DRUG ADDICTION AND IT'S PSYCHOLOGICAL IMPACT

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ABSTRACT

Drug abuse has become a global menace during the last ten years. The problem relating to drug addiction and its implications has raised multiple numbers and become a serious issue for the relevant government around the globe. The present article will examine the history growth , types of illicit drugs available today as well as outline its various physical and psychological implications that is literally affecting the health and wealth of a country very badly.

KEY WORDS: Drug Abuse, Opiads, Synthetic drugs, Psychological effects

INTRODUCTION

The term "Addiction" means a state in which any person become dependent on the regular consumption of drugs and feel highly dependable upon it physical or psychologically. Addiction of any kind affects the body and mind of the addicts in such a way that they feel incapable to work or think straightway without having the daily dose of their addicted substance. These habit forming drugs have a long history and innumerable ramifications on the physical, social, mental and financial aspect of the drug addict. Its types and way of consumption has changed during the last two decades or so. Its extent and more certainly, its pattern and trends may have differed, but it has been with us for generations[2]. However, the dilemma in current times has assumed hazardous magnitude. Considering the rise in percentage of drug addicts around the world, it has become more or less a part of their subculture which is very alarming. Although consumption of alchohol and opiades has long history in India but its consumption was restricted and moderate as compare to the present drug epidemic scenario worldwide and especially in India. There is no dearth of resources which indicates how since ancient times, Indians love to indulge in drugs and alcohol consumption during celebrations, festivals or family functions. There is mention of substance abuse in various religious books about intoxicants such as Soma rasa, dev booty, madira etc.

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[2] Andrews, G. & Solomon, D (eds.). 1975. Drugs and Magic. In Cocoa leaf and Cocaine Papers. Harcourt Brace, New York.

During Mughal period, cultivation of Opium started and slowly it became so popular that it became part of export of opium from India to China. There are multiple books written describing about the usage of cannabis (ganja) and opium in India during the British Raj too.[3] After some time, new form of substances are evolved from opium such as heroin and lysergic acid diethylamide (LSD) etc. [4] Although the progress of synthetic drugs been slower in India as compare to the western countries but still it the extent of destruction caused by the drug addiction in India is very disturbing and Government of India need to address this issue with utmost attention and care since the future of our country is riding on the proper regulation of drug addiction and abuse.

HISTORY AND GROWTH

It was stated that production of opium poppy husk started in 3,400 B.C in lower Mesopotamia. Earlier this plant or crop was called as Hul Gil, the "joy plant." Slowly its consumption started growing due to its addictive characteristics and demand grew which prompted many nations to grow this crop in their respective countries. Its cultivation broadened along the Silk Road and eventually led to China. China played a pivotal role in spreading the usage of opium in other countries during 1800s.

The production and cultivation of Heroin begin with opium poppy seeds. Opium seeds are grown in dry, hot weather. Earlier it was grown in mountains extending central Asia from Turkey through Pakistan and Burma. Of late, opium has been produced in Latin America, particularly in Colombia and Mexico. Selling of these seeds was a profitable business which led to its widespread cultivation in many countries and its addiction kept the demand rising and more profits for the farmers. In the 18th century, there were many trade routes that connected the major countries in the world and silk route was one of such routes. It connected various countries such as Italy in the West to China in the East and to Scandinavia in the North. Opium was one of the products traded along the Silk Road and through this route, it reached China. Britishers promoted the opium cultivation in India and with the help of East India Company, began smuggling Indian opium to China in order to import Chinese goods such as Tea, silk and other products. Opium addiction affected the Chinese population very badly and caused a escalated demand for the opium. Addiction rate in China grew very shortly and was the reason of Opium Wars of the mid-1800s. Slowly this phenomenon,

[3] Chopra,L C., and R.N. Chopra. 1957. The use of the cannabis drugs in India. Bulletin on narcotics (United Nations publication) 9:1:4-29.
[4] Kaur, Ravneet, and Jatinder K. Gulati. "Drug Abuse: Trends and Issues." (2007).

started to affect many parts of the world. Where ever the opium addicts went, they brought along the opium consumption tendency with them and eventually led to more opium cultivation around the world. The very reason it became an addiction around the world is that it is proven to be powerful pain reliever. During 1800s and 1900s scientific developments were taking place and economic transformation was on its way which lured more hardworking and ambitious persons and opium consumption provided the much needed relief from pain and anxiety from the constant hard labour to general people. Around the world, opium has been given different names such as morphine, codeine, oxycodone, and heroin.[5] Heroin was invented in 1874 and infused from the opium for medical purposes.[6] But its addiction and further effects on the addict were more alarming than opium so that is why it was banned in United States of America in 1924.[7]

CAUSES OF SUBSTANCE ABUSE

1. Biologic Factors such as genetic factors, biochemical factors.

2. Socio-cultural factors: Depression, feeling of failure, peer pressure, easy availability of the substance, social acceptance about the use of substance.

3. Family factor: associated with dysfunctional family pattern, family disputes, matrimonial disharmony.

4. Behavioural model which means that substance abuse is a response to stressful stimuli because substance provide temporary relief of anxiety

5. Psychoanalytic theory based on mal adaptation in the early stage of development

TYPES OF ILLEGAL DRUGS

1. Heroin

It is processed from morphine which is extracted from the seeds of opium poppy plants. It is commonly named as Brown sugar, Skunk, China White, H, Horse, Junk, Skag, White Smack, Horse, Dope, Cheese etc.

[5] Prof. Dr. Otto Wilhelm Thomé invented the morphine drug. In 1803, morphine, the principal ingredient in opium, was extracted from opium resin. Morphine is ten times more powerful than processed opium, quantity for quantity. Hailed as a miracle drug, it was widely prescribed by physicians in the mid-1800s. Morphine is one of the most effective drugs known for the relief of severe pain and remains the standard against which new pain relievers are measured.

[6] First synthesize from morphine in 1874, the Bayer Company of Germany introduced heroin for medical use in 1898. Physicians remained unaware of its addiction potential for years, but by 1903, heroin abuse had risen to alarming levels in the United States. All use of heroin was made illegal by federal law in 1924.

[7] "HistoryEffectsProduction & DistributionResources Cannabis, Coca, & Poppy: Nature's Addictive Plants" (https:// www.deamuseum.org/ccp/opium/history.html) Retrieved on 3 May, 2014.

2. Cocaine

It is a potent addictive stimulant drug which is processed from the leaves of the coca plant. It is also known as different names such as Toot, Snow, Blow, Charlie, Bump, C, Candy, Crack, Flake, Coke, Rock etc. as per the country of their production and distribution. It is found in the form of White powder and whitish rock crystals.

3. Methamphetamine

It is an exceptionally addictive stimulant amphetamine popularly known as meth, Speed, ice Chalk, Fire, Glass, Crystal, Go Fast and Crank etc. It is found in the form of White powder or pill, crystal meth which resembles to pieces of glass or shiny blue-white "rocks" of different sizes.

4. LSD

LSD is a short name for Lysergic acid diethylamide, also known as Yellow Sunshine, Acid, Blotter, Cubes, Microdot, Blue Heaven, LSD, LSD-25, or acid etc. It is considered as a recreational drug in order to increase various types of workouts for transcendence including in meditation and psychotherapy etc.

5. Ecstasy

It is also known as MDMA which is a short form for methylenedioxy-methamphetamine. This substance is mainly consumed in Parties, clubs etc. for recreational purposes to escalate the mood or frame of mind. It is also known as Lover's Speed, Adam, Eve, Peace, Clarity and Uppers.

6. Opium

It is extremely addictive narcotic substance that is retrieved in the desiccated latex form from the opium poppy seed pod. Usually the immature shell is tear open and the juice ooze out and parched on the external shell of the pod. The ensuing yellow-brown latex, include number of alkaloids such as codeine, morphine, papaverine, anopiate alkaloid and the baine etc.

7. Marijuana

It is processed from the plant named Cannabis sativa. Its usage is century long among humans but earlier it usage was restricted only for recreational, medicinal or religious purposes. It is commonly consumed by smoking or ingestion. It is known as many other names such as Boom, Sinsemilla, Blunt, Dope, Skunk , Hash Green, Herb, Joint, Pot, Reefer, Bud, Smoke, Mary Jane, Weed, Ganja, Hashish, Gangster, Hemp Grass etc.

8. Tobacco

Tobacco is processed from the dried leaves of a Plant and used after fermentation of the dried leaves grown for its leaves, which are dried and fermented before use. It is consumed through various processes such as bidis, Sheesha, Tobacco chewing, Kreteks, cigars, Cigarettes, hookahs, E-cigarette and smokeless tobacco etc. Its Short term effects include amplified BP, breathing, and heart rate disorders etc.[8] its long term effects are lung cancer, oral cavity, hypo-pharynx, cataracts, nasal cavity and paranasal sinuses, chronic bronchitis, larynx, emphysema, oesophagus, stomach, pancreas, liver, kidney, urinary bladder, uterine cervix and bone marrow (myeloid leukaemia).[9]

9. Prescription Opioids

Now-a-days there are several other prescription drugs that are being abused since they are legally and medically available in the market and drug abusers abuse these drugs by mixing it with other drugs to create euphoria and ecstasy.

10. Hallucinogens

Drugs that cause intense distortion in a person's acuity of certainty, such as ayahuasca, psilocybin, LSD, ketamine, mescaline, PCP, DMT, psilocybin and mescaline salvia etc. These drugs are used for anaesthetic practices and these drugs induce sleep like state in the mind of addict and are responsible for distorted way of perception regarding point in time, movement, colours, resonance, and personality

11. Inhalants

Inhalants are explosive matters that are capable of generating chemical fumes that if inhaled causes a mind-altering effect. Every household have such materials such as spray paints, Paint thinners, markers, glues, petrol, gases and cleaning liquids etc which are highly hazardous and can cause death within seconds.

Health Consequences of Drug Abuse

There are number of physical and mental health disorders associated with the prolonged abuse of drugs, and injecting drugs. Harmful Effects of Drugs and Drug Abuse[10]

[8] Mishra, Gauravi A., Sharmila A. Pimple, and Surendra S. Shastri. "An Overview of the Tobacco Problem in India." Indian Journal of Medical and Paediatric Oncology : Official Journal of Indian Society of Medical & Paediatric Oncology 33.3 (2012): 139–145. PMC. Web. Retrieved on 4 May, 2014

[9] . IARC Monographs on the Evaluation of Carcinogenic Risks to Humans. IARC; 2002. Tobacco Smoke and Involuntary Smoking; p. 83. Official Journal of Indian Society of Medical & Paediatric Oncology 33.3 (2012): 139–145. PMC. Web. Retrieved on 4 May, 2014

[10] Dr Los Baños ,Psychiatry Substance Abuse 3rd/November 13, 2008 Eis, Isay, Jasy, Candy

1. Physical Effects

- Malnutrition
- Illneses

PTB, bronchitis, hepatitis, cirrhosis, gastric ulcer, heart diseases, AIDS, blood poisoning, coma, stroke

- Skin infections
- Over dosage
- Severe irritation of nasal passages

2. Psychological Effects

- Amotivational Syndrome
- Tolerance
- Psychosis
- Paranoia
- Difficulty in remembering
- Diminished ability to cope with problems

3. Social Effects

- Disruption and disharmony within families
- Deviant behavior
- Deterioration in interpersonal interaction
- Socially non-functional
- Tendency to commit crimes and bizarre sexual acts
- Threat to security and integrity of nations through corruption, terrorism, intimidation, Etc.

4. Economic Effects:

- Taxpayers' money spent on T & R, law enforcement efforts, etc
- Decreased productivity and more job related accidents
- Increased cost of doing business due to absenteeism, sloppy workmanship, defective Products, etc.
- Decreased crop production/food shortage due to marijuana cultivation

5. Effects on the Family

- Feelings of frustration, pain, and disappointment
- Intense feeling of humiliation and guilt by family members

- Low self-esteem among family members
- Spirit of togetherness/unity is lost
- Occurrence of domestic violence
- Loss of money and valuables

Drug abuse and mental health

As per number of scientific researches, there are ample proof that prolonged usage of narcotics substances hamper with the way neurons transmit, collect, and process indicators via neurotransmitters. It has been analysed that some type of drugs especially heroin and marijuana has the capability to stimulate neurons for the reason that their chemical configuration imitate that of a ordinary neurotransmitter in the human body. This permits the narcotics to affix onto and set off the neurons. Even though these drugs impersonate the brain's personal chemical substances, they don't trigger neurons in the similar way as a innate neurotransmitter, and they show the way to anomalous messages being transmitted through the system.

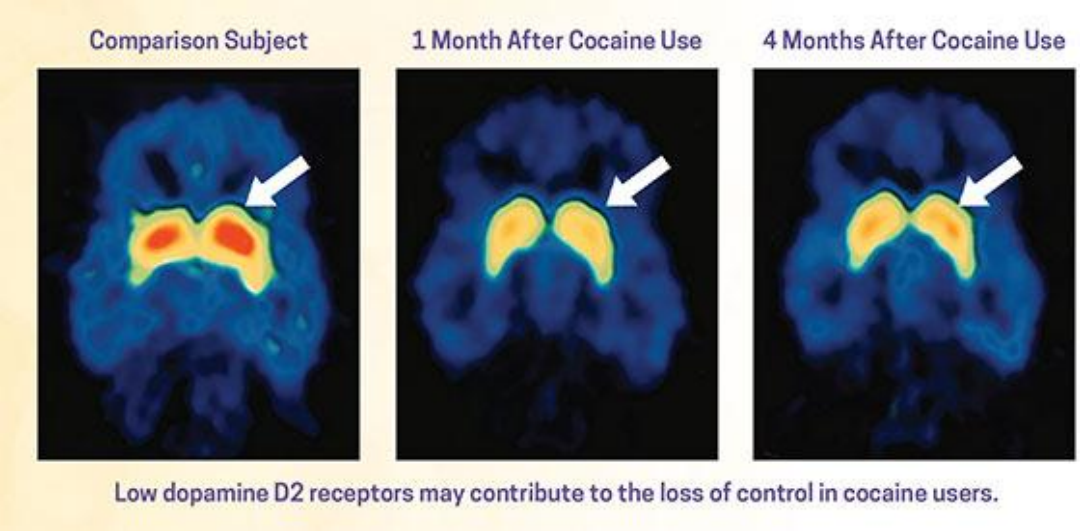
This too intensifies or upset the usual communiqué amid neurons.[11] Since opiods are the most used drugs in the world, this drug also has some grave negative effects on the mental health of drug addicts. It affects the brain stem[12], which have power over crucial utility vital to existence, such as heart rate, respiration, and sleeping which explains the reason why overdoses can cause dejected breathing and demise.[13] For the brain, the distinction amid ordinary rewards and narcotics use rewards can be equated with the distinction amid someone murmuring into your ear and somebody screaming into a microphone. Just as we decline the level of audio on a device that is excessively deafening, the brain of somebody who abuses drugs fine-tune by generating smaller amount of neurotransmitters in the reward circuit, or by dropping the amount of receptors that can obtain indicators. As a consequence, the individual's capability to feel gratification from naturally gratifying activities is also abridged. Following is the image of MRI of the human brain which provides clear insight into

[11] Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health. Modified with permission from Volkow et al. 1993.

[12] The brainstem also plays an important role in the regulation of cardiac and respiratory function. It also regulates the central nervous system, and is pivotal in maintaining consciousness and regulating the sleep cycle. The brainstem has many basic functions including heart rate, breathing, sleeping, and eating. Alberts, Daniel (2012). Dorland's illustrated medical dictionary (32nd ed.). Philadelphia, PA: Saunders/Elsevier. p. 248. ISBN 978-1-4160-6257-8. https://en.wikipedia.org/wiki/Brainstem#cite_note-1) Retrieved on 5 May, 2014.

[13] The term addiction as used in this booklet is equivalent to a severe substance use disorder as defined by the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5, 2013).

the effects of prolonged usage of drug abuse especially Cocaine [14] addiction.



Source: National Institute on Drug Abuse. NIDA. "Drugs, Brains, and Behavior: The Science of Addiction." National Institute on Drug Abuse, https://www.drugabuse.gov/publications/drugs-brains-behavior-science-addiction.

Drugs can modify significant brain part that are essential for life-sustaining task and can coerce the obsessive drug make use of that results dependence.

The *basal ganglia*[15] is an very vital component which play an important role in various human activities such as enthusiasm, including the enjoyable outcomes of beneficial physical activities like food intake, entertainment, and in configuration of daily patterns of work and routines. These areas form a vital joint of what is at times described as the brain's "reward circuit." Drugs over-activate this circuit, generating the ecstasy of the drug elevated, but with recurring experience, the circuit becomes accustomed to the existence of the drug, deteriorating its sensitivity and it became tough to experience gratification from anything besides the narcotics substances.

[14] These fMRI images compare the brain of an individual with a history of cocaine use disorder (middle and right) to the brain... These fMRI images compare the brain of an individual with a history of cocaine use disorder (middle and right) to the brain of an individual without a history of cocaine use (left). The person who has had a cocaine use disorder has lower levels of the D2 dopamine receptor (depicted in red) in the striatum one month (middle) and four months (right) after stopping cocaine use compared to the non-user. The level of dopamine receptors in the brain of the cocaine user are higher at the 4-month mark (right), but have not returned to the levels observed in the non-user (left).

[15] The basal ganglia (or basal nuclei) is a group of subcortical nuclei, of varied origin, in the brains of vertebrates, including humans, which are situated at the base of the forebrain. There are some differences in the basal ganglia of primates. Basal ganglia are strongly interconnected with the cerebral cortex, thalamus, and brainstem, as well as several other brain areas. The basal ganglia are associated with a variety of functions, including control of voluntary motor movements, procedural learning, habit learning, eye movements, cognition,and emotion. Stocco, Andrea; Lebiere, Christian; Anderson, John R. (2010). "Conditional Routing of Information to the Cortex: A Model of the Basal Ganglia's Role in Cognitive Coordination". b Weyhenmeyer, James A.; Gallman, Eve. A. (2007). Rapid Review of Neuroscience. Mosby Elsevier. p. 102. ISBN 0-323-02261-8.

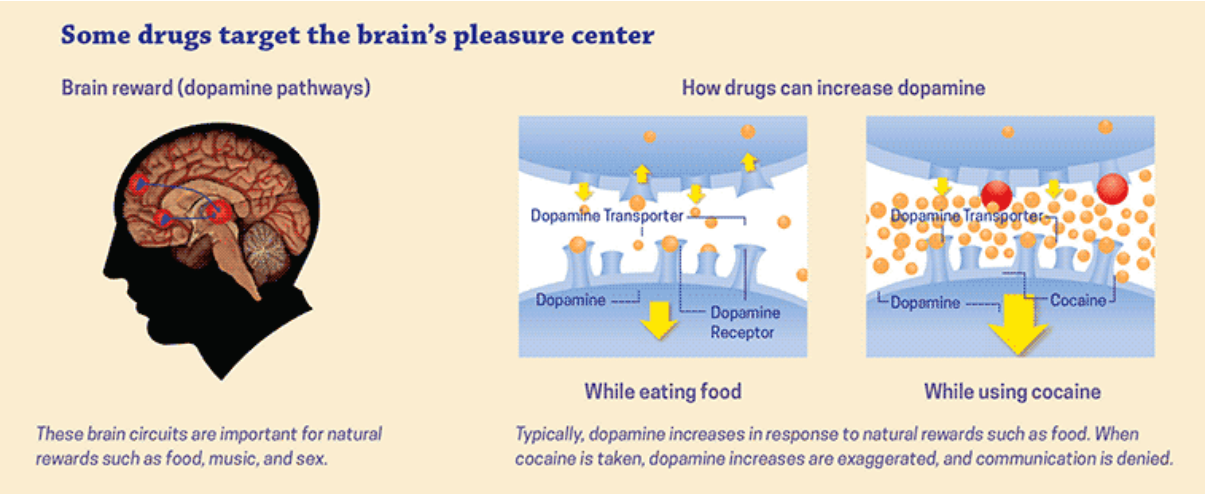
The extensive element called *amygdala*[16] has a most important work such as sensitivities like concern, bad temper, and awkwardness, which exemplify extraction after the drug effects weaken and as a result encourage the individual to ask for the drug yet again. This course develops into more and more susceptible with amplified drug use. Over time, an individual with substance use chaos uses drugs to get momentary aid from this anxiety rather than to get elevated.

The *prefrontal cortex*[17] controls the capacity to sense, prepare, unravel problems, make resolutions and put forth restraint over cravings. This is also the final component of the brain to fully grown, that is why the youngsters are generally susceptible to drug related problems. Changing equilibrium amid this route and the remuneration and strain courses of the basal ganglia and extensive amygdala cause a mental compulsion to look for more drugs with reduced urge control. The regular intake of drugs, causes physical and psychological dependency on drugs force the drug addicts to intake more amount of drugs every time to feel the same the sense of euphoria.

This is why a human being who abuses drugs ultimately experience dreary, without inspiration, comatose, and/or miserable, and is incapable to take pleasure in stuff that were formerly pleasurable. Now, the human being desires to continue taking drugs to sense yet a regular point of reward—which simply compose the predicament worse, like a ferocious cycle. Also, the individual will habitually require to intake larger quantity of the drug to generate the familiar enthusiasm an outcome identified as *tolerance.*

[16][16] amygdala is one of two almond-shaped groups of nuclei located deep and medially within the temporal lobes of the brain in complex vertebrates, including humans.Shown in research to perform a primary role in the processing of memory, decision-making and emotional responses (including fear, anxiety, and aggression), the amygdalae are considered part of the limbic system. "Amygdala - Define Amygdala at Dictionary.com". University of Idaho College of Science (2004). "amygdala". Archived from the original on 31 March 2007. Retrieved 15 March 2007.Amunts K, Kedo O, Kindler M, Pieperhoff P, Mohlberg H, Shah NJ, Habel U, Schneider F, Zilles K (December 2005). "Cytoarchitectonic mapping of the human amygdala, hippocampal region and entorhinal cortex: intersubject variability and probability maps". Anatomy and Embryology. (2010)

[17] In mammalian brain anatomy, the prefrontal cortex (PFC) is the cerebral cortex which covers the front part of the frontal lobe. Many authors have indicated an integral link between a person's will to live, personality, and the functions of the prefrontal cortex.This brain region has been implicated in planning complex cognitive behavior, personality expression, decision making, and moderating social behavior. DeYoung CG, Hirsh JB, Shane MS, Papademetris X, Rajeevan N, Gray JR "Testing predictions from personality neuroscience. Brain structure and the big five". (June 2010). Yang Y, Raine A "Prefrontal structural and functional brain imaging findings in antisocial, violent, and psychopathic individuals: a meta-analysis". (November 2009).



Source: National Institute on Drug Abuse. NIDA. "Drugs, Brains, and Behavior: The Science of Addiction." National Institute on Drug Abuse, (https://www.drugabuse.gov/publications/drugs-brains-behavior-science-addiction).

All above stated reasons are pointing towards one thing that drug addiction is brain disorder, because it entails functional modification to brain circuits involved in incentive, anxiety, and restraint, and those alteration may last a elongated point in time after a individual has stopped taking drugs.[18]

Addiction is a lot like other diseases, such as heart disease. Both disrupts the normal, healthy functioning of an organ in the body, both have serious harmful effects, and both are, in many cases, preventable and treatable. If left untreated, they can last a lifetime and may lead to death.

Drug use and mental illness often co-exist. In some cases, mental disorders such as anxiety, depression, or schizophrenia may come before addiction; in other cases, drug use may trigger or worsen those mental health conditions, particularly in people with specific vulnerabilities.[19] Some people with disorders like anxiety or depression may use drugs in an attempt to alleviate psychiatric symptoms, which may exacerbate their mental disorder in the long run, as well as increase the risk of developing addiction.[20]

[18] Goldstein RZ, Volkow ND. Dysfunction of the prefrontal cortex in addiction: neuroimaging findings and clinical implications. Nat Rev Neurosci. 2011.

[19] Moss R, Munt B. Injection drug use and right sided endocarditis. Heart. 2003; 89(5):577-581. National Institute on Drug Abuse.NIDA. "Drugs, Brains, and Behavior: The Science of Addiction." National Institute on Drug Abuse, 20 Jul. 2018, https://www.drugabuse.gov/publications/drugs-brains-behavior-science-addiction.

[20] Kelly TM, Daley DC. Integrated treatment of substance use and psychiatric disorders. Soc Work Public Health. 2013;28(0):388-406. doi:10.1080/19371918.2013.774673 National Institute on Drug Abuse.NIDA. "Drugs, Brains, and Behavior: The Science of Addiction." National Institute on Drug Abuse, https://www.drugabuse.gov/publications/drugs-brains-behavior-science-addiction.

CONCLUSION

There are number of implications that are followed by pronged drug abuse such as physical disorders, delinquency, mental disorders and economic burden on the National economy to raise appropriate infrastructure to deal with these issues. Drug addiction is affecting the younger generations that is the future of any nation's prosperity, wealth and economy. In order to eradicate this evil from the society it is necessary to focus and invest in different aspects such as the parents, family, home and social environment, culture, education, religion, economy and political environment, mass media, government, policies and regulations to effectively deal with the root cause of this growing phenomenon with united efforts.

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b Weyhenmeyer, James A.; Gallman, Eve. A. Rapid Review of Neuroscience. Mosby Elsevier. (2007)