

## Review on Addictions: Its psychological and behavioural aspects, underlying causes and management.

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**Abstract:** “Anything that makes you weak physically, intellectually and spiritually, reject as a poison” – This has been said even in our scriptures.

Addictions have been found to be common state observed in all age groups particularly young adults.

### I. Introduction:

Addiction is very common state which can be observed in our surrounding in day to day basis. People are usually found to be addicted to substances, people, Things like internet, money, popularity, etc. The American Society of Addiction Medicine states that, “Addiction is a chronic relapsing disease.”

Three C's:-

- COMPULSION - Differs from craving in that it is subconscious.
- Loss of CONTROL
- Continued use despite negative CONSEQUENCES

Anxiety is also very commonly occupying the states of mind in teenage <sup>1</sup>Addictive drugs chemically change our behavior, our values, and even our concept of the “self”. Addictive drugs offer a portal to the “mind”

Addictions starts with Experimental /Circumstantial drug use → Casual drug use leading to Intensive drug use → Compulsive drug use → finally leads to **Addiction**.

### II. Psychological and Neurological Aspects of Addictions :

In the brain, dopamine functions as a neurotransmitter—a chemical released by nerve cells to send signals to other nerve cells. The brain includes several distinct dopamine systems, one of which plays a major role in reward-motivated behavior. Every type of reward that has been studied increases the level of dopamine in the brain, and a variety of addictive drugs, including stimulants such as cocaine, amphetamine, and methamphetamine, act by amplifying the effects of dopamine <sup>2</sup>. Other brain dopamine systems are involved in motor control and in controlling the release of several important hormones. One of the important system lies in the Ventral Tegmental Area (VTA in the brain)The VTA dopamine system is strongly associated with the reward system of the brain. Dopamine is released in areas such as a result of rewarding experiences such as **food, sex, popularity, power, money, internet, substances and neutral stimuli that become associated with them. When these stimuli are not available, they feel miserable, irritable due to lack of dopamine.**

Effect of dopamine level on behaviours are as follows :

Excess	Deficient	"Normal"
Addictions	Addictions	Motivated
Anxiety	Depression	Feelings of well-being, satisfaction
Compulsions	Anhedonia - no pleasure, world looks colorless	Pleasure, reward in accomplishing tasks
Sexual fetishes	Lack of ambition and drive	Healthy libido
Sexual addiction	Inability to "love"	Good feelings toward others
Unhealthy risk-taking	Low libido	Healthy bonding
Gambling	Erectile dysfunction	Healthy risk taking
Compulsive activities	No remorse about personal behavior	Sound choices
Aggression	ADD/ADHD	Realistic expectations
Psychosis	Social anxiety disorder	Maternal/Paternal love
Schizophrenia	Antisocial behavior	

Gateway to addictions is experimental usage of substances<sup>3</sup>, like trying among friends, not able to refuse the offer received from friends, fear of losing identity if not involved in consumption of substances like others in a meet or a get together. It has been observed that many people start the substance use due to influence of others, what will others feel about them if they don't consume it. And this experimental usage leads to intensive use and finally addictions. In such conditions, they require higher doses of substances to release the same amount of dopamine (or to feel same level of pleasure which earlier used to happen at lower doses of substances). This develops tolerance, to get that pleasure feelings by dopamine, people indulge into intensive usage of products<sup>4</sup>

People are dependent on various substances to be in a comfortable zone. Addiction is physical dependence. DSM IV (Diagnostic and Statistical Manual of Mental Disorders) uses term "Dependence" instead of addiction. It was found that people who are addicted to such things had anxiety or fear of some level. It all starts from thought of running from fear or anxiety, this fear or anxiety can be of anything, it can be anxiety of situation, anxiety of result after doing work, or after result if there is failure. Fear of what people will think if I will not drink in social parties. According to these people it is sign of "cool-ness" or "manliness". Some commercial advertisements also promote and project alcohol beverages and tobacco (all forms) as sign of manliness and to create an image people generally hesitate to reject these substances when offered and gradually, these substances take control over them. Similarly now a days these addictive substances taken as supplement to cope up with stress, it is very evident in youngsters.

Students who are under stress due to exams and work uses smoke, alcohol to stay awake during night. As a sexual fetish, Girls love to see boys smoking and drinking and vice-versa, and to fulfil their fascinations, they motivate and force each other to consume more and more substances so that their senses get gratified. It is because these things act as neuro stimulator and gradually become addicted to these substances..

People are addicted to attention, importance they get from others. When people lose the power they suddenly experience lack of attention and they get miserable.

It is due to the addiction to popularity, power and money, that when they don't get either of these people are found to suffer from depression in their older age.

### **III. Causes of Addictions :**

Drugs are chemicals that tap into the brain's communication system and disrupt the way nerve cells normally send, receive, and process information. There are at least two ways that drugs are able to do this: by imitating the brain's natural chemical messengers, and/or overstimulating the "reward circuit" of the brain.

Some drugs, such as marijuana and heroin, have a similar structure to chemical messengers, called neurotransmitters, which are naturally produced by the brain. Because of this similarity, these drugs are able to "fool" the brain's receptors and activate nerve cells to send abnormal messages.

Other drugs, such as cocaine or methamphetamine, can cause the nerve cells to release abnormally large amounts of natural neurotransmitters, or prevent the normal recycling of these brain chemicals, which is needed to shut off the signal between neurons. This disruption produces a greatly amplified message that ultimately disrupts normal communication patterns.

Nearly all drugs, directly or indirectly, target the brain's reward system by flooding the circuit with dopamine. 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 behaviours that are linked to survival (eating, spending time with loved ones, etc), produces euphoric effects in response to the drugs. 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 behaviour control. Together, these changes can drive an abuser to seek out and take drugs compulsively in other words, to become addicted to drugs.

There is no single cause of addiction and it can be hard to figure out why some people become addicted and others don't. Researches believe that there are several factors that can influence the development of addiction.

Visuals have a great impact on mind, new advertisements make use of sensual visuals, where role models advertising addictive substances without bothering its effect on human mind.

1. **Genetics:** There appears to be a genetic link to addiction. If your parents or other family members have struggled with or are struggling with addiction, you have a higher chance of developing an addiction too. Sons of alcoholic fathers, for instance, are at three to four times the risk of abusing the drug. Generally, a

predisposition to abuse one drug applies to almost all other drugs. Still, no gene has ever been identified, and, even among men who carry a hereditary load, predisposing physical factors don't doom them to a sodden or chemically dependent lifestyle. There's no such thing as a pre-addictive personality. Alcoholism, for instance, may be present in as many as three-fourths of cocaine addicts. But keep in mind that there are other factors that affect the development of addiction.

2. **Your brain:** Substances and activities that are associated with addiction all increase the levels of a chemical messenger that is dopamine in the brain. Dopamine activates the pleasure and reward areas of the brain, making you feel positive and good. Because these feelings are pleasurable, you want to repeat the behaviour that created the feeling.
3. **Childhood experiences:** Some traumatic childhood experience (e.g., emotional, physical, or sexual abuse) can trigger addiction when people seek comfort or an escape from the pain of past experiences. Young adults also may have friends who use alcohol and other drugs, and peer influence can lead to experimenting with addictive substances.
4. **Mental health:** Addiction is more common in people with other mental health issues such as depression or anxiety. It is thought that people with mental health issues use addictive substances or activities to help them feel better, but in fact, the opposite happens. Rates of addiction to drugs and/or alcohol are higher for people who also have a mental illness. They may start using as a way to deal with the symptoms of depression or anxiety.
5. **Stress and coping with feelings:** Some people may turn to substances or activities to relieve stress or help them cope with certain situations and feelings. Feelings of not belonging as a result of race, gender, or ethnicity can cause people to turn to addictive substances for relief. Addiction can also be influenced by poverty and not doing well in school (either academically or socially).
6. **Environmental Considerations**  
The place where you were brought up can influence whether you develop an addiction. If you spend time with people who are addicts, you are more likely to develop the same kinds of habits.
7. **Lack of Spiritual/Religious Connection**  
People who are not affiliated with a specific religion may be more likely to feel empty or unfulfilled in their lives. Using a substance to feel better can be the start of a full-blown addiction.
8. **Difficulty Coping with Thoughts and Feelings**  
A person who has trouble dealing with the trials in their lives may start to use drugs or alcohol to help them calm down. Other people may start using to deal with feelings of sadness or boredom. A person who feels shy in social situations may find it easier to interact with other people after drinking or taking drugs.
9. **Physical or Sexual Abuse**  
People who were abused as children may start using as a way to cope with the feelings of guilt, shame, and anger that remain after the abuse has stopped.
10. **Low Tolerance for Frustration**  
A person who reacts badly to stress and becomes frustrated easily is at a higher risk of developing an addiction. They don't have the emotional makeup to ride out the situation and may turn to a substance to help them cope.
11. **Low Self-Esteem**  
A person with self-esteem issues is more likely to turn to drugs or alcohol to feel better about themselves. They may start using to give their self-esteem a boost or to fit in with their peers. This type of individual may feel so bad about themselves that they start taking drugs because they don't care about the dangers involved in substance abuse.
12. **Accessibility**  
The fact that drugs are available means that people are going to experiment with them. If you are interested in buying drugs, they are available at schools and in workplaces just about anywhere. A certain percentage of people who decide to try them will develop a full-blown addiction.

### 13. **The Substance Itself**

Some types of drugs, such as heroin, cocaine, and meth, are highly addictive substances. It is possible to become addicted to them very quickly. In some cases, the person will develop a dependence after their first experience. It's common for people to think that they will be able to stop using any time they want, but this is usually not the case for someone who has developed an addiction.

One thing researchers know for sure: addiction is also caused by personal weakness or lack of willpower.

There are also factors that can help protect you from the pitfalls of addiction. These factors include:

- having positive role models such as parents, teachers, or family friends
- having a supportive and involved family
- having strong connections with schools and your community
- having plans for the future
- being involved in sports and other activities (e.g., music, dance)
- being involved in the community (e.g., volunteering)

## **IV. Substance abuse:**

### **Tobacco-**

There have been significant correlations between tobacco use and future use of other drugs as well as increased involvement in risky behaviours such as sexual activity and violence. There was a mild correlation with deficiencies in brushing and flossing that was more apparent in boys than in girls. Diagnostic clues can be seen in the oral cavity, including stained teeth, abrasions, smoker's melanosis, burns, palatal lesions, halitosis, leukoplakia, epithelial dysplasia, and frank carcinoma. Some sample screening questions include "When was the last time you smoked a cigarette, even 1 or 2 puffs?" and "During the past 30 days, on how many days did you smoke cigarettes?"<sup>17</sup> The difficulty of asking these questions might be compounded by parental influence. The child might not want to answer out of fear that the parent will become involved.

### **Alcohol-**

It is important to monitor for alcohol abuse in adolescents because there is a lifetime prevalence of alcoholism of 13.8%. Teenage problem drinking has also been associated with cannabis and other drug use antisocial behaviour tobacco use and early and unsafe sexual activity or sexual abuse. Typical methods for screening for alcohol abuse in adults are less useful for adolescents than for adults. Therefore, the CRAFFT questionnaire has been developed specifically for this age group. If screening leads the clinician to suspect a substance or alcohol problem, additional consultation with the parent and the child can be undertaken to more completely resolve the extent of abuse. If necessary, an appropriate referral can be made.

### **Marijuana**

Marijuana, also known as cannabis, is the most commonly abused illicit drug in adults and teenagers. Other suspected associations include violent or antisocial behaviour, psychological problems, lower educational attainment and criminal offenses and legal problems. Chronic use might lead to an "a motivational syndrome" that consists primarily of antisocial behavior, apathy, and disinterest.

### **Opiates**

Heroin has been the historical representative of opiate drug abuse, but abuse of oxycodone, a prescription pain reliever, has been increasing. Youths who inject heroin and other opiates tend to start their habits earlier in life and develop dependence on the drug more rapidly than to other non-opioid drugs. Significant associations with heroin use are prostitution and human immunodeficiency virus infection. The interview is important, but proof might be more difficult to obtain in the history because of the stigma associated with intravenous drug abuse. The clinician should have a high index of suspicion for heroin abuse because of the higher risk for suicide and suicidal behaviour in those who use this drug.

### **Cocaine**

Cocaine is a common sympathomimetic drug that is quite addictive. There are several forms of cocaine, but the most prevalent forms are cocaine hydrochloride powder, which is generally snorted, and the free-base and crack forms, which are alkaline bases. Cocaine can be difficult to detect with a history. A high index of suspicion is needed for aberrant behaviour or occurrences during treatment.

### **Amphetamines**

Amphetamines are sympathomimetic stimulants with a mechanism of action similar to cocaine, although the duration is longer and the rate of onset is slower. They have been used by truckers, medical interns,

students, and others who need to delay sleep for prolonged periods of time. They have also been used to treat attention deficit-hyperactivity disorder, a disease that confers an increased risk of drug abuse. Amphetamine use is a risk factor for increased criminal activity, legal trouble, other drug use, and risky sexual behavior.

### **Methamphetamine**

Extensive use leads to increased dependence, lack of sleep, irritability, and social problems.

### **Ecstasy and other club drugs**

used as date-rape drugs and have effects fairly consistent with sedative-hypnotics, including retrograde amnesia, euphoria, and relaxation. All club drugs have been implicated in unsafe sexual behaviour. Definitive physical findings to indicate the use of these drugs are unlikely. The “rave look” has been characterized as baggy pants, shirts with logos, visors, running shoes, and suckers or pacifiers. Pacifiers have been implicated in bruxism and jaw pain/trismus in club-drug users, particularly with ecstasy.

### **Inhalants**

Inhalants are volatile substances that are inhaled into the lungs to achieve a euphoric sensation. Some common substances that are inhaled include glue, paint, lacquer, correction fluid, butane, and gasoline. The appeal of these substances to adolescents is ease of use, low cost, and obtainability. Particularly relevant to the dental clinician is breath odor that can persist for hours after use. Other signs might be paint or other substances on the face or around the mouth, substances on clothes, dry facial skin, or characteristic perioral bacterial infection known as “huffer’s rash.”

### **Steroids**

It is hard to fault adolescents for thinking about using steroids to get ahead in sports with the emphasis placed on them in today’s society, particularly when their role models are heavily involved with these drugs. There might be periods of paranoia, increased aggression, and irritability. Infertility, liver disease, and cardiovascular disease have also been documented

## **V. Management :**

Patient group is often viewed as inherently healthy, and important signs and symptoms of disease can be missed simply because of a biased outlook. A particularly vital portion of the care of teenagers is monitoring for depression and other psychosocial disorders, including substance abuse. This period of life is a time of great psychological, social, and physical changes. Teens often undergo significant peer pressure to try drugs and alcohol. It has been shown that orthodontic patients who use tobacco are at risk for other high-risk behaviour. Suicidal behaviour and substance abuse have been clearly linked as have substance use and depression. Considering the length of treatment time and the frequent follow-up appointments in a typical orthodontic treatment regimen, the orthodontist will have a clinical vantage point that other clinicians do not. Like all other diseases or disorders careful diagnosis is of utmost important in treatment planning. The orthodontist will know the child over several years and, in most instances, develop a rapport that transcends simple orthodontic treatment.

Typical methods for screening for alcohol abuse in adults are less useful for adolescents than for adults. Therefore, the CRAFFT questionnaire has been developed specifically for this age group. It is also useful for drug abuse. If screening leads the clinician to suspect a substance or alcohol problem, additional consultation with the parent and the child can be undertaken to more completely resolve the extent of abuse. If necessary, an appropriate referral can be made.

CRAFFT questionnaire to screen for adolescent substance abuse:

- C Have you ever ridden in a **C**ar driven by someone (including yourself) who was high or had been using alcohol or drugs?
- R Do you drink or take drugs to **R**elax, feel better about yourself, or fit in?
- A Do you ever drink or take drugs while you are **A**lone?
- F Do you ever **F**orget things you did while using alcohol or drugs?
- F Do(es) your **F**amily or **F**riends ever tell you that you should cut down on your drinking or drug abuse?
- T Have you gotten in **T**rouble from drinking or taking drugs?

### **Counselling and spirituality-**

Spirituality is one of the essential foundations for the remediation of an addictive disease, but it is the one that child welfare professionals understand the least. Many addiction treatment counsellors believe that when individuals are reconnected to a positive spiritual momentum, they are more likely to take control of their

lives. These addictions counsellors believe that the classic treatment models that ignore spirituality have had limited success. They advocate instead for a more holistic approach, which integrates the spiritual, the physiological (biological), and the psychosocial components of a person's life. In fact, evidence exists that individuals in recovery who have participated in spiritually based programs have made the most significant progress in their recovery from addiction. Based on the belief that addictive diseases consume every aspect of an individual's life, successful recovery is also more likely to be developmental in scope. By underestimating or totally ignoring the spiritual dimensions of an addicted parent's recovery, child welfare caseworkers are likely to remain frustrated in their attempts to provide a safe and stable environment for children.

As we discussed when person cannot able to control his senses ,then he try to run away from situation or takes support of some external substance which may be beneficial or harmful for him.As soon they developed this tendency it is become very difficult for them to distinguish between what is right and what is wrong for them.After dependence on substances they cannot concentrate on their thoughts and carried away with illusions and delusions. Spiritual therapy can be given or advised to patient which can be of any form for eg. Stress reducing activities, meditation, jacobson's exercise etc.

Meditation can be advised to a patient in various ways ,but very basic method is just to seat relax in whatever posture you are comfortable with. Free your spine and give your body weight on ribs.Next step is to regulate breathing and concentrate on it specially try to feel the temperature of inhaled and exhaled air at nostrils.It leads to a body which is now harmonious and now it is very easy to concentrate on mind.By regular practising meditation one will get control over thoughts even if he doesn't control thoughts the number of thoughts or disorganised traffic of thoughts will be reduced. Due to less thoughts in mind we can get that window of opportunity in which we can decide what is good and what is bad for us, This is a kind of mental exercise which needs practise ,it cannot be happened in day or two. It means now we can control our subconscious mind by giving positive auto-suggestions consciously .This is circle in which again subconscious thoughts comes out as thought and we consciously expressed them. It is like a bubble of air coming out from the bottom of water and bursting on surface( expressing in external behaviour )

Cure of addiction necessarily involves unspinning - putting into reverse - the habit as it was formed. It means regaining control over one's life, denying oneself the sensations to which one has become helplessly addicted, and generally negating the path one has followed. It means the re-establishment by gentle means, of control over the habit, being able to switch it on or off at will, just like a tap. This means stopping gazing at pleasant forms, stopping the internal fantasy element and stopping all the habits associated [attendant rituals of habit] with what is a pattern of addictive behaviour. Inevitably, a very long slow process can take as many years to un-learn as it took to establish in the first place. It means learning how to live day by day on nothing, on a sensory diet of nothing in particular and this will eventually stop the cravings. It means being able to 'enjoy' ordinary life as it is. Additionally, it means being able to discover and enjoy oneself just as we are. In these senses, it might be seen as a very joyful and refreshing path to follow. To the addict, this may sound like a very boring form of sense deprivation – which is exactly what it is!

*'Non-attachment...views desire as faulty, thereby deliberately restraining desire...*

Although addiction is harmful in certain respects [both to self and to others], in other ways, some positive things can come from it and it can be seen as a form of spiritual path. In this respect, it can lead one to make many useful realisations. There are at least three ways in which it can be useful. Firstly, it can lead to a realisation of the need for non-attachment, a greater indifference to the world and greater moderation in one's habits. It can therefore lead one to a deeper realisation of the fleeting, transient [impermanent] nature of the world and of the mind, and their twin engagement. This is an important Buddhist realisation to make and which addicts of all types can apprehend. Likewise, it leads to an understanding of the way desire leads only to pain.

Broadly the treatment options varies from drugs to drugs.

**Nicotine patch and nicotine gum-** can be useful in treatment of nicotine abuse. Nicotine patch therapy combined with cognitive-behavioural intervention was effective, compared with placebo, for treatment of tobacco dependence among adolescent smokers. Decreases in the numbers of cigarettes smoked appeared to be offset by compensatory smoking. Additional study of nicotine gum, with enhanced instructional support, is needed to assess its efficacy among adolescent smokers. Gum is available in two strengths: 2mg and 4mg. The 4mg gum is most appropriate for smokers who smoke more than 20 cigarettes a day, or who are strongly addicted to nicotine.

When you use nicotine gum, the nicotine is absorbed through the lining of your mouth. When you first quit you should be chewing about 1 piece of gum every hour. To release the nicotine from the gum, chew until the taste becomes strong or hot. After this you can rest the gum inside your cheek. Once the taste or heat fades you will need to chew again to release more nicotine. Discard the gum after about an hour.

Gradually you can begin to cut down on the amount of gum you use. Try chewing for shorter periods, using smaller pieces, a lower dose or alternating with a non-nicotine gum. Nicotine patches work well for most regular smokers and can be worn round the clock (24 hour patches) or just during the time you are awake (16 hour patches), and they work by releasing nicotine directly into the bloodstream through the skin.

#### **How to use patches**

There are two ways to use patches: just during the time you are awake (16 hour patch) or both day and night (24 hour patch). The 24 hour patch may cause some sleep disturbance but is helpful for people who have strong cravings during the early morning.

Patches also come in different strengths. Whichever strength you start on you should aim to gradually reduce the strength over time before stopping the usage of patches completely.

**Benzodiazepines-** Benzodiazepines are suitable agents for alcohol withdrawal, with choice among different agents guided by duration of action, rapidity of onset, and cost. Dosage should be individualized, based on withdrawal severity measured by withdrawal scales, comorbid illness, and history of withdrawal seizures. Medication is typically given for approximately 7 days. It has been suggested that the choice of which benzodiazepine to use routinely is not critical, but to consider that particular drugs may suit different circumstances (e.g. lorazepam or oxazepam in patients with liver failure). Alcohol withdrawal severity varies widely and the amount of benzodiazepine required for symptom amelioration can also vary. There is no fixed, standardized dose for all patients, but a typical regimen for covering uncomplicated withdrawal is 20 mgs q.d.s. of chlordiazepoxide, reducing over approximately 7 days.

There are alternative ways of giving benzodiazepines other than a reducing regimen over approximately 7 days, but these are less widely used.

#### **Relaxation exercises:**

Relaxation exercises which makes people feel good, it can be breathing exercises, yoga, meditation, Jacobson's relaxation exercise<sup>1,5</sup> which makes people feel good, so that people do not turn towards addictive substances to feel good.

## **VI. Conclusion :**

Addiction is a very common problem associated with human beings, which is a weakness and people project it as a style. It is very essential to be mindful towards our own mind and thoughts which will help us in controlling our thoughts and thus actions.

To restrain from doing certain acts is the best way of avoiding addiction, because addictions cannot be given by doing things repeatedly. If so, our brain needs to survive for atleast 1000 years to give up any addiction by overdoing, but for a average life span of below 100 years, habits can be given up by restraining only.

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