

Drug Abuse and Addiction: Causes, Symptoms and Prevention

Anu

Asstt. Prof., Deptt. of Chemistry, BUC College,
Batala (Gurdaspur)-143505

Abstract:

Drug addiction and drug abuse have been referred to multifaceted syndromes that appear on compulsive drug use. Going for a recreational drug causes a dramatic surge in levels of dopamine; a neurotransmitter in the brain, which trigger feelings of pleasure. The brain evokes these feelings and wants them repeated. Changes in brain interfere with the ability to think positively, exercise good judgment, control your behavior and feel normal without drugs. If one gets addicted, the substance takes on the same significance as other survival behaviors, such as eating and drinking. The urge to use is so strong that the mind finds many ways to deny or rationalize the addiction. The addict may drastically underestimate the quantity of drugs he is taking, how much it impacts his life, and the level of control he has over his drug use. Whether the person has been addicted to inhalants, Xanax, speed, or heroin, the uncontrollable craving to use grows more important than anything else, including family, friends, career, and even your own health and happiness. While each drug produces different physical effects, all abused substances share one thing in common: repeated use can alter the way the brain looks and functions. The present study reviews about addiction of a person to drugs and the various abuses of these habit forming chemicals and how the right treatment and support can counteract the disruptive effects of drug use and regain control of life. With a strong willpower to recognize and admit the problem, or listen to loved ones who are often better able to see the negative effects drug use, abuses of drugs may be overpowered.

Reference to this paper should be made as follows:

Anu,

*Drug Abuse and
Addiction: Causes,
Symptoms and
Prevention,*

RJPSSs 2017, Vol. 43,
No.2, pp.31-40,
Article No. 4 (RJ1920)

Online available at :
[http://anubooks.com/
?page_id=2012](http://anubooks.com/?page_id=2012)

Introduction:

Drugs are chemicals that interfere with the brain's functioning system and upset the way nerve cells normally send, receive and process the required information [1-7]. There are at least two ways that drugs perform their action: by imitating the brain's natural chemical messengers and/or over stimulating the "reward circuit" of the brain. Some drugs such as heroin and marijuana have a similar structure to chemical messengers called neurotransmitters produced naturally by the brain. Because of this similarity, these drugs are able to cheat the brain's receptors and activate nerve cells to send abnormal messages. Other drugs such as methamphetamine or cocaine can cause the nerve cells to release abnormally large amounts of natural neurotransmitters or prevent the normal recycling of these brain chemicals needed to shut off the signal between neurons. This disruption produces a greatly amplified message that ultimately disrupts normal communication patterns.

Dopamine is a neurotransmitter present in regions of the brain that control movement, emotion, motivation, and feelings of pleasure. The overstimulation of this system, which normally responds to natural behaviors that are linked to survival (eating, spending time with loved ones, etc), produces euphoric effects in response to the drugs. Almost all the drugs target the brain's reward system by flooding the circuit with dopamine. This reaction sets in motion a pattern that "teaches" people to repeat the behavior of abusing drugs. As a person continues to abuse drugs, the brain adapts to the dopamine surges by producing less dopamine or reducing dopamine receptors. The user must therefore keep abusing drugs to bring his or her dopamine function back to "normal" or use more drugs to achieve a dopamine high. Long-term drug abuse causes changes in other brain chemical systems and circuits, as well. Brain imaging studies of drug-addicted individuals show changes in areas of the brain that are critical to judgment, decision-making, learning and memory, and behavior control. Together, these changes can drive an abuser to seek out and take drugs compulsively — in other words, to become addicted to drugs.

Drug use, drug abuse and addiction:

People experiment with drugs for many different reasons. Many first try drugs out of curiosity, to have a good time, because friends are doing it, or in an effort to improve athletic performance or ease another problem, such as stress, anxiety, or depression. Use doesn't automatically lead to abuse, and there is no specific level at which drug use moves from casual to problematic. It varies by individual. Drug abuse and addiction is less about the amount of substance consumed or the frequency, and more to do with the consequences of drug use. No matter how

often or how little you're consuming, if your drug use is causing problems in your life—at work, school, home, or in your relationships—you likely have a drug abuse or addiction problem.

Why do some drug users become addicted, while others don't?

As with many other conditions and diseases, vulnerability to addiction differs from person to person [8-12]. Your genes, mental health, family and social environment all play a role in addiction. Risk factors that increase your vulnerability include:

- ü Family history of addiction
- ü Abuse, neglect, or other traumatic experiences in childhood
- ü Mental disorders such as depression and anxiety
- ü Early use of drugs
- ü Method of administration—smoking or injecting a drug may increase its addictive potential

How drug abuse and addiction can develop:

People who experiment with drugs continue to use them because the substance either makes them feel good, or stops them from feeling bad. In many cases, however, there is a fine line between regular use and drug abuse and addiction. Very few addicts are able to recognize when they have crossed that line. While frequency or the amount of drugs consumed don't in themselves constitute drug abuse or addiction, they can often be indicators of drug-related problems [4-6].

- **Problems can sometimes sneak up on you**, as your drug use gradually increases over time. Smoking a joint with friends at the weekend, or taking ecstasy at a rave, or cocaine at an occasional party, for example, can change to using drugs a couple of days a week, then every day. Gradually, getting and using the drug becomes more and more important to you.
- **If the drug fulfills a valuable need**, you may find yourself increasingly relying on it. For example, you may take drugs to calm you if you feel anxious or stressed, energize you if you feel depressed, or make you more confident in social situations if you normally feel shy. Or you may have started using prescription drugs to cope with panic attacks or relieve chronic pain, for example. Until you find alternative, healthier methods for overcoming these problems, your drug use will likely continue.
- **Similarly, if you use drugs to fill a void in your life**, you're more at risk of crossing the line from casual use to drug abuse and addiction. To maintain healthy balance in your life, you need to have other positive experiences, to feel good in your life aside from any drug use.
- **As drug abuse takes hold**, you may miss or frequently be late for work or

school, your job performance may progressively deteriorate, and you start to neglect social or family obligations. Your ability to stop using is eventually compromised. What began as a voluntary choice has turned into a physical and psychological need.

Signs and symptoms of drug abuse and drug addiction

Although different drugs have different physical effects, the symptoms of addiction are similar. See if you recognize yourself in the following signs and symptoms of substance abuse and addiction. If so, consider talking to someone about your drug use.

Common signs and symptoms of drug abuse:

- Ø **You're neglecting your responsibilities** at school, work, or home (e.g. flunking classes, skipping work, neglecting your children) because of your drug use.
- Ø **You're using drugs under dangerous conditions or taking risks while high**, such as driving while on drugs, using dirty needles, or having unprotected sex.
- Ø **Your drug use is getting you into legal trouble**, such as arrests for disorderly conduct, driving under the influence, or stealing to support a drug habit.
- Ø **Your drug use is causing problems in your relationships**, such as fights with your partner or family members, an unhappy boss, or the loss of old friends.

Common signs and symptoms of drug addiction

- Ø **You've built up a drug tolerance.** You need to use more of the drug to experience the same affects you used to attain with smaller amounts.
- Ø **You take drugs to avoid or relieve withdrawal symptoms.** If you go too long without drugs, you experience symptoms such as nausea, restlessness, insomnia, depression, sweating, shaking, and anxiety.
- Ø **You've lost control over your drug use.** You often do drugs or use more than you planned, even though you told yourself you wouldn't. You may want to stop using, but you feel powerless.
- Ø **Your life revolves around drug use.** You spend a lot of time using and thinking about drugs, figuring out how to get them, and recovering from the drug's effects.
- Ø **You've abandoned activities you used to enjoy**, such as hobbies, sports, and socializing, because of your drug use.
- Ø **You continue to use drugs, despite knowing it's hurting you.** It's

causing major problems in your life—blackouts, infections, mood swings, depression, paranoia—but you use anyway.

Physical warning signs of drug abuse:

- Bloodshot eyes, pupils larger or smaller than usual
- Changes in appetite or sleep patterns
- Sudden weight loss or weight gain
- Deterioration of physical appearance, personal grooming habits
- Unusual smells on breath, body, or clothing
- Tremors, slurred speech, or impaired coordination

Behavioral signs of drug abuse:

- Drop in attendance and performance at work or school
- Unexplained need for money or financial problems; may borrow or steal to get it.
- Engaging in secretive or suspicious behaviors
- Sudden change in friends, favorite hangouts, and hobbies
- Frequently getting into trouble (fights, accidents, illegal activities)

Psychological warning signs of drug abuse:

- Unexplained change in personality or attitude
- Sudden mood swings, irritability, or angry outbursts
- Periods of unusual hyperactivity, agitation, or giddiness
- Lack of motivation; appears lethargic or “spaced out”
- Appears fearful, anxious, or paranoid, with no reason

Commonly abused drugs and their warning signs:

- Ø **Marijuana:** Glassy, red eyes; loud talking, inappropriate laughter followed by sleepiness; loss of interest, motivation; weight gain or loss.
- Ø **Depressants (including Xanax, Valium, GHB):** Contracted pupils; drunk-like; difficulty concentrating; clumsiness; poor judgment; slurred speech; sleepiness.
- Ø **Stimulants (including amphetamines, cocaine, crystal meth):** Dilated pupils; hyperactivity; euphoria; irritability; anxiety; excessive talking followed by depression or excessive sleeping at odd times; may go long periods of time without eating or sleeping; weight loss; dry mouth and nose.
- Ø **Inhalants (glues, aerosols, vapors):** Watery eyes; impaired vision, memory and thought; secretions from the nose or rashes around the nose and mouth; headaches and nausea; appearance of intoxication; drowsiness; poor muscle control; changes in appetite; anxiety; irritability; lots of cans/aerosols in the trash.

- Ø **Hallucinogens (LSD, PCP):** Dilated pupils; bizarre and irrational behavior including paranoia, aggression, hallucinations; mood swings; detachment from people; absorption with self or other objects, slurred speech; confusion.
- Ø **Heroin:** Contracted pupils; no response of pupils to light; needle marks; sleeping at unusual times; sweating; vomiting; coughing, sniffing; twitching; loss of appetite.

Warning signs of teen drug abuse:

While experimenting with drugs doesn't automatically lead to drug abuse, early use is a risk factor for developing more serious drug abuse and addiction [12]. Risk of drug abuse also increases greatly during times of transition, such as changing schools, moving, or divorce. The challenge for parents is to distinguish between the normal, often volatile, ups and downs of the teen years and the red flags of substance abuse. These include:

- Having bloodshot eyes or dilated pupils; using eye drops to try to mask these signs
- Skipping class; declining grades; suddenly getting into trouble at school
- Missing money, valuables, or prescriptions
- Acting uncharacteristically isolated, withdrawn, angry, or depressed
- Dropping one group of friends for another; being secretive about the new peer group
- Loss of interest in old hobbies; lying about new interests and activities
- Demanding more privacy; locking doors; avoiding eye contact; sneaking around

Five myths about drug abuse and addiction:

- **MYTH 1:** Overcoming addiction is a simply a matter of willpower. You can stop using drugs if you really want to. Prolonged exposure to drugs alters the brain in ways that result in powerful cravings and a compulsion to use. These brain changes make it extremely difficult to quit by sheer force of will.
- **MYTH 2:** Addiction is a disease; there's nothing you can do about it. Most experts agree that addiction is a brain disease, but that doesn't mean you're a helpless victim. The brain changes associated with addiction can be treated and reversed through therapy, medication, exercise, and other treatments.
- **MYTH 3:** Addicts have to hit rock bottom before they can get better. Recovery can begin at any point in the addiction process—and the earlier, the better. The longer drug abuse continues, the stronger the addiction becomes and the harder it is to treat. Don't wait to intervene until the addict has lost it all.

- **MYTH 4:** You can't force someone into treatment; they have to want help. Treatment doesn't have to be voluntary to be successful. People who are pressured into treatment by their family, employer, or the legal system are just as likely to benefit as those who choose to enter treatment on their own. As they sober up and their thinking clears, many formerly resistant addicts decide they want to change.
- **MYTH 5:** Treatment didn't work before, so there's no point trying again. Recovery from drug addiction is a long process that often involves setbacks. Relapse doesn't mean that treatment has failed or that you're a lost cause. Rather, it's a signal to get back on track, either by going back to treatment or adjusting the treatment approach.

Getting help for drug abuse and drug addiction:

Recognizing that you have a problem is the first step on the road to recovery, one that takes tremendous courage and strength. Facing your addiction without minimizing the problem or making excuses can feel frightening and overwhelming, but recovery is within reach. If you're ready to make a change and willing to seek help, you can overcome your addiction and build a satisfying, drug-free life for yourself.

Support is essential to addiction recovery:

Don't try to go it alone; it's all too easy to get discouraged and rationalize "just one more" hit or pill. Whether you choose to go to rehab, rely on self-help programs, get therapy, or take a self-directed treatment approach, support is essential. Recovering from drug addiction is much easier when you have people you can lean on for encouragement, comfort, and guidance.

Support can come from:

- family members
- close friends
- therapists or counselors
- other recovering addicts
- healthcare providers
- people from your faith community

When a loved one has a drug problem:

If you suspect that a friend or family member has a drug problem, here are a few things you can do:

- **Speak up.** Talk to the person about your concerns, and offer your help and support, without being judgmental. The earlier addiction is treated, the better. Don't wait for your loved one to hit bottom! Be prepared for excuses and denial by listing specific examples of your loved one's behavior that has you worried.

- **Take care of yourself.** Don't get so caught up in someone else's drug problem that you neglect your own needs. Make sure you have people you can talk to and lean on for support. And stay safe. Don't put yourself in dangerous situations.

- **Avoid self-blame.** You can support a person with a substance abuse problem and encourage treatment, but you can't force an addict to change. You can't control your loved one's decisions.

What not to do?

- Attempt to punish, threaten, bribe, or preach.

- Try to be a martyr. Avoid emotional appeals that may only increase feelings of guilt and the compulsion to use drugs.

- Cover up or make excuses for the drug abuser, or shield them from the negative consequences of their behavior.

- Take over their responsibilities, leaving them with no sense of importance or dignity.

- Hide or throw out drugs.

- Argue with the person when they are high.

- Take drugs with the drug abuser.

- Feel guilty or responsible for another's behavior.

When your teen has a drug problem:

Discovering your child uses drugs can generate fear, confusion, and anger in parents. It's important to remain calm when confronting your teen, and only do so when everyone is sober. Explain your concerns and make it clear that your concern comes from a place of love. It's important that your teen feels you are supportive [1-2].

Five steps parents can take:

- **Lay down rules and consequences.** Your teen should understand that using drugs comes with specific consequences. But don't make hollow threats or set rules that you cannot enforce. Make sure your spouse agrees with the rules and is prepared to enforce them.

- **Monitor your teen's activity.** Know where your teen goes and who he or she hangs out with. It's also important to routinely check potential hiding places for drugs—in backpacks, between books on a shelf, in DVD cases or make-up cases, for example. Explain to your teen that this lack of privacy is a consequence of him or her having been caught using drugs.

- **Encourage other interests and social activities.** Expose your teen to healthy hobbies and activities, such as team sports and afterschool clubs.

- **Talk to your child about underlying issues.** Drug use can be the result of other problems. Is your child having trouble fitting in? Has there been a recent

major change, like a move or divorce, which is causing stress?

· **Get help.** Teenagers often rebel against their parents but if they hear the same information from a different authority figure, they may be more inclined to listen. Try a sports coach, family doctor, therapist, or drug counselor.

Conclusion:

Addiction is a complex problem that affects every aspect of life. Overcoming it requires making major changes to the way one live, deal with problems, and relate to others. You can support a person with a substance abuse problem and encourage treatment, but you can't force an addict to change. You can't control your loved one's decisions. Let the person accept responsibility for his or her actions, an essential step along the way to recovery for drug addiction. Learn about the tools that can lead the journey to sincerity.

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