

Substance Use Disorder: A Cultural Catastrophe

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Abstract: *Life throws up innumerable situations, which we greet with both negative and positive emotions such as excitement, frustration, fear, happiness, anger, sadness, joy et al. All human beings are not equipped to take on changes or difficult situations in life, naturally. Out of them, many don't adapt to those situations. The result normally is— those situations and accompanying stress overwhelm people. The mind-boggling changes in every sphere of life—culture, profession, modes of transportation and rapid lifestyle changes put pressure on men to adjust with equal speed. Stress begins to wear them out and there is a loss of resiliency against adverse situations of life. Consequently, they begin to pull away from others and give in to depression. It is said that life acts and you react. Our attitude is our reaction to what life hands out to us. A significant amount of stress symptoms can be avoided or aroused by the way we relate to stressors. Stress is created by what we think rather than by what has actually happened. For instance, handling adopted children, adolescents, academic failures, retirements or sudden loss of money needs a relaxed attitude, focused will and preparedness to face the quirks of life positively. Otherwise one tends to feel stressed and reacts in anger and frustration. Children of stressed out parents are more likely to be ill equipped to handle stressors positively. They may suffer from emotional disturbances, depression, aggressive behaviour or confusion besides chances of weak physical constitutions, which again can be a source of anxiety. With a better control of attention one can feel that the world is a more congenial place to live in. A right attitude can make a resilient person out of us in the face of stressful situations. We can choose to stand aside; or to take weak and ineffective measures; or to implement robust and enduring measures to protect the health and wealth of populations.*

Keywords: drugs, substance misuse, culture, depression, stress, lifestyle, smoking, alcohol, tobacco, e-cigarettes, nicotine, behavioural therapies, adolescence, drug addiction, DALYs

1. Introduction

Substance abuse and dependence has become a public health crisis not only in developed countries but also in developing countries. According to the World Health Organization substance abuse is persistent or sporadic drug use inconsistent with or unrelated to acceptable medical practice¹. It is considered as a major cause of premature death, preventable ill health and social harm throughout the population.² Substance dependence is showing a rising trend all over the world and these disorders are rapidly recognized throughout in India.^{3,4}

2. The Global Burden

Psychoactive substance use poses a significant threat to the health, social and economic fabric of families, communities and nations. The extent of worldwide psychoactive substance use is estimated at 2 billion alcohol users, 1.3 billion smokers and 185 million drug users. Disability Adjusted Life Years (DALY) are calculated by adding the years of life lost due to premature mortality and the years of life lost due to living with disability. The years of life lost due to disability are determined from morbidity, where each disease has been given a certain disability weight, which is multiplied with the time spent with that disease, to arrive at the years of life lost due to disability. In an initial estimate of factors responsible for the global burden of disease, tobacco, alcohol and illicit drugs contributed together 12.4% of all deaths worldwide in the year 2000. Looking at the percentage of total years of life lost due to these substances,

it has been estimated that they account for 8.9%. The level of economic development in countries also plays an important role. The burden from psychoactive substance use is higher in the developed countries than especially in the high mortality developing countries. The sex ratio for the attributable deaths of psychoactive substance use varies from 80% male for tobacco and illicit drug use and 90% for alcohol. With regard to DALYs it is between 77 and 85% for all substances. The largest proportion of DALYs is on males in the developed countries, where psychoactive substance use accounts for 33.4% of all DALYs.^{1,2,3,4,5,6,7,8,9,10,11,12}

3. Indian Scenario

Consumption of different substances has been in existence in India for many centuries, earliest reference to alcohol (Somras and Sura) traced to year 2000 B.C. Indian religious texts (such as Vedas), mention somras⁶ and considered cannabis as sacred plants and refer to it as “source of happiness,” “joy-giver” and “liberator”. Historically, Indian farmers gave it to their oxen to provide them strength to plough the fields. Many sadhus, or ascetics, still use this drug to experience hallucinations and a sense of timelessness and bhang drinking is a well established social custom in many parts of East and North India. Ganja smoking is widespread in the Uttar Pradesh and Bihar among the cultivators and unskilled labourers. The use of cannabis also appears to be linked to religious festivals and participation in *bhajan* sessions. Indeed, occasions like *Holi*, are not complete without the sharing of *bhanga* (a drink made with cannabis). So it can be said that many cultural, behavioral

and psychological variables interact in the development of these disorders.^{1,2,3,4,5,6,7,8,9,10,11,12}

People abuse substances such as drugs, alcohol, and tobacco for varied and complicated reasons and society pays a significant cost. There are 76.5 million persons with alcohol use disorders worldwide. At least 15.3 million persons who have drug use disorders. Injecting drug use reported in 136 countries, of which 93 report HIV infection among this population. For every dollar invested in drug treatment, 7 dollars are saved in health and social costs. More than half the economic cost of alcohol and drugs is due to crime. A substance abuser is 18 times more likely to be involved in criminal activity than someone in the general population. Many violent crimes have been linked to the mind-altering effects of drugs. Substance abusers often commit thefts to support their drug habits. Drugs and alcohol have been linked to domestic violence and sexual assault. Most abused substances have harmful health effects. For some substances, such as tobacco, effects are caused by long-term use. For other drugs, a single use can cause significant disease. In addition to their direct effects on health, drugs produce other indirect effects. Many drugs lessen inhibitions and increase the likelihood that a person will participate in risky behavior. Studies show that the use of alcohol and drugs among teenagers increases chances for teen pregnancy and contracting HIV/AIDS or other sexually transmitted diseases. Any injected drug is associated with contracting HIV/AIDS and hepatitis B and C. Up to 75% of injured people treated at emergency departments test positive for illicit or prescription drugs. Alcohol is strongly associated with both intentional and unintentional injury. Drug use also puts people at risk of violence. Nearly half of assault victims are cocaine users.^{1,2,3,4,5,6,7,8,9,10,11,12}

Globally, substance abuse and dependence has become a major public health problem. According to the World Health Organization (WHO) substance abuse is persistent or sporadic drug use inconsistent with or unrelated to acceptable medical practice. It is considered as a major cause of premature death, preventable ill health and social harm throughout the population.² Substance dependence is showing a rising trend all over the world and these disorders are rapidly recognized throughout in India.

Consumption of different substances has been in existence in India for many centuries. Indian religious texts (such as Vedas), mention somras and considered cannabis as sacred plants and refer to it as “source of happiness,” “joy-giver” and “liberator”. Historically, Indian farmers gave it to their oxen to provide them strength to plough the fields. Many sadhus, or ascetics, still use this drug to experience hallucinations and a sense of timelessness and bhang drinking is a well established social custom in many parts of East and North India. Ganja smoking is widespread in the Uttar Pradesh and Bihar among the cultivators and unskilled labourers. The use of cannabis also appears to be linked to religious festivals and participation in *bhajan* sessions. Indeed, occasions like *Holi*, are not complete without the sharing of *bhang* (a drink made with cannabis). Many cultural, behavioral and psychological variables interact in the development of these disorders. The impact of substance dependence is devastating irrespective of age, race, gender,

but prevalence of substance abuse varies across age and gender groups and across the population in general. Many developing countries have seen rapid increases in the use of opioids, cocaine and psychotropic drugs, and resulting problems. In a number of these countries drug injection is becoming increasingly common, and pattern of abuse has also reportedly changed in Indian settings too.^{1,2,3,4,5,6,7,8,9,10,11,12}

Tobacco Use

Globally, tobacco use killed 100 million people in the 20th century, much more than all deaths in World Wars I and II combined. Tobacco-related deaths will number around 1 billion in the 21st century if current smoking patterns continue. Among middle-aged persons, tobacco use is estimated to be the most important risk factor for premature death in men and the second most important risk factor in women (following high blood pressure) in 2010-2025. To understand better how to address this issue, tobacco deaths need to be monitored closely, and this can be done best if death registries systematically collect data on tobacco use status. Currently, data on tobacco deaths mostly come from individual epidemiological studies.^{13,14}

World over, nearly a third of men ages 15 years or older, or around 820 million people, are current smokers. In the last 30 years, the global age-standardized prevalence of daily smoking among men has decreased approximately 10%. However, the trend in smoking prevalence in men varies substantially worldwide, from a 24% decrease in Canada to a 16% increase in Kazakhstan from 1980 to 2013.¹⁴

Although most of the countries with the greatest reductions in male smoking are high-income countries, smoking prevalence has also substantially decreased in many low- to middle-income countries (LMICs). Many other LMICs have made only slight reductions or have even experienced an increase in their smoking prevalence. Most of these countries are located in Southern and Central Asia, Eastern Europe, and Africa.

China has one third of all male smokers worldwide. Although awareness about the importance of tobacco control appears to be increasing, and several tobacco control policies have recently been established in China, simulation models suggest that additional tobacco control programs could reduce smoking rates in China by more than 40% and potentially save more than 12.7 million lives by 2050. Countries with limited tobacco control policies could see comparable or even greater reductions in smoking prevalence if they were to establish more effective policies.^{13,14}

Approximately 176 million adult women worldwide are daily smokers. Smoking rates in women significantly decreased from 1980 to 2013 in several high-income countries. However, smoking among women is still more common in high-income than in low- and middle-income countries.

Appropriate tobacco control programs must be in place to prevent an increase in smoking rates among women in the

future to ensure that low- and middle-income countries will not follow the pattern of the global smoking epidemic. In this model, first the male smoking prevalence substantially increases, and over the following 3–5 decades smoking rates increase among women. The example of Japan shows that this second stage of the epidemic (the increase in female smoking prevalence) is not inevitable. Tobacco companies attempt to link smoking to women's rights and gender equality, as well as glamour, sociability, enjoyment, success, and slimness. They use various strategies to promote the social acceptability of smoking in women, including product development (e.g. flavours and aromas), product design (e.g. packs that are more appealing to women) and advertising, involvement in social responsibility programs, and using the influence of popular media. Tobacco use increases the risk of death from many diseases; cancer, ischemic heart disease, chronic obstructive pulmonary disease (COPD), and stroke are the most common ones. Lung cancer is the leading cause of cancer death worldwide, killing approximately 1.4 million people globally in 2008. At least 80% of lung cancer deaths are attributable to smoking.¹⁴

Globally, cigarette smoking is common among youth. Another serious concern is that other tobacco products—including pipes, hookahs, smokeless tobacco, or bidis—are also commonly used by youth worldwide. In fact, prevalence of use of these products is higher than that of cigarettes in many countries, particularly in Southeast Asia, the Eastern Mediterranean, and sub-Saharan Africa.

Student Tobacco use rates are even higher than the corresponding rates in adults in many countries. There is a need for tobacco regulations for adolescents to include tobacco products other than cigarettes, and the need to increase awareness about their harms. Most regular smokers initiate smoking before 20 years of age. Youth may have several reasons for starting tobacco use, including looking 'cool', 'mature', or 'sociable', or believing that tobacco use is good for coping with stress and weight control. The factors increasing youth tobacco initiation may vary across countries, but some common factors are: tobacco use by parents or peers; exposure to tobacco advertising; acceptability of tobacco use among peers or in social norms advertised in movies or tobacco commercials; having depression, anxiety, or stress; and higher accessibility and lower prices of tobacco products.^{13,14}

Tobacco pricing and stronger regulations are crucial to addressing the youth tobacco epidemic. Teens are particularly sensitive to tobacco pricing; higher prices prevent many of them from becoming regular tobacco users. Tobacco regulations are also important. As water pipe smoking may be exempt from smoking bans in public places, more young people may smoke water pipes in social gatherings in hookah (water pipe) lounges. The percentage of youth smokers who usually obtain tobacco products in a store is high in many countries, but it can be reduced by banning tobacco product sales to minors or enforcing the existing bans.

Electronic cigarettes, also known as e-cigarettes or electronic nicotine delivery systems, were introduced to the market by Chinese entrepreneurs in 2004 and have

skyrocketed in awareness, use, and controversy over the past decade. E-cigarettes represent a booming industry, estimated at USD 2.5 billion in the USA in 2014. E-cigarettes mimic traditional cigarettes in design and are often assumed to be "safer" than traditional cigarettes, or to help smokers quit harm. While these health claims are implied, they are not usually stated explicitly, as this might trigger additional regulation. Many governments, organizations, companies and consumers are uncertain how e-cigarettes should be regulated. E-cigarettes deliver nicotine, and their health effects are unknown; yet they are assuredly less harmful than traditional tobacco products that burn tobacco. Tobacco companies recognize the potential of this growing market and are investing heavily in e-cigarette brands. On an individual level, e-cigarettes are likely less harmful to a user than traditional cigarettes, but additional research is needed about the effects of e-cigarettes, long-term consequences of use, and ingredients.^{13,14}

Currently, there is a significant focus on e-cigarettes and much research is underway to determine health impacts and help inform regulations. For now, this multi-billion dollar industry continues to grow as more people use e-cigarettes out of curiosity, a desire to quit smoking, or a safer way to continue a nicotine addiction.

As of January 2014, there were more than 7700 E-Cigarette flavors available, with approximately 200+ new flavours being introduced monthly.¹⁴ The World Health Organization (WHO) reckons that of the one billion smokers globally, 80% live in low- & middle-income countries, most of which are markets that have not yet been penetrated by e-cigs. Robustly designed, implemented and accurately reported scientific evidence will be the best tool we have to help us predict and shape the effectiveness of E-cigarettes.

Smokeless tobacco products are often sold with more flavorings than candy. Approximately 2.1 million adults in Great Britain use e-cigarettes. Of these, about 700,000 are ex-smokers, while 1.3 million are dual users of tobacco and e-cigarettes.

Despite manufacturing 95% of the world's e-cigarettes in Shenzhen, China, e-cig use in the country is very small.^{13,14} Nearly 48% of US adult e-cigarette users have used combustible cigarettes and e-cigarettes on the same day. Dual use of e-cigarettes and traditional cigarettes is a public health concern, as smokers could be exposed to even higher amounts of nicotine. Most e-cig users continue to smoke, although some may quit completely. Discourage long-term dual use. Returning to "safe" nicotine may be attractive to former smokers (potential relapse to smoking).

Over 300 million people around the world, the vast majority of whom live in South Asia, use smokeless tobacco products. In over a dozen countries, more women than men use smokeless tobacco, reflective of the differing norms in each culture of smokeless use. Smokeless tobacco use definitively causes cancers of the head and neck. More than forty types of smokeless tobacco products are ingested by nose or mouth around the world. An ongoing chain of chemical reactions during the preparation of smokeless tobacco products between bacteria and tobacco leaves makes

up the chemical-microbial dynamic products. This dynamic influences the concentration of the same deadly chemicals in smokeless tobacco that cause disease in combustible tobacco users.

In 2012, the Indian Supreme Court disrupted the world's largest smokeless tobacco market when it ruled that gutkha and pan masala were dangerous food products, the sale of which could be temporarily banned under Indian food safety laws. India's manufacturers responded by producing smokeless tobacco products that are not classified as food. The reaction of India's smokeless tobacco users to the bans remains unclear. Bringing smokeless tobacco products into tobacco control regulatory frameworks is essential to managing the harms caused by these products.^{13,14}

Morbidity

Not only does tobacco use cause disease, but patients with coronary heart disease, cancer, or several other diseases who continue smoking are also at significantly higher risk of death compared to patients with the same disease who never smoked or who quit smoking after being diagnosed with the disease. Even for those who smoke 10 or fewer cigarettes per day, life expectancy is on average 5 years shorter and lung cancer risk is up to 20 times higher than in never-smokers. Those who smoke fewer than 4 cigarettes per day are at up to 5 times higher risk of lung cancer. As there is neither a safe tobacco product, nor a safe level of tobacco use, the best way to prevent tobacco-related deaths is to avoid using it. Current smokers greatly benefit from quitting smoking

About 5.8 trillion cigarettes were smoked worldwide in 2014. The significant reductions in smoking rates in the United Kingdom, Australia, Brazil, and other countries that implement increasingly tight tobacco control laws have been offset by the growing consumption in a single nation: China. The Chinese market now consumes more cigarettes than all other low- and middle-income countries combined.^{13,14}

Other regions are increasingly playing larger roles in the growing global smoking epidemic. The WHO Eastern Mediterranean Region (EMRO) now has the highest growth rate in the cigarette market, with more than a one-third increase in cigarette consumption since 2000.

Due to its recent dynamic economic development and continued population growth, Africa presents the greatest risk in terms of future growth in tobacco use. Without appropriate prevention policies across the continent, Africa will lose hundreds of millions of lives in this century due to tobacco smoking.

Tobacco continues to be the substance causing the maximum health damage globally. According to WHO estimates, there are around 1.1 thousand million smokers in the world, about one-third of the global population aged 15 and over. While consumption is leveling off and even decreasing in some countries, worldwide more people are smoking, and smokers are smoking more cigarettes. Substantially fewer cigarettes are smoked per day per smoker in developing countries than in developed countries. However, this gap is fast narrowing and unless effective tobacco control measures take place,

daily cigarette consumption in developing countries is expected to increase as economic development results in increased real disposable income. People cite many reasons for using tobacco, including pleasure, improved performance and vigilance, relief of depression, curbing hunger, and weight control. The primary addicting substance in cigarettes is nicotine. But cigarette smoke contains thousands of other chemicals that also damage health. Hazards include heart disease, lung cancer and emphysema, peptic ulcer disease, and stroke. Withdrawal symptoms of smoking include anxiety, hunger, sleep disturbances, and depression. Smoking is responsible for nearly a half million deaths each year.

The harm caused by tobacco use is not limited to lung cancer, heart disease, and emphysema. Tobacco use exacerbates other non-communicable diseases, mental illnesses and substance abuse problems, as well as damages the environment and undermines human development. The tobacco industry continues to thrive with revenues approaching USD1,000,000,000,000 annually, with millions of deaths occurring each year among the one billion adult smokers who consume trillions of cigarettes annually.^{13,14}

By engaging a wide-ranging array of health, legal, economic, development, and environmental proponents and demonstrating how tobacco use affects their issues, we can amplify our impact. Revenue from cigarette tax increases could be directed to fund tobacco prevention and cessation programs for disadvantaged groups.

Documenting the impact of tobacco use and how it exacerbates mental health conditions, substance abuse, diabetes, tuberculosis, HIV, poverty, and environmental degradation can help enlist an increasing number of individuals and institutions, thereby expanding our collective spheres of influence. As tobacco use is the most common preventable cause of death, governments must implement effective policies to prevent tobacco use (reducing initiation and promoting cessation) and involuntary exposure to tobacco smoke in order to save lives. Death registries should collect data on tobacco use status to help assess and monitor national tobacco-related death rates.

Over 85% of all cigarettes smoked globally are being produced by only six transnational companies, each having gross revenue that is comparable to the gross domestic product of a small country. In the battle for public health, few low- and middle-income countries have the experience and resources that could match those of the transnational tobacco industry. The big business of tobacco is global in nature, and each part of the tobacco business, from growing the leaf to manufacturing products, contributes to the multi-billion dollar tobacco industry.¹⁴

Each year, the tobacco industry produces six trillion cigarettes, enough to create a continuous chain from Earth to Mars and back, multiple times. Nearly 500 tobacco factories have been documented worldwide, with the location of another 200 suspected but unconfirmed. China grows more tobacco, manufactures more cigarettes, and also consumes more tobacco than any other country in the world. China

National Tobacco Corporation (CNTC) posted revenues of USD95.2 billion and profits of USD19 billion in 2011. The Chinese government profits financially from the manufacture and sale of tobacco, as well as from tobacco taxes collected by the government. CNTC contributes 7–10% of the country's total annual revenue through tobacco tax and profits. In spite of decades' worth of scientific and medical evidence about the dangers of smoking, one billion people continue to smoke worldwide. The decline in smoking rates in high-income countries is more than offset by increased tobacco use in middle and low-income countries. Tobacco companies know they must find replacement smokers, and focus much of their effort in these low- and middle-income markets, which have the potential for economic and demographic growth, and thus increased profits.^{13,14}

Tobacco control interventions are relatively inexpensive to implement. Only USD600 million per year would deliver four "best buy" tobacco control interventions to all LMICs. This amount is equal to just less than 0.17% of what citizens of LMICs spent on tobacco products in 2013.

A 10% increase in cigarette price causes the consumption of cigarettes to fall between 2% and 8%. Roughly half of this fall comes from current smokers cutting back on the number of cigarettes they smoke, while the other half results from fewer youths starting to smoke as well as current smokers quitting. Policies beyond excise taxes also directly and indirectly influence tobacco product prices, including bans on discounting and price promotions, minimum retail prices, and minimum package sizes.¹⁴

Smoking bans benefit non-smokers and smokers alike: Non-smokers are exposed to significantly less second-hand smoke, while smokers tend to smoke less, have greater cessation success, and experience increased confidence in their ability to quit. These effects are greatest under the strongest bans. When indoor smoking areas are allowed, ventilation is inadequate to eliminate second-hand smoke, due to doorways, leakage, poor maintenance and difficult enforcement, and the reduction in smoking among smokers is smaller.^{13,14}

Elimination of smoking, thus second-hand smoke, also eliminates the formation of third-hand smoke from the environment. The latter—residual nicotine and other chemicals left on surfaces by tobacco smoke—can linger for months, and is not amenable to normal cleaning. All combustible tobacco products must be covered for a policy to be comprehensive. The use of e-cigarettes and water pipes poses ongoing legislative challenges, with some countries opting to include these in smoke-free legislation.^{13,14}

4. Smoke-free legislation

Only 16% of the world's population is covered by comprehensive smoke-free laws. At any age, quitting smoking benefits health; smoking cessation is one of the best ways to add years to a smoker's life. Most smokers will make many attempts to quit over a lifetime, and resources should be more easily available to increase their chances for success.

Health professionals should always try to get smokers to stop. People should be asked if they smoke; they should always be advised to stop; and they should be offered assistance in doing so. Several interventions are useful as smoking cessation aids, including counseling and support, nicotine replacement therapy, and the use of medications. Most people who successfully quit say that simply stopping was the most effective strategy. Although nicotine replacement and treatment with medicines have been shown to lead to higher sustained quit rates, relatively few people use these approaches, and their impact on a population level has been small. Population-based approaches such as raising prices, limiting advertising, and restricting public smoking have been very effective in reducing tobacco use.

It is essential to reach teenagers and other young smokers with smoking cessation messages and aids. The younger someone is when they stop smoking, the greater the benefit in terms of years of life saved industry. Smokers lose a decade of life because of their habit, and someone who quits before the age of 40 reduces their chance of death from tobacco-related illness by 90%.

As economic development continues rapidly and as transnational tobacco, alcohol, food, and beverage companies aggressively promote unhealthy choices, non-communicable diseases (NCDs) such as cardiovascular disease, stroke, diabetes, chronic lung disease, and cancer are becoming more important as causes of global morbidity and mortality.

NCDs have surpassed communicable diseases (e.g. HIV, malaria, tuberculosis, diarrhea, pneumonia) as the leading causes of death in all but the lowest-income nations. Even in low-income countries, deaths from NCDs are rapidly approaching those of communicable disease.

Tobacco is a driver of the development of most of the leading NCDs, including chronic lung disease, cardiovascular disease, stroke, cancer, and diabetes.¹³

Proven and effective tobacco control measures, such as marketing bans, packaging and labeling regulations, and taxation, can also be used in addressing those other major NCD risk factors. Newly-suggested measures include supply-side strategies to curb the tobacco industry, such as new structures through which tobacco products would be supplied, removal of the profit incentive from selling tobacco products, or even the outright abolition of commercial tobacco product manufacture and sale. Other ideas include harm reduction by reducing the harmful content of cigarettes, or shifting away from smoking combustible products towards potentially safer ways of delivering nicotine.

All countries will need to put immediate and much greater emphasis on stronger enforcement, particularly of smoke free areas and price policies. The benefits of envisioning an endpoint for the tobacco epidemic are far greater than any risks.^{13,14}

5. Complexity of Substance Abuse

In addition to alcohol and nicotine, there are a number of psychotropic substances that are taken for their effects on mood and other mental functions: Solvents, Amphetamines and related substances, Ecstasy, Cocaine, Hallucinogenic drugs, Cannabis, Tranquillizers and Opiates. Use and abuse of substances may begin in childhood or the teen years. Certain risk factors may increase someone's likelihood to abuse substances. Factors within a family that influence a child's early development have been shown to be related to increased risk of drug abuse: Chaotic home environment, Ineffective parenting and lack of nurturing and parental attachment. Factors related to a child's socialization outside the family may also increase risk of drug abuse: Inappropriately aggressive or shy behaviour in the classroom, poor social coping skills, poor school performance, association with a deviant peer group, perception of approval of drug use behaviour.

Long-term drug use alters brain function and strengthens compulsions to use drugs. This craving continues even after your drug use stops. The most important component of treatment is preventing relapse. Treating substance abuse depends on both the person and the substance being used. Behavioural treatment provides you with strategies to cope with your drug cravings and ways to avoid relapse. Often, a drug user has an underlying mental disorder, one that increases risk for substance abuse. Such disorders must be treated medically and through counseling along with the drug abuse. Addiction is a complex but treatable disease that affects brain function and behavior. No single treatment is appropriate for everyone. Matching treatment settings, interventions, and services to an individual's particular problems and needs is critical to his or her ultimate success in returning to productive functioning in the family, workplace, and society. Treatment needs to be readily available. People take drugs because they want to change something about their lives. They think drugs are a solution. But eventually, the drugs become the problem destroying and ruining millions of lives every year. Treatment varies depending on the type of drug and the characteristics of the patient. There are a variety of evidence-based approaches to treating addiction. Drug treatment can include behavioural therapy (such as individual or group counseling, cognitive therapy, or contingency management), medications, or their combination. The best programs provide a combination of therapies and other services to meet an individual patient's needs. Behavioural therapies can help motivate people to participate in drug treatment; offer strategies for coping with drug cravings; teach ways to avoid drugs and prevent relapse; and help individuals deal with relapse if it occurs. Behavioural therapies can also help people improve communication, relationship, and parenting skills, as well as family dynamics.¹⁴

6. The Impact

The impact of substance dependence is devastating irrespective of age, race, gender, but prevalence of substance abuse varies across age and gender groups and across the population in general. Many developing countries have seen rapid increases in the use of opioids, cocaine and

psychotropic drugs, and resulting problems. In a number of these countries drug injection is becoming increasingly common, and pattern of abuse has also reportedly changed in Indian settings too.

Drug dependence is a complex problem having medical and social ramifications which impacts all social strata. Despite the associated medical and psycho-social adverse effects of substance abuse, there are significant evidences of increase in substance abuse all over the World. It often follows the course of a relapsing and remitting chronic disease; hence, treatment of such a condition requires a multidisciplinary effort. The substantial proportion of working age subjects attending the psychiatry outpatient department suffers from substance dependence. It could be useful to introduce intervention programs targeting vulnerable population. So the knowledge of the pattern of substance abuse and vulnerable population and risk factors would be the corner stone for preventive and treatment action.^{15,16,17,18,19,20,21,22,23}

One of the foremost essential steps to combat this challenge is to document the extent, patterns and trends of substance abuse to appreciate the magnitude and severity of the problem. Substance use estimates, however, are liable to change over time, depending upon diverse factors such as availability and cost of the substances in the community, existing legislations and their implementation, social perception and attitude about use of particular substances, peer pressure and other socio-cultural factors. No single cross-sectional survey can cover this complex shift of the substance use across time, unless such surveys are repeated at regular intervals on the same defined population.^{15,16,17,18,19,20,21,22,23}

7. Drug Abuse Among Youth

Today's youth face many risks, including drug abuse, violence, and HIV/AIDS. Responding to these risks before they become problems can be difficult. Prevention science has made great progress in recent years. Many interventions are being tested in "real-world" settings so they can be more easily adapted for community use. Scientists are studying a broader range of populations and topics.

The key risk periods for drug abuse are during major transitions in children's lives. The first big transition for children is when they leave the security of the family and enter school. Later, when they advance from elementary school to middle school, they often experience new academic and social situations, such as learning to get along with a wider group of peers. It is at this stage—early adolescence—that children are likely to encounter drugs for the first time. When they enter high school, adolescents face additional social, emotional, and educational challenges. At the same time, they may be exposed to greater availability of drugs, drug abusers, and social activities involving drugs. These challenges can increase the risk that they will abuse alcohol, tobacco, and other substances. When young adults leave home for college or work and are on their own for the first time, their risk for drug and alcohol abuse is very high. Consequently, young adult interventions are needed as well.

8. Risk Factors and Protective Factors

The risk of becoming a drug abuser involves the relationship among the number and type of risk factors (e.g., deviant attitudes and behaviors) and protective factors (e.g., parental support). The potential impact of specific risk and protective factors changes with age. For example, risk factors within the family have greater impact on a younger child, while association with drug-abusing peers may be a more significant risk factor for an adolescent.^{25,26,27,28,29,30,31,32}

Prevention programs should enhance protective factors and reverse or reduce risk factors and should address the type of drug abuse problem in the local community, target modifiable risk factors, and strengthen identified protective factors. Early intervention with risk factors (e.g., aggressive behavior and poor self-control) often has a greater impact than later intervention by changing a child's life path (trajectory) away from problems and toward positive behaviors.^{25,26,27,28,29,30,31,32}

While risk and protective factors can affect people of all groups, these factors can have a different effect depending on a person's age, gender, ethnicity, culture, and environment. Prevention programs should address all forms of drug abuse, alone or in combination, including the underage use of legal drugs (e.g., tobacco or alcohol); the use of illegal drugs (e.g., marijuana or heroin); and the inappropriate use of legally obtained substances (e.g., inhalants), prescription medications, or over-the-counter drugs. Prevention programs should be tailored to address risks specific to population or audience characteristics, such as age, gender, and ethnicity, to improve program effectiveness.^{25,26,27,28,29,30,31,32}

9. Prevention

Prevention science has made great progress in recent years. Many interventions are being tested in "real-world" settings so they can be more easily adapted for community use. Prevention programs should enhance protective factors and reverse or reduce risk factors. Family-based prevention programs should enhance family bonding and relationships and include parenting skills; practice in developing, discussing, and enforcing family policies on substance abuse; and training in drug education and information. Family bonding is the bedrock of the relationship between parents and children. Bonding can be strengthened through skills training on parent supportiveness of children, parent-child communication, and parental involvement. Once this is done, we can expect better results. Such an approach can restore life the beauty it has lost to addiction.¹⁴

Prevention Planning

Family-based prevention programs should enhance family bonding and relationships and include parenting skills; practice in developing, discussing, and enforcing family policies on substance abuse; and training in drug education and information. Family bonding is the bedrock of the relationship between parents and children. Bonding can be strengthened through skills training on parent supportiveness of children, parent-child communication, and parental involvement.

Parental monitoring and supervision are critical for drug abuse prevention. These skills can be enhanced with training on rule-setting; techniques for monitoring activities; praise for appropriate behavior; and moderate, consistent discipline that enforces defined family rules. Brief, family-focused interventions for the general population can positively change specific parenting behavior that can reduce later risks of drug abuse. Prevention programs can be designed to intervene as early as preschool to address risk factors for drug abuse, such as aggressive behavior, poor social skills, and academic difficulties. Prevention programs for elementary school children should target improving academic and social-emotional learning to address risk factors for drug abuse, such as early aggression, academic failure, and school dropout. Education should focus on the following skills: self-control; emotional awareness; communication; social problem-solving; and academic support, especially in reading.

Community prevention programs that combine two or more effective programs, such as family-based and school-based programs, can be more effective than a single program alone.

Community prevention programs reaching populations in multiple settings are most effective when they present consistent, community-wide messages in each setting. When communities adapt programs to match their needs, community norms, or differing cultural requirements, they should retain core elements of the original research-based intervention which include: Structure (how the program is organized and constructed); Content (the information, skills, and strategies of the program); and Delivery (how the program is adapted, implemented, and evaluated).

Prevention programs should be long-term with repeated interventions (i.e., booster programs) to reinforce the original prevention goals. Research shows that the benefits from middle school prevention programs diminish without follow-up programs in high school. Prevention programs are most effective when they employ interactive techniques, such as peer discussion groups and parent role-playing, that allow for active involvement in learning about drug abuse and reinforcing skills.^{25,26,27,28,29,30,31,32}

Research-based prevention programs can be cost-effective. For each dollar invested in prevention, a savings of up to \$10 in treatment for alcohol or other substance abuse can be seen.

Some signs of risk can be seen as early as infancy or early childhood, such as aggressive behavior, lack of self-control, or difficult temperament. As the child gets older, interactions with family, at school, and within the community can affect that child's risk for later drug abuse. Families can provide protection from later drug abuse when there is: a strong bond between children and parents; parental involvement in the child's life; and clear limits and consistent enforcement of discipline.^{25,26,27,28,29,30,31,32}

Interactions outside the family can involve risks for both children and adolescents, such as: poor classroom behavior or social skills; academic failure; and association with drug-

abusing peers. Association with drug-abusing peers is often the most immediate risk for exposing adolescents to drug abuse and delinquent behavior. If drug abuse persists into later adolescence, abusers typically become more heavily involved with marijuana and then advance to other drugs, while continuing their abuse of tobacco and alcohol. Abuse of drugs in late childhood and early adolescence is associated with greater drug involvement. It is important to note that most youth, however, do not progress to abusing other drugs. Preventive interventions can provide skills and support to high-risk youth to enhance levels of protective factors and prevent escalation to drug abuse. Youth who rapidly increase their substance abuse have high levels of risk factors with low levels of protective factors. Gender, race, and geographic location can also play a role in how and when children begin abusing drugs.^{25,26,27,28,29,30,31,32}

Action Plan

Parents can use information on risk and protection to help them develop positive preventive actions (e.g., talking about family rules) before problems occur. Educators can strengthen learning and bonding to school by addressing aggressive behaviors and poor concentration—risks associated with later onset of drug abuse and related problems. Community leaders can assess community risk and protective factors associated with drug problems to best target prevention services. The first step in planning a drug abuse prevention program is to assess the type of drug problem within the community and determine the level of risk factors affecting the problem. The results of this assessment can be used to raise awareness of the nature and seriousness of the community’s problem and guide selection of the best prevention programs to address the problem. Next, assessing the community’s readiness for prevention can help determine additional steps needed to educate the community before launching the prevention effort. Then, a review of current programs is needed to determine existing resources and gaps in addressing community needs and to identify additional resources. Finally, planning can benefit from the expertise of community organizations that provide youth services. Convening a meeting with leaders of these service organizations can set the stage for capturing ideas and resources to help implement and sustain research-based programs.^{25,26,27,28,29,30,31,32}

A well-constructed community plan:

- *Identifies* the specific drug and other child and adolescent problems in a community;
- *Builds* on existing resources (e.g., current drug abuse prevention programs);
- *Develops* short-term goals related to selecting and carrying out research-based prevention programs and strategies;
- *Projects* long-term goals so that plans and resources are available for the future; and
- *Includes* ongoing assessments of the prevention program.

The prevention principles offer guidance and support for selecting and adapting effective, research-based prevention programs to meet specific community needs. The principles can help guide community planners in selecting the best prevention programs for their community and in providing the best strategies for putting them into effect. Parents, educators, and community leaders can carefully plan how, when, and where to carry out each program. [Table 1]

To assess the level of risk of youth engaging in drug abuse, it is important to: measure the nature and extent of drug abuse patterns and trends; collect data on risk and protective factors throughout the community; and identify prevention efforts already under way to address the problem.

It is also important to consult with key community leaders to understand the community culture. Researchers have developed many tools, available to community planners, to assess the extent of a community’s drug problems. They include public access questionnaires and existing community-level data (e.g., truancy records, drug arrest records, and emergency room admissions data). Identifying a serious level of risk in a community does not always mean that the community is ready to take action. Based on studies of many small communities, researchers have identified nine stages of "community readiness" that can guide prevention planning. Once prevention planners know what stage the community is in, they can take the next steps for starting prevention programming.^{25,26,27,28,29,30,31,32}

Table 1: Assessing Readiness and Community Response

ASSESSING READINESS*		COMMUNITY ACTION
Readiness Stage	Community Response	Ideas
1. No awareness	Relative tolerance of drug abuse	Create motivation. Meet with community leaders involved with drug abuse prevention; use the media to identify and talk about the problem; encourage the community to see how it relates to community issues; begin preplanning.
2. Denial	Not happening here, can't do anything about it	
3. Vague awareness	Awareness, but no motivation	
4. Preplanning	Leaders aware, some motivation	
5. Preparation	Active energetic leadership and decisionmaking	Work together. Develop plans for prevention programming through coalitions and other community groups.
6. Initiation	Data used to support prevention actions	Identify and implement research-based programs.
7. Stabilization	Community generally supports existing program	Evaluate and improve ongoing programs.
8. Confirmation/Expansion	Decisionmakers support improving or expanding programs	Institutionalize and expand programs to reach more populations.
9. Professionalization	Knowledgeable of community drug problem; expect effective solutions	Put multicomponent programs in place for all audiences.

Another evaluation approach is to track data over time on drug abuse among students in school, rates of truancy, school suspensions, drug abuse arrests, and drug-related emergency room admissions. Data from community drug abuse assessments can serve as a baseline for measuring change. Because drug abuse problems change with time, periodic assessments can ensure that programs are meeting current community needs. Prevention programs in schools focus on children's social and academic skills, including enhancing peer relationships, self-control, coping, and drug-refusal skills.¹⁻⁹

Prevention programs work at the community level with civic, religious, law enforcement, and other government organizations to enhance anti-drug norms and pro-social behaviors. Many programs coordinate prevention efforts across settings to communicate consistent messages through school, work, religious institutions, and the media. Research has shown that programs that reach youth through multiple settings can strongly impact community norms. Community-based programs also typically include development of policies or enforcement of regulations, mass media efforts, and community-wide awareness programs.^{25,26,27,28,29,30,31,32}

As community planners review prevention programs to determine which best fit their needs, they should consider the following core elements of effective research-based programs.

- **Structure**—how each program is organized and constructed;

- **Content**—how the information, skills, and strategies are presented; and
- **Delivery**—how the program is selected or adapted and implemented, as well as how it is evaluated in a specific community.

Use of interactive methods and appropriate booster sessions helps to reinforce earlier program content and skills to maintain program benefits. Evaluating community prevention programs can be challenging. Community leaders often consult with evaluation experts, such as local universities or State agencies, to assist in evaluation design. The community plan should guide actions for prevention over time because community needs change. Parents can work with others in the community to use the prevention principles in selecting drug abuse programs. Educators can incorporate research-based content and delivery into their regular classroom curricula. Community leaders can work with evaluation experts to evaluate program progress and develop improvements in outcomes.^{25,26,27,28,29,30,31,32}

Understanding of Drug Addiction

As a result of scientific research, we know that addiction is a disease that affects both the brain and behavior. Scientists have identified many of the biological and environmental factors and are beginning to search for the genetic variations that contribute to the development and progression of the disease. Scientists use this knowledge to develop effective prevention and treatment approaches that reduce the toll drug abuse takes on individuals, families, and communities.[Fig 1]

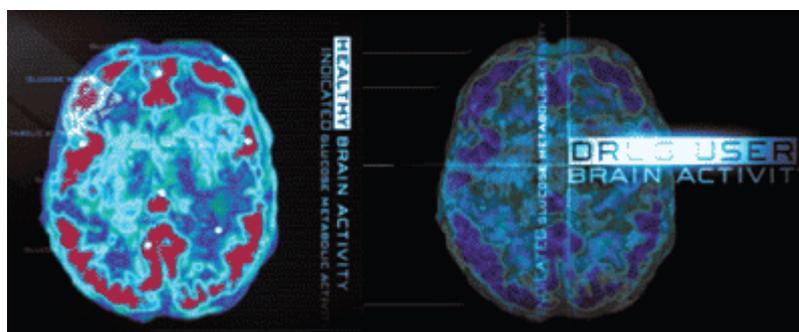


Figure 1: People of all ages suffer the harmful consequences of drug abuse and addiction

Babies exposed to drugs in the womb may be born premature and underweight. This exposure can slow the child's intellectual development and affect behavior later in life. *Adolescents* who abuse drugs often act out, do poorly academically, and drop out of school. They are at risk for unplanned pregnancies, violence, and infectious diseases. *Adults* who abuse drugs often have problems thinking clearly, remembering, and paying attention. They often develop poor social behaviors as a result of their drug abuse, and their work performance and personal relationships suffer. *Parents'* drug abuse often means chaotic, stress-filled homes, as well as child abuse and neglect. Such conditions

harm the well-being and development of children in the home and may set the stage for drug abuse in the next generation.³³⁻⁶¹

Scientists study the effects that drugs have on the brain and on people's behavior. They use this information to develop programs for preventing drug abuse and for helping people recover from addiction. Further research helps transfer these ideas into practice in our communities. The consequences of drug abuse are vast and varied and affect people of all ages. [Fig 2]

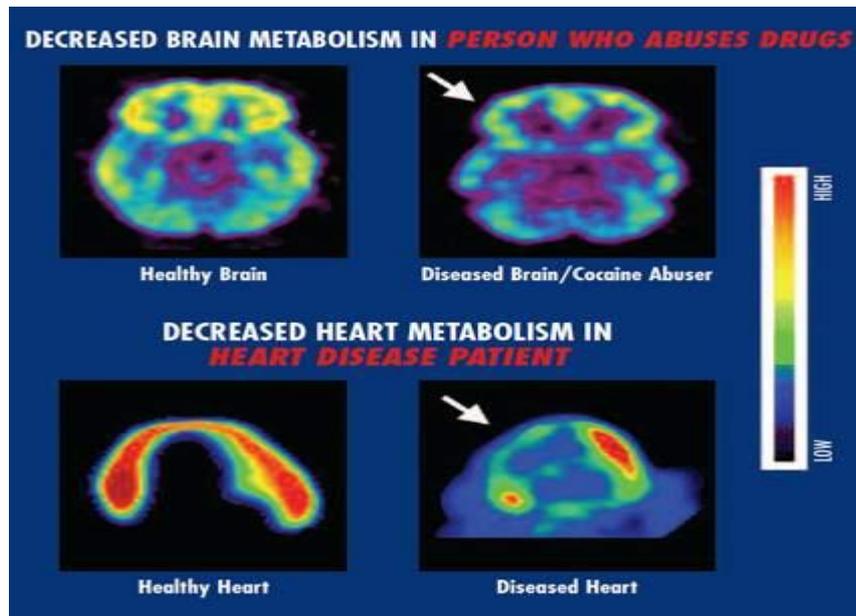


Figure 2: Effect of drug misuse on brain Source: From the laboratories of Drs. N. Volkow and H. Schelbert

Addiction disrupts the normal, healthy functioning of the underlying organ, have serious harmful consequences, and are preventable and treatable, but if left untreated, can last a lifetime. In general, people begin taking drugs for a variety of reasons: to feel good, to feel better, to do better, curiosity and because others are doing it.

When they first use a drug, people may perceive what seem to be positive effects; they also may believe that they can control their use. However, drugs can quickly take over a person's life. Over time, if drug use continues, other pleasurable activities become less pleasurable, and taking the drug becomes necessary for the user just to feel "normal." They may then compulsively seek and take drugs even though it causes tremendous problems for themselves and their loved ones. Some people may start to feel the need to take higher or more frequent doses, even in the early stages of their drug use.

No single factor determines whether a person will become addicted to drugs. The more *risk factors* a person has, the greater the chance that taking drugs will lead to abuse and addiction. *Protective factors*, on the other hand, reduce a person's risk of developing addiction. Risk and protective factors may be either environmental (such as conditions at home, at school, and in the neighborhood) or biological. [Table 2, Fig 3]

Table 2: Risk and Protective Factors for Drug Abuse and Addiction

Risk Factors	Protective Factors
Aggressive behavior in childhood	Good self-control
Lack of parental supervision	Parental monitoring and support
Poor social skills	Positive relationships
Drug experimentation	Academic Competence
Availability of drugs at school	School anti-drug policies
Community poverty	Neighborhood pride

Environmental factors

The influence of the home environment, especially during childhood, is a very important factor. Parents or older family members who abuse alcohol or drugs, or who engage in

criminal behavior, can increase children's risks of developing their own drug problems. Friends and acquaintances can have an increasingly strong influence during adolescence. Drug-using peers can sway even those without risk factors to try drugs for the first time. Academic failure or poor social skills can put a child at further risk for using or becoming addicted to drugs.³³⁻⁶¹

Biological factors

Scientists estimate that genetic factors account for between 40 and 60 percent of a person's vulnerability to addiction; this includes the effects of environmental factors on the function and expression of a person's genes. A person's stage of development and other medical conditions they may have are also factors. Adolescents and people with mental disorders are at greater risk of drug abuse and addiction than the general population.

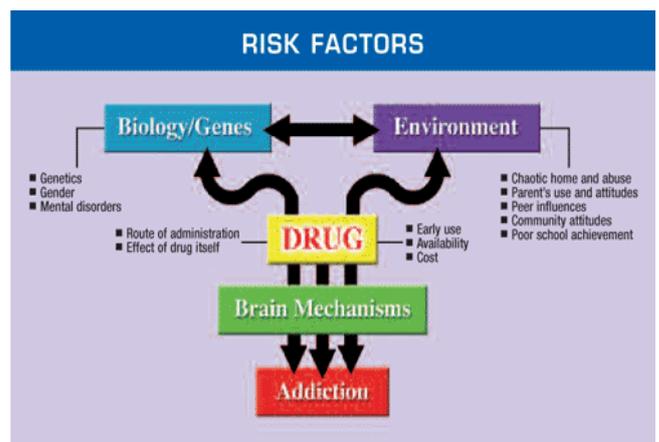


Figure 3: Risk Factors

Children's earliest interactions within the family are crucial to their healthy development and risk for drug abuse.

Other Factors

Although taking drugs at any age can lead to addiction, research shows that the earlier a person begins to use drugs, the more likely he or she is to develop serious problems.

This may reflect the harmful effect that drugs can have on the developing brain; it also may result from a mix of early social and biological vulnerability factors, including unstable family relationships, exposure to physical or sexual abuse, genetic susceptibility, or mental illness. Still, the fact remains that early use is a strong indicator of problems ahead, including addiction.

Smoking a drug or injecting it into a vein increases its addictive potential. Both smoked and injected drugs enter the brain within seconds, producing a powerful rush of pleasure. However, this intense “high” can fade within a few minutes, taking the abuser down to lower, more normal levels. Scientists believe this starkly felt contrast drives some people to repeated drug taking in an attempt to recapture the fleeting pleasurable state. Addiction is a developmental disease—it typically begins in childhood or adolescence.

The brain continues to develop into adulthood and undergoes dramatic changes during adolescence. One of the brain areas still maturing during adolescence is the prefrontal cortex—the part of the brain that enables us to assess situations, make sound decisions, and keep our emotions and desires under control. The fact that this critical part of an adolescent’s brain is still a work in progress puts them at increased risk for making poor decisions (such as trying drugs or continuing to take them). Also, introducing drugs during this period of development may cause brain changes that have profound and long-lasting consequences.
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Adolescence and drug addiction

Early use of drugs increases a person’s chances of developing addiction. Drugs change brains—and this can lead to addiction and other serious problems. So, preventing early use of drugs or alcohol may go a long way in reducing these risks. If we can prevent young people from experimenting with drugs, we can prevent drug addiction. Risk of drug abuse increases greatly during times of transition. For an adult, a divorce or loss of a job may lead to drug abuse; for a teenager, risky times include moving or changing schools. In early adolescence, when children advance from elementary through middle school, they face new and challenging social and academic situations. Often during this period, children are exposed to abusable substances such as cigarettes and alcohol for the first time. When they enter high school, teens may encounter greater availability of drugs, drug use by older teens and social activities where drugs are used.

Many behaviors that are a normal aspect of their development, such as the desire to try new things or take greater risks, may increase teen tendencies to experiment with drugs. Some teens may give in to the urging of drug-using friends to share the experience with them. Others may think that taking drugs (such as steroids) will improve their appearance or their athletic performance or that abusing substances such as alcohol or MDMA (Ecstasy or “Molly”) will ease their anxiety in social situations. A growing number of teens are abusing prescription ADHD stimulants to help them study or lose weight. Teens’ still-developing judgment and decision-making skills may limit their ability

to accurately assess the risks of all of these forms of drug use. Using drugs at this age can disrupt brain function in areas critical to motivation, memory, learning, judgment, and behavior control. Teens who use alcohol and other drugs often have family and social problems, poor academic performance, health-related problems (including mental health), and involvement with the juvenile justice system.³³⁻⁶¹ [Fig 4]

Research-based programs

Scientists have developed a broad range of programs that positively alter the balance between risk and protective factors for drug abuse in families, schools, and communities. Studies have shown that research-based programs, can significantly reduce early use of tobacco, alcohol, and illicit drugs.

The Drug Danger Zone: Most Illicit Drug Use Starts in the Teenage Years

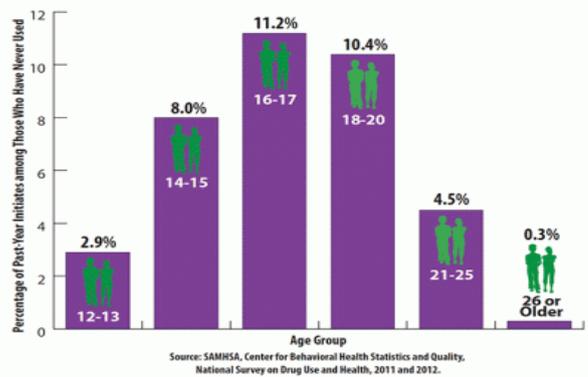


Figure 4: The Drug danger zone

These prevention programs work to boost protective factors and eliminate or reduce risk factors for drug use. The programs are designed for various ages and can be designed for individual or group settings, such as the school and home. There are three types of programs: **Universal programs** address risk and protective factors common to all children in a given setting, such as a school or community. **Selective programs** target groups of children and teens who have factors that put them at increased risk of drug use. **Indicated programs** are designed for youth who have already begun using drugs. When research-based substance use prevention programs are properly implemented by schools and communities, use of alcohol, tobacco, and illegal drugs is reduced. Drug use decreases when drugs are perceived as harmful and vice versa. [Fig 5]

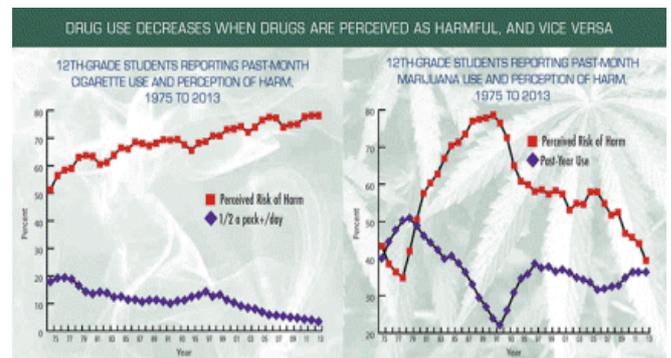


Figure 5: Perception of drugs being harmful and vice versa
 Source: *Monitoring the Future Survey*. University of Michigan

The Human Brain

The human brain is the most complex organ in the body that regulates human body's basic functions; enables you to interpret and respond to everything you experience; and shapes your thoughts, emotions, and behavior. Different parts of the brain are responsible for coordinating and performing specific functions. Drugs can alter important brain areas that are necessary for life-sustaining functions and can drive the compulsive drug abuse that marks addiction. The brain is a communications center consisting of billions of neurons, or nerve cells. Networks of neurons pass messages back and forth among different structures within the brain, the spinal cord, and nerves in the rest of the body (the peripheral nervous system). These nerve networks coordinate and regulate everything we feel, think, and do.

Drugs affect the brain by tapping into its communication system and interfering with the way neurons normally send, receive, and process information. Some drugs, such as marijuana and heroin, can activate neurons because their

chemical structure mimics that of a natural neurotransmitter. Other drugs, such as amphetamine or cocaine, can cause the neurons to release abnormally large amounts of natural neurotransmitters or prevent the normal recycling of these brain chemicals. This disruption produces a greatly amplified message, ultimately disrupting communication channels. [Fig 6]

Most drugs of abuse directly or indirectly target the brain's reward system by flooding the circuit with dopamine. Dopamine is a neurotransmitter present in regions of the brain that regulate movement, emotion, motivation, and feelings of pleasure. When activated at normal levels, this system rewards our natural behaviors. Overstimulating the system with drugs, however, produces euphoric effects, which strongly reinforce the behavior of drug use—teaching the user to repeat it. Most drugs of abuse target the brain's reward system by flooding it with dopamine.

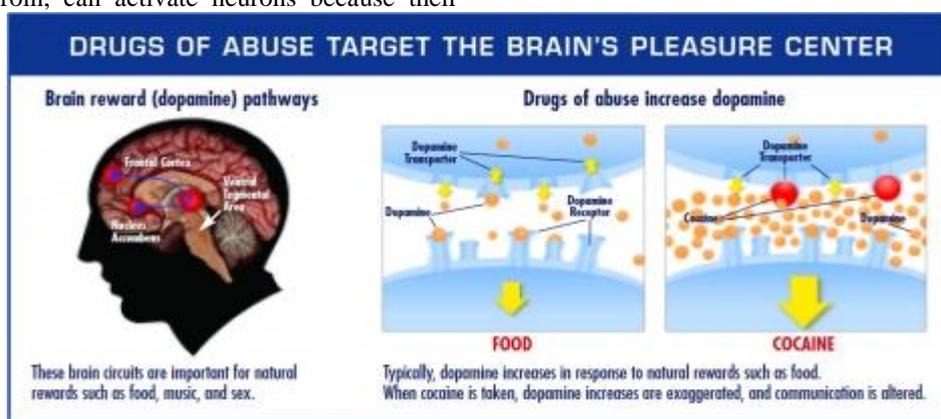


Figure 6: Drugs of abuse target the brain's pleasure centre

When some drugs of abuse are taken, they can release 2 to 10 times the amount of dopamine that natural rewards such as eating and sex do. In some cases, this occurs almost immediately (as when drugs are smoked or injected), and the effects can last much longer than those produced by natural rewards. The resulting effects on the brain's pleasure circuit dwarf those produced by naturally rewarding behaviors. The

effect of such a powerful reward strongly motivates people to take drugs again and again. This is why scientists sometimes say that drug abuse is something we learn to do very, very well. Long-term drug abuse impairs brain functioning.³³⁻⁶¹ [Fig 7]

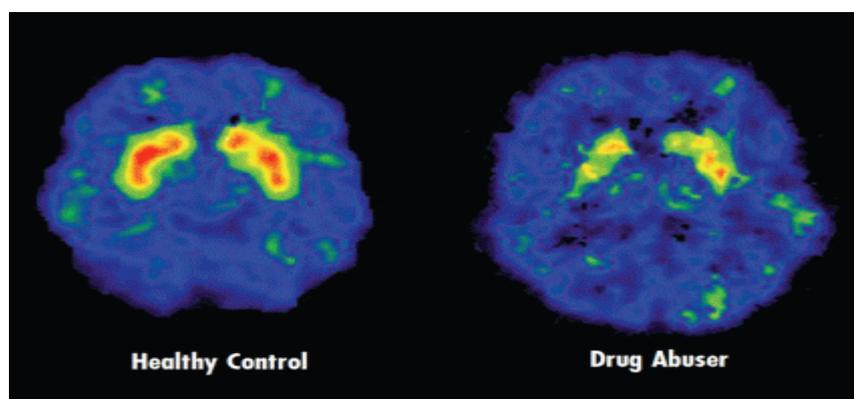


Figure 7: Decreased Dopamine Transporters in a Methamphetamine Abuser

Chronic exposure to drugs of abuse disrupts the way critical brain structures interact to control and inhibit behaviors related to drug use. Just as continued abuse may lead to tolerance or the need for higher drug dosages to produce an effect, it may also lead to addiction, which can drive a user

to seek out and take drugs compulsively. Drug addiction erodes a person's self-control and ability to make sound decisions, while producing intense impulses to take drugs. People who suffer from addiction often have one or more accompanying medical issues, which may include lung or

cardiovascular disease, stroke, cancer, and mental disorders. Imaging scans, chest X-rays, and blood tests show the damaging effects of long-term drug abuse throughout the body. Tobacco smoke causes cancer of the mouth, throat, larynx, blood, lungs, stomach, pancreas, kidney, bladder, and cervix. Moreover, some drugs of abuse, such as inhalants, are toxic to nerve cells and may damage or destroy them either in the brain or the peripheral nervous system: Cardiovascular disease, Stroke, Cancer, HIV/AIDS, Hepatitis B and C, Lung disease and Mental disorders. Drug abuse and mental illness often co-exist. In some cases, mental disorders such as anxiety, depression, or schizophrenia may precede addiction; in other cases, drug abuse may trigger or exacerbate those mental disorders, particularly in people with specific vulnerabilities. Addiction and HIV/AIDS are intertwined epidemics.³³⁻⁶¹

The prefrontal cortex—which monitors impulsivity, goal setting, reasoning, and judgment—is immature throughout the period of adolescence. Simultaneously, the nucleus accumbens is also still developing and may increase an adolescent's tendency for thrill seeking. These biological immaturities may increase the propensity to act impulsively

and disregard negative consequences such as those involved with drug and alcohol use.

Harmful consequences of Addiction

Beyond the harmful consequences for the person with the addiction, drug abuse can cause serious health problems for others. Three of the more devastating and troubling consequences of addiction are: Negative effects of prenatal drug exposure on infants and children, Negative effects of secondhand smoke and Increased spread of infectious diseases. [Fig 8]. Injection of drugs such as heroin, cocaine, and methamphetamine currently accounts for about 12 percent of new AIDS cases. Injection drug use is also a major factor in the spread of hepatitis C, a serious, potentially fatal liver disease. Injection drug use is not the only way that drug abuse contributes to the spread of infectious diseases. All drugs of abuse cause some form of intoxication, which interferes with judgment and increases the likelihood of risky sexual behaviors. This, in turn, contributes to the spread of HIV/AIDS, hepatitis B and C, and other sexually transmitted diseases. Tobacco use is responsible for an estimated 5 million deaths worldwide each year.³³⁻⁶¹

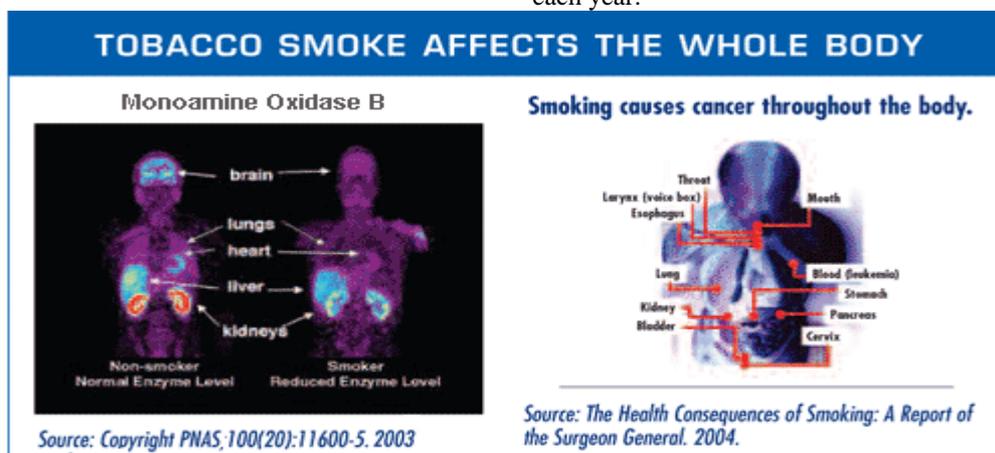


Figure 8: Tobacco use affecting the whole body

Nicotine is an addictive stimulant found in cigarettes and other forms of tobacco. Tobacco smoke increases a user's risk of cancer, emphysema, bronchial disorders, and cardiovascular disease. The mortality rate associated with tobacco addiction is staggering. Tobacco use killed approximately 100 million people during the 20th century, and, if current smoking trends continue, the cumulative death toll for this century has been projected to reach 1 billion.²⁴

Alcohol consumption can damage the brain and most body organs. Areas of the brain that are especially vulnerable to alcohol-related damage are the cerebral cortex (largely responsible for our higher brain functions, including problem solving and decision making), the hippocampus (important for memory and learning), and the cerebellum (important for movement coordination).

Marijuana is the most commonly abused illegal substance. This drug impairs short-term memory and learning, the ability to focus attention, and coordination. It also increases

heart rate, can harm the lungs, and can increase the risk of psychosis in those with an underlying vulnerability.

Prescription medications, including opioid pain relievers, anti-anxiety sedatives, and ADHD stimulants, are commonly misused to self-treat for medical problems or abused for purposes of getting high or (especially with stimulants) improving performance.

Inhalants are volatile substances found in many household products, such as oven cleaners, gasoline, spray paints, and other aerosols, that induce mind-altering effects; they are frequently the first drugs tried by children or young teens. Inhalants are extremely toxic and can damage the heart, kidneys, lungs, and brain. Even a healthy person can suffer heart failure and death within minutes of a single session of prolonged sniffing of an inhalant.

Cocaine is a short-acting stimulant, which can lead users to take the drug many times in a single session (known as a "binge"). Cocaine use can lead to severe medical

consequences related to the heart and the respiratory, nervous, and digestive systems.

Amphetamines, including methamphetamine, are powerful stimulants that can produce feelings of euphoria and alertness. Methamphetamine's effects are particularly long-lasting and harmful to the brain. Amphetamines can cause high body temperature and can lead to serious heart problems and seizures. [Fig 9]

MDMA (Ecstasy or "Molly") produces both stimulant and mind-altering effects. It can increase body temperature, heart rate, blood pressure, and heart-wall stress. MDMA may also be toxic to nerve cells.

LSD is one of the most potent hallucinogenic, or perception-altering, drugs. Its effects are unpredictable, and abusers may see vivid colors and images, hear sounds, and feel sensations that seem real but do not exist. Users also may have traumatic experiences and emotions that can last for many hours.

Heroin is a powerful opioid drug that produces euphoria and feelings of relaxation. It slows respiration, and its use is linked to an increased risk of serious infectious diseases, especially when taken intravenously. People who become addicted to opioid pain relievers sometimes switch to heroin instead, because it produces similar effects and may be cheaper or easier to obtain.

Steroids, which can also be prescribed for certain medical conditions, are abused to increase muscle mass and to improve athletic performance or physical appearance. Serious consequences of abuse can include severe acne, heart disease, liver problems, stroke, infectious diseases, depression, and suicide.

Drug combinations. A particularly dangerous and common practice is the combining of two or more drugs. The practice ranges from the co-administration of legal drugs, like alcohol and nicotine, to the dangerous mixing of prescription drugs, to the deadly combination of heroin or cocaine with fentanyl (an opioid pain medication). Whatever the context, it is critical to realize that because of drug-drug interactions, such practices often pose significantly higher risks than the already harmful individual drugs.

Addiction is a treatable disease. Research in the science of addiction and the treatment of substance use disorders has led to the development of evidence-based interventions that help people stop abusing drugs and resume productive lives. Addiction can be managed successfully. Treatment enables people to counteract addiction's powerful disruptive effects on their brain and behavior and regain control of their lives.

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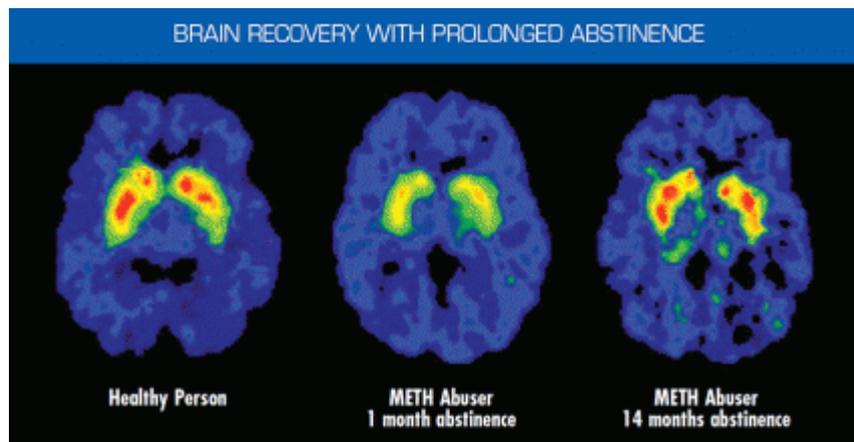


Figure 9: Images showing the density of dopamine transporters in a brain area called the striatum illustrate the brain's remarkable potential to recover, at least partially, after a long abstinence from drugs—in this case, methamphetamine.

[Source: *The Journal of Neuroscience*, 21(23):9414-9418. 2001].

The chronic nature of the disease means that relapsing to drug abuse at some point is not only possible, but likely. Relapse rates (i.e., how often symptoms recur) for people with addiction and other substance use disorders are similar to relapse rates for other well-understood chronic medical illnesses such as diabetes, hypertension, and asthma, which also have both physiological and behavioral components. Treatment of chronic diseases involves changing deeply imbedded behaviors, and relapse does not mean treatment has failed. For a person recovering from addiction, lapsing back to drug use indicates that treatment needs to be reinstated or adjusted or that another treatment should be tried.³³⁻⁶¹

Research shows that combining treatment medications with behavioral therapy is the best way to ensure success for most patients. Treatment approaches must be tailored to address each patient's drug use patterns and drug-related medical, psychiatric, and social problems.

Advancing Addiction Science

Different types of medications may be useful at different stages of treatment to help a patient stop abusing drugs, stay in treatment, and avoid relapse. [Fig 10] When patients first stop using drugs, they can experience a variety of physical and emotional symptoms, including depression, anxiety, and other mood disorders, as well as restlessness or sleeplessness. Certain treatment medications are designed to

reduce these symptoms, which makes it easier to stop the drug use.

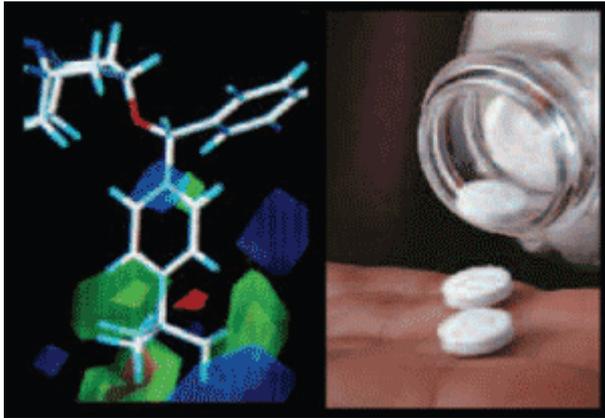


Figure 10: Discoveries in science lead to advances in drug abuse treatment

Some medications are used to help the brain adapt gradually to the absence of the abused drug. These medications act slowly to stave off drug cravings and have a calming effect on body systems. They can help patients focus on counseling and other psychotherapies related to their drug treatment.³³⁻⁶¹

Behavioral therapies

Behavioral treatments help engage people in substance use disorder treatment, modifying their attitudes and behaviors related to drug use and increasing their life skills to handle stressful circumstances and environmental cues that may trigger intense craving for drugs and prompt another cycle of compulsive use. Behavioral therapies can also enhance the effectiveness of medications and help people remain in treatment longer.

Holistic Approach

The best programs incorporate a variety of rehabilitative services into their comprehensive treatment regimens. Treatment counselors may select from a menu of services for meeting the specific medical, psychological, social, vocational, and legal needs of their patients to foster their recovery from addiction.

- *Cognitive Behavioral Therapy* seeks to help patients recognize, avoid, and cope with the situations in which they are most likely to abuse drugs.
- *Contingency Management* uses positive reinforcement such as providing rewards or privileges for remaining drug free, for attending and participating in counseling sessions, or for taking treatment medications as prescribed.
- *Motivational Enhancement Therapy* uses strategies to evoke rapid and internally motivated behavior change to stop drug use and facilitate treatment entry.
- *Family Therapy (especially for youth)* approaches a person's drug problems in the context of family interactions and dynamics that may contribute to drug use and other risky behaviors.³³⁻⁶¹

10. Prevention Programmes

Prevention science has made great progress in recent years. Many prevention interventions are being tested in “real-world” settings so they can be more easily adapted for community use.

The risk of becoming a drug abuser involves the relationship among the number and type of risk factors (e.g., deviant attitudes and behaviors) and protective factors (e.g., parental support) The potential impact of specific risk and protective factors changes with age. Risk factors within the family have greater impact on a younger child, while association with drug-abusing peers may be a more significant risk factor for an adolescent. Early intervention with risk factors (e.g., aggressive behavior and poor self-control) often has a greater impact than later intervention by changing a child's life path (trajectory) away from problems and toward positive behaviors. Prevention programs should address all forms of drug abuse, alone or in combination, including the underage use of legal drugs (e.g., tobacco or alcohol); the use of illegal drugs (e.g., marijuana or heroin); and the inappropriate use of legally obtained substances (e.g., inhalants), prescription medications, or over-the-counter drugs. Prevention programs should address the type of drug abuse problem in the local community, target modifiable risk factors, and strengthen identified protective factors. Prevention programs should be tailored to address risks specific to population or audience characteristics, such as age, gender, and ethnicity, to improve program effectiveness.

Family-based prevention programs should enhance family bonding and relationships and include parenting skills; practice in developing, discussing, and enforcing family policies on substance abuse; and training in drug education and information. Family bonding is the bedrock of the relationship between parents and children. Bonding can be strengthened through skills training on parent supportiveness of children, parent-child communication, and parental involvement. Parental monitoring and supervision are critical for drug abuse prevention. These skills can be enhanced with training on rule-setting; techniques for monitoring activities; praise for appropriate behavior; and moderate, consistent discipline that enforces defined family rules. Drug education and information for parents or caregivers reinforces what children are learning about the harmful effects of drugs and opens opportunities for family discussions about the abuse of legal and illegal substances. Brief, family-focused interventions for the general population can positively change specific parenting behavior that can reduce later risks of drug abuse. School Programs Prevention programs can be designed to intervene as early as preschool to address risk factors for drug abuse, such as aggressive behavior, poor social skills, and academic difficulties.. Prevention programs for elementary school children should target improving academic and social-emotional learning to address risk factors for drug abuse, such as early aggression, academic failure, and school dropout.^{14,62-67} [Fig 11]

Prevention programs aimed at general populations at key transition points, such as the transition to middle school, can

produce beneficial effects even among high-risk families and children. Such interventions do not single out risk populations and, therefore, reduce labeling and promote bonding to school and community. Community prevention programs that combine two or more effective programs, such as family-based and school-based programs, can be more effective than a single program alone. Community prevention programs reaching populations in multiple settings are most effective when they present consistent, community-wide messages in each setting. When communities adapt programs to match their needs, community norms, or differing cultural requirements, they should retain core elements of the original research-based intervention, which include: structure (how the program is organized and constructed); content (the information, skills, and strategies of the program); and delivery (how the program is adapted, implemented, and evaluated).^{14,62-67}

Prevention programs should include teacher training on good classroom management practices, such as rewarding appropriate student behavior. Such techniques help to foster students' positive behavior, achievement, academic motivation, and school bonding. Prevention programs are most effective when they employ interactive techniques, such as peer discussion groups and parent role-playing, that allow for active involvement in learning about drug abuse and reinforcing skills. Research-based prevention programs can be cost-effective. Helping a young child learn to control impulsive behavior is a focus of some prevention programs.

Risk factors for drug abuse represent challenges to an individual's emotional, social, and academic development. These risk factors can produce different effects, depending on the individual's personality traits, phase of development, and environment. Early intervention can help reduce or reverse these risks and change that child's developmental path.

The risk of becoming a drug abuser involves the relationship among the number and type of risk factors (e.g., deviant attitudes and behaviors) and protective factors (e.g., parental support). The potential impact of specific risk and protective factors changes with age. Early intervention with risk factors (e.g., aggressive behavior and poor self-control) often has a greater impact than later intervention by changing a child's life path (trajectory) away from problems and toward positive behaviors. While risk and protective factors can affect people of all groups, these factors can have a different effect depending on a person's age, gender, ethnicity, culture, and environment. Prevention programs should address all forms of drug abuse, alone or in combination, including the underage use of legal drugs (e.g., tobacco or alcohol); the use of illegal drugs (e.g., marijuana or heroin); and the inappropriate use of legally obtained substances (e.g., inhalants), prescription medications, or over-the-counter drugs. Prevention programs should address the type of drug abuse problem in the local community, target modifiable risk factors, and strengthen identified protective factors.^{14,62-67}

Risks appear at every transition from early childhood through young adulthood; therefore, prevention planners need to consider their target audiences and implement

programs that provide support appropriate for each developmental stage. They also need to consider how the protective factors involved in these transitions can be strengthened.

Early abuse includes such drugs as tobacco, alcohol, inhalants, marijuana, and psychotherapeutic drugs. If drug abuse persists into later adolescence, abusers typically become more involved with marijuana and then advance to other illegal drugs, while continuing their abuse of tobacco and alcohol. Studies have also shown that early initiation of drug abuse is associated with greater drug involvement, whether with the same or different drugs. The pattern of abuse is associated with levels of social disapproval, perceived risk, and the availability of drugs in the community.

Initial drug abuse can also be influenced by where drugs are offered, such as parks, streets, schools, homes, or parties. While most youth do not progress beyond initial use, a small percentage rapidly escalate their substance abuse. There are protective factors that can suppress the escalation to substance abuse. These factors include self-control, which tends to inhibit problem behavior and often increases naturally as children mature during adolescence. Moreover, protective family structure, individual personality, and environmental variables can reduce the impact of serious risks of drug abuse. Preventive interventions can provide skills and support to high-risk youth to enhance levels of protective factors and prevent escalation to drug abuse.^{14,62-67}

11. Consequences of youth substance abuse

Young people who persistently abuse substances often experience an array of problems, including academic difficulties, health-related problems (including mental health), poor peer relationships, and involvement with the juvenile justice system. Additionally, there are consequences for family members, the community, and the entire society.

Academics

Declining grades, absenteeism from school and other activities, and increased potential for dropping out of school are problems associated with adolescent substance abuse. A low level of commitment to education and higher truancy rates appear to be related to substance use among adolescents. Cognitive and behavioral problems experienced by alcohol- and drug-using youth may interfere with their academic performance and also present obstacles to learning for their classmates).

Physical health

Injuries due to accidents (such as car accidents), physical disabilities and diseases, and the effects of possible overdoses are among the health-related consequences of teenage substance abuse. Disproportionate numbers of youth involved with alcohol and other drugs face an increased risk. Many substance-abusing youth engage in behavior that places them at risk of contracting HIV/AIDS or other sexually transmitted diseases. This may include the actual use of psychoactive substances (particularly those that are injected) or behavior resulting from poor judgment and

impulse control while experiencing the effects of mood-altering substances. Rates of AIDS diagnoses currently are relatively low among teenagers, compared with most other age groups. Although alcohol-related traffic fatalities for youth have declined, young people are still overrepresented in this area. The catastrophic health-related consequences of substance abuse among adolescents cannot be overemphasized. Besides personal and family distress, additional healthcare costs and loss of future productivity place burdens on the community.

Mental health

Mental health problems such as depression, developmental lags, apathy, withdrawal, and other psychosocial dysfunctions frequently are linked to substance abuse among adolescents. Substance-abusing youth are at higher risk than nonusers for mental health problems, including depression, conduct problems, personality disorders, suicidal thoughts, attempted suicide, and suicide. Marijuana use, which is prevalent among youth, has been shown to interfere with short-term memory, learning, and psychomotor skills. Motivation and psychosexual/emotional development also may be influenced.

Peers

Substance-abusing youth often are alienated from and stigmatized by their peers. Adolescents using alcohol and other drugs also often disengage from school and community activities, depriving their peers and communities of the positive contributions they might otherwise have made.

Families

In addition to personal adversities, the abuse of alcohol and other drugs by youth may result in family crises and jeopardize many aspects of family life, sometimes resulting in family dysfunction. Both siblings and parents are profoundly affected by alcohol- and drug-involved youth. Substance abuse can drain a family's financial and emotional resources.

Social and economic consequences

The social and economic costs related to youth substance abuse are high. They result from the financial losses and distress suffered by alcohol- and drug-related crime victims, increased burdens for the support of adolescents and young adults who are not able to become self-supporting, and greater demands for medical and other treatment services for these youth.

Delinquency

There is an undeniable link between substance abuse and delinquency. Arrest, adjudication, and intervention by the juvenile justice system are eventual consequences for many youth engaged in alcohol and other drug use. It cannot be claimed that substance abuse causes delinquent behavior or delinquency causes alcohol and other drug use. However, the two behaviors are strongly correlated and often bring about school and family problems, involvement with negative peer groups, a lack of neighborhood social controls, and physical or sexual abuse. Possession and use of alcohol and other drugs are illegal for all youth. There is strong evidence of an association between alcohol and other drug

use and delinquent behavior of juveniles. Substance abuse is associated with both violent and income-generating crimes by youth. This increases fear among community residents and the demand for juvenile and criminal justice services, thus increasing the burden on these resources. Gangs, drug trafficking, prostitution, and growing numbers of youth homicides are among the social and criminal justice problems often linked to adolescent substance abuse.^{14, 61-67}

Family History of Alcoholism or Drug Addiction:

Whether a person decides to use alcohol or drugs is a choice, influenced by their environment--peers, family, and availability. But, once a person uses alcohol or drugs, the risk of developing alcoholism or drug dependence is largely influenced by genetics. Alcoholism and drug dependence are not moral issues, are not a matter of choice or a lack of willpower. A person with family history of alcoholism or addiction is four times more likely to develop a problem.



Figure 11: The Community Plan

Causes of Drug Addiction

The reasons why a young person gets addicted to these harmful drugs are many. Curiosities, spiritual search, desire for pleasure, social excommunication, mental gap, lack of self-reliance are some of the reasons why these youth becomes a drug-addict. Lack of self-confidence, that is inferiority complex, has been marked as cause of one's becoming a drug addict.

The problem of drug addiction is all the more serious because the addicts are mostly young school or college going boys and girls, the future citizens of a country, on whom will depend in future its welfare and the welfare of its people. So it is imperative to see that such young boys and girls may be no means fall victims to drug addiction. Rehabilitation of the young drug-addicts is a major social problem. Those who become able to overcome their addiction can tutor other young addicts. The need of forming a healthy environment where the needs of these youth can be met is equally important.

De-addiction centres should be established by the government to provide medical treatment for the addicts. The drug addicts need our sympathy. Their case must be

handled delicately because this is the only way to win their heart and put them on the right track.

Drugs addiction is harmful not only for the addicted but also has negative impact on the fabric of the society. The effects of such an addiction can cause dangerous changes in the mind, body and spirit of the drug addict. The most disturbing aspect of drug addiction is that it is reaching epidemic proportions in the whole world.

Pakistan, Afghanistan, Bangladesh, Bhutan, India and even Sri Lanka all have major issues with use of drugs. Afghanistan, for example, has about 28,513,677 drug addicts, while Bangladesh has 141, 340, 476 addicts. India has a staggering 1,065, 070,607 drug users, while Pakistan has 159, 196, 336 addicts.^{14,62-67}

The worst thing about being addicted to drugs is that it is affecting the youth in every part of the world in a major way. The trouble starts among the school-going children but the problem is exacerbated with abetment by those who wish to earn money out of selling drugs. Education, productivity and social interaction are also deeply affected. There are economic fallouts as well. Some boys are the only wage earners for their families and they too, fall into the drug net. Some girls, who get caught in this web, lose their academic abilities and even chastity. The problem among children and youth arises because of a perception that they seem to harbour the notion of their inadequacy for failing to measure up to their expectations of their elders.

The youth has become the target of major drug peddlers. These peddlers sell drugs and package them as symbols of revolution and freshness but have no regard for the consequences of their actions. The youth that takes to drugs are more likely to commit suicide because of the harmful effects of the drugs they are taking. Misinformation about drugs is another reason for these deaths as the addict or user may take the drugs in wrong doses, which can then lead to a fatality.

Drugs addiction among the youth is killing them morally and socially as well as psychologically and even physically. And, drug barons are becoming increasingly wealthier by supplying these drugs that are causing untold misery. It is time that societies and governments took a firmer view about preventing and stopping drugs addiction. There should be a community plan that should be implemented to stop addiction to drugs. This plan must identify the specific drugs that youth are using. It should build on existing resources such as existing drug abuse prevention programmes and it should also develop short-term goals relevant to proper implementation of research-based drug abuse prevention programmes.

The community plan must project its long-term objectives to ensure that resources are made available and in addition, the community plan must also incorporate ongoing assessments to evaluate the effectiveness of their preventive measures and strategies.

All preventive measures need to address different forms of drug abuse and addiction and should also target different types of drug abuse and addictions. It should also be tailored

to address risks that are specific to certain populations or audience characteristics. It must be aimed at specific populations and at major transition points such as at middle-school level.

Unless serious measures are taken now, the very future of a large chunk of today's youth will be severely compromised. The problem of drug addiction is too real and serious to be ignored. The governments need to involve communities and media in highlighting the perils associated with the drug addiction. Media has a responsibility to highlight such issues with a view to educating people and building a consensus among them to forge a united stand against such scourges.^{14,62-67}

The solution for the drug problem lies in the willpower of the young mind. The youth taking the drug should stop taking it and must allocate more time to studies, sports and career-building. The rehabilitation of the youth after treatment is a must else they would be tempted to resort to their old lifestyles. The State and the youth can join hands for eradicating this menace for our young generation. The family should also adopt a positive attitude. A drugged youth means a drugged nation and sick nations have no future. We must control and eliminate this menace before it overcomes our youth.

The willpower of the drug addict can pull him out of the darkness of drug addiction. He should admit to his parents or friends that he has started taking drugs. He can also contact a doctor or a drug rehabilitation centre. The treatment is complicated and costly. The drug addicted boy or girl must be willing to come out of his shell. The family members and friends must extend all cooperation. The police force must also be sympathetic towards these drug victims and must not use coercive methods for extracting information about drug peddlers from the drug addicts, the social organisations and NGOs could play vital roles in this context.

Drug menace is assuming very dangerous proportions. It could spoil the future of nations; it must be eliminated so that the young minds would be saved from the scourge of drug addiction.

12. Indian Scenario

India with a population of over 1.25 billion people, spread over an area of 3.28 million sq. kms. (3214 km. from North to South and 2933 km. from East to West), has about 3 million (about 0.3 per cent of total population) estimated victims of different kinds of drug usages, excluding alcohol dependents. Such population comes from diverse socio-economic, cultural, religious and linguistic backgrounds. The use of dependence-producing substances, in some form or the other, has been a universal phenomenon. India is the biggest supplier of illicit demand for opium required primarily for medicinal purposes. Besides this, India is located close to the major poppy growing areas of the world, with "Golden Crescent" on the Northwest and "Golden Triangle" on the North-East. These make India vulnerable to drug abuse particularly in poppy growing areas and along the transit/trafficking routes

Over the years, drug addiction is becoming an area of concern as traditional moorings, effective social taboos, emphasis on self-restraint and pervasive control and discipline of the joint family and community are eroding. The processes of industrialization, urbanization and migration have led to loosening of the traditional methods of social control rendering an individual vulnerable to the stresses and strains of modern life. The fast changing social milieu, among other factors, is mainly contributing to the proliferation of drug abuse, both of traditional and of new psychoactive substances.

The introduction of synthetic drugs and intravenous drug use leading to HIV/AIDS has added a new dimension to the problem, especially in the Northeast states of the country. The rough estimation i.e. over 3 million population dependent on drugs (0.3% of the population), excluding those dependent on alcohol, has been the basis for various interventions. The issues relating to drugs are tackled by the Government of India through its two-pronged strategy viz. supply reduction and demand reduction. Whereas the supply reduction is under the purview of the enforcement agencies with the Department of Revenue as the nodal agency, the demand reduction strategy is under the domain of social sector and the Ministry of Social Justice & Empowerment in Government of India is responsible for implementation of demand reduction strategy in the country.

The drug abuse is not only a problem arising out of the availability of such intoxicating drinks and drugs but it has a great deal to do with the social conditions which create the demand for or the need for consumption of such substances. The vulnerability of the modern society plays a catalytic role in promoting the consumption and abuse of narcotic and psychotropic drugs.

With this the need arose for implementing strategies for prevention of drug abuse, educating the people about its ill effects and rehabilitation of the addicts. The Govt. of India has a three-pronged strategy for demand reduction consisting of: building awareness and educating people about ill effects of drug abuse Building awareness and educating people about ill effects of drug abuse, dealing with the addicts through programme of motivational counselling, treatment, follow-up and social-reintegration of recovered addicts, to impart drug abuse prevention/rehabilitation training to volunteers with a view to build up an educated cadre of service providers. The objective of the entire strategy is to empower the society and the community to deal with the problem of drug abuse.

The Ministry of Social Justice & Empowerment, as the focal point for drug demand reduction programmes in the country, has been implementing the Scheme for Prohibition and Drug Abuse Prevention since the year 1985-86. As implementation of programmes for deaddiction and rehabilitation of drug addicts require sustained and committed/involved effort with a great degree of flexibility and innovation, a State-community (voluntary) partnership appears to be particularly strong mechanism for service delivery. Accordingly, under the Scheme, while major portion of the cost of services is borne by the Government, the voluntary organisations provide actual services through

the Counselling and Awareness Centres; De-addiction cum Rehabilitation Centres, De-addiction Camps, and Awareness Programmes.^{14, 62-67}

The basic objective in creating facilities for treatment, at than 400 Integrated Rehabilitation Centres for Addicts (IRCA's) spread all over the country and run through voluntary organisations, is to ensure that the support of the family and the community is mobilized to the maximum. These Centres adopt a wide variety of approaches, systems and methodologies for treatment and rehabilitation of the addicts suitable and adaptable to the social customs, traditions and culture. However this do not in any way undermine adoption of scientific, modern and established systems of treatment. The rehabilitation and social reintegration of an addict is the mainstay of any such initiative. Therefore all programmes for treatment of addicts must compulsorily integrate into delivery system, programmes for psychosocial counselling of the addict and his family/peer groups; programmes for vocational training/rehabilitation and comprehensive programme for after-care and follow-up.^{14, 62-67}

To attain these objectives, all Centres are equipped with a cadre of experts from various fields including doctors, counselors, community workers, social workers etc. Thus, it is a multi-disciplinary approach being applied according to the needs of individual cases. They work in coordination with the community resources as well infrastructure and services available under other related agencies.

The Government has established a National Centre for Drug Abuse Prevention (NC-DAP) under the aegis of the National Institute of Social Defence, New Delhi, to serve as the apex body in the country in the field of training, research and documentation in the field of drug abuse prevention.

To meet the growing demand of rehabilitation professionals in the country, the Centre has been conducting three months' Certificate Course on Deaddiction Counselling and Rehabilitation of Drug Abusers. The Centre has been conducting advocacy programmes, seminars, conferences and training courses all over the country in collaboration with the State Govt. Institutions and NGOs for sensitisation, awareness generation and training. The NC-DAP is mandated to serve as a Centre of Excellence in the region with an in-house team of experts as faculty, being complemented and supported by eminent experts and professionals as guest faculty.

The Government of India has been following an integrated approach involving all concerned Ministries and Departments who could complement and supplement the initiatives being taken by each other. The initiatives being taken include imparting education on drugs and positive alternative to the youth through appropriate modification in school curriculum and sensitisation of school environment. Programmes are being developed for the sensitisation of the teachers, parents and the peer groups in a school environment through the participation of the Non-Government Organisations. The cooperation of the media and various youth organisations has also been solicited for dissemination of information on ill effects of alcohol/drugs

and in engaging the community in positive/healthy alternatives.

Available Government infrastructure and services have been integrated with the services offered by the NGO sector for dealing with associated health problems such as TB, HIV/AIDS, Hepatitis etc. One of the successful initiatives towards inter-sectoral collaboration has been the integration of HIV/AIDS prevention programme into the substance abuse programme of 100 NGO run Deaddiction Centres supported by the Ministry of Social Justice and Empowerment.

India has adopted a holistic approach by way of convergence of advocacy, prevention and rehabilitation programmes of all relevant Government departments as also of other non-government activities. This convergence has been concretised by way of dovetailing the drug issues in the curriculum of schools/colleges, educational and informative programmes of media, activities of youth and sports organisations and health programmes.

While all round efforts are being made for prevention and containment of drug abuse in our society, a long journey is yet to be covered before we can draw some satisfaction. The problem having transnational causes and implications shall require Herculean efforts on the part of all the institutions. The empowerment of society through sensitisation and awareness is the only solution to support the efforts of enforcement agencies in containing the proliferation of drug trafficking and drug abuse. There is a need for sustained engagement and coordinated action among countries.

Social development orientated programmes or interventions should strive for a balance among law enforcement, prevention and treatment interventions.

13. Social Influences on Drug Abuse

Drug abuse is one of the major burdens of societies in the 21st Century. Studies and statistics show that globally more preadolescent and teenage children are using drugs and alcohol. Drugs used and abused by children and youth include tobacco, alcohol, heroine, cocaine, mandrax, LSD, ecstasy, cannabis and hallucinogens. The easy access and availability of drugs and other substances is another cause for concern amongst those in social development institutions and human social services.

One of the major concerns is that children seem to be targeted as the new market for the drug industry globally. In economic terms, both licit and illicit drugs are viewed as consumer goods that are traded in a competitive global market. Illegal drugs account for at least \$400 billion of world trade marking. The World Population Trends Estimates for the period 2000- 2050 show a decline of young people in a number of countries (China, Sweden, Norway, Australia) in the age groups of 10- 19 (U.S. Census Bureau, 2000).

Children and young people who use and/ or abuse drugs become one of the most vulnerable groups to HIV/AIDS

infection. The increase of drug use and threat of HIV/AIDS amongst young people globally are a cause for concern. Young people between 10-24 years are estimated to account for up to 60% of all new HIV infection worldwide.

With the young people in the United Kingdom, some of the reasons given for using drugs are relaxation or stress relief, fun, excitement and happiness. Young people in the United Kingdom have made very few negative associations with drugs, namely health (10 percent) and hangovers/after effect (8 percent for both). These negative associations and percentages show the level of ignorance and lack of information about drugs amongst young people. In Russia and Eastern Europe there is a rising drug problem amongst children and young people. An announcement made by the Ministry of Interior in Russia estimated that the country has 2 million drug users; of the 20,000 who are formally registered users, one third (6,700) are minors.

In Australia young people use drugs for the same reasons as adults and youth in other parts of the world. They use drugs for relaxation and fun; dealing with inhibition; coping with pressure and frustration; to relieve stress and anxiety or pain; and to overcome boredom. Some of the drugs are perceived as acceptable norms in society. The United States has the highest number of drug abusers in the world. Statistics show a prominent but varied use of drugs amongst children and young people. Accessibility and availability remain major critical challenges in efforts to deal with illicit drug abuse amongst children and young people. Cigarette smoking amongst 8th graders, boys and girls, is on the increase at least by 50%.

Overall, drugs are part of experimentation and risk taking for during the period of early and late adolescence. In some instances young people have viewed experimentation with drugs and other substances as a way of negotiating developmental transitions. Drugs are used and abused by children and youth from all socio-economic and racial/ethnic backgrounds. These young people may later, in their late teens and early adulthood use harder drugs like heroin and cocaine. The issue of drugs and youth should be viewed and tackled in relation to a number of social, economic, cultural and political factors. Any intervention, process or plan cannot be treated in isolation of other factors. Drug treatment is not a single entity but a variety of different approaches to different populations and goals.

Young people are a critical component of any population or society and as a crucial asset in the development of human capital globally. Social change processes and social service programmes should not be primarily about responding to crises and providing perpetual remedial interventions but rather should focus on areas of prevention and socialization. The well-being of societies, amongst other things, hinges on stable and healthy socio-economic development programmes. In the context of social development, prevention and socialization are other dimensions that are critical in addressing environmental issues of substance and drug abuse, especially among children and young people. The family and peer group function as the social resource systems for the individual. The individual goes through the psychological, social, cognitive, emotional and motivational

developmental processes. The developmental outcomes or negotiated changes are: a) an individual with self-efficacy (belief system); b) self-esteem; c) social competence; d) planning/problem solving and decision-making. A balanced and positive interaction amongst the distal, proximal factors would possibly reduce the vulnerability to drugs and substance abuse.

The social development approach caters to all people; it facilitates the integration of economic and social policies; it creates opportunities for growth and self-actualisation for members of the society; it develops and sustains clear plans and processes for programmes and the ability to engage a range of disciplines in social development programmes. In generating preventive, curative and /or educational programmes on drug abuse, it is essential to address the social influences as it is to address policy, legal and biomedical factors.

Most of the countries that have drug policies such as South Africa and the United States have adopted demand reduction and supply reduction policies. Despite the massive financial, human and technical resources invested in implementing these policies, the decrease of drug abuse and the rate of recidivism has been minimal. As indicated earlier on in the text, the illicit drug industry is becoming more sophisticated in its operations.

In the United States the supply reduction and demand reduction strategy has concentrated on reducing supplies of drugs through law enforcement. Law enforcement included interaction with foreign policy wherein the eradication extended to the drug producing countries outside the borders of the United States (Caribbean, Mexico, Panama and many South American countries). Heavy penalties and sentences are metered against both suppliers and users - users generally easier to identify in the inner cities. Though the penalties are heavy, there is an increase of drug users and suspects. On the other hand, billions of federal dollars are invested in national and international efforts to reduce supply and demand.

The harm reduction model is used in Australia and other European countries like Norway. The Program for Adolescent Life Management (PALM) is an example of a harm reduction intervention developed jointly by the National Drug and Alcohol Centre and the Ted Noffs Foundation (Spooner & Howard, 1996; Spooner, et. al 1998a, 1998b). The PALM Model is both a holistic and social development approach. It is alive to the individual and social environmental realities that are part of the drug problem. It recognised the human weakness to stop drug use or to be "clean" within specific short time frames. It uses a specific treatment model - cognitive -behavioural. This demonstrates that social development does not undermine clinical interventions but advocate for appropriateness and effectiveness. This model advocates for the reduction of risk factors and the enhancement of supportive and protective factors.14,62-67

The Dutch model of harm reduction is informed by three principles, namely, (a) separation of markets, (b) low threshold treatment and (c) normalization of drug abuse

treatment. In essence the Dutch Drugs policy adopts a non-emotive and demystifying approach when it comes to drug use and abuse. Children and young people are a precious asset for human population and future human capital, we need to invest our intellect, social resources and a range of resources in nurturing them and protecting them against two of the deadly social conditions of the 21st century, HIV/AIDS and Drugs. The family in particular should seriously re-examine its role and responsibility as a socializing and nurturing agent. The family as an institution is breaking down; on the other hand, it is continually cited as one of the powerful agents of social change and social support system in most clinical interventions. Young people have powerful organization, which should play a very visible and important role in addressing and responding to needs of young people. 62-67

14. Treatment Approaches

The majority of current substance abuse treatment programs incorporate a set of services that can dispensed in different formats and for different lengths of time. In most cases today, once an adolescent's substance use habits and related factors have been professionally assessed, the individual will be referred to one of five treatment levels, according to American Society of Addiction Medicine patient placement criteria]. These levels, ranging on a continuum of service intensity, include the following:

- Early intervention services, which commonly consist of educational or brief intervention services.
- Outpatient treatment, in which adolescents typically attend treatment for 6 h/wk or less for a period dependent on progress and the treatment plan.
- Intensive outpatient, in which adolescents attend treatment during the day (up to 20 h/wk) but live at home (ranging in length from 2 months–1 year).
- Residential/inpatient treatment includes programs that provide treatment services in a residential setting (lasting from 1 month–1 year).
- Medically managed intensive inpatient, which is most appropriate for adolescents whose substance use, biomedical, and emotional problems are so severe that they require 24-hour primary medical care for a length dependent on the adolescent's progress.

Within these five levels of care, practitioners may utilize a wide variety of theoretical orientations or modalities. To date, most outpatient and inpatient adolescent programs will use an eclectic treatment approach, integrating multiple therapeutic models within their treatment service framework. The most commonly utilized therapeutic models include the following:

Family-based therapy: this approach seeks to reduce an adolescent's use of drugs and correct the problem behaviors that often accompany drug use by addressing the mediating family risk factors, such as poor family communication, cohesiveness, and problem solving. This approach is based on the therapeutic premise that the family carries the most profound and long-lasting influence on child and adolescent development. Family therapy typically includes the adolescent and at least one other parent or guardian.^{68,69,70}

Individual and group therapy: individual therapy refers to one-on-one psychosocial therapeutic sessions between a patient and a therapist, whereas group therapy refers to psychosocial sessions between a group of individuals and a therapist (or two). Cognitive-behavioral therapy (CBT), brief intervention/motivational interviewing (BI/MI), and the contingency management reinforcement approach is effectively practiced.

BI/MI techniques have come to the forefront of therapeutic approaches for addiction in the past decade, and even more so recently for adolescents. This therapeutic approach uses a person-centered, nonconfrontational style in assisting the youth to explore different facets of his or her use patterns. The contingency management reinforcement approach encourages healthy changes in behavior by rewarding adolescents for objective evidence of abstinence, such as negative urinalyses. This approach, pharmacology, regards substance use and related behaviors as operant behaviors that are reinforced by the effects of the drugs involved. Following the operant conditioning model, the adolescent's drug use will subside when tangible incentives are offered for abstinence.⁷¹⁻⁸⁴

Twelve-step programs: these programs incorporate a self-help approach centered within the context of reciprocal support. They are organized around the basic tenets of Alcoholics Anonymous (AA), and are a commonly applied strategy in inpatient and outpatient treatment programs, as well as a standalone approach (ie, attending AA, Narcotics Anonymous, or Cocaine Anonymous meetings). Approximately 2.3% of AA members in the United States and Canada are under the age of 21. Within this approach, individuals support each other's sobriety through encouragement of mental and spiritual health via a lifelong spiritual journey through 12 steps.⁷¹⁻⁸⁴

Therapeutic community (TC) is typically rooted in self-help principles and experiential knowledge of the recovery community. This treatment option is holistic in nature, viewing the community as the key agent of change and emphasizing mutual self-help, behavioral consequences, and shared values for a healthy lifestyle.

Pharmacotherapy: This treatment approach uses medication to address various aspects of addiction, including craving reduction, aversive therapy, substitution therapy, and treatment of underlying psychiatric disorders.

Nearly all adolescent drug treatment approaches are based on an abstinence model. Unfortunately, a return to drug use (or relapse) is a fairly common occurrence among adolescents. Among youth treated for alcohol or drug problems, one third to one half is likely to return to some drug use at least once within 12 months following treatment.⁷¹⁻⁸⁴

15. Conclusion

Drug use, including alcohol, among adolescents has been a public health concern for decades and continues to show alarming rates of drug and alcohol use. The early initiation of drug use is correlated with an increased risk of a

constellation of problem behaviors, such as legal problems; driving under the influence of a substance; and physical, sexual, and emotional abuse. Moreover, substance use problems in adolescence have been shown to increase the risk of later development of a substance use disorder. Adolescents will have a stronger likelihood of successful recovery when their treatment options are tailored to their specific psychological, developmental, and social needs. Therefore, considering the combination of the prevalence of adolescent SUDs, the biological development of the adolescent brain, and the lack of adolescent-specific treatment services, the need for evidence-based, quality treatments for this population becomes quite clear. A multipronged and multidisciplinary approach is required to prevent the substance abuse, particularly in youth, minimize the harm and save our economy as drug addiction is avoidable if effective programmes are devised and implemented. Strong political will, robust public health interventions and community support are vital for prevention and control of this problem. Groundbreaking research is essential to identify and correct the problem of substance misuse at genetic level.

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