

Case Study on Substance Related and Addiction Disorders

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Abstract: *The aim of the present study was to understand substance related disorders with the help of case history. Substance use is commonly defined as the consumption of a substance frequent enough to produce clinically important distress and change in behaviour. The DSM-5 classifies ten separate classes of drugs which result in development of substance use or dependence. Many intoxication and withdrawal symptoms are distressing and even life threatening. Frequent drug use can lead to abnormalities in the central nervous system and also acts as a stressor for psychological disorders. The case study highlights that when the substance use starts in the youth it is detrimental for the development of the individual and impacts his personal and social life. Intervention in early stages is of utmost importance to avoid further distress for the individual and society.*

Keywords: Substance related& addiction disorders, intoxication, withdrawal, substance use, DSM-5

1. Introduction

A drug as described by WHO is a substance which when present in an organism's body may modify one or more of its functions. A *psychoactive drug*, once consumed, is capable of altering mental functioning.¹Substances with mind altering abilities yield substance intoxication, substance use disorders and substance withdrawal as the three basic types of disorders. These mainly occur under the influence of substances recognized by ICD-10.²DSM-5 considers substance use disorders (formerly known as substance abuse or substance dependence) resulting from the use of ten separate classes of drugs namely: alcohol; cannabis; opioids; hallucinogens (phencyclidine, LSD); inhalants; sedatives; hypnotics; stimulants (amphetamine, cocaine); tobacco as well as other unknown substances.²

1.1 Substance Use Disorder

A user takes a substance frequently enough to produce clinically important distress or impaired functioning which results in changed behavioural characteristics. Substance use can be developed accidentally as well especially while using prescribed drugs for the treatment of chronic pain.³The activation of the brain's reward system in central to the problem of substance use. A person experiences a rewarding feeling upon taking drugs which produces feelings of pleasure and euphoria which are referred to as a 'high'. This feeling can be so profound that the individual would neglect daily activities in favour of using substances.⁴

Self-control is a criterion which defines the vulnerability of developing substance abuse disorders. Lower levels of self-control are directly related to higher risk of frequent or even daily substance use. The lower the self-control a person has the more it predisposes them to develop a problem if exposed to drugs. Thus, the DSM-5 recognizes that not everyone is equally vulnerable to this problem.²

DSM-5 defines certain criteria to specify the types of addiction; these include behavioural, cognitive and physiological symptoms.

- The use is problematic. It causes problems and discomfort for the user and the people around the user.
- There is a pattern to the use. The repetition of the activity makes it a predictable habit.
- The effects of the same are clinically important. This points out that the use came to the attention of a professional or needs such attention.
- The use causes distress or impairment. It interferes with the patient's life in some severe way or the other.
- The interference should show at least two symptoms out of the given: more use than intended; attempts to reduce usage; much time spent getting or using; craving; shirking obligations; social problems; reduced activities; use despite its physical danger; use despite physical or psychological disorder; tolerance; and withdrawal symptoms. The severity depends on the number of symptoms visible.²

The constant use of substance can cause many disparities in the personal lives of the patient such as strained relationships, employment, lose self control, health and tolerance.³

1.2 Substance Withdrawal

The symptoms which occur specific to the class of substances when frequent use of substance is discontinued or reduced markedly.¹ Withdrawal syndrome may contain combination of physical, mental and emotional symptoms. When an organism's body gets used to frequent use of a substance, the absence of that substance leads to several repercussions. The person might get physiologically dependent on their desired substance and use it to feel 'normal'.

The symptoms of withdrawal are specific to the class of substance used however there are common symptoms found in withdrawal from many substances³:

- Mood alteration (mania, depression, anxiety, elevated levels of anger)
- Abnormal motor activity (restlessness, immobility)
- Irregular sleep (insomnia, hypersomnia)
- Physical problems (fatigue, nausea, change in appetite)

For a person to experience withdrawal, they must develop tolerance to it. This means there needs to be frequent use for a period of time differing between the substances. Most patients with substance dependence will experience withdrawal when denied substance. Though, typically patients report that withdrawal symptoms are relieved when substance is consumed again.³ Some substances on the other hand does not produce withdrawal symptoms. Those include hallucinogens which produce addiction but no signs of withdrawal were reported. Similarly, caffeine doesn't lead to any withdrawal according to the DSM-IV. ³Withdrawal syndrome can seldom be lethal but the possibility of that is not completely inexistent. For instance, alcohol withdrawal can lead to severe seizures which could lead to potential death albeit it rarely takes place. Another instance is withdrawal in the case of opioids. After a long period of abstinence, the tolerance decreases and intake of opioids could lead to an overdose.³

1.3 Substance Intoxication

It is an acute clinical condition which is the result of recent overuse of any substance. Intoxication may happen to anyone be it voluntarily or involuntarily. This is the only substance related diagnosis which occurs in a person who uses a substance only once. All drugs have specific syndromes of intoxication except for nicotine.³ For the sake of diagnosis of substance intoxication to be appropriate, effects of substance on the central nervous system must produce psychological changes as well as behavioural changes. The behavioural changes caused by intoxication are usually problematic. These include work and social problems, unstable mood, impaired thinking and defective judgement. This criterion is important to differentiate between intoxication in physiological sense and behavioural changes which impair functioning.³

Substance intoxication is often reversible. If the symptoms are major, it can also be termed as substance intoxication delirium. This state lasts longer than the transient symptoms most intoxicated people experience. In this state individuals may have interference in cognition and can be rendered unable to attend to external environment. Delirium changes someone's state of consciousness which disrupts their attention, awareness, and ability to process information.²

Symptoms of substance intoxication differ based on the substance in use however there are a few commonalities: Loss of motor coordination and agitation, loss of attention and focus, impaired memory (also known as a *blackout*), reduced alertness (drowsiness), effect on the nervous system (heart palpitations, change in blood pressure, dry mouth etc), and mood changes (depression, mania, euphoria). It can be said that symptoms of intoxication that last longer than 4 weeks can be a sign of another mental or physical disorder.²

1.4 Risk Factors

National Institute of Drug Addiction (NIDA) listed certain risk factors for developing substance use disorder which are: Genetic factors, lack of parental supervision, exposure to sexual or physical abuse, availability of drugs, family history of drug use, peer influence and negative mental health.⁵

2. Substances and Symptoms

This section of the paper will discuss substance use with regards to the classes of substances recognized by the DSM-5. The substances which will be discussed are alcohol, cannabis, hallucinogens, stimulants and opioids.

2.1 Alcohol Use Disorder

Alcoholism is the most common substance use disorder. It occurs more often in males than females. The onset tends to be in the teenage years however it may occur in the latter years of life. Alcohol use disorder is characterized by an impaired ability to control use of alcohol despite adversities in social, occupational, familial and health consequences. A person's risk for developing AUD depends on many factors. Mainly, how much, how often and how quickly they consume alcohol.³

Alcohol Withdrawal- Heavy, frequent drinking produces symptoms of withdrawal in almost every case. The symptoms show up shortly after the drinking stops. Nearly all patients show central nervous system over activity. This includes rapid heartbeat, sweating, and heightened reflexes. Other physiological symptoms include nausea, insomnia and tremors. Some patients may even experience brief hallucinations. The experiences of withdrawal cannot be predicted accurately however, the likelihood increases with an increase in the consumption and frequency of alcohol.^{3,7}

Alcohol Intoxication- There is a great deal of variability in the blood levels of alcohol that people can tolerate without appearing 'drunk'. The symptoms of intoxication are more prominent in the early stages of drinking period when the blood levels are high rather than when the person is in the later stages and 'sobering up'. Alcohol intoxication clouds a person's judgement and lowering self-control.³ There are levels to intoxication ranging from mild to severe. Mild intoxication leads to symptoms like unsteady gait, disinhibition and slightly fast heartbeat wherein the blood alcohol concentration is between 0.01 to 0.1 percent. Moderate, in which the BAC is between 0.15 and 0.3% sees mood variability, slurred speech, dizziness etc. Severe intoxication is also called alcohol poisoning when the BAC is greater than 0.3%. When this occurs, one can experience severe dizziness, delusions, hallucinations and potential loss of consciousness.⁸

2.2 Cannabis Use disorder

Cannabis is the most widely used illicit substance, popular among the youth, particularly men. The serious behavioural and psychological consequences of using other severe substances are less problematic in cannabis which makes it harder for some patients to stop using it. It causes relatively fewer and less severe medical conditions which could motivate the cessation of other substances. The characteristics of cannabis use disorder are similar to those of other substance disorders and are generic.³

Cannabis Withdrawal- Initially, there were debates regarding the existence of cannabis withdrawal which led to the conclusion that they are real and frequent use of cannabis

leads to withdrawal state. Upon observations made by the researcher, withdrawal symptoms included cravings, irritability and nightmares. Physical symptoms could include CNS over activity, *insomnia and abdominal pain*.³

Cannabis Intoxication-Cannabis use can lead to both positive and negative reactions from an individual. Many patients report elevation of mood, distorted sense of time, they see the world afresh and colors seem brighter to them. On the other hand, they feel passive, drowsy and anxious (common in first time users). Usually cannabis also produces redness in eyes.³

2.3 Hallucinogens

Phencyclidine (PCP) also known as angel dust has both stimulant and depressant qualities. It can produce severe psychotic symptoms which sometimes look like schizophrenia. PCP has high addictive potential it could be as high as heroin or cocaine as well.³

Lysergic acid diethylamide (LSD) is a psychedelic drug also known as acid. Its effects include intensified thoughts, emotions and perceptions. Higher dosages of this substance can manifest auditory and visual hallucinations. It also causes dilated pupils, increased blood pressure and increased body temperature.⁹

Hallucinogen Use Disorder- The symptoms for developing PCP and other hallucinogen use disorders is the same as every other substance as provided by the DSM-5.

Hallucinogen Withdrawal- Unlike other substances, usage of hallucinogens rarely results in any withdrawal symptoms.³ There do not appear to be any physical symptoms when the drug is not taken, albeit a noticeable tolerance develops for the drug after a short period of time.¹⁰

Phencyclidine Intoxication- The effects of PCP are directly related to the dosage. Shortly after using the drug, patients develop serious symptoms. PCP can produce euphoria, lethargy, anxiety, depression, delirium, and behavioral problems. Catatonic symptoms like suicide have been reported as well. Users can even experience unpredictable sensory responses. Physical symptoms include high fever, muscle rigidity and hypertension.³

Other hallucinogen intoxication- Patients often report somatic symptoms of dizziness, numbness, tremor etc. Perceptual changes occur in the form of illusions. Hallucinations occur in the form of shapes and colors. People also experience intense euphoria, depersonalization, derealization, distorted sense of time and dream like state.³

Hallucinogen Persisting Perception Disorder-A flashback is said to occur when a patient experiences symptoms in the absence of the drug.¹⁰ These symptoms include seeing faces, geometric forms, flashes of color, after images, micropsia or macropsia. These last for only a few seconds and rarely do they interfere with daily activities.³

2.4 Stimulants

Stimulants affect the mental and physical functioning; they improve alertness, mood and activity for a limited time. DSM-5 recognizes two stimulants: amphetamine and cocaine.² Amphetamine- Users often use amphetamine for euphoria, appetite suppression and increase in activity. Users often look sleep deprived and anorectic. Some physical signs are dark circles, poor hygiene and itchy skin.³ Often used for energy boost; users tend to switch to this substance when caffeine does not satisfy them.

Cocaine- It is most used as a recreational drug or as a euphoriant.¹¹ Cocaine creates powerful craving which induces users to use it more frequently than in the case of amphetamines.³ It can be snorted or injected in the veins. Psychological effects could be feeling of happiness, sexual arousal, loss of contact with reality and agitation. Physical include fast heart rate, sweating and dilated pupils.¹²

Stimulant Use Disorder-The characteristics for stimulant use disorder are the same as the general characteristics of most substances recognized by the DSM-5.²

Amphetamine Intoxication-This substance is used to treat ADHD and obesity however without prescription it is detrimental. Typically, it arouses feelings of euphoria, confidence and well-being. It gives the user a 'rush' of energy and euphoria. However, it is accompanied by anorexia and agitation.³ With longer use people may develop hallucinations (bugs crawling on skin) or paranoia. Physical symptoms include tremors, abnormally fast reflexes and confusion.¹³

Cocaine Intoxication- It is the strongest pharmacological reinforcer ever devised. Humans use it by snorting, injecting and smoking. It can produce feelings of euphoria and well being as fast as a few seconds after intake.³ Users report that they feel alert, self-confident and have increased sexual arousal. However, these feelings are quickly replaced by dysphoria and craving. Cocaine produces behavioural changes including aggression and agitation. Other symptoms include delusions, irritability, sensory awareness, anorexia and insomnia.²

Stimulant Withdrawal-Symptoms of amphetamine and cocaine are similar. After the levels of the substance in the blood drops, agitation, anxiety, fatigue and depression develop. Panic attacks are common for both the substances. Specifically in the case of cocaine withdrawal, suicide attempts are fairly common.³

2.5 Opioids

Opioids are still the costliest illegal drug. It was considered the most threatening drug however that designation is assumed by cocaine now. Some degree of tolerance to the drug develops initially but the pursuit of consuming the drug dominates the life of the user.³ Some commonly used opioids are prescription drugs such as Vicodin and OxyContin. Morphine and Fentanyl are used as well. Heroin, an illegal drug, is the most widely used opioid.¹⁴

Opioid Use Disorder-The characteristics for the use disorder are the same as the other specific substance disorders.²

Opioid Intoxication-The effects of opioid use can be felt almost immediately, users claim that they feel a rush after using the substance. This can be followed by euphoria, drowsiness, perception of warmth and heaviness.³ Though it can be confused with sedative and alcohol toxicity, the constriction of pupils helps distinguish. Tolerance of enormous quantities of opioids usually gets developed however if overdose happens it is typically treated as a medical emergency.¹⁴

Opioid Withdrawal-Withdrawal symptoms resemble flu like illness with vomiting, nausea, dysphoria, muscle aches and pains, runny nose, diarrhoea and watery eyes. After cutting back from opioid usage for several weeks also leads to autonomic nervous system irregularities like dilated pupils, sweating and hairs standing up.¹⁴

3. Treatments and Therapy

The National Institute of Mental Health lists the following behavioural therapies:

Cognitive behavioural therapy: It is a talk therapy that helps learn to reframe irrational thoughts and change behaviours,

Dialectical behavioural therapy: This is a type of therapy that teaches skills to control emotions and behaviours while being aware of one's emotional state,

Community-based treatment: This makes use of community outreach, and therapeutic communities' therapy, which involves long-term residential treatment,

Contingency management: This is a process that offers rewards for achieving substance use goals,

Family therapy: This includes both the person with a substance use disorder and their family to address concerns and plan recovery strategies together and

Recovery support: This includes follow-up visits with therapists and other support systems to ensure continued success after treatment.¹⁵

4. Statement of Purpose

Substance use is a very pertinent issue in society which is often overlooked, thus people don't seek help for the same. The purpose of the case study was to further elaborate the understanding of substance use an issue which is particularly present in the youth. As a psychology student, the researcher was curious to learn about the real world applications of therapy. Thus, interning at a rehabilitation centre provided the researcher with first-hand experience in case history taking which motivated the researcher to write this paper.

5. Case Study

Name: M. K. Age: 19 years

Gender: Male

Education: High school dropout

Marital status: Unmarried

Family type: Nuclear family

Family members: 3

Personal History

The subject claimed to be captivated with misconduct since his childhood. He considers himself to have always been social and energetic however, he often got into fights with his upperclassmen. He felt isolated from children his own age and joined friend groups of his seniors in school. He was aware that his friends were involved in ill behaviour and chose to indulge himself as well. After joining rehabilitation centres, it was observed upon conducting a Mental State Examination that the subject was reluctant to accept his condition and had severe mental instability.

Family History

The subject was brought up in a nuclear family by his parents along with his elder sister. Before his history of substance use, the subject had good relations with his mother and sister. He didn't get along with his father and reported that his father physically abused him during his intoxication years. The subject mentioned that his violent tendencies towards him were a result of his father's alcoholism. During this period the subject stopped talking to his family to avoid arguments and stated that "they didn't understand his feelings". After recovering, the subject started building a healthy relationship with his family.

Educational History

The subject attended a private school in his vicinity. He continued his education till grade 10, after which he dropped out of school due to his increasing substance addiction. He considered himself to be intelligent and got good grades in school. Subsequently, the subject started working part time jobs on his father's orders.

History of substance use

The subject started smoking cigarettes at the age of 13 in the company of his friends. He stated that he shifted to another substance as soon as he got bored of the former and sought to seek more pleasure in the subsequent substances. Thus, he started consuming edibles (cannabis candies) firstly in a moderate amount and later in dangerous quantity. He consumed 10-15 edibles at the same time and added that he felt a dopamine rush while doing so. He started consuming alcohol the subsequent year and started smoking cannabis. He often experienced psychological and behavioural changes while intoxicated. Later, he used complex drugs like opioids and stimulants. The subject often resided at his friend's studio and rarely went home. His friends were heavily involved with drug dealing which made these substances accessible to him. Soon after he was left with no money, he started smuggling and gambling. He claims to have committed many morally incorrect and illegal acts to attain his desired substance. He used to pickpocket people, snatch chains, commit car theft and indulge in violence. He confessed that he had thoughts of killing people to get drugs. The researcher observed that he often blamed the substances he used for his behaviour. For instance, saying "drugs made me steal cars and fight with people". The subject stated that he went through severe withdrawal symptoms when he did not have access to drugs.

Subjective Rating of Symptoms

The rating of symptoms was directly communicated by the subject due to his insight about his situation. The rating was

taken to understand the perception of the subject about pertinent issues that occurred during his substance use period. The scale ranges from 0 (no problem at all) to 10 (severe problem caused). The table below shows the rating.

Symptoms	Ratings
Stealing	9
Physical violence	9
Intrusive thoughts with killing intent	7
Craving for substance	9
Sadness	4
Loneliness	5
Withdrawal symptoms (Body ache, nausea)	10

The ratings clearly show that the subject experienced severe withdrawal symptoms which caused major issues for him and the people around him. The subject mentioned that he rarely felt lonely and was comforted by the company of his friends.

Present Status

After two years in rehabilitation programmes, during which he relapsed twice, the subject is now 8 months into recovery. He volunteers and spends time at his rehabilitation centre to help with trivial matters. He developed several new hobbies to pass time. He enjoys being on social media and is fond of music. He mentioned that he hasn't thought about his future but would like to have a productive and successful future. The subject uses spirituality and social support to stay sober and prays two times everyday without fail. He is now more self-confident and finds himself to be in a safe and better space.

6. Conclusions

It can be concluded that substance use is a detrimental problem for the affected person and the society. Every substance has its own set of symptoms in the intoxication and withdrawal stages which are harmful for any individual. Many hereditary and environmental stressors can predispose a person to develop substance use disorders. Nevertheless, the right social support and therapy can help contain the situation and prevent it from escalating to dangerous levels which could even lead to death.

6.1 Implications

- Substance use is increasingly found in the youth which hinders with their development. Adequate measures should be taken by stakeholders to prevent further rise in numbers.
- Social and family support is of utmost importance for the recovery of a substance use patient.
- Various stressors can trigger an addiction. People at high risk should be recognized and monitored to rectify use in its early stages and take measures to prevent addiction.

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