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## Drug Abuse and Substance Dependence among Youths in Contemporary Society

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**Abstract** A healthy nation is a wealthy one. One can conclude that a nation full of drug abusers is a nation set for destruction and without labour force for the economic development. Since the youths are future leaders of any nation, problem of youths should become problem of all and the welfare of the youths should be the welfare of all as they constitute the labour strength for the nation that work hard for economic development. A drug free Society is the one with viable workforce. Working age of every country determines the extent of the economic development of the country; hence the Society, Family, School and Worship Centres are expected to mentor, monitor, train and develop the capacity of the youth by building a positive values system. This paper focuses on the concept of drug abuse, types, theories of causes, signs and symptoms, effects, and strategies for counselling.

**Keywords** Drug, Drug abuse, Drug of abuse and Substance Dependence

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### 1. Introduction

Since the early times, herbs, leaves and plants have been used to heal and control diseases. The use of drugs in itself does not constitute any danger, because drugs correctly administered have been a blessing [1]. Sambo (2008) viewed that "chronic use of substances can cause serious, sometimes irreversible damage to adolescent's physical and psychological development. The use of drugs could be beneficial or harmful depending on the mode of use [2].

A **drug** is, in the broadest of terms, a chemical substance that has known biological effects on humans or other animals. Foods are generally excluded from this definition, in spite of their physiological effects on animal species. [3].

In pharmacology, a drug is "a chemical substance used in the treatment, cure, prevention, or diagnosis of disease or used to otherwise enhance physical or mental well-being. Pharmaceutical drugs may be used for a limited duration, or on a regular basis for chronic disorders.

Recreational drugs are chemical substances that affect the central nervous system, such as opioids or hallucinogens. Alcohol, nicotine, and caffeine are the most widely consumed psychotropic drugs worldwide.

They may be used for effect on perception, consciousness, personality, and behaviour. Many recreational drugs are also medicinal. Some drugs can cause addiction and habituation and all drugs have side effects. Many drugs are illegal for recreational purposes and international treaties such as the Single Convention on Narcotic Drugs exist for the purpose of legally prohibiting certain substances.

A *medication* or *medicine* is a drug taken to cure and/or ameliorate any symptoms of an illness or medical condition, or may be used as preventive medicine that has future benefits but does not treat any existing or pre-existing diseases or symptoms.

Recreational drugs use is the use of psychoactive substances to have fun, for the experience, or to enhance an already positive experience. National laws prohibit the use of many different recreational drugs and medicinal drugs



that have the potential for recreational use are heavily regulated. Many other recreational drugs on the other hand are legal, widely culturally accepted, and at the most have an age restriction on using and/or purchasing them. These include alcohol, tobacco, betel nut, and caffeine products in the west and in other localised areas of the world drugs such as Khat are common. Because of the legal status of many drugs, recreational drug use is controversial, with many governments not recognising spiritual or other perceived uses for drugs and classing them under illegal recreational use.

Drugs, both medicinal and recreational, can be administered in a number of ways. Many drugs can be administered in a variety of ways rather than just one.

- Bolus is the administration of a medication, drug or other compound that is given to raise its concentration in blood to an effective level. The administration can be given intravenously, by intramuscular, intrathecal or subcutaneous injection.
- Inhaled, (breathed into the lungs), as an aerosol or dry powder. (This includes smoking a substance)
- Injected as a solution, suspension or emulsion either: intramuscular, intravenous, intraperitoneal, intraosseous.
- Insufflations, or snorted into the nose.
- Orally, as a liquid or solid, that is absorbed through the intestines.
- Rectally as a suppository, that is absorbed by the rectum or colon.
- Sublingually, diffusing into the blood through tissues under the tongue.
- Topically, usually as a cream or ointment. A drug administered in this manner may be given to act locally or systemically.
- Vaginally as a suppository, primarily to treat vaginal infections

### **1.1. Substance Abuse**

Most alcohol and drug use occurs among persons who are not violent. However, alcohol and, to a lesser extent, illicit drugs are present in both offenders and victims in many violent events. The links between psychoactive substances and violence involve broad social and economic forces, the settings in which people obtain and consume the substance, and the biological processes that underlie all human behaviour. In the case of alcohol, evidence from laboratory and empirical studies support the possibility of a causal role in violent behaviour. Similarly, the psychopharmacodynamics of stimulants, such as amphetamines and cocaine, also suggest that these substances could play a contributing role in violent behaviour. On the other hand, most real-world studies indicate that this relationship is exceedingly complex and moderated by a host of factors in the individual and the environment. In addition to psychopharmacological effects, substance use may lead to violence through social processes such as drug distribution systems (systemic violence) and violence used to obtain drugs or money for drugs (economic compulsive violence).

### **1.2. Drug Abuse**

NAFDAC (2000) as cited by Haladu (2003) explained the term drug abuse as excessive and persistent self-administration of a drug without regard to the medically or culturally accepted patterns. It could also be viewed as the use of a drug to the extent that it interferes with the health and social function of an individual [4].

Drug is said to be abuse when they are used in a manner that deviate from medically approached or socially acceptable pattern within the society. The main purpose of the usage will be for curing illness as a description by data. Any contrary usage is drug abuse which has a negative result. Drug abuse has been found to be factor creating major health and socio-economic problems throughout the world. There are several factors which influence the abuse of drugs among the youths. The major areas are peer pressure, weak parental control, child abuse, limitation stress, truancy among students. The study observed that a lot of young people take pride in the abuse of drugs to their own detriment. They use drugs such as concaine, nicotine, marijuana, tobacco, alcohol, amphetamine derivatives and even as far as sniffing glue and so on to feel high and enhance social performance. Research has found that in 1981, three to six million out of the population of Nigerians could be classified as drug abusers. Most of who are youths.



The need to control the supply and reduce the demand for narcotic drugs in Nigeria leads to the establishment of national drug law enforcement agency (NDLEA) in January 1999 by the Babangida administration. This is due to the fact that the issue of drug abuse has been a major concern to the federal government and state government alike. However, this work proves to give an insight to this problem and how government can eradicate it from their area. This will enhance a better social life on the part of a young person and the society in general by engaging on a economic activities to increase drugs domestic product (GDP) as well as drugs national product (GMP). The drug abuse problem among youth is global plague, affecting both developed and developing nations worldwide. It is a problem that affects virtually every aspect of nations, political, social and economic life [5].

### 1.3. Substance Dependence

Substance abuse may continue for long period of time or progress to substance dependence, a more severe disorder associated with physiological signs of dependence (tolerance or withdrawal syndrome) or compulsive use of a substance. Substance dependence is an impaired control over the use of psycho- active substance; often characterised by physiological dependence. People who become compulsive users lack control over their drug use. They may be aware of how their drug use is disrupting their lives or damaging their health, but feel helpless or powerless to stop using drugs, even though they may want to. Repeated use of a substance may altered the body's physiological reaction, leading to the development of tolerance or a physical withdrawal syndrome. Tolerance is a state of physical habitation to a drug resulting from frequent use, such that higher doses are needed to achieve the same effects. A withdrawal syndrome (also called an abstinence syndrome) is a cluster of symptoms that occur when dependent persons abruptly stops using a particular substance following heavy and prolonged used. People who experience a withdrawal syndrome often return to using the substance to relieve the discomfort associated with withdrawal, which thus serves to maintain the addictive pattern. Withdrawal symptoms vary with the particular type of drug. With alcohol dependence, typical withdrawal symptoms include the following:

- a. Elevated blood pressure
- b. Nausea or vomiting
- c. Weakness
- d. Increase heart rate
- e. Anxiety
- f. Depression

Substances that may lead to withdrawal syndromes include in addition to alcohol: opioids, cocaine, amphetamines, sedatives and barbiturates, nicotine and anti-anxiety agents (minor tranquillizers) [6].

### 1.4. Drugs of Abuse

Drugs of abuse are generally classified with three major groupings:

- Depressants such as alcohol and opioids
- Stimulants such as amphetamines and cocaine
- Hallucinogens

### 1.5. Depressants

A depressant is a drug that slows down or curbs the activity of the central nervous system. It reduces feelings of tension and anxiety, slows movement, and impairs cognitive processes. In high doses, depressants can arrest vital functions and cause death. The most widely use depressants; alcohol can cause death when taken in large amounts because of its depressants effects on breathing. Other effects are specific to the particular kind of depressant. For example some depressants such as heroine, produce "rush" of pleasure.

#### 1.5.1. Types of Depressants

- Alcohol
- Barbiturates
- Opioids
- Morphine



- Heroin

**Alcohol:** is the most widely abused substance in the united state and worldwide. You might not think of alcohol as a drug, perhaps because itn is so common or perhaps it is ingested by drinking rather than by smoking or injection. But alcoholic beverages such as wine, beer and had liquor contain a depressant drug called ethyl alcohol (or ethanol). The concentration of the drug varies with the type of beverage (wine and beer have less pure alcohol per ounce than distilled spirits such as rye, gin or vodka). We can think of alcohol as an over-the-counter tranquilizer. Alcohol abuse is connected with lower productivity, loss of jobs, and downward movements in socio-economic status. Alcohol plays a rule in many violent crimes including assaults and homicides, and more than 180,000 rapes and sexual attacks annually in the United States (Nelson 2005). More teenagers and young adults die from alcohol related motor vehicle accident than from any other cause. Despites increase awareness about the risk of drinking and driving, fatal alcohol related motor vehicle accidents are on the rise. All told, and estimated 100,000 people in the united states die from alcoholic related causes each year, most from motor vehicle crashes and alcohol related diseases [6]. Alcohol, not concaine or other drugs is the drug or choice among young people today and the leading drug of abuse.

### 1.5.2. Chemistry of Alcoholic Beverages

Ethanol and water are the main components of most alcoholic beverages, although in some very sweet liqueurs the sugar content can be higher than the ethanol content. Ethanol is present in alcoholic beverages as a consequence of the fermentation of carbohydrates with yeast. It can also be manufactured from ethylene obtained from cracked petroleum hydrocarbons. The alcoholic beverage industry has generally agreed not to use synthetic ethanol manufactured from ethylene for the production of alcoholic beverages, due to the presence of impurities. In order to determine whether synthetic ethanol has been used to fortify products, the low  $^{14}\text{C}$  content of synthetic ethanol, as compared to fermentation ethanol produced from carbohydrates, can be used as a marker in control analyses.

### 1.5.3. Medical Consequences of Alcohol Abuse and Dependence

**Nervous System:** peripheral neuritis pressure damage to individual nerves, global brain damage, degeneration of the corpus callosum; degeneration of the Pons, degeneration of the cerebellum.

**Gastrointestinal Tract:** Carcinoma of the oropharynx, carcinoma of the oesophagus, gastritis, enteritis, carcinoma of the rectum, fatty liver, hepatitis, cirrhosis.

**Metabolism:** hypoglycaemia, glucose intolerance, exacerbation of acute porphyria, exacerbation of cutaneous, hepatic porphyria, exacerbation of gout.

**Kidney:** nephropathy

**Blood:** anaemia, macrocytosis, leucopenia, thrombocytopenia, reboundthrombocytosis.

**Cardiovascular System:** hypertension, stroke, alcoholic heart muscle disease arrhythmias.

**Endocrine System:** impotence, male infertility, cushingoid syndrome.

**Bones:** osteoporosis, vascular necrosis of femoral head.

### 1.5.4. Physiological Effect of Alcohol

At physiological level, alcohol appears to work like the benzodiazepines (a family of antianxiety drugs), by heightening activities of the neurotransmitter GABA (gammaaminobutyric acid). Because GABA is an inhibitory neurotransmitter,(it tones down nervous system activity), increasing GABA activity produces feelings of relaxation. As people drink, their senses become clouded, and balance and coordination suffer. Still higher dose acts on the parts of the brain that regulate involuntary vital functions, such as heart rate, respiration rate, and any body temperature. People may do many things when drinking that they would not do when sober, in part becomes of expectations concerning the drugs, in part because of the drug's effects on the brain. For example, they may become more flirtatious or sexually aggressive or say or do things they later regret [1]



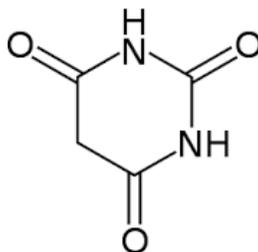
### 1.5.5. Physical Health and Alcohol

Habitual drinkers tend to be malnourished, which can put them at risk of complication arising from nutrition deficiency. Chronic drinking is thus associated with such nutritionally linked disorders as cirrhosis of the liver (linked to protein deficiency) and alcoholic-induced persisting amnesic disorder (connected with vitamin B deficiency). This condition also known as Korsahoffs syndrome is characterized by glaring confusion disorientation and memory loss for recent events. Mothers, who drink during pregnancy, place their foetuses at risk for infant mortality, birth defects, central nervous system dysfunctions, and later academic problems. Children whose mothers drink during pregnancy may develop fatal alcoholic syndrome (FAS), a syndrome characterized by facial features such as flattened nose, widely spaced eyes, and undeveloped upper jaw, as well as mental retardation and social skills deficits [1]. Although the risk is greater among women who drinks heavily during pregnancy, FAS has been found to among children of mothers who drank as little as a drink and a half per week. Although the question of whether there is any safe dose of alcohol during pregnancy continues to be debated, the fact remains that FAS is an entirely preventable birth defect. The safest course for women who know or suspect they are pregnant is not to drink [6].

### 1.5.6. Moderate Drinking: Is There A Health Benefit?

Despite this list of adverse effects associated with heavy drinking, evidence shows that moderate use of alcohol (1 to 2 drinks per day for women, 2 to 4 drinks for men) is linked to lower risks of heart attacks and strokes, as well as lower death rates overall [6]. Higher doses of alcohol are associated with higher mortality (death) rates. Researchers suspect that alcohol may help prevent the formation of blood clots that can clog arteries and lead to heart attacks. Alcohol also appears to increase the levels of HDL cholesterol, the so-called good cholesterol that sweeps away fatty deposits along artery walls [3].

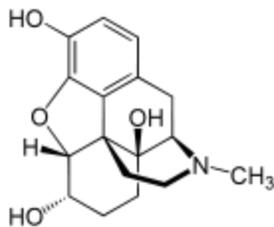
**1.6. Barbiturates:** Barbiturates such as amobarbital, pentobarbital, Phenobarbital and secobarbital are depressants or sedatives. These drugs have several medical uses, including easing anxiety and tension, dulling pain, and treating epilepsy and high blood pressure. Barbiturate use quickly leads to psychological dependence and physiological dependence in the form of both tolerance and development of a withdrawal syndrome. Barbiturates are also popular street drugs because they are relaxing and produce a mild state of euphoria, or “high.” High doses of barbiturates, like alcohol, produces drowsiness, slurred, motor impairment, irritability, and poor judgment. The effects of barbiturates last from 3 to 6 hours. Physiologically dependent people need to be withdrawn carefully, and only under medical supervision, from sedatives, barbiturates, and anti anxiety agents. Abrupt withdrawal can produces states of delirium that may involve visual, tactile, or auditory hallucination and disturbances in thinking processes and consciousness.



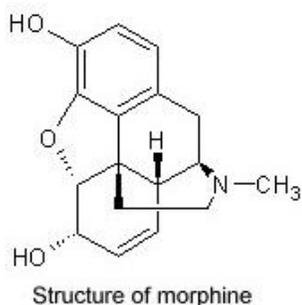
**1.7. Opioids:** Opioids are classified as narcotics, addictive drugs that have pain relieving and sleeping-inducing properties. Opioids include both naturally occurring opiates (morphine, heroin, codeine) derived from the juice of the poppy plant and synthetic drugs (e.g. Demerol, Darvon) that have opiate like effects. The ancient Sumerians named the poppy plant opium, meaning “plant of joy.” Opioid produces a rush, or intense feelings of pleasure, which is the primary reason for their popularity as street drugs. The major medical application of opioids, natural or synthetic, is the relief of pain, or analgesia. Medical use of opioids, however, is carefully regulated because overdoses can lead to coma and even death [1]. The withdrawal syndrome associated with opioids can be severe. It begins within 4 to 6 hours of the last dose. Flulike symptoms are accompanied by anxiety, feelings of restlessness,



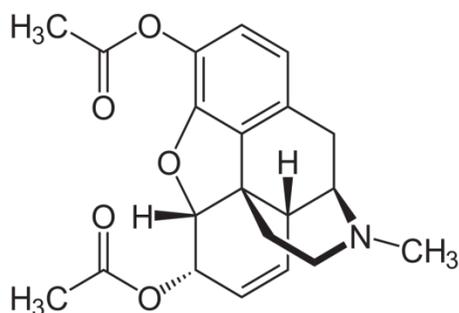
irritability, and cravings for the drugs. Within a few days, symptoms progress to rapid pulse, high blood pressure, cramps, among others. Although these symptoms can be uncomfortable, they are usually not devastating, especially when other drugs are prescribed to relieve the. Moreover, unlike withdrawal from barbiturates, the withdrawal syndrome rarely results in death.



**1.8. Morphine:** Morphine which receives its name from Morpheus, the Greek god of dreams was introduced at about the time of the U.S. Civil war. Morphine, powerful opium derivatives, was used liberally to deaden pain from wounds. Physiological dependence on morphine became known as the “soldier’s disease.” There was little stigma attached to dependence until morphine was made a restricted substance.



**1.9. Heroin:** Heroin, the most widely used opiate, is a powerful depressant that can create a rush. Users of heroin claim that it is so pleasurable it can eradicate any thought of food or sex. Heroin was developed in 1875 during a search for a drug that would relieve pain as effectively as morphine, but without causing addiction. Chemist Heinrich Dresser transformed morphine into a drug believed to have “heroic” effects in relieving pain without addiction, which is why it was called heroin. Unfortunately, heroin does lead to physiological dependence [3]. Heroin is usually injected either directly beneath the skin (skin popping) or into a vein (mainlining). The positive effects are immediate. There is a powerful rush that lasts from 5 to 15 minutes and a state of satisfaction, euphoria and well-being that lasts from 3 to 5 hours. In this state, all positive drives seem satisfied. All negative feelings of guilt, tension and anxiety disappear.

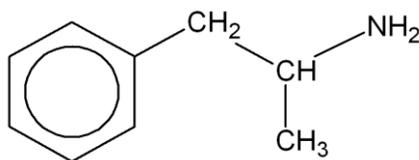


**1.10. Stimulants:** These are psychoactive substances that increase the activity of the central nervous system, which enhances states of alertness and can produce feelings of pleasure or even euphoric highs. The effect varies with the particular drug.



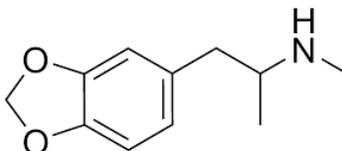
**1.11. Amphetamines:** The amphetamines are a class of synthetic stimulants. Typical example of amphetamines involve: (amphetamine sulphate; trade name Bensedrin), (Methamphetamine; trade name Methedrine), and (dextroamphetamine; trade name Dexedrine).

Amphetamines are used in high doses for their euphoric rush. They are often taken in pill form or smoked in a relatively pure form called “ice” or “crystal meth.” The most potent form of amphetamine, liquid methamphetamine, is injected directly into the vein cause restlessness, irritability, hallucinations, paranoid delusions, loss of appetite, and insomnia [3]. Physiological dependence can develop from using amphetamines, leading to an abstinence syndromes characterized by depression and fatigue, as well as by unpleasant, vivid dreams, insomnia or hypersomnia (excessive sleeping), increased appetite, and either a slowing sown of motor behaviour or agitation. Methamphetamine abuse can cause brain damage, producing deficits in learning and memory in addition to other effects. Violent behaviour may also occur, especially when the drug is smoked or injected intravenously [23].



### 1.12. Ecstasy:

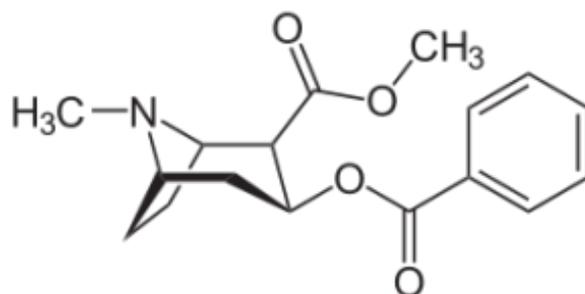
The drug ecstasy or MDMA (3-methylenedioxyamphetamine) is a designer drug. It produces mild euphoria and hallucination and has become especially popular on college campuses and in clubs in many cities (Nursing and Midwifery Council, 2006). Ecstasy can produce adverse psychological effects, including depression, anxiety, insomnia, and even paranoia and psychosis. The drug may also impair cognitive functioning, including learning ability and attention, and may have long-lasting effects on memory. Scientist suspects that drug may kill dopamine-using neurons in the brain, which can have long-lasting effects on the ability to experience pleasure in everyday life experiences [23]. Physical side effects include higher heart rate and blood pressure, a tense or chattering jaw, and body warmth and/or chills [17]. The drug can be lethal when taken in high doses.



### 1.13. Cocaine

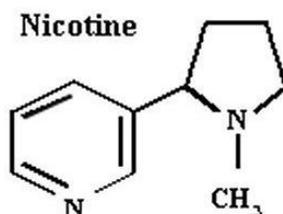
Cocaine is a natural stimulant extracted from the leaves of the coca plant (*Erythroxylon coca*), the plant from which the soft drink obtained its name. Coca-cola is still flavoured with an extract from the coca plant, one that is not known to be psychoactive. It was long believed that cocaine was not physically addicting. However, the drug produces a tolerance effect and an identifiable withdrawal syndrome, which is characterized by depressed mood and disturbances in sleep and appetite [4]. Intense craving for the drug and loss of ability to experience pleasure may also be present. Withdrawal symptoms are usually brief in duration and may involve a “crash” or period of intense depression and exhaustion, following abrupt withdrawal. Cocaine is usually snorted in powder form or smoked in the form of crack, a hardened form of cocaine that may be more than 75% pure. The rush from snorting powdered cocaine is milder and takes a while to develop, but it tends to linger longer than the rush of cracks. Next to marijuana, cocaine is the most widely used illicit drug in use in the United States. Nearly 14% of Americans aged 12 and older have used cocaine and about 0.8% are current (past-month) users [3].





**1.13.1. Effects of Cocaine:** Like heroin, cocaine directly stimulates the brain. It also produces a sudden rise in blood pressure and accelerates heart rate that can cause potentially dangerous, even fatal, irregular heart rhythms. Overdose can produce restlessness, insomnia, headaches, nausea, convulsion, tremor, hallucination, delusions, and even sudden death due to respiratory or cardiovascular collapse.

**1.14. Nicotine:** Nicotine as a stimulant increases alertness but can also give rise to cold, clammy skin, nausea and vomiting, dizziness and fainting, and diarrhoea all of which account for the discomforts of novice smokers. Nicotine also stimulates the release of epinephrine, a hormone that generates a rush of autonomic nervous system activity, including rapid heartbeat and release of stores of sugar into the blood. Nicotine quenches the appetite and provides a psychological “kick.” Nicotine also leads to the release of endorphins, the opiate like hormones produced in the brain. This may account for the pleasurable feelings associated with tobacco use. Habitual use of nicotine leads to physiological dependence on the drug. Nicotine dependence is associated with both tolerance (intake rises to a level of a pack or two a day before levelling off) and a characteristic withdrawal syndrome. The withdrawal syndrome for nicotine includes such features as lack of energy, depressed mood, irritability, frustration, nervousness, impaired concentration, light-headedness and dizziness, drowsiness, headaches, fatigue, irregular bowels, insomnia, cramps, lowered heart rate, heart palpitation, increased appetite, weight gain, sweating, tremors, and craving for cigarettes [3].



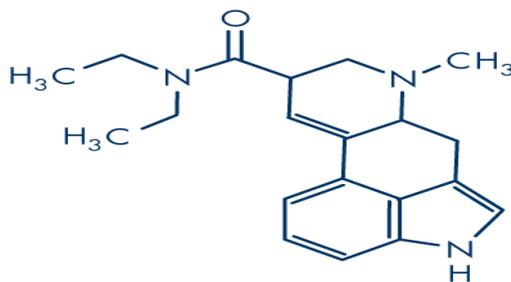
#### 1.15. Hallucination

Hallucinogens, also known as psychedelics, are a class of drugs that produces sensory distortions or hallucinations, including major alteration in colour perception and hearing. Hallucination may also have additional effects, such as relaxation and euphoria or, in some cases, panics. Hallucinogens include lysergic acid diethylamide (LSD), psilocybin, and mescaline. Psychoactive substances that are similar in effect to psychedelic drugs are marijuana (cannabis) and phencyclidine (PCP). Although tolerance to hallucinogens may develop, we lack evidence of a consistent or clinically significant withdrawal syndrome associated with their use [6]. However, craving following withdrawal may occur.

#### 1.16. LSD

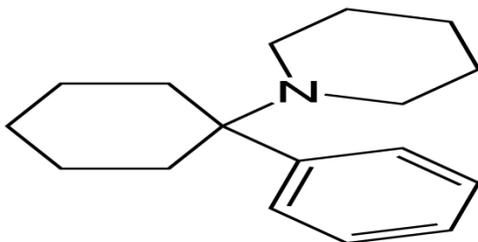
LSD is the acronym for lysergic acid diethylamide, a synthetic hallucinogenic drug. In addition to the vivid parade of colours and visual distortions produced by LSD, users have claimed it “expands consciousness” and opens new worlds, as if they were looking into some reality beyond the usual reality. The effects of LSD are unpredictable and depend on the amount taken as well as the user’s expectations, personality, mood, and surroundings [7]. They may stem from chemical changes in the brain caused by the prior use of the drug.





### 1.17. Phencyclidine (PCP)

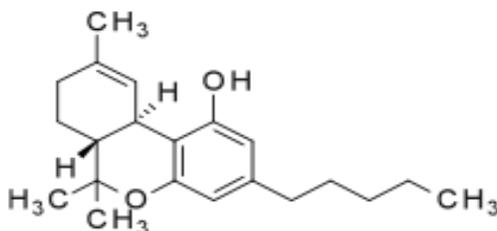
It was developed as an anaesthetic in the 1950s but was discontinued as such when its hallucinatory side effects were discovered. The effects of PCP, like most drugs, are dose related. In addition to causing hallucinations, PCP accelerates the heart rate and blood pressure and causes sweating, flushing, and numbness. PCP is classified as a deliriant, a drug capable of producing states of delirium. It also has dissociating effects, causing users to feel as if there are some sort of invisible barriers between themselves and their environments. Dissociation can be experienced as pleasant, engrossing, or frightening, depending on the user's expectations, mood, settings, and so on. Overdoses can give rise to drowsiness and a blank stare, convulsions, and now and then coma; paranoia and aggressive behaviour; and tragic accidents resulting from perceptual distortion or judgment during states of intoxication.



### 1.18. Marijuana

Marijuana is derived from the cannabis sativa plant. Marijuana is generally classified as a hallucinogen because it can produce perceptual distortions or mild hallucinations, especially in high doses or when used by susceptible individuals. The psychoactive substance in marijuana is delta-9-tetrahydrocannabinol, still, marijuana remains our most widely used illegal drug, and abuse of marijuana is the most common of all the substance abuse disorders involving illicit drugs [2]. Low doses of the drug can produce relaxing feelings similar to drinking alcohol. Some users report that at low doses the drug makes them feel more comfortable in social gatherings. Higher doses, however, often lead users to withdraw into themselves. Some users believe the drug increases their capacity for self-insight or creative thinking, although the insights achieved under its influence may not seem so insightful once the drug's effects have passed. People may turn to marijuana, as to other drugs, to help them cope with life problems or to the help them functions when they are under stress. Strongly intoxicated people perceive time as passing more slowly. A song of a few minutes may seem to last an hour. Smokers also report that strong intoxication heightens sexual sensations. High levels of intoxication now and then induce nausea and vomiting. We have also learned that long-term use can lead to problems with both learning and memory. Marijuana elevates heart rate and blood pressure and is linked to an increased risk of heart attacks in people with heart disease. And like cigarettes, smoking marijuana can cause respiratory diseases, including chronic bronchitis [1].





## 2. The Effects of Drugs on the Labour Market

Youths under the influence of drugs tend to be unproductive workers, beside absenteeism at work place and lack of commitment and work performance of such person is always very poor and the percentage of dependents on the economy increases. Some also engage in related vices of the drug trafficking which seriously affects the nation's development and render the labour market saturated with unwanted or not qualify labour force, which in turn affects foreign investment. Alcohol and drugs can make people behave in an unsafe, irresponsible and aggressive way and are therefore forbidden in combination with driving motor-cars, many prescription drugs cause a mental cloudiness; the person may seem to be slow at answering questions performing tasks [14]. The involvement of Nigerian image both home and abroad, such person constitutes menace to the society and become a social deviant and economically dependent rendering the labour market vacant. However, drugs make people sick when abused and a sick nation must necessary be a poor one. Since the period of sickness will be economically, politically and socially too.

## 3. Treatment of Substance Abuse and Dependence

### 3.1. Biological Approach

An increasing range of biological approaches is used in treating problems of substance abuse and dependence. For people concern with chemical dependencies. Biological treatment typically begins with detoxification-that is, helping them through withdrawal addictive substances.

### 3.2. Detoxification

Detoxification is often more safely carried out in a hospital setting. In the case of addiction to alcohol or barbiturates, hospitalization allows medical personnel to monitor and treat potentially dangerous withdrawal symptoms such as convulsion. Anti-anxiety drugs, such as benzodiazepines Librium and valium, may help block severe withdrawal symptoms such as seizures and delirium tremens. Detoxification to alcohol takes about a week. Detoxification is an important step toward staying clean but is only a start. Approximately halve of all drug abusers relapse within a year of detoxification. Continuing support and structure therapy such as behavioural counselling, plus possible use of therapeutic drugs, increase in chance of long time success [14].

### 3.3. Disulfiram

The drug disulfiram (brand name anti abuse) discourages alcohol consumption because the combination of the two produces a violent response consisting of nausea, headache, heart palpitations and vomiting. In some extreme cases, combining disulfirams and alcohol can produce such a dramatic drop in blood pressure that the individual goes into shock or even dies. Although disulfiram has been widely used in alcoholism treatment, its effectiveness is limited because many patients who want to continue simply stop using the drug. Others stop taking the drug because they believe that they can remain abstinent without it. Unfortunately, many return to uncontrolled drinking. Another drawback is that the drug has toxic effects in people with liver disease, a frequent ailment of people who suffer from alcoholism. Little evidence supports the efficacy of the drug in the long run.

### 3.4. Antidepressant

Antidepressant it may help reduce cravings for cocaine following withdrawal. These drugs stimulate neural processes that promote feelings of pleasure derived from every day experiences. If cocaine users can feel pleasure from non drug related activities, they may less likely to return to using cocaine. However, antidepressants have yet



to produce consistent results in reducing relapse rate for cocaine dependence, so it is best to withhold judgement concerning their efficacy. The antidepressant drug bupropion (trade name xyban) is used to blunt cravings for nicotine in much the same way that other antidepressants have been used to reduce cocaine cravings. The drug has modest benefits in helping people quit smoking successfully [15]. Another drug, varenicline may be more effective than bupropion for smoking cessation (Barclay and Bega, 2006). Several recent controlled studies show that varenicline produces significant benefits in aiding smokers in quitting relative to placebo [21]. The drug works by binding to nicotine receptors in the brain to blunt the reward value of smoking and to prevent withdrawal symptoms.

### **3.5. Methadone Maintenance Programmes**

Methadone is a synthetic opiate that blunts cravings for heroin and helps curb the unpleasant symptoms that accompany withdrawal. Because methadone in normal doses does not produce a high or leave the user feeling drugged, it can help heroin addicts hold jobs and get their lives back on track [2]. However, like other opioids, methadone is highly addictive for this reason, people treated with methadone are, in effect, substituting dependence on one drug for dependence on another. Yet because most methadone programmes are publicly financed, the relief people addicted to heroin on the need to engage in criminal activity to support their drug habit. Methadone programmes need to be strictly monitored because overdoses can be lethal and the drug can become abused as a street drug [13]. Still another synthetic opiate drug that is chemically similar to morphine, buprenorphine, blocks withdrawal symptoms and cravings without producing a strong narcotic high. Many treatment providers prefer buprenorphine to methadone because it produces less of a sedative effect and can be taken in pill form only three times a week, whereas methadone is given in liquid form daily.

### **3.6. Naltrexone**

Naltrexone is a drug that blocks the high produced by alcohol and opioids such as heroin, but seems to blunt cravings for these drugs. Evidence shows that naltrexone and similar drugs are used in treating alcohol and opiate dependence [1]. By blocking the pleasure produced by alcohol, the drug can help break the vicious cycle in which one drink creates a desire for another, leading to an episode of binge drinking. A nagging problem with drugs such as naltrexone, disulfiram, and methadone is that people with substance abuse problems may simply stop using them and return to their substance abusing behaviour.

### **3.7. Residential Approaches**

A residential approach to treatment required a stay in hospital and therapeutic residence. Hospitalisation is recommended when substance abusers cannot exercise self control in their usual environment, cannot tolerate withdrawal symptoms or behave self destructively or dangerously. Less costly outpatient treatment is indicated when withdrawal symptoms are less severe, clients are committed to changing their behaviour and support systems. Such as families can help clients make the transition to a drug free life. The majority of alcohol dependent patients are treated on an outpatient basis. Most inpatient programmes used an extended 28 day detoxification period. For the first few days, treatment focuses on helping clients with withdrawal symptoms. Then the emphasis shifts to counselling about the destructive effects of alcohol and combating distorted ideas or rationalisation. Consistent with the disease model, abstinence is the goal.

### **3.8. Controlled Drinking**

Some professionals argue that behaviour modification self controlled techniques can teach many people with alcohol abuse or dependence to engage in controlled drinking, to have a drink or two without necessarily falling off the wagon. Controlled drinking programmes may represent a pathway to abstinence for people who would not otherwise enter abstinence-only treatment programs.



## 4. Literature Overview

### 4.1. Student in School Children

A number of studies in various localities have tried to access the extent to drug abuse among school childhood population over different period of time [30] conducted a study of schoolchildren in five schools in Lothian is south-east Scotland during 1979 and 1980 and followed them up later in 1983. They were primarily looking at alcohol use among teenagers, but also include questions like, “have you ever use drugs for kicks or out of curiosity?” and gave a list of drugs in questionnaire. They found that among 1036 schoolchildren aged between 15 and 16, 15.2% of boys and 10.7% of girls had used drugs some time: 7% had use drugs cannabis, 5% tranquilizers and 2.5% amphetamines. Only 1% admitted to over using heroin. When 92% of the study groups were re-interviewed, in 1983, they found that the proportion of drug users had increased to 37% of boys 23.2% of girls. In general, the surveys show that the number of ever used increases with age and that more males than females are likely to have ever used. There is also some evidence of geographical variation in different part of the country. The local studies in the south of England arrived at a figure of 19% who admitted to drug use with 14% admitting to cannabis use. 12% solvent and 4% admitting to use other drugs, mainly amphetamines less than 1% admitted to use of heroin, this is similar to results obtained in a survey conducted in England and Wales when 17% claimed use of cannabis 6% solvent and 2% admitted to using of heroin at some time [31]. The use of illicit drugs is sometimes associated with a history of early smoking of tobacco, drinking alcohol, mixing with other children, having more sexual experience other than other children, etc and the term precocity has been used to describe this association. For example, plant example, founded that young people who were heavy drinkers at 15-16 were among likely to have used illegal drugs in later years [31]. A survey carried out in 1987 by the school health education unit base on Exeter University recently reported a much lower use of illicit drugs among school children. It covered more than 18000 pupil aged between 11 and 16 years, and although it was done in schools which volunteered to take part in the study, the sample was thought to be fairly representatives. It found that cannabis had been taken by less than 1 in 25 of fifth-year pupils. Only 2.6% of boys and 2.1% of girls in the fifth year reported using solvent and less than 1% in all the ages had used heroin. However, there was evidence that drugs were a more easily available in some areas than others. A survey in 1986 among 3,333 adolescents in state comprehensive schools in London selected on a geographical basis showed a much higher incidence [33]. More than 20% of 11 to 16 years old had used solvent or illegal drugs at least once; about 8.4% indulged in repeated use and 5% use hard drugs (stimulates hallucinogenic drugs, tranquilizers, cocaine, and heroin). Heroin was the least used substance (1.7%) the survey did not find any significance sex difference but the prevalence of substance abuse showed a sharp increase by the age of 14. The author suggested that a prevention program should encompass the whole range of drugs both licit and illicit.

### 4.2. Survey of Student in Higher Education

All the studies of drug abuse by student of higher education in this country were done before 1980 so that information about any recent changes is lacking. There is evidence from earlier studies that part from geographical variations, there may also be time trends in that studies done earlier showed a lower prevalence on the other hand researchers could not find evidence of changes in the proportion of users in new student between 1970 and 1978. [32], in this study of six London college between 1971 and 1972, found that about 34% of his sample admitted to ever using illicit drugs; 32% of the total samples admitted to cannabis use, 9% to amphetamines, 8% to LSD and 1% to opiates over half of the sample only use cannabis. There was no evidence of an increase in the dropout rate from colleges, nor any effects on exam achievement, nor increased medical problems in relation to drug use. [26], who studied the incidence of cannabis use by student in higher education, found that about 1-3% was using cannabis four times a week. They felt that those who used less frequently were more similar to non users but that the more frequent or heavier users they also found out that student in social sciences, arts and medicine were more likely to have used illicit drugs than student in physical science and engineering. There is also evidence that variation exist in different colleges in the same area.



### 4.3. Studies in Defined Geographical Areas

There has been numbers of studies which have tried simple enumerations to estimate the prevalence of drug abuse, usually of opiates, in local communities. One of the earliest studies was done in Crawley, a new town about 35 miles from London with a population of approximately 62000, 41% of whom were under 20 years of age. The study covered the age group 15-20. The first survey was carried out in 1967 and the same survey was continued until 1970, although less thoroughly than the initial survey. A case register of opiate abusers was made with information from probation offices, police, referrals for treatment survey of hepatitis cases in the age group of 15 and 25, survey of admission casualty department for overdose of amphetamines and/or barbiturates, and information from patient under treatment about new users known to them fifty confirmed users plus 48 probable users were identified and this rose to 102 confirmed users and 37 suspects in 1970. The survey calculated a prevalence rate of 8.5 per 1000 population aged 15-20 in 1967 or 14.75 per 1000 when only the males were considered [21].

More recently, studied prevalence of drug use in two districts in London between 1977 and 1983. In order to access more accurately the extend of opioid dependence they choose three approaches; the use of routine statistics, survey of agencies who have contact with drug users, filed work among drug users, or users. Regular opioid users, in their definition were those who used opioid drugs daily, or at least six days a week for at least one month in a specified period. They recognized that intensive case finding is not possible in large metropolitan areas, and therefore used different indirect methods based on different assumptions and derived from different data in that hope that collectively they would provide a more valid estimate than could any single technique alone. They arrive at a best estimate figure for annual period prevalence for three age group; 12 per 1000 of 16 to 24 years old population, 25 per 1000 of 25 to 34 year old, and 5 per 1000 of 35 to 44 year old. They also found the prevalence of regular opioid users during 1982-1983 was at least 5 times the total number of addicts reported in home office figures. However a study in Glasgow in 1981 suggested that under reporting might be even more significant and that only one intend was notified [22].

(Adlaf 1996), examined why drugs use is common among youths. The result show that they use drug in order to achieve one or more of these goals, overcome frustration, shyness, anxiety, and worry or to stimulate them to perform with bravado a particular action or anxiety they normally will not be able to do [7].

(Johnson 1981), in a research to determine whether students/youths knowledge about drug is acquired, a research on parents and teachers' attitudes towards drugs, and knowledge of drug abuse to elementary school teachers, high school teachers and parents in southern, eastern urban areas. Result indicates to general lack of accurate drug information among parent and teachers. This implies that neither the teachers nor the parents were qualified to provide drug information to the student/youth. The importance of drug knowledge in determining whether a person will become an abuser of drug cannot be overstated [25].

(Lawton and Powell, 1962) carried out a research to find out why people take drugs. They reported that imitations of drugs was seen as largely as a social and psychological phenomenon mediated by the mechanism of curiosity, imitation, identifications, status striving and rebellion [27].

(Joane, 1974), making use of 1,400 subjects reported among other things, that the primary reason for the use of drugs was for fun. (Robert, 1975), working with 30-hospitalized drug addicts reported for use of drug, the result was that they use drug to gain pleasure, get moderately high, feel good and enjoy with others the effects of drugs [24].

(Arllcer, 1973), observed that many youngsters claimed that curiosity was behind their first experience of taking drugs, such curiosity was either by what they have been told by friends or glamorous sensational stores they must have read or heard from mass media to their feeling [11].

(Berley, 1974), studied types of crimes and observed that most adult, juvenile delinquencies have their root cause in drug abuse. He concluded that wide range of drugs used such as heroin, cannabis, amphetamines etc are responsible for such social problems like robbery, rape, gross insubordination, and other minor offences [15].

(Linda, 1975) report that the role of environmental factors such as readily availability of supplies, social, cultural and religious factors contributes immensely to produce more drug addicts than expected. Environment with high incidence of drug abuse is more likely to initiate younger ones in to the act. Also environment where laws are not



enforced against drug abuse, there is the tendency that the adolescent would have the advantage of this situation and imitates others [28].

(Norman A, 1970) reported that the role of availability of the sources of drug production is reflected in high incidence of drug abuse, there is thus, the indication that people closer to the sources of drug production are more exposed to the availability of them. On the contrary, with location where it is extremely difficult to come by drugs, it is always difficult to identify drug users [29].

(Char, 1971) carried out a research on drug abuse to find the critical age of abuse, he observed that there is little or no drug abuse in early adolescent. Drug abusers are with middle adolescent and increase rapidly and that when in adolescent stage, drug abuse is most preponderant during the period with transition from latter adolescent to early adulthood [18].

(Cohen, 1975), pointed out in article titled teenage drinking, that are acts of abuse among youths between 12 and 17 years of age is increasing at an alarming rate and this is caused by influence of parents and peers [19].

## 5. Effects

### 5.1. Long-Term Effects of Drugs on the Brain

When a person takes drugs repeatedly, the brain changes in response to this experience. If a person takes drugs and then stops, he or she will crave the drug. In other words, the individual will have a strong desire to take more of the drug. Scientists can actually see evidence of cravings in the brain. If someone addicted to cocaine sees pictures of drug paraphernalia, PET scans show that a part of the brain that is important for emotional memory (called the amygdala) is activated, and the person reports feelings of drug craving. If he or she sees a video with mountains, trees, and animals, the amygdala is not stimulated. Thus, just seeing pictures of drugs or things associated with drugs can trigger an uncontrollable urge for drugs.

After taking drugs for a period of time, a person may need to take a higher dose of the drug to have the same experience that he or she did when first taking the drug. This is called **tolerance**. The brain has adapted to having a certain amount of drug present and does not respond the same way it did initially. That is why people who abuse and who are addicted to drugs take increasingly higher amounts of an abused drug. Tolerance may develop because the body may become more efficient at eliminating the chemical from the body, or because the cells of the body and brain become less responsive to the effect of the drug [1].

Scientific studies have shown clearly that certain drugs can cause dramatic changes in the brain, but not all questions have been answered. Drugs can change the structure of the brain. Perhaps one of the most dramatic long-term effects of a drug is to kill neurons. Many people have heard that drinking alcohol will kill brain cells. It's true. If alcohol is abused over a period of time, neurons in the brain can die. Some neurons in the brain are more sensitive to alcohol than others. Neurons that make up the mammillary bodies (small round structures on the brain's under surface) and hippocampus, areas in the brain that are important for memory, are more vulnerable to the effects of alcohol than are some other neurons in the brain. The neurons in the cerebral cortex, the part of the brain that controls most of our mental functions and endows us with consciousness, may also die if a person frequently abuses alcohol in high doses.

Another drug that can be toxic to neurons is an amphetamine derivative called MDMA, or ecstasy. In rats and nonhuman primates, MDMA damages the axon terminals of neurons that release serotonin, a neurotransmitter that is involved in regulating appetite, sleep, emotions, and so on. In some parts of the brain, the axons of some of these neurons may regenerate (or re-grow) after drug use is stopped, but the new growth of the neurons is not normal. Some areas are not reinervated (nerve fibers' do not grow back into the area), and some areas have abnormally high re-growth of the neurons. Either way, the neurons do not look normal. Studies have not yet been able to determine whether MDMA has this same effect on humans.

Cocaine also changes the brain in ways that may last for a long time. PET scans of human brains have shown that glucose metabolism is reduced even three months after the last use of cocaine. Remember that glucose metabolism is an indicator of how active the brain cells are. If the neurons are using less glucose in certain areas, they are not as active. The changes that cocaine causes in the brain last much longer than the pleasurable feelings it produces.



Other drugs cause similar decreases in brain activity. Even two years after the last use of amphetamines, PET images show that the brain of a person who has abused drugs is less active than the person's who never used drugs. Scientists, for many reasons, don't know all of the effects that a drug has. First, the brain is such a complicated organ that, despite great scientific advances, understanding all that it does will take many more years. Second, individuals may respond differently to drugs due to genetic and other differences among people. Third, many people who abuse drugs abuse more than one drug. Many individuals who take cocaine, for example, also drink alcohol. The combination of the drugs makes it difficult to determine what the effect of one drug alone may be. Another complication is that people addicted to drugs may have other health problems in addition to their drug problem. People addicted to heroin, for example, spend most of their energy and activity trying to get their next "fix." Consequently, they do not eat well and may have impaired immune systems. Also, drug-addicted people often suffer from mental illnesses, such as depression. The changes that occur in the brain because of mental illness make it difficult to determine what changes the drugs have caused [3].

Marijuana is the dried leaves and flowers of *Cannabis Sativa*. Delta-9-tetrahydrocannabinol (THC) is the main active ingredient in marijuana that causes people who use it to experience a calm euphoria. Marijuana changes brain messages that affect sensory perception and coordination. This can cause users to see, hear, and feel stimuli differently and to exhibit slower reflexes.

THC, the main active ingredient in marijuana, binds to and activates specific receptors, known as cannabinoid receptors. There are many of these receptors in parts of the brain that control memory, thought, concentration, time and depth perception, and coordinated movement. By activating these receptors, THC interferes with their normal functioning.

The cerebellum is a part of the brain involved in balance, posture, and coordination of movement. The cerebellum coordinates the muscle actions ordered by the motor cortex. Nerve impulses alert the cerebellum that the motor cortex has directed a part of the body to perform a certain act. Almost instantly, impulses from that part of the body inform the cerebellum as to how the action is being carried out. The cerebellum compares the actual movement with the intended movement and then signals the motor cortex to make any necessary corrections. In this way, the cerebellum ensures that the body moves smoothly and efficiently.

The hippocampus is involved with memory formation. Studies suggest that marijuana affects memory by decreasing the activity of neurons in this area. Because the hippocampus is involved in new memory formation, someone under the influence of marijuana will have impaired short-term memory, and new learning may be compromised. However, most studies in humans suggest that if a person stops using marijuana, their memory abilities can recover. Marijuana also affects brain areas responsible for sensory perception (for example, touch, sight, hearing, taste, and smell) in the cerebral cortex. Most sensory information that comes from the body is routed through the thalamus, and then on to appropriate areas of the cerebral cortex. For example, the somatosensory cortex receives messages interpreted as body sensations, such as touch. The somatosensory cortex lies in the parietal lobe of each hemisphere. The somatosensory cortex is organized in such a way that the entire body is represented, so that it can receive and accurately interpret impulses from a specific body part. Other specialized areas of the cerebral cortex receive the sensory impulses related to seeing, hearing, taste, and smell. Impulses from the eyes travel along the optic nerve and then are relayed via the thalamus to the visual cortex in the occipital lobes. Portions of the temporal lobes receive auditory messages from the ears. The area for taste lies buried in the lateral fissure, which separates the frontal and temporal lobes. The centre for smell is on the underside of the frontal lobes-smell is the only sense that is not relayed through the thalamus. Olfactory nerves carrying this information go through the olfactory bulb and directly to the cortex. Marijuana activates cannabinoid receptors in these various cortical areas, leading to altered sensory perception that users experience under the influence.

In the late 1980's, it was discovered that THC acted at specific receptors in the brain, which became known as cannabinoid receptors. It was then hypothesized that, because these receptors exist, there must also be a substance naturally produced in the brain that acts on them. In 1992, scientists discovered a substance that activates the THC receptors and has many of the same physiological effects as THC. The scientists named the substance anandamide, from a Sanskrit word meaning "bliss." The discovery of anandamide opened whole new avenues of research, which



led to the discovery of additional cannabinoid molecules and receptors. One of these, 2-arachidonoglycerol, is similar to anandamide, and helps control pain. Scientists continue to study the functions of anandamide and 2-arachidonoglycerol in the brain, with the hope of understanding not just how marijuana exerts its actions and why it is abused, but also how the cannabinoid system contributes to brain function under normal (non-drug) conditions [3].

Marijuana's potential medicinal effects have long been hypothesized. Indeed, oral forms of THC (e.g., marinol) are already currently available to treat nausea associated with chemotherapy and to stimulate appetite in AIDS wasting syndrome. The discovery of the brain's own THC-like substances, and their unique mode of action, should help uncover the mechanisms underlying the therapeutic potential of cannabinoids, which could then lead to the development of more effective and safer treatments for a variety of conditions, including addiction, pain, obesity, multiple sclerosis, etc.

Inhalants are common household products that give off mind-altering chemical fumes when sniffed. These common products include paint thinner, fingernail polish remover, glues, gasoline, cigarette lighter fluid, and nitrous oxide. They also include fluorinated hydrocarbons found in aerosols, such as whipped cream, hair and paint sprays, and computer cleaners. The chemical structure of the various types of inhalants is diverse, making it difficult to generalize about the effects of inhalants. It is known, however, that the vaporous fumes can change brain chemistry and may be permanently damaging to the brain and central nervous system. Inhalant users are also at risk for Sudden Sniffing Death (SSD), which can occur when the inhaled fumes take the place of oxygen in the lungs and central nervous system. This basically causes the inhalant user to suffocate. Inhalants can also lead to death by disrupting the normal heart rhythm, which can lead to cardiac arrest. Use of inhalants can cause hepatitis, liver failure, and muscle weakness. Certain inhalants can also cause the body to produce fewer of all types of blood cells, which may result in life-threatening a plastic anaemia.

Inhalants also alter the functioning of the nervous system. Some of these effects are transient and disappear after use is discontinued. But inhalant use can also lead to serious neurological problems, some of which are irreversible. For example, frequent long-term use of certain inhalants can cause a permanent change or malfunction of nerves in the back and legs, called poly-neuropathy. Inhalants can also act directly in the brain to cause a variety of neurological problems. For instance, inhalants can cause abnormalities in brain areas that are involved in movement (for example, the cerebellum) and higher cognitive function (for example, the cerebral cortex). Inhalants enter the bloodstream quickly and are then distributed throughout the brain and body. They have direct effects on both the central nervous system (brain and spinal cord) and the peripheral nervous system (nerves throughout the body).

Using brain imaging techniques, such as magnetic resonance imaging (MRI), researchers have discovered that there are marked structural changes in the brains of chronic inhalant abusers. These changes include a reduction in size in certain brain areas, including the cerebral cortex, cerebellum, and brainstem. These changes may account for some of the neurological and behavioural symptoms that long-term inhalant abusers exhibit (for example, cognitive and motor difficulties). Some of these changes may be due to the effect inhalants have on myelin, the fatty tissue which insulates and protects axons and helps speed up nerve conduction. When inhalants enter the brain and body, they are particularly attracted to fatty tissues. Because myelin is a fat, it quickly absorbs inhalants, which can then damage or even destroy the myelin. The deterioration of myelin interferes with the rapid flow of messages from one nerve to another.

Inhalants can also have a profound effect on nerves that are located throughout the body. The poly-neuropathy caused by some inhalants, as well as other neurological problems, may be due in part to the effect of the inhalants on the myelin sheath that covers axons throughout the body. In some cases, not only is the myelin destroyed, but the axons themselves degenerate.

Tobacco, which comes primarily from the plant *nicotiana tabacum*, has been used for centuries. It can be smoked, chewed, or sniffed. The first description of addiction to tobacco is contained in a report from the New World in which Spanish soldiers said that they could not stop smoking. When nicotine was isolated from tobacco leaves in 1828, scientists began studying its effects in the brain and body. This research eventually showed that, although tobacco contains thousands of chemicals, the main ingredient that acts in the brain and produces addiction is



nicotine. More recent research has shown that the addiction produced by nicotine is extremely powerful and is at least as strong as addictions to other drugs such as heroin and cocaine.

Some of the effects of nicotine include changes in respiration and blood pressure, constriction of arteries, and increased alertness. Many of these effects are produced through its action on both the central and peripheral nervous systems. Nicotine readily enters the body. When tobacco is smoked, nicotine enters the bloodstream through the lungs. When it is sniffed or chewed, nicotine passes through the mucous membranes of the mouth or nose to enter the bloodstream. Nicotine can also enter the bloodstream by passing through the skin. Regardless of how nicotine reaches the bloodstream, once there, it is distributed throughout the body and brain where it activates specific types of receptors known as cholinergic receptors.

Cholinergic receptors are present in many brain structures, as well as in muscles, adrenal glands, the heart, and other body organs. These receptors are normally activated by the neurotransmitter acetylcholine, which is produced in the brain, and by neurons in the peripheral nervous system. Acetylcholine and its receptors are involved in many activities, including respiration, maintenance of heart rate, memory, alertness, and muscle movement. Because the chemical structure of nicotine is similar to that of acetylcholine, it is also able to activate cholinergic receptors. But unlike acetylcholine, when nicotine enters the brain and activates cholinergic receptors, it can disrupt the normal functioning of the brain.

Regular nicotine use causes changes in both the number of cholinergic receptors and the sensitivity of these receptors to nicotine and acetylcholine. Some of these changes may be responsible for the development of tolerance to nicotine. Tolerance occurs when more drugs is needed to achieve the same or similar effects. Once tolerance has developed, a nicotine user must regularly supply the brain with nicotine in order to maintain normal brain functioning. If nicotine levels drop, the nicotine user will begin to feel uncomfortable withdrawal symptoms. Recently, research has shown that nicotine also stimulates the release of the neurotransmitter dopamine in the brain's pleasure circuit. Using micro-dialysis, a technique that allows minute quantities of neurotransmitters to be measured in precise brain areas, researchers have discovered that nicotine causes an increase in the release of dopamine in the nucleus accumbens. This release of dopamine is similar to that seen for other drugs of abuse, such as heroin and cocaine, and is thought to underlie the pleasurable sensations experienced by many smokers.

Other researchers are providing more clues as to how nicotine may exert its effects in the brain. Cholinergic receptors are relatively large structures that consist of several components known as subunits. One of these subunits, the (beta) subunit, has recently been implicated in nicotine addiction. Using highly sophisticated bioengineering technologies, scientists were able to produce a new strain of mice in which the gene that produces the subunit was missing. Without the gene for the subunit, these mice, which are known as "knockout" mice because a particular gene has been knocked out, were unable to produce any subunits. What researchers found when they examined these knockout mice was that in contrast to mice who had an intact receptor, mice without the subunit would not self-administer nicotine. These studies demonstrate that the subunit plays a critical role in the addictive properties of nicotine. The results also provide scientists with valuable new information about how nicotine acts in the brain, information that may eventually lead to better treatments for nicotine addiction. However, nicotine may not be the only psychoactive ingredient in tobacco. Using advanced brain imaging technology, it is possible to actually see what tobacco smoking is doing to the brain of an awake and behaving human being. Using one type of brain imaging, positron emission tomography (PET), scientists discovered that cigarette smoking causes a dramatic decrease in the levels of an important enzyme that breaks down dopamine and other neurotransmitters. The decrease in this enzyme, known as monoamine-oxidase-A (MAO-A), results in an increase in dopamine levels. Importantly, this particular effect is not caused by nicotine but by some additional, unknown compound in cigarette smoke. Nicotine itself does not alter MAO-A levels; it affects dopamine through other mechanisms. Thus, there may be multiple routes by which smoking alters the neurotransmitter dopamine to ultimately produce feelings of pleasure and reward.

Nicotine is a highly addictive drug can clearly be seen when one considers the vast number of people who continue to use tobacco products despite their well known harmful and even lethal effects. In fact, at least 90% of smokers would like to quit, but each year fewer than 10% who try are actually successful. But, while nicotine may produce



addiction to tobacco products, it is the thousands of other chemicals in tobacco that are responsible for its many adverse health effects. Smoking either cigarettes or cigars can cause respiratory problems, lung cancer, emphysema, heart problems, and peripheral vascular disease. In fact, smoking is the largest preventable cause of premature death and disability. Cigarette smoking kills at least 400,000 people in the United States each year and makes countless others ill, including those who are exposed to second hand smoke. The use of smokeless tobacco is also associated with serious health problems.

Chewing tobacco can cause cancers of the oral cavity, pharynx, larynx, and oesophagus. It also causes damage to gums that may lead to the loss of teeth. Although popular among sports figures, smokeless tobacco can also reduce physical performance [3].

## 6. Conclusion

Let us remember that a healthy nation is a wealthy one. Having analysed drug abuse and its effects, one can conclude that a nation full of drug abusers is a nation set for destruction and without labour force to work for the economic development of the nation. Since the youths are future leaders of any nation, problem of youths should become problem of all and the welfare of the youths should be the welfare of all as they constitute the labour strength for the nation that work hard for economic development.

## 7. Recommendation

The menace of drug abuse has eaten deep into the fabrics of our Society; however, with effective counselling programmes, the problems can be tackled through campaign against drug abuse by government and other relevant authorities. Drug control counselling centres should be established in every community and qualified health counsellors should be employed in helping drug addicts by giving them special advice on how to go about the withdrawal system. Drug awareness units to be set up in all states by the federal, state and local government not to try people who use drugs as criminals, but to help solve their socio-psychological problem.

Working age of every country determines the extent of the economic development of the country and youth in every society constitutes the working force of the nation, hence the society, family, school and worship centres are expected to mentor, monitor, train and develop the capacity of the youth against the usage of tomorrow, this can start by building a positive values system from the immediate home where father and mother are requested to train the child to be a useful and a better member of the society.

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