



TDCJ

**Rehabilitation Programs Division
On-Line Distance Training**

Course 1013

Understanding Addiction

One (1) General Education Credit Hour

TDCJ/RPD

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Course RPD1013 - Understanding Addiction

The dictionary says, “addiction is giving up self-control”. An exact definition of addiction is difficult. In fact, the Diagnostic and Statistical Manual of the American Psychiatric Association, DSM-IV-TR, doesn’t even list addiction, going instead with the term “dependence”. However, for our purposes we will start with the term addiction. A simplistic definition of addiction is “a maladaptive pattern of use despite consequences or any desire to stop and characterized by denial, tolerance, withdrawal, progression or relapse (same definition as dependency in DSM-IV-TR). However, this definition doesn’t do much to clarify the issue. Discussing addiction we often use three terms more easily defined:

PHYSICAL DEPENDENCE - after using a drug for awhile, the user’s body adjusts to the presence of the drug in his or her system. If the person suddenly stops using the drug, the body responds with symptoms that we call **WITHDRAWAL**.

These withdrawal symptoms are different when different drugs are used. When first using narcotics, people often complain of constipation (they have difficulty with bowel movements), but the body eventually adjusts, allowing things to work more normally. When the person tries to quit taking drugs, the body, having adjusted to constipation, may have the opposite problem – diarrhea.

The body has adapted to having the drug and reacts with one or more withdrawal symptoms when the drug is not provided. A physical withdrawal reaction means the body has developed **PHYSICAL DEPENDENCE**. Physical dependence may also be a result of changes incurred by the brain from the use of the chemical.

The second thing we discuss when talking about addiction is **TOLERANCE**. This is also a physical sign of what we view as addiction. The person, having taken the drug for a period of time, finds that he or she will get less and less of the effect they expect from the drug. They must take a larger and larger amount of the drug, or get a more potent dose of the drug. Once again, this involves the body’s ability to adapt to the drug. Eventually, the user may be taking a dose so powerful that a first time user might die if she or he took it. The long-term user’s body has an increased drug **TOLERANCE**. It is worthwhile here to discuss three mechanisms involved in tolerance.

DISPOSITION TOLERANCE involves the rate of drug metabolism (processing by the liver) or excretion (through the kidneys). For example, Phenobarbital increases the activity of liver enzymes that metabolize the drug. This increased metabolism reduces the effect of subsequent doses, perhaps resulting in the person taking a larger dose; however, that larger dose will further increase enzyme activity. Another mechanism in the tolerance equation can be the acidity (pH) of the urine. For example, amphetamine is excreted unchanged in the urine. The rate of the excretion is increased when the urine becomes more acidic. The drug itself, as well as the lack of food intake that normally accompanies use of amphetamine, increases urine acidity. This also relates to “drug deactivation” where the only way to stop a drug’s effect is to either excrete it unchanged out of the body (usually in the urine) or to chemically change or metabolize it (usually via enzymes in the liver).

The liver has enzymes that seem to be designed to change certain chemicals into a different form (called metabolites) that generally do less damage than the initial form of the chemical. For example, alcohol is broken down by the enzyme alcohol dehydrogenase into the chemical acetaldehyde, which is normally broken down by acetaldehyde dehydrogenase to acetic acid. However, among those of Asian heritage, about half carry a gene reducing the effectiveness of their acetaldehyde dehydrogenase. This results in a build up of acetaldehyde in their body and leads to facial flushing, sweating, and nausea.

A second type of tolerance is called PHARMACODYNAMIC TOLERANCE. Here, the amount of drug that reaches the brain remains constant; however the neurons' sensitivity to the drug does change. This can result in the brain itself causing a decrease in a specific neurotransmitter or reducing the number of receptors. For example a continual depressed state in the central nervous system can result in a reduction in the amount of the neurotransmitter GABA that is released or a reduction in the number of GABA receptors. The PHARMACODYNAMIC TOLERANCE not only leads to reduced drug effectiveness, but to the withdrawal reactions indicating dependence.

The third form of tolerance is BEHAVIORAL TOLERANCE. This can be observed in the person who routinely operates a vehicle while under the influence. While he or she will never be as good a driver as they would sober, they may develop methods to reduce the impact. They may drive slower, may stick to the back roads, or find some other techniques to reduce exposure to arrest and other consequences.

The third thing we talk of when dealing with addiction is **PSYCHOLOGICAL DEPENDENCE**. PSYCHOLOGICAL DEPENDENCE is the reinforcement or feelings of well being the drug temporarily provides. These feelings cause the person to seek out more of the drug (drug-seeking behavior). Users may "crave" the feeling the drug provides. Psychological reinforcement is powerful; some drug addicts say they get a "rush" just from handling a syringe, or some other piece of drug paraphernalia (items related to drug use). Some believe that **PSYCHOLOGICAL DEPENDENCE** is the real power behind addictions.

Regardless of whether it is **PHYSICAL DEPENDENCE, DRUG TOLERANCE, PSYCHOLOGICAL DEPENDENCE, OR MOST LIKELY A COMBINATION OF ALL THREE**, which resulted in a person's addiction, the individual's **RECOVERY** will require strong, sustained, personal effort. Affiliation with a recovery group is often very helpful for this. Another thing common with addictions is the defense mechanism: **DENIAL**. Alcoholism and other addictions often cause the addict to strongly resist all comments from others regarding a problem with alcohol, drugs, or even an addiction to a specific behavior (e.g., gambling, selling drugs).

Those in recovery say: "DENIAL ISN'T A RIVER IN EGYPT." It is a serious obstacle to alcoholics and addicts recognizing that they have a problem and that they need help to overcome it!

A person in denial may say: "I ain't got a problem. I can quit drinking (using) anytime

I want to...I just don't want to", "Alcohol (or the other drug) isn't a problem, it helps me cope with my problems!"

JUSTIFYING THE ADDICTION and CRIMINAL LIFESTYLE

People involved in addiction and criminal behaviors often deny responsibility for their actions and the harm they inflict on themselves, their families, and on others.

A wide range of psychological maneuvers emerges when addicted and criminally inclined people unwittingly protect themselves from the reality of what they are doing. All of these maneuvers distort reality. This distorted reality can be similar to the armor worn by knights of old. Worn to ward off the blows of life, it makes it very difficult to see, hear, or feel what is really happening.

Addiction and Offender Thinking Errors can be arrested when openly confronted. **It is the denial of addiction and crime that kills people** by continuing the cycle.

Denial has many faces.

- * Impaired Judgment
- * Self Delusion
- * Selective Recall

Simple denial

Saying something is not true, when in fact, it is true (e.g., insisting that chemical dependency isn't a problem, when it is seen as such by those around you). The person in denial frequently does not tell the truth, but is unaware of the fact. "I was framed, I'm innocent!"

Minimizing

Admitting to some degree of a problem with chemical use or criminal behavior but in such a way that it appears to be much less serious or significant than is actually the case. "I only stole from a company, not from an individual" or "I only drank some beer".

Blaming

Denying responsibility for certain behavior and maintaining that the responsibility lies with someone else. The behavior is not denied, but its cause is placed "out there", not within the person. "They made me do it!"

Projection

Attributing one's own feelings, shortcomings, or unacceptable impulses to others. "They're the thieves, not me!"

Rationalizing

Offering alibis, excuses, justifications, and other explanations for behavior by giving reasonable but false reasons. “I only sold because I couldn’t get a real job.”

Diversion

Chemically dependent people and offenders change the subject to avoid a topic that is threatening to their usage and related behavior. “It is just baloney; the real problem is the way I was treated by my parents!”

Hostility

Becoming angry and irritable when reference is made to chemical usage and drug related behavior or criminality. This is a good way to avoid the issue. It serves to get people to back off. “What do you mean I’m an addict? I wouldn’t have to use if you weren’t on my back all the time!”

Assimilation

Taking everyone else along for the ride. Pretending the problem is normal behavior. “Hey, everyone drinks.”

Dehumanizing

Treating someone as less than human to avoid guilt over using or hurting him or her. “They are just a bunch of _____, nobody cares what happens to them.”

After years of living in an addictive or offender lifestyle, these defense mechanisms become automatic. The addict or offender is now living a lie. Dishonesty has become a way of life. However, the addict or offender is largely unaware of this fact.

It should be noted that some addicts or offenders who are heavily predisposed or who live with those practicing an addictive or offending lifestyle, incorporating the above forms of denial, have a much greater difficulty of recognizing the harm they are doing to both themselves and others by their actions. They have come to believe that alcohol, drugs and crime are a normal way of life. They will have a much more difficult task of seeing and recognizing addiction and offender behavior as damaging to themselves and others.

Alcoholism or Drug Dependency is one of the few problems a person can have whereby the cause of the problem blinds the person to the fact there is a problem. The drug dependent person will do anything to protect the supply of his or her drug of choice.

If a doctor told us we had cancer, we might wonder if the tests were switched with the results of someone else; however, we would not scream at the doctor that he or she did not know what they were talking about. Yet, it is common for a dependent person to have such angry reactions to anyone telling them that they appear to have a problem with alcohol, some other drug or an action that has become self-destructive.

It almost seems the stronger the dependence, the greater the resistance (denial).

We recognize that **alcohol is a drug**. “Light” beer contains the same amount of alcohol as a shot of whisky.

Why some become addicted to alcohol has baffled scientists. Why can some people have wine with meals or drink socially, without becoming addicted, while others rapidly suffer full-blown addiction? We will explore some of the scientific theories of addiction.

Scientists and researchers studying addictions have developed several theories regarding what is involved. We will explore some of the theories.

1. **GENETIC FACTORS** may play a role in alcoholism. Research shows that children of alcoholics, even when placed in non-alcoholic environments at birth, are at increased risk of addiction. Some scientists feel such children have less serotonin, a chemical in the brain, than others and experience a greater serotonin increase (which makes them feel better), when they first drink. However, it is not long before they find they must drink just to stop feeling bad. They cannot get the same degree of pleasure from drinking but they “chase” after that feeling anyway.
2. **ENVIRONMENTAL FACTORS** may also contribute to being “prone” to abuse alcohol or other drugs. Being raised by drinkers or users, having friends that drink or use, adopting their views and values, and sharing in their activities, are all predictors of substance use, abuse, or addiction.
3. Research points to a **RELATIONSHIP BETWEEN EMOTIONAL DISORDERS AND SUBSTANCE ABUSE** (specifically depression and anxiety disorders) in adolescents and young adults. Those exhibiting hyperactivity (known *as* Attention Deficit Hyperactivity Disorder) in youth, especially when also displaying Conduct Disorder, or as adults displaying Antisocial Personality Disorder, appear at high risk to drink or use.
4. Some researchers believe the use of alcohol and other drugs is an attempt to **MEDICATE THE PAIN** of psychological disorders or the pain experienced from a disordered life.
5. Some believe **BOTH SUBSTANCE USE AND PSYCHOLOGICAL PROBLEMS STEM FROM A COMMON VULNERABILITY** (problem). Research shows substance use and psychological problems make the symptoms worse for each. We also know that some psychological problems can result from using alcohol or other drugs.

Addiction can change the way cells in the body and brain function, contributing to what is called a “**CELLULAR NEED**” for the drug. There can also be a “**LEARNED HABIT**” involved in drinking and drug use. Here, users train themselves to expect alcohol or other drugs during pleasurable events.

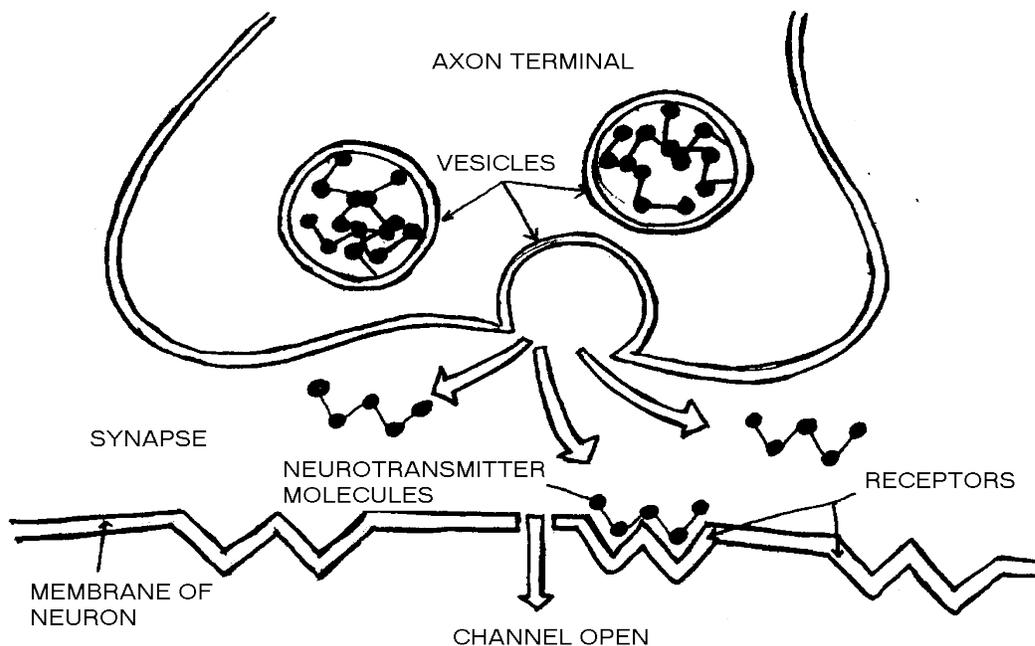
Addiction can occur either quickly or can take some time to develop. Addictive chemicals mimic or enhance pleasure-producing neurotransmitters (chemical messengers in the brain), resulting in modification to what we call the “old (primitive) brain”. As dependency builds, the

body craves more and more of the chemical until one message dominates all the person does and supersedes all other considerations. That message is **“USE!”**

This knowledge may explain why the offender, or someone he or she cares for, became an abuser or addict, or serve as a warning for a child who is predisposed to use. If one or more of a child’s biological relatives were addicted or had psychological problems, they should be warned about addictions.

The drawing below reflects “normal” neurotransmitter operations. A thought, feeling, or observation causes an electrical impulse to start in the soma (main body of the nerve cell), which flows down the neuron’s arms (called axons). At the end of the axon is a synaptic terminal (an axon can have branches going to many synaptic terminals). The synapse is similar to the gap in a sparkplug. A gap is formed by the axon of one nerve cell and the dendrite (receiving arm) of another. Across the gap flow specific neurotransmitters which can either excite or slow down the flow of electrical information between neurons.

Basically, each cell has a membrane and the neurotransmitters when released from their vesicles either activate or inhibit the passage of different types of ions (electrically charged chemical particles) from nerve cell to nerve cell through ion channels. These ions confer on the neurons their capability to generate and transmit the wave of electrochemical depolarization that is the nerve impulse. The transmission of neurochemical impulses takes place faster than the fastest man-made computer, however, when we use alcohol or other drugs, we interfere with this process.



Alcohol & other drugs can mimic natural neurotransmitters and cause feelings of euphoria and result in a change in both the neurons in the brain and how the brain functions. Richard Restak, M.D., on page 178 of his book, Receptors, said a former cocaine addict told him of her daily struggle not to return to the drug. She had experienced a chronic alteration in her moods, her thoughts, and her ambitions and was particularly susceptible to cravings when around people and situations that reminded her of her drug-using days. She told him she found staying away from such temptation required constant effort. "It is as if the drugs have somehow permanently altered her body chemistry, particularly the ways her brain processes pleasure. She finds that she must work continuously to keep herself stimulated, interested, and hopeful." It appeared the ventral tegmentum, the nucleus accumbens, and other brain areas associated with pleasure & emotions were permanently altered by use of the drug. Additional information on the relationship of neurotransmitters and addictions is in Chapter 22 of The Thinking Guide to Sobriety, if you wish additional information on this dynamic area.

Whatever the initial cause, recovering from and resisting future use of alcohol and other drugs is not easy. The big book of Alcoholics Anonymous page 58 states, "Remember that we deal with alcohol – cunning, baffling, powerful!" Those who have been successful in their own personal recovery for many years often are quick to warn others: "When you think you've got an addiction licked...watch out! That's just when the craving for alcohol or another drug will rise up and bite you – hard!"

The philosophy of the Secular Organizations for Sobriety (SOS) states, "Sobriety, the living of life free from the use of chemicals, is our goal. It must be kept as our first and foremost goal of living, separate and apart from all other issues, if we are to resist the cruelty of addiction."

Addiction is a cruel & heartless master; relentless in its efforts to enslave and imprison its victims. Addiction is an invisible prison. It forces the addict to go where he or she does not wish to go and do what they do not want to do. Addictions take and take giving only loss, pain, and grief. Addicts lose families, non-using friends, jobs, money, clothes, and homes. Eventually addiction steals freedom and health; addicts have seen others die and know it could happen to them. However, alcohol & other drugs still call to them very powerfully – **THAT IS ADDICTION!**

HISTORICAL OVERVIEW

Alcohol in the form of fermented honey (mead) has been around since the Paleolithic era, (8,000 BC) and beer and berry wine since about 6,500 BC. Grape wine was not made until about 300 – 400 BC.

The South-American Incas chewed coca leaves (from which cocaine is now made) when they traveled – they walked everywhere. If asked, "How far are you going?" - They might answer "two coca leaves" (the time to chew two leaves).

Pyramid workers in Egypt who did well were rewarded with an early form of (warm) beer.

While there were undoubtedly others who got drunk, **do any of you know who had the first documented occurrence of getting drunk?** The earliest written record of someone getting drunk we know of is from the Bible...it was Noah.

Much later, the French and Spanish explorers brought wine and vines (to grow grapes) to America, and the British brought mead or ale with them when establishing their settlements here.

Many Native-Americans were already using drugs, such as peyote in their religious ceremonies to enhance their visions.

When America built the railroads, Chinese laborers were imported to help with the work. The Chinese brought opium with them.

Frontier America had saloons where men drank; however, women had “resources” too. Some used a tonic (78% alcohol) to feel good or they got the doctor to give them laudanum (a mix of opium and alcohol).

Morphine was discovered around 1800 and was used so extensively in the American civil war by wounded soldiers that addiction to it became known as “soldier’s disease”. Heroin (from morphine) was developed and it was three times more powerful. Initially thought to be less addicting than morphine, it was not long before that idea was disproved.

Cocaine was later discovered and was considered a wonder drug – it restored energy, relieved headaches and was even thought to be a possible cure for heroin addiction. There was even a popular soft drink containing cocaine – Coca-Cola! In 1907, when they took cocaine out of Coca-Cola, the drink was no longer green. So, they made the bottles green so people would continue to drink it. Not many people would even consider drinking green soda today. In World War I, American troops were issued morphine in case they were wounded. Some started using the morphine even though they were not wounded and quickly became addicted.

In World War II, morphine was only issued to the medics, while the troops were issued amphetamines (speed) to help them march further and fight longer. Germany also gave speed to their troops.

In the 1960s, America became involved in the Vietnam War and political upheaval. A number of disenchanted youth began to “tune-in, turn-on and drop-out”. They used marijuana, LSD and other drugs as a statement against the war and expressed rejection of the system. By the end of the Vietnam War many troops were coming home addicted. The addicted flower children and the Vietnam veterans had children, who grew up with drugs as a way of life.

Now, we see advertisements on the TV or hear them on the radio saying we cannot have a barbecue or enjoy football without a beer. Some commercials even imply that we cannot attract a partner without alcohol.

We seem to be conditioned to believe there is nothing wrong with alcohol or other drugs.

The following story is summarized from Narcotics Anonymous.

At age 17 I had been a long time abuser and user. I got kicked out of my folk's house and was going nowhere – so, I did what a lot of kids do, I joined the Army. Even though we were all dressed alike, I felt different. But I went gung-ho and did everything they wanted me to do and I made squad leader and went to jump school. Graduating as an Airborne Ranger, I went to Vietnam. Once “in country” (Vietnam) I forgot the beliefs about being there to protect my country. It wasn't like on television, I was scared, lonely and saw people die. I didn't want friends, 'cause the next day they'd be dead or wounded.

Someone handed me a cigarette with heroin on it and said, “try this”. I'd never wanted to do heroin because I'd seen junkies in the states and disliked them.

Once I'd tried it, I found my friend. It replaced my parents, girlfriend and my buddies. It seemed to never let me down. I was soon caught up in the insanity of drugs and the war. I no longer cared about living and volunteered for every dangerous mission figuring if I came home a hero in a box, I'd show my family I was somebody.

One day I asked God to watch over me, but I didn't know why. I'd been in 'Nam 28 months when I had a nervous breakdown and was sent home. I didn't know how to act in California. I was sent to Alaska where it was 60 degrees below zero...quite a difference from Vietnam's 115-degree heat!

Being an Arctic Airborne Ranger was different. What I had glorified in my mind about being in Vietnam sickened others in my Alaskan unit. They couldn't relate and saw me as a drug crazed baby killer. That hurt my pride! The townspeople disliked servicemen, and I wanted to die. I had returned as the “odd man out”. Others who returned from Vietnam came home missing arms or legs, I felt cheated 'cause I got no hero's welcome.

I began drinking heavily. Career soldiers hated me and peers resented my authority as an E-5 Sergeant, so I drank and used alone. I got busted, got out, and went to Washington to learn a trade, dealing drugs to live. At the construction site there was as much drugs and alcohol as on the streets. I got busted again and was sent to drug treatment, but when I got out I had no outside support. **An addict alone is in bad company!**

I was ready to kill myself but a voice in my head told me to call for help. Thinking it was the Army that had caused my drug problem, I called the nearest army hospital. A man from their program told me that God loved me and so did he. In all my years of life, I'd never had anyone say, “I love you, your life is worth living, you are somebody.” I went into their program, which is oriented toward Narcotics Anonymous (NA).

I learned that all veterans have similar problems but it wasn't the service that caused my problem. My problem was dealing with life on life's terms. I found out about myself in narcotics anonymous, and I wasn't alone.

At meetings there were people just like me. NA wasn't easy. If it had been, I probably wouldn't have stuck with it. I went to meetings and I really listened. I used to think I knew it all, but today I'm glad to say that I know I don't know. NA taught me a new way of living, how to love myself and to feel love. I used to have nightmares and heard bells in my head, keeping me awake. I was very antisocial and had a “who cares” attitude.

Today I know someone cares for me. I work the steps and I have become a part of the NA program. I used to be a taker, but now I have learned how to be a giver. That's what is in this program for me now. Today the war is over.

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