differently, with varying levels of tolerance. (A) ▪ Describe specific physical, psychological, and lifestyle changes indicative of increased alcohol use. (K) ▪ Explain the methods of eliciting information and criteria for alcohol use disorders. (K) ▪ Use current gender-specific assessment tools that are successful in identifying problem use and need for further intervention. (S) ▪ Use the current medical criteria when evaluating patients. (S) 	<ul style="list-style-type: none"> ▪ Explain to other health professionals the progression of alcoholism. (K) ▪ Explain to others how gender- and culture-specific intervention and counseling techniques are used with women in different stages of addiction. (S) ▪ Review and assess new research to classify and describe stages of alcoholism in pregnancy. (S) ▪ Explain to other health professionals about symptoms of addictive disease process. (S)

A=Attitude-based objective; K=Knowledge-based objective; S=Skill-based objective

Level 1. Medical and allied health students or professionals who need basic background information on FASDs for their education, work, or both.

Level 2. Medical and allied health practitioners who need to use the information to provide services.

Level 3. Medical and allied health professionals who educate and train other professionals about FASDs.

Goal III-D: Explain the stages of change in alcohol use

Learning Objectives

<p>Level 1 The learner will be able to...</p>	<p>Level 2 The learner will be able to...</p>	<p>Level 3 The learner will be able to...</p>
<ul style="list-style-type: none"> ▪ Explain why an alcoholic woman will need treatment to stop use during pregnancy. (K) ▪ Describe the stages of change in alcohol use (pre-contemplation, contemplation, preparation, action, maintenance). (K) ▪ Identify brief interventions that will assist with change. (K) ▪ Explain how to interview women in a nonjudgmental way to promote self-assessment and change. (S) ▪ Provide information on the benefits of decreasing or stopping alcohol use for mother and baby. (S) 	<ul style="list-style-type: none"> ▪ Describe how underreporting is part of the denial that manifests in alcoholism. (A) ▪ Identify specific information related to each stage of change. (K) ▪ Describe potential barriers to change in alcohol use among women, including cultural beliefs. (K) ▪ Use flexible interviews to identify stages of change. (S) ▪ Direct pregnant women who drink into appropriate treatment setting and monitor treatment progress. (S) 	<ul style="list-style-type: none"> ▪ Explain to other practitioners the concept and use of stages of change with pregnant women who drink alcohol. (K) ▪ Identify community resources that can assist in enabling change, understanding that there are treatment beds for pregnant women and their children. (K) ▪ Review and assess literature for effective community treatments. (S)

A=Attitude-based objective; K=Knowledge-based objective; S=Skill-based objective

Level 1. Medical and allied health students or professionals who need basic background information on FASDs for their education, work, or both.

Level 2. Medical and allied health practitioners who need to use the information to provide services.

Level 3. Medical and allied health professionals who educate and train other professionals about FASDs.

Goal III-E: Address co-occurring psychiatric disorders related to alcohol use

Learning Objectives

<p>Level 1 The learner will be able to...</p>	<p>Level 2 The learner will be able to...</p>	<p>Level 3 The learner will be able to...</p>
<ul style="list-style-type: none"> ▪ Explain how certain disease processes can affect alcohol use. (A) ▪ Explain how psychological disorders are associated with problematic alcohol use. (A) ▪ Identify specific psychological disorders that are associated with increased alcohol use (e.g., depression, ADHD, mood disorders, PTSD, impulse control problems, FASDs). (K) ▪ Demonstrate a clear understanding of the addictive disease process and how that might mimic a psychological disorder. (S) ▪ Explain the interplay of alcohol use and unaddressed co-morbid issues. (S) 	<ul style="list-style-type: none"> ▪ Explain how many psychiatric disorders are associated with increased alcohol use or dependence (e.g., ADHD, depression, bipolar disorders, PTSD, impulse control problems, anxiety, eating disorders, FASDs). (A) ▪ Explain how one's own comfort level can assist in obtaining necessary information about co-morbidities. (A) ▪ Describe how alcoholic patients are frequently misdiagnosed with psychiatric disorders without an associated diagnosis of alcoholism. (K) ▪ Recognize that a clinical assessment might be necessary to obtain an accurate assessment of the addictive disease process with or without a co-morbid disorder. (K) ▪ Direct questions during an interview to obtain information on co-morbidity and drinking use. (S) ▪ Demonstrate the ability to refer patients who need specific psychiatric intervention to appropriate specialist. (S) 	<ul style="list-style-type: none"> ▪ Summarize current research regarding identification and treatment of co-morbid issues. (K) ▪ Explain to other practitioners the possible co-morbid issues in alcohol dependence to assist in their practice. (S)

A=Attitude-based objective; K=Knowledge-based objective; S=Skill-based objective

Level 1. Medical and allied health students or professionals who need basic background information on FASDs for their education, work, or both.

Level 2. Medical and allied health practitioners who need to use the information to provide services.

Level 3. Medical and allied health professionals who educate and train other professionals about FASDs.

Goal III-F: Recognize characteristics of alcohol-dependent families

Learning Objectives

<p>Level 1 The learner will be able to...</p>	<p>Level 2 The learner will be able to...</p>	<p>Level 3 The learner will be able to...</p>
<ul style="list-style-type: none"> ▪ Explain the role that genetics play in determining individuals at risk for alcoholism. (A) ▪ Explain how certain characteristics in families might contribute to alcohol use and dependency. (A) ▪ Identify some family factors that might contribute to alcohol use (e.g., genetics, stress, isolation, low self-esteem, alcoholism in families). (K) ▪ Recognize reciprocity in the relationship between an individual and his or her family (i.e., individual both affects and is affected by family factors/processes). (K) ▪ Demonstrate ability to ask open-ended questions to promote discussion and reflection of family issues. (S) ▪ Identify families at risk for possible alcohol dependency. (S) 	<ul style="list-style-type: none"> ▪ Describe how different family characteristics contribute to alcohol use and dependency in families. (A) ▪ Demonstrate the ability to be nonjudgmental and empathic with alcohol-dependent families. (A) ▪ Identify specific and subtle family factors that contribute to a woman's risk for alcohol use and alcoholism. (K) ▪ Describe the role of denial in alcohol-dependent families. (K) ▪ Anticipate that interventions directed at individuals will also potentially impact families and that interventions directed at families will impact individuals. (K) ▪ Evaluate risk factors for alcohol dependency in families. (S) ▪ Assess family dynamics for possible alcohol dependency. (S) ▪ Support women in clarifying how family dynamics affects their drinking. (S) 	<ul style="list-style-type: none"> ▪ Describe to other health professionals about family and cultural factors in alcohol use and dependency. (A) ▪ Demonstrate successful family interventions to other health professionals. (S) ▪ Promote important community support systems for families (e.g., counseling, alcohol treatment). (S) ▪ Evaluate literature for new family therapies for alcohol-dependent families. (S)

A=Attitude-based objective; K=Knowledge-based objective; S=Skill-based objective

Level 1. Medical and allied health students or professionals who need basic background information on FASDs for their education, work, or both.

Level 2. Medical and allied health practitioners who need to use the information to provide services.

Level 3. Medical and allied health professionals who educate and train other professionals about FASDs.