

A Theoretical Study on the Abuse of Prescription Drugs in India

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Abstract

Prescription drugs are medical treatments for a wide variety of illnesses. Every individual consumes a variety of drug medications but most of these prescribed drugs are addictive which results in drug abuse by many patients. This abuse can lead to long-term biological and psychological dispositions. There are various drugs which, on over-consumption can have permanent behavioural changes sometimes leading to aggressive, impulsive, or antisocial behaviour. Such individuals may not consider the role of a medication drug on their body and brain over a long period. This study summarizes the effects of specific drug abuse on the Human body and discusses the long-term personality and behavioural changes which are posed by those effects. Moreover, there are various crimes which happen in the due course of getting the desired supplement of the particular drug. This describes the crimes happening because of it, both victimless crimes as well as crimes with victims. Negligence by the doctors and the chemist is a key factor for these types of happenings going unnoticed. The role of the doctor and the pharmacist is pivotal to prevent such kind of situations during patient treatment.

Keywords: Prescription drug abuse, anti-social behaviour, aggression, psychopathy, criminality

Introduction

Prescription drugs are those drugs which are approved to be used for medical ailments and must be strictly administered for that purpose alone. The usage of such drugs without a medical prescription is prohibited by law. Drugs like cannabis, opioids, cocaine, etc. are banned from open usage without proper medical prescription to the individual to treat their disease. But how often is this law being followed in India? After prescribing the drug to a patient, the doctor does not know the frequency of drug intake by the patient or the ways the patient is using it. A single prescription can be used to purchase medicine multiple times and by a person other than the original patient whether with legitimate or illegitimate intentions.

In India, various medications like Central Nervous System (CNS) depressants, stimulants, steroids, etc. are under restricted category to be used only after proper medical prescription from a registered medical practitioner. These medicines do not pose a threat when taken in limited dosage, but regular intake makes the body resistant to medication, leading to the need for increasing the dosage. If this happens again and again, a person may get addicted to it and is prone to develop certain biological as well as psychological side effects such as dizziness, nausea, confusion, aggression, change in personality, organ damage, psychosis, and many more depending on the type of drug. Many people, knowingly or unknowingly get trapped in this loop of addiction so much that missing out on a single dose can bring about adverse

withdrawal symptoms. These after-effects can lead to non-social or anti-social behaviour in a person resulting in a violent and impulsive personality.

The 'General Theory of Crime' given in 1990 by Gottfredson and Hirschi is a theory about 'self-control'. They talk about how the lack of developing self-control while growing up can lead to aggressive behaviour and this aggression becomes the cause of crime. Similarly, the personality theory of offending by Eysenck, commonly known as the PEN model (extraversion, neuroticism and psychoticism) talks about how childhood experiences of a person can be responsible for behaviour like aggressive, anxiety, lack of empathy, depression, ego-centric, impulsive, and anti-social personality. These behaviours in turn are the reason for criminality (Costa and McCrae, 1995).

Though these theories are talking about the growing stage of a child and the fixation of behaviour in it, but there is a common intermediary factor of behaviour, development, which becomes the reason for criminality. These behaviours can develop in the later stages of life as well due to the abuse of certain drugs in high dosages. Additionally, as it becomes available in the market, the misuse of it for illegal is commonly seen as well.

Objectives

The objectives of this study are:

- To recognise the long-term adverse effects of addictive prescription drugs
- To investigate those effects leading to psychological effects like antisocial, aggressive, and impulsive behaviour
- To identify the crimes having prescription drug abuse as an intermediary factor.

Literature Review

There are a total of 7 categories of drugs under Drug Recognition Expert (DRE) categorization. These are (1) CNS depressants (2) CNS stimulants (3) Hallucinogens (4) Dissociative Anesthetics (5) Narcotic Analgesics (6) Inhalants (7) Cannabis. The three classes of medication most commonly misused are Opioids, CNS depressants and stimulants. Breaking it down further, Opioids and CNS depressants are commonly prescribed drugs for various ailments. Whereas, CNS stimulants are mostly abused by illegal means. Apart from that, steroids are a different class of drugs and do not show speedy addiction effects. All these three drugs have an addiction and abuse potential after a doctor's prescription.

Many of the drugs are sold Over the Counter (OTC) i.e. without the prescription of a medical practitioner because it is not exclusively mentioned in the laws that it has to be a 'prescribed only drug'. Thus, to save the consultation cost, many people buy pharmacist-recommended drugs without restriction on the quantity to be used (Marathe et. al., 2020).

1. Steroids

Steroids (also called corticosteroids) are anti-inflammatory drugs and they are also a group of hormones naturally produced by the human body which are used to treat diseases like lupus, rheumatic arthritis, asthma, painful inflammation of joints and muscles, hives, multiple sclerosis, Addison's disease, etc. Corticosteroids can be administered as tablets, inhalers, injections, lotions and creams. Continuous use of such drugs for a long time especially tablets can have effects like depression, mood swings, high blood pressure, diabetes, and suppression of adrenal glands (produces steroids naturally in our body) and can lead to withdrawal symptoms.

Corticosteroids when taken for a long time target the brain and it has been found that a higher amount of endogenous and exogenous corticosteroids in blood can impair cognitive functions. It can have symptoms like mania, hypomania, depression, and psychosis which happens during the therapy of corticosteroids by physicians. It can severely affect the declarative and verbal memory of a person. These studies have shown that the psychiatric effects of corticosteroids are dose-dependent (Brown & Chandler, 2001).

Topical corticosteroids are also commonly used for external usage of dermatological issues such as acne and fairness. According to the Drugs and Cosmetics Act of 1940, topical corticosteroids are a category of drugs which comes under Schedule H drugs and therefore should not be allowed to be used without a medical prescription from a qualified doctor. However, due to a lack of proper regulations and surveillance in India, these are openly marketed and sold over the counter. There is a lack of awareness not only in chemists and doctors but also in consumers who blindly use it to have 'fair skin'. The exogenous corticosteroids also have adrenal suppression potential and lead to adverse effects on the skin as well as become threatening to life as well (Kumar et. al.,2016). It is not addictive but creates a dependence as stopping use may result in visible non-likable effects on the skin. Hence, it continues being abused and misused in larger quantities as time progresses.

Anabolic Steroids are another group of synthetic steroids which copy the activity of the male Testosterone hormone and can have much more adverse effects than corticosteroids. These are performance-enhancing drugs which increase muscle mass and thereby commonly used by athletes and bodybuilders. Anabolic steroid abuse can have adverse biological effects on men such as infertility, erectile dysfunction, breast development, increased risk of prostate cancer, and reduced sperm count. Even in females, the effects are loss of breasts, clitoris swelling, period-related problems, etc. The psychological effects of it are even worse. It leads to extremely aggressive and violent behaviour, paranoia, hallucinations, and manic behaviour. Apart from athletes, even teenagers and adolescents use these drugs to have a growth spurt in puberty. These drugs can accelerate the growth of bones leading to premature ageing of bones and growth is restricted. Adolescent boys who misuse this drug suffer from body dysmorphic disorder (Navidinia et. al., 2017; Pany et.al., 2019).

A study shows that anabolic-androgenic steroids are loosely abused in Male fitness centres of the Kancheepuram district of Tamil Nadu with the misconception that small doses will not lead to addiction (Balaji et. al., 2019). This study raises a question regarding the misuse of steroids in other gyms in India. It is commonly found that most of these abusers of steroids do not know about their side effects and abuse them to get a perfect body type to achieve their dreams of attracting the one they like. Overdose of these drugs can be life-threatening and can cause infertility as well. Moreover, abusers of steroids become aggressive over time (Samuel et. al., 2019).

Athletes are medically prescribed to use steroids but they are not allowed to use them during or before the sports competition as it will give them extra edge. There are monitoring and testing systems set up by the World Anti-Doping Agency and its national affiliates to detect if the athletes have used any banned substances. There is a recent longitudinal monitoring program which is known as a biological passport. On failing this test, not only can an athlete lose their chance to perform for the sport but they can also get banned from that sport for a lifetime (Anawalt, 2018). Initial usage of it becomes a habit and leads to excessive dependence which can put performance pressure on the sportsman to use such substances even when it is banned.

According to a finding in Madhya Pradesh, girls of eight years were forced into prostitution after administering them with steroids for faster physical growth. The flesh trade of girls is one of the major

crimes committed in India against girls or women. It is a new trend to inject pre-adolescent girls with growth hormones to force them into prostitution. Unfortunately, these drugs despite strict regulations by the government, are easily available in the market and can be misused by anti-social components of society as well which results in the committing of such heinous crimes (Patel, 2013).

One of the important laws regarding the restriction on Anabolic drugs can be seen in this statement of the Bombay High Court which is quoted as follows, “This petition under Art. 226 of the Constitution impugns the notification dated 22nd November, 1985, whereby the use of Anabolic Steroids with other drugs has been completely prohibited in purported exercise of the power conferred upon the Central Government by Section 26-A of the Drugs and Cosmetics Act, 1940 (Act No. 23 of 1940), hereinafter referred to as 'the Drug Act'.” (Bombay High Court, 1987).

During COVID-19, a lot of drugs have been over-prescribed by doctors due to a lack of knowledge about the after-results. One such drug is steroids as well. A study shows that the steroids namely methylprednisolone and dexamethasone were administered during Covid-19 to control its effects. These drugs later lowered the immunity of the body of diabetic patients, making them vulnerable to the black fungus attack (Chouhan et. al., 2021). Another study talks about the high usage of Corticosteroids in dermatology which should be kept in check by regular studies (Nikzad et. al., 2023). Some of these steroids are not even recommended by physicians but purchased by consumers by looking at the advertisements or recommendations from pharmacists who did not even have proper knowledge regarding these steroids or the fact that these are schedule ‘H’ drugs (Sheth and Nair, 2021).

2. Opioids

Opioids are a plant-based class of drugs derived naturally from the opium poppy plant but they can be synthesised as well. Many opioids are administered as medication to relieve pain and thus, some also use it for non-medical relaxation purposes and to attain a ‘high’ state of mind. But these drugs are very addictive and overuse can have symptoms like nausea, euphoria (intense excitement), confusion of mind, constipation, drowsiness, and slowed breathing (hypoxia). Ultimately, it can also lead to death. Adults or old-aged individuals are at high risk of this as they have various medical conditions demanding the use of opioids. Continuous use in prescribed proportion will develop tolerance, leading to dependence and increased dosage, which may lead to addiction in the end (NIDA, 2021).

According to the report “Magnitude of Substance Use in India, 2019” which was published by the Ministry of Social Justice and Empowerment, Government of India, opioid is used by 2.1% in India among all the drugs. Further among opioids, Heroin is reported to be used by 1.14%, pharmaceutical opioids to be used by 0.96%, and opium is reported to be used by 0.52%. The global prevalence average of opioids is one-third of what it is there in India. Here, heroin abuse is also linked to organised crime in India and the illegal supply of it (Singh, 2020).

After scheduling opioids like codeine, dextropropoxyphene, and tramadol in 2011, 2017, and 2018 respectively under the Narcotic Drugs and Psychotropic Substances Act (NDPS Act), a new type of opioid emerged in the market namely ‘Tapentadol’. It has slow addictive power but it is addictive and can have similar long-term effects. According to a study, Tapentadol abuse was 25% in India in the year 2019. The biggest source of this drug was from chemist shops (without prescription – 53% and with prescription – 40%). It is evident from this study that its easy availability in the market without any restrictions plays a major role in its abuse (Basu et. al., 2020). After the amendment of the Narcotic Drugs and Psychotropic

Substances Act (NDPS Act) in 2014, there came a liberality in access to some opioids like hydrocodone, fentanyl, oxycodone, and codeine as they are ‘essential’ drugs (Singh and Rao, 2021).

There is a misconception that drugs are only abused by men. Here, when we are talking about prescription drug abuse men and women both take medications equally and thereby both abuse the particular drug equally. According to a study, prescription opioids like benzodiazepines and pentazocine were commonly administered to women for treatment of ailments like pain, depressive disorder, cluster B disorder, and somatoform disorder. Co-occurrence of mood and anxiety disorders was reported among the women abusing prescription opioids (Dayal & Balhara, 2016).

Antisocial Personality Disorders (APD) are very common for opioid abusers according to another study. The personality traits shown by such abusers are high extraversion, high neuroticism, and high impulsivity compared to the average population (Trémeau et. al., 2003). Opioid abuse can numb the senses of an individual to feel pain physically as well as mentally. It is found that opioid abusers do not feel guilt or remorse while committing violent acts and even when they realise it later, they cannot stop themselves from consuming it as they feel like they have the courage to do all the things in the world when they are in opioid influence (Havnes et. al., 2014).

3. Central Nervous System Depressants and Stimulants

Under Section 26A of the Drugs and Cosmetics Act 1940, trade or consumption of certain CNS depressants such as alprazolam, imipramine, escitalopram, etc. is banned in India (Central Drugs Standard Control Organization, 2022). CNS depressants are drugs which slow down brain activity and that is why they are used as the medication for panic, stress, anxiety, and sleep disorders. These drugs include tranquilisers, hypnotics, and sedatives. Depressants can have effects on the brain such as confusion, concentration issues, dizziness, memory problems, low blood pressure and slowed breathing. Abuse of it can be fatal and stopping the usage will cause withdrawal symptoms or seizures (NIDA, 2018).

Abusing sleeping and anxiety pills by teenagers is a very common phenomenon seen today to escape from daily depression and anxiety. Sleeping pills like benzodiazepines-diazepam, lorazepam, triazolam, etc. are used to treat insomnia, anxiety, or depression disorders. But they can lead to sleeping disorders. Addiction can lead to heavy drug abuse such as consuming 30 sleeping pills daily and this can be extremely life-threatening (Times of India, 2015). Similar is the situation for anti-anxiety pills but not much attention or consideration is yet given to it.

Stimulants are those drugs which are used to increase energy, and alertness, and enhance physical ability by boosting the levels of certain chemicals in the brain such as norepinephrine and dopamine. These are majorly used to treat narcolepsy, Attention Deficit Hyperactivity Disorder (ADHD), and depression. Caffeine is the most commonly used stimulant with relatively moderate effects so it is widely used by students, athletes, and professionals who wish to attain temporary alertness. Amphetamine and methamphetamine are the common stimulants used for medicinal and recreational purposes. Cocaine is widely used for recreational purposes by illegal trading. Depending on the person’s biological factors, the type of stimulant used, dosage, tolerance, and combination with other drugs will determine the effects of it. There can be various short-term or long-term adverse effects such as anxiety, insomnia, psychosis, paranoia, hypertension, seizures, and many more (Farzam et. al., 2022).

A study was done in Kolkata to determine how the need for certain drugs is created by marketing the need for anti-depressants. Instead of relying on psychological help, people often lean towards the usage of medicines for faster relief without thinking about the adverse effects, thus, leading to over-prescription of

such drugs. (Goswami and Chaudhuri, 2020). In Nepal, a study shows that pharmaceutical companies give commissions to the prescribers to prescribe their drugs more and more without worrying about the outcomes for the patient (Upadhaya, 2018).

4. Psychedelics

Hallucinogens and dissociative anaesthetics are included in this category. Psychedelics are a group of drugs which alter the person's level of awareness, sensations, thoughts, feelings and distorted perception of time. Dissociative drugs have an additional effect which can make a person feel disconnected from reality, and from their surrounding world and make them hallucinate (NIDA, 2019). In many parts of the world, especially America, these drugs also have some religious value. This leads to aggravated and open abuse of this drug which is justified in the eyes of abusers.

Some mental disorders such as depression, anxiety, chronic headache, and insomnia which are treated by highly toxic drugs like anti-depressants, anti-anxiety drugs, etc. can be substituted by psychedelics. As these are comparatively less toxic and the amount of misuse potential is comparatively less (Lowe et al., 2022). All psychedelics do not have addictive potential, although tolerance can be developed over time. Though it is a better alternative to harmful drugs, these drugs can themselves have some long-term dispositions on the human mind. Continual use of classical hallucinogens can lead to Persistent Psychosis or Hallucinogen Persisting Perception Disorder (HPPD) whereas, long-term use of dissociative drugs will leave an individual- a patient of memory loss, anxiety, depression, and prone to suicidal thoughts (NIDA, 2019). Thus, the person under the influence of this drug or have been using this drug for a long period can become disconnected from reality which can sometimes if met with a trigger induce self-harming activities. These are the effects which have been researched, but more research is needed on the after-effects of continual heavy use of hallucinogens.

Several dissociatives such as Phencyclidine (PCP) and Ketamine were originally used as anesthetics for patients during surgeries due to their hallucinating and relaxing effects. Later, Phencyclidine became a common recreational drug which can be fatal if the dose is not controlled. Popularly known as "angel dust" it can bring several psychological problems, depression, and aggression-related issues (Stillman, et. al., 1979). Ketamine on the other hand is popular to be used as a "date-rape drug" and its overdose can be fatal as well.

Psychedelics are illegal in India to be possessed by a non-medical professional as they can only be used for healthcare according to the NDPS (Narcotic Drugs and Psychotic Substances) Act, 1985. But the seeds of the drugs like magical mushrooms are not psychoactive and hence, can be possessed but as soon as they are cultivated, they become illegal again. This explains its easy availability. Psychedelics are not abused as much as the other forms of drugs in India also it is more popular in teenagers and young adults. Nevertheless, according to a survey, Lysergic Acid Diethylamide (LSD) was the most abused substance among psychedelics, followed by Psilocybin mushrooms (magic mushrooms), and N, N-dimethyltryptamine (DMT). The main reasons for consuming it were reported to be curiosity and spiritual use as Psychedelics have some cultural significance in India (Raj, 2022). However, the results of this survey cannot be considered very accurate as the sample size was very small (68). However, this study can be used as a baseline for further studies. Furthermore, studies are necessary for researching the various ways these drugs get circulated illicitly as right now there is limited data available on this matter.

Relevance

There are not many studies done in India on the abuse and misuse of prescribed drugs which can lead to addiction and various psychological and health-related problems. This study draws attention towards the abuse potential of medically prescribed drugs, their effects, and their use for recreational purposes.

Methodology

- 1. Systematic Review:** I initiated my literature review using the data from the Google Scholar database and identified the search terms & the inclusion and exclusion criteria. I modified my review methodology based on these results and according to the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA).
- 2. Search Process:** I searched Google Scholar for studies on Prescription drugs' effects on the human body between 2001 to 2024 with the custom time range search filter. I sorted it by relevance. I only used the primary studies and not the secondary ones.
- 3. Article Selection:** The PRISMA approach guided the organization of the papers based on more than one perspective or topic. The articles were selected to answer questions such as,
 1. Q1. What are the effects of prescription drugs on the human body?
 2. Q2. What are the effects of drugs due to the high dosage over a long period?
 3. Q3. How do the effects lead to psychological disorders and behavioural changes?
 4. Q4. Does the abuse of prescription drugs lead to criminal behaviour?
5. For this, I have reviewed 50 articles, among which 32 are relevant to this study. 10 of them were not used because they were based on organized crimes of drugs and their illegal usage. 5 of them were not used because the studies were not relevant to India. 3 of them were not used because the types of drugs were not related to my study.

Results and Discussion

The drugs which we think are saving us by curing us are sometimes eating us from the inside slowly. In India, doctors easily prescribe heavy medication to patients without ensuring that they are not misusing or abusing that drug. Even though the drugs are in a restricted category, with a valid prescription from the doctor they can easily get it from different medical stores because even the pharmacists do not have the resources to check whether the prescription was used again. On the other hand, using it for a certain period will develop a tolerance and then the need to increase the dosage. This ultimately leads to dependence on that drug. The patient will be obliged to take it again and again, resulting in drug abuse.

Drugs like Opioids used for pain relief, de-sensitise a person who abuses them and he does not feel any remorse while being aggressive or violent. If someone has anxiety issues or they have depression and are recommended to take CNS depressants, with time, the need for those drugs will increase and with that, the depression or anxiety level also goes up which can push someone to commit a crime out of anxiousness or from depression they may become suicide-prone. Steroids on the other hand are not considered to be “bad” drugs but in reality, they are highly addictive and continuous abuse may lead to aggressive and violent behavior.

All these are concerning points to be considered and some policy changes should be considered to stop this. And in this case, doctors and pharmacists will have a major role to play because they have to make sure that no patient is using the prescription more than what is needed. Using the same prescription at different pharmacies should not happen. For that, they should make clear guidelines for pharmacists to

only sell medicines to prescriptions of particular doctors and not others. Keeping a digitised record of each prescription will help to avoid selling the same prescription again.

It is a proven fact that when someone finds solace after consuming medication, they crave for more and if this craving is not stopped at the initial stage, then it becomes so uncontrolled that individuals may commit crimes just to get the high, relaxation, or other desired effects from that drug. They can even turn to illegal purchase and consumption of drugs. Although there are many studies on how crimes are committed for drugs, there are very few studies which talk about how drug consumption can lead to psychological changes. These changes alone have the potential to develop criminal behaviour in a person. Due to lack of study, it cannot be proven in this paper but a derivative study has been done to draw attention towards this angle of crime.

Conclusion

Prescriptions are given by doctors to attain a healthy body and not to have bad effects on it. Depending on the way of usage and quantity of it, the effects can alter. If controlled, they are medications, if uncontrolled they can have severe repercussions. Prescription drug abuse is a topic not explored yet to its fullest. Anti-social personality, aggression, violence, and psychopathy are the results which can lead to criminal behaviour as explained by the criminology theories of 'self-control' and 'personality theory of offending'. As these medicines are important for treatment, they cannot be banned and the loophole in restrictions is manipulated by many.

The Narcotic Drugs and Psychotropic Substances Act of 1985 is the most stringent act of the Indian government, so, making it stricter is quite hard. The alternative approach for this can be the vigilance of doctors/physicians and pharmacists, because if they take up this responsibility of limiting the usage of such medicines for the patients who absolutely need it and try to replace the other treatments with more natural ways then it would help to control these medicinal drugs addictions.

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