

## Impact of Drug Abuse and Addiction in Daily Life: A Mini Review

Ram Kumar\*

Department of Pharmaceutical Science and Technology, Maharaja Ranjit Singh Punjab Technical University, Bathinda, Punjab, India

### ABSTRACT

Drug addiction involves potentially life-long behavioral abnormalities that are caused in vulnerable individuals by repeated exposure to a drug of abuse. The persistence of these behavioral changes suggests that long-lasting changes in gene expression, within particular regions of the brain, may contribute importantly to the addiction phenotype. Work over the past decade has demonstrated a crucial role for epigenetic mechanisms in driving lasting changes in gene expression in diverse tissues, including the brain. In this review article, we will be discussed the prevalence of drug addiction among high-school students and its association with violence and school behavior. The present study provides baseline data focusing specifically on the extent of the importance of early detection of drug addiction among vulnerable young people, enabling the development of educational programs to prevent abuse and dependence on substances due to drug addiction and violence. As will be seen, there is robust evidence that repeated exposure to drugs of abuse induces changes within the brain's reward regions in three major modes of epigenetic regulation histone modifications such as acetylation and methylation, DNA methylation, and non-coding RNAs. In several instances, it has been possible to demonstrate directly the contribution of such epigenetic changes to addiction-related behavioral abnormalities. Studies of epigenetic mechanisms of addiction are also providing an unprecedented view of the range of genes and non-genic regions that are affected by repeated drug exposure and the precise molecular basis of that regulation.

**Keywords:** Drug addiction; Drug abuse; Drugs; Medicines; Violence; DNA methylation

### INTRODUCTION

Drug is described as a chemical substance or non-food substance used mostly for therapeutic purposes. It is recognized by the official pharmacopeia and formulary. It is primarily used for diagnosis of diseases, mitigation, treatment, and prevention. Depending on its inherent nature, it tends to take control of both your body and mind [1]. When consumed, it alters the physiology or psychology of an organism. Food and substances that give nutritional support are usually distinguished from drugs. Drugs can be consumed through inhalation, injection, smoking, and ingestion, absorption through a strip on the skin, suppository, or dissolution underneath the tongue [2].

A drug is a chemical substance with a known structure that, when prescribed to a living thing, generates a biological effect. A

pharmaceutical drug, also known as a treatment regimen as well as medicine, is a chemical substance that is used to treat, cure, prevent, or diagnose a disease or to promote health. Drugs were traditionally obtained through the extraction of medicinal herbs, but more recently, through organic synthesis. Pharmaceuticals can be taken for a limited time or on a regular basis to treat chronic disorders [3].

### LITERATURE REVIEW

The drug is used for the mainly 3 purposes:

1. Diagnosis
2. Treatment
3. Prevention

**Correspondence to:** Ram Kumar, Department of Pharmaceutical Science and Technology Maharaja Ranjit Singh Punjab Technical University, Bathinda, Punjab, India, E-mail: ramkumar17040@gmail.com

**Received:** 01-Nov-2022, Manuscript No. JALDD-22-19776; **Editor assigned:** 03-Nov-2022, PreQC No. JALDD-22-19776 (PQ); **Reviewed:** 17-Nov-2022, QC No. JALDD-22-19776; **Revised:** 23-Nov-2022, Manuscript No. JALDD-22-19776 (R); **Published:** 30-Nov-2022, DOI: 10.35248/2329-6488.22.10.374.

**Citation:** Kumar R (2022) Impact of Drug Abuse and Addiction in Daily Life: A Mini Review. J Alcohol Drug Depend. 10:374.

**Copyright:** © 2022 Kumar R. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

## Medicine

A medication, also known as a medicine, is a drug that is used to treat or alleviate the symptoms of a disease or medical condition [4]. The consumer may also be preventive medicine, which has long-term benefits but does not treat any current or which was before diseases or symptoms. Governments frequently categories medication dispensing into three categories: over-the-counter medications, which are freely available in pharmacies and supermarkets; behind-the-counter medications, which are given by a pharmacist without the need for a doctor's prescription; and prescribing medicines, that must be prescribed by a licensed medical professional, usually a physician [5].

## Drug abuse

It is defined as the term in which patterned use of the Drug (any substance) in which the user consumes the substance in amounts or with methods neither approved nor supervised by the medical professionals. On the other side, it may be defined as the misuse or habitual use of drugs that are not needed for therapeutic purposes [6]. It affects the state of consciousness or affects a body's function unnecessarily. The continued use of the drugs can lead to drug addiction and dependence which may lead to a state of Physical and mental dependence. It will affect the Central Nervous System of the brain, also called psychological problems [7].

## Drug addiction

It is a Neurological disorder characterized by a continual and intense desire to partake in a certain use of a narcotic, despite considerable harm and other negative consequences. Repetitive drug use frequently affects brain activity in ways that propagate craving while weakening (but not completely negating) self-control [8]. Some types of drug abuse and addiction are behavioral changes including alcoholism, marijuana addiction, amphetamine addiction, cocaine addiction, nicotine addiction, opioid addiction, video game addiction, gambling addiction, pornography addiction, and sexual addiction. The term "addiction" is frequently misused when referring to other compulsive disorders, particularly dependence, in news media. An important difference between drug addiction and dependence would be that drug dependence is a disease in which stopping drug use causes an unpleasant withdrawal state that can lead to further drug use [9]. Addiction is defined as the obsessive use of a material or the performance of a behavior that is not accompanied by withdrawal symptoms. Although the two often occur together, addiction can occur in the absence of dependence and dependence can take place in the absence of addiction [10].

## Symptoms of drug addiction

1. Change in Appetite, weight and sleep.
2. No motor coordination.
3. Blood shoots eyes and changes pupil size.
4. Excessive absence from school and work.

5. Mood swings.
6. Secretive behavior.

## Occurrence of drug abuse

It starts with the prescription that will be prescribed by the doctor. A patient who doesn't feel well goes to the doctor and diagnose and the doctor will be prescribed medicine for a short period max. 1-weeks may vary from condition to condition. After that, the medication will be stopped by the doctor or you can say that treatment is over. But in some cases, the patient's patient since treated without the doctor's consent and the treatment is over but the user's continuous intake of medications or drugs. These types of cases may lead to addiction in which patients and users continuously intake the drug without any kind of information and it may lead to death [11].

It is found that the patient which is suffering from the related problems is assumed that suffer from drug abuse and dependency-related problems. Because they will be intake medicines or painkillers without the doctor's consent. They (patients/users will be said feel to be better when they have drugs. It may cause drug addiction. Firstly, a person will be misused drugs also called drug abuse. After continuous use of drugs, it may result in addiction to drugs. The repeated use of the drugs may lead to dependency on that drug after some time or years body will be habitual of that drug it may not effective in the current dose patient/user have to increase the dose of that drug to get the effect [12].

## Causes of drug abuse or addiction

**Personal issues:** Personality theories of addiction are psychological models that associate personality traits or modes of thinking (i.e., affective states) with an individual's proclivity for developing an addiction. Data analysis demonstrates that there is a significant difference in the psychological profiles of drug users and non-users and the psychological predisposition to using different drugs may be different. Models of addiction risk that have been proposed in psychology literature include an affect dysregulation model of positive and negative psychological effects, the reinforcement sensitivity theory model of impulsiveness and behavioral inhibition, and an impulsivity model of reward sensitization and impulsiveness.

**Family issue:** Sometimes the atmosphere of the family is not good there will be no good relationship between father and son, husband and wife, father and mother, etc. it may cause depression, anxiety, and non-attention which may lead to drug addiction.

**Professional issue:** In this case, when a person is doing the job his/her performance is not well or up to the mark in the workplace. Any sportsperson who doesn't perform well in sports can also lead to depression and anxiety may lead to drug addiction.

## Stages of drug addiction

These are the various stages by which we can find out whether one person is addicted or not. How persons become addicted.

1. Experimentation
2. Addiction
3. Abuse
4. Regular use

### Prevalence of drug addiction on daily life

Teenage crime and drug addiction are becoming increasingly recognized as major public health issues. Although the cause of both issues is unknown, fact research has repeatedly shown that violence and addiction are linked. There have been reports of both unidirectional- directional (i.e., drug use predicts violence) as well as bidirectional (i.e., reciprocal, in that each behavior strengthens, instead of predicts, the other) connections between the two behaviors [13]. Previous research reported higher levels of conflict were strongly linked to higher levels of drug use, including such cigarettes, alcohol, and marijuana. Some studies anticipated drug-induced aggression, while others discovered the mutual relationship between aggressive behavior and drug addiction or were not able to predict the relationship. These contradictory findings imply that the causal relationship between aggression and drug use is still unknown [14].

Physical aggression causes harm to another person via direct physical damage or the threat of physical damage and includes behaviors including such physical assaults and threats of physical attacks. Relational violence, on the other hand, entails harming people to a peer through intentional deception or relationship damage, such as insulting a person, purposefully with the exception of a peer from proposals, or lying about a partner. A previous study discovered that boys are more outright aggressive than girls [15]. A prospective study of physical and relational violence discovered that initial aggressive behavior in fourth grade anticipated lifelong cigarette and alcohol use, but not marijuana being used in sixth grade; however, there was no gender or aggression interaction (i.e., physical or relational). It is worth noting that aggression, which is generally associated with boys, predicts later drug use. At the age of 17-18 years, age is an important determinant in trying to introduce alcohol use and its effects on school bonding, perception of harmfulness, and proactive parenting.

### Effects on students

Conflicts, disrespect for teachers or school administration, and property destruction were common among students, and were associated significantly with drug use. Other studies have found that scientific achievement is strongly linked to violence and drug addiction. Drug use by youth is also common as a form of consolation, rebellion, excitement, independence, belonging to a referent group, and a symbol of maturity [16]. Apart from not displaying respect for teachers, which was more prevalent among addicted educators, the current study results did not vary significantly among drug-addicted students and those who weren't not addicted in terms of violent behaviors or school-related factors. This could be due to the direct effect of the drug on the brain, which provides pleasure and satisfaction,

as well as the fact that addictive materials are easily accessible, either in terms of price or obtaining them, a matter that is not associated with violence. However, the formative periods of young adulthood and adolescence distinguishing susceptibility to risk-taking behaviors include criminal behavior and drug use. Drug abuse can result in serious mental illnesses. To prevent children from developing potentially criminal behavior, they must be monitored psychologically [17].

### Epigenetic mechanisms of drug addiction

Drug addiction also called maladaptive neuroplasticity that occurs in individuals to respond to repeated acquaintance to drug addiction. It is roughly determined by genetic factors and half by non-genetic factors which includes environmental exposure as well as stochastic events during the development. It may lead to life-long abnormalities. This feature plays an important role in epigenetic mechanisms. The word epigenetics is defined as the series of biochemical processes which lead to changes in gene expression achieved through the life cycle of an organism without change in the DNA sequence.

With this context there are 3 general roles that epigenetic mechanisms are likely to play in the case of drug addiction which are as follows:

1. Repeated exposure to drug abuse in adolescence or adulthood addiction in vulnerable individuals.
2. Epigenetic regulation mediates changes in steady-state gene expression or includability of genes that occur throughout an individual's lifetime.
3. There is the possibility that drugs or other environmental exposures induce epigenetic changes in sperm or ova [18].

## DISCUSSION

### Future prospective sog drug addiction

Nowadays addiction of drugs is increasing day by day every 3 person is suffering from addiction to drugs. The age group is involved in it is 18-35 years. According to some studies it is found out that adolescence and young adulthood are due to the development of both impulsive behavior and use of the drug in this period. This report from the Foresight project on Brain Science, Addiction and Drugs contains the detailed Horizon Scan produced by the project's science experts, Prof David Nutt, Prof Trevor Robbins and Prof Gerry Stimson. It has been written with the benefit of the state-of-the-science reviews commissioned by Foresight from world experts in the many fields of interest to the future of brain science, addiction and drugs [19]. These range from sociology, social policy and economics to neuroscience and drug treatment. It is not a précis of the reviews, of which two-page summary versions are available. A list of the review titles is at the back of this document. This Horizon Scan articulates Foresight's objective of providing the Government and others with challenging visions of possible futures. It is based on scientific evidence of the state of play at the time of writing (September 2004 to May 2005), and builds on this evidence base to look at possible future change. It does not offer predictions, but it does raise issues and

possibilities that policymakers and others might wish to consider. Some are more speculative than others. As this report looks out to 2025 and future possibilities, it inevitably challenges current thinking [20].

## CONCLUSION

These article discusses about the impact of drugs in daily life, nowadays youth were using the drugs continuously by making it a habit which may affect the future as well as carrier of the user. The main reasons behind that lack of awareness between the peoples regarding the usage of drug. In some cases, Literate persons are addicted to drugs because they continuously intake the drugs without the doctor's prescription which may leads to the drug addiction and dependency. Persons become addicted by their own mistake. Some cases of drug addiction are due to the genetic factors and epigenetic mechanisms of drug addiction because the epigenetic mechanism leads to the neuroplasty which may leads to the lifelong abnormalities.

## REFERENCES

- Raffee LA, Al-Qudah MA, Hayajneh WA, Alawneh KZ, Mahasneh OI, Alomari MM, et al. Prevalence estimates of drug addiction among high-school students and its association with violence, and school behaviors: a cross-sectional study from Jordan. *Ann Med*. 2021;67:102490.
- Johnston LD, O'Malley PM, Bachman JG, Schulenberg JE. *Monitoring the Future national survey results on drug use, 1975-2006. Volume I: Secondary school students*. Bethesda, MD: National Institute on Drug Abuse; 2007.
- Robers S, Zhang J, Truman J. *Indicators of School Crime and Safety: 2010*. NCES 2011-002/NCJ 230812. NCES. 2010.
- Lafferty L, Hunter TS, Marsh WA. Knowledge, attitudes and practices of pharmacists concerning prescription drug abuse. *J Psychoact Drugs*. 2006;38(3):229-232.
- Baldwin JN, Dole EJ, Levine PJ, Light KE, Murawski MM, Stock C, et al. Survey of pharmacy substance abuse course content. *Am J Pharm Educ*. 1994;58:47S.
- Nestler EJ. Epigenetic mechanisms of drug addiction. *Neuropharmacology*. 2014;76:259-268.
- Jaenisch R, Bird A. Epigenetic regulation of gene expression: how the genome integrates intrinsic and environmental signals. *Nature genetics*. 2003;33(3):245-254.
- Holmes D. Prescription drug addiction: the treatment challenge. *The Lancet*. 2012;379(9810):17-18.
- Agha R, Abdall-Razak A, Crossley E, Dowlut N, Iosifidis C, Mathew G, et al. STROCSS 2019 Guideline: strengthening the reporting of cohort studies in surgery. *Int J Sur*. 2019;72:156-165.
- Peltzer K. Prevalence and correlates of substance use among school children in six African countries. *Int J Psychol*. 2009;44(5):378-386.
- Osman T, Victor C, Abdulmoneim A, Mohammed H, Abdalla F, Ahmed A, et al. Epidemiology of substance use among university students in Sudan. *J Addict*. 2016.
- Claro HG, Oliveira MA, Titus JC, Fernandes IF, Pinho PH, Tarifa RR. Drug use, mental health and problems related to crime and violence: cross-sectional study1. *Rev Lat Am Enferm*. 2015;23:1173-1180.
- Suyanto B, Egalita N, Sugihartati R, Susilo D. Involvement Process and Deviant Behaviour of Drug Addict Students. *Talent Dev Excell*. 2020;12(1):2262-2273.
- Dawi K, Hendrik H, Yenny AS. Criminology Review on Narcotics Abuse by Students in Pontianak. *Am Int J*. 2018;8:194-200.
- Kennedy PJ, Feng J, Robison AJ, Maze I, Badimon A, Mouzon E, et al. Class I HDAC inhibition blocks cocaine-induced plasticity by targeted changes in histone methylation. *Nat Neurosci*. 2013;16(4):434-440.
- Yoo JY, Jetté N, Kwon CS, Young J, Marcuse LV, Fields MC, et al. Brief potentially ictal rhythmic discharges and paroxysmal fast activity as scalp electroencephalographic biomarkers of seizure activity and seizure onset zone. *Epilepsia*. 2021;62(3):742-751.
- Heilig M, MacKillop J, Martinez D, Rehm J, Leggio L, Vanderschuren LJ. Addiction as a brain disease revised: why it still matters, and the need for consilience. *Neuropsychopharmacology*. 2021;46(10):1715-1723.
- LaPlant Q, Vialou V, Covington HE, Dumitriu D, Feng J, Warren BL, et al. Dnmt3a regulates emotional behavior and spine plasticity in the nucleus accumbens. *Nature neuroscience*. 2010;13(9):1137-1143.
- Deng JV, Rodriguiz RM, Hutchinson AN, Kim IH, Wetsel WC, West AE. MeCP2 in the nucleus accumbens contributes to neural and behavioral responses to psychostimulants. *Nature neuroscience*. 2010;13(9):1128-1136.
- Adams ZW, Kaiser AJ, Lynam DR, Charnigo RJ, Milich R. Drinking motives as mediators of the impulsivity-substance use relation: Pathways for negative urgency, lack of premeditation, and sensation seeking. *Addict Behav*. 2012;37(7):848-855.