A SOCIO-CULTURAL PERSPECTIVE OF PRESCRIPTION DRUG ABUSE

A thesis submitted to the Caspersen School of Graduate Studies

Drew University in partial fulfillment of

the requirements for the degree,

Master of Medical Humanities

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Drew University

Madison, New Jersey

August, 2016

ACKNOWLEDGEMENTS

I sincerely thank Dr. Scibilia for introducing me to Medical Humanities and to its indispensable role in the healthcare sector. This thesis would not have been possible without his support. All my professors, throughout the year, have influenced my outlook on the changing world of medicine and public health. I am thankful to all.

I extend my gratitude to Dr. Atmaram Pawar, Dean of Pharmaceutical Science, Bharati Vidyapeeth University, Pune, India for helping me with the survey. I am extremely grateful to the students and staff of the Pharmacy college for participating in the survey.

Last but not least, I want to thank my husband, Purushottam, and my daughters for their valuable inputs, and for showing all the patience and support throughout my course.

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ABSTRACT

The aim of this research paper is to understand the problem of prescription drug abuse. Though we humans try to seek solutions to all our health problems through a lab-based process, there are many affections which have answers in our societal trends and culture. We seem to be vacillating between the thought processes of deviance from social rules to germ-based causes as the sources of disease and back. This study was done to compare the relationship between cultural values and norms and status of mental and physical health of an individual in Asia and America. My research shows that acts of defiance against set societal values have invariably produced problems in the population. In this thesis, I have compiled the results of various studies that show how social cohesion and cultural pride go a long way in preventing the youth from falling prey to vices. I have also conducted a survey where students from a pharmacy college in Pune, India were asked to respond to a questionnaire to find about their ways of handling stress and dependence on drugs for relief. While different articles confirmed that many health problems can be traced to the deviance from values and norms, further research is needed to better examine the minority cultures with a view to understanding how these races have been able to control the problem which is so rampant in the whites today. I propose that the policy makers pay close attention to preventive factors and try and incorporate them while tackling the problem of prescription drug abuse.

Chapter 1

INTRODUCTION

Misuse or abuse of prescription drugs is defined as the use of prescription medications in doses that do not meet individual clinical needs, use of prescription medications for an extended period of time, or use of prescription medications for the experience or feelings derived from the medication (NIDA, 2016). Substance abuse is defined by the American Psychiatric Association (2015) in the *DSM-IV-TR* as "a maladaptive pattern of substance use manifested by recurrent and significant adverse consequences related to the repeated use of substances." Non-medical use of prescription medicines is also defined as use without a prescription or solely for the feeling or experience caused by the drug. It is the use of medication outside the purpose for which it has been prescribed by a physician but taken by individuals for whom it is not intended, or taken non-medically. Concisely it is:

· Taking a medicine that was prescribed for someone else
· Taking a larger dose than you are supposed to
· Taking the medicine in a different way than you are supposed to. This might be crushing tablets and then snorting or injecting them.
· Using the medicine for another purpose, such as getting high

Though all age groups are at a risk of becoming abusers, adolescents, and elderly show increased vulnerability of morbidity. Prescription drug abuse (PDA) is an epidemic that has been labeled as the nation's fastest growing menace. Problems due to prescription drug abuse may manifest themselves as a failure to fulfill major role

obligations in their lives, recurrent use of substances in physically hazardous situations, recurrent legal problems related to their substance use, or recurrent problems in social or interpersonal settings secondary to substance use. If a patient is substance dependent, his disease may be manifested by intolerance, withdrawal, taking larger amounts of the substance, unsuccessful efforts to cut back on their use, a large amount of time spent trying to get the substance, important personal activities given up because of substance use, or continued use despite recurrent problems related to or caused by the substance (APA 2015).

The Drug Abuse Warning Network (DAWN), which monitors drug-related hospital emergency visits, found that drug-related emergency department (ED) visits involving prescription opioids increased every year from 1994 to 2002, representing an overall increase of 153%. In 2002, prescription opioids represented 16% of total drug-related ED visits, with hydrocodone and oxycodone representing the most frequently abused opioids. In 2005, of the 1.4 million ED visits involving drug use/misuse, 600,000 involved the nonmedical use of pharmaceuticals. Of these, 33% involved opiates/opioids, the largest single class of drugs represented. The most frequently listed opioids were hydrocodone products (37.8% of opioids mentioned), oxycodone products (31.6% of opioids mentioned), and methadone (30.4% of opioids mentioned) (DAWN, 2011; Brown, Swiggart, Dewey, & Ghulyan, 2012; CDC 2011). From 2008-2015, medical emergencies resulting from prescription drug abuse increased 132%, with opioid involvement rising by 183%. The United States makes up 5% of the world's population and consumes 75% of the world's prescription drugs. The U.S. death

rate, due to drug use, of young age group 15-24 (both male /females) is extremely high which is alarming (NIDA, 2015). In fact, Roy Bostock, Chairman of the Partnership for a Drug-Free America, commented that "For the first time, our national study finds that today's teens are more likely to have abused a prescription painkiller to get high than they are to have experimented with a variety of illegal drugs. In other words, Generation Rx has arrived" (PATS, 2005).

Table 1. Timeline Of PDA In The United States.

Year/period	Significant Events
	Humans throughout history have always searched for substances that would alter their state of mood, thoughts and make them feel better. This search has led him to drugs like cocaine, ecstasy, marijuana and in present times, certain prescription medications.
1861 to 1865	Opium consumption spread through the world and reached the U.S. during the Civil War. It was then used as a medication for wounded soldiers for pain relief.
Mid 19th century	People took drugs not only for health complaints but also for pleasure/psychic effects.
Late 19th century	By the late 19th century, medical use of morphine and cocaine had reached steep levels, especially in White, middle-class men and women.

1914	America's first widespread anti-drug campaigns lead to the passing of Harrison Narcotics Tax Act in 1914 which made opiates and cocaine prescription-only drugs.	
1920-70	The second wave of abuse, with extensive use of barbiturates and amphetamines.	
1968	Restriction on the sale of opium and opiate products by 1968-they were declared as illegal drugs.	
1980s	After the 1980s, pharmaceutical companies started rolling out new sedatives, stimulants, antidepressants, and analgesics. At the same time, new ideas about pain management became widespread justifying prescribing opioids for pain.	
1994 to 2002	Drug-related emergency department (ED) visits increased by 153%, prescription drugs mainly abused are hydrocodone and oxycodone.	
2005	Teens are more likely to have abused a prescription painkiller to get high.	Generation Rx has arrived
2010 (NSDUH)	Estimated 2.4 million Americans used prescription drugs non-medically for the first time within the past year, averaging to approximately 6,600 initiates per day.	

2011 (CDC)	Opioid prescription painkillers caused more drug overdose deaths than cocaine and heroin combined.
	The number of individuals abusing prescription drugs is larger than the number of individuals abusing cocaine, hallucinogens, heroin, and inhalants combined.
	Drug overdose currently surpasses HIV/AIDs and Hepatitis C virus as the single greatest cause of mortality in the United States.
	This third wave, now has White, working class, and middle-class Americans, many in rural or suburban areas under its clutches.
2014	Almost 2 million Americans abused or were dependent on prescription opioids.

(Vizi, 2007; Herzberg, Guarino, Mateu-Gelabert, & Bennett, 2016; CDC, 2011; NSDUH, 2011).

Table 1 shows that use of different substances for achieving an excited state of mind. Using substances for achieving exhilarated state is a common phenomenon in human history. Even today some cultures use psychostimulants, and hallucinogens but their use is restricted to certain occasions and events. The use of these substances is strictly controlled by the seniors and there are a lot of restrictions on who will use it and when. The substance abuse which we encounter in the youth today is far from this ritual based use of stimulants. Today PDA is a problem which is corrupting the lives of the younger

generation from a very early age; as early as middle school. The use has moved from an occasional intake to an addictive daily life routine.

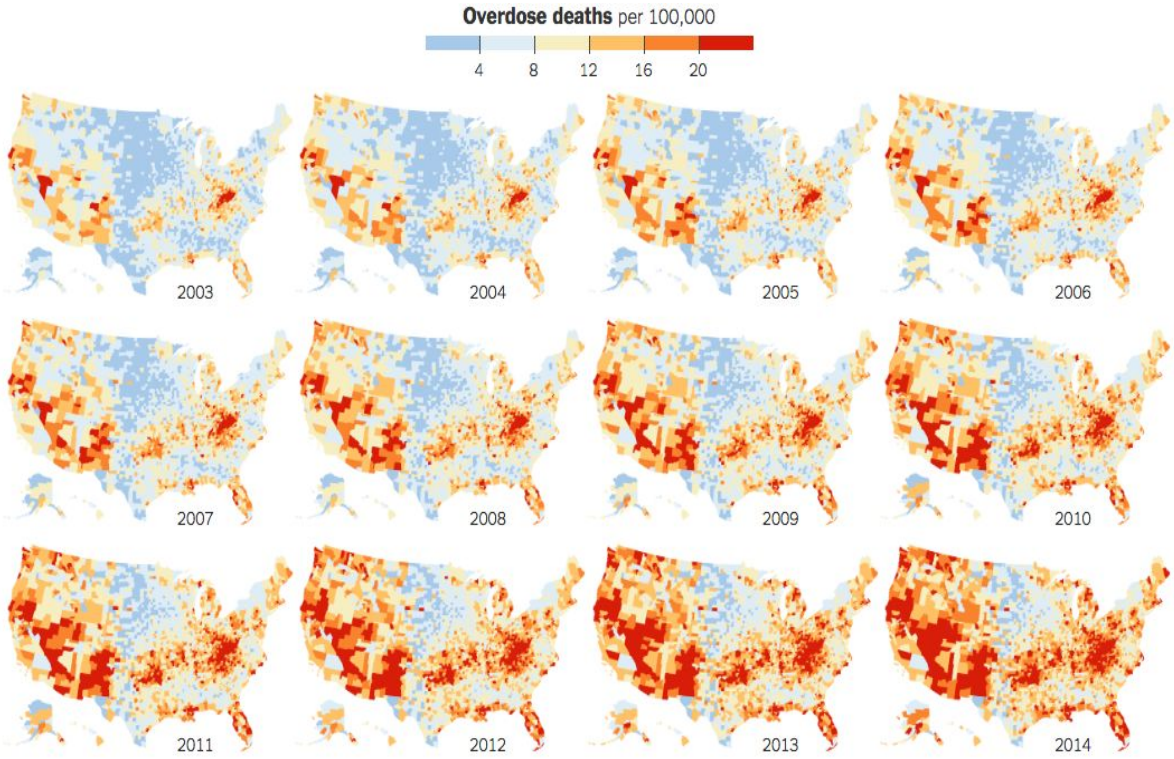


Figure 1. How the Epidemic of Drug Overdose Deaths Ripples Across America.

(Park, & Bloch, 2016). In Figure 1 we can see the spread of PDA across the country from year 2003 to 2014. The numbers have been steadily increasing in most states and the intensifying of color across the country is truly frightening.

As per Center for Disease Control's (CDC) (2016) report:

1. The most common drugs involved in prescription opioid overdose deaths include:

- Methadone
- Oxycodone (such as OxyContin®)
- Hydrocodone (such as Vicodin®)

2. Among those who died from prescription opioid overdose between 1999 and 2014:

- Overdose rates were highest among people aged 25 to 54 years.
- Overdose rates were higher among non-Hispanic whites and American Indian or Alaskan Natives, compared to non-Hispanic blacks and Hispanics.
- Men were more likely to die from an overdose, but the mortality gap between men and women is closing.

3. Overdose is not the only risk related to prescription opioids. Misuse, abuse, and opioid use disorder (addiction) are also potential dangers:

- In 2014, almost 2 million Americans abused or were dependent on prescription opioids.
- As many as 1 in 4 people who receive prescription opioids long term for noncancer pain in primary care settings struggles with addiction.
- Every day, over 1,000 people are treated in emergency departments for misusing prescription opioids.

Chapter 2

THE BASICS OF PRESCRIPTION DRUG ABU.S.E

Prescription drug abuse (PDA) is a modern epidemic due to the abuse of prescription medication; it is the use of medication other than its intended purpose usually a nonmedicinal purpose. According to the 2010 National Survey on Drug Use and Health (NSDUH), an estimated 2.4 million Americans used prescription drugs non-medically for the first time within the past year, which averages to approximately 6,600 new persons per day.

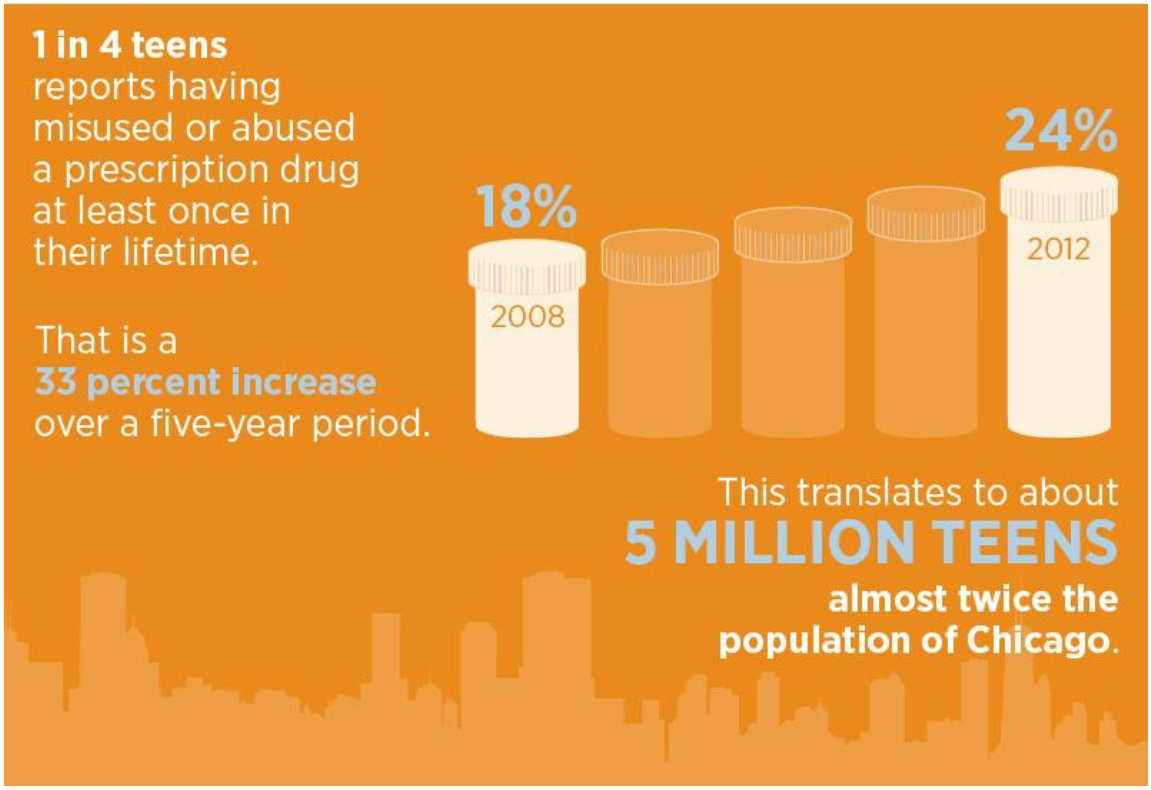


Figure 2. Teen Medicine Abuse: An Epidemic. (PATS, 2008). Figure 2 shows the seriousness and intensity of the problem in terms of the population of a state as a comparison of how large is the number of teens affected by PDA.

The common view is that the medicinals are intended for therapeutic use only. Any other use is unethical and criminal and can lead to various aftereffects. The problem deserves serious attention because the numbers are steadily increasing as the prescription drugs are perceived to be socially acceptable than other 'hard' drugs. Several types of research have shown that today many middle-aged white Americans are suffering from this problem whereas the numbers are quite low among other ethnic groups. "Three classes of controlled prescription drugs are most commonly abused:

1. **Opiates** such as oxycodone (OxyContin®), hydromorphone (Dilaudid®) or hydrocodone (Vicodin®)
2. **Sedative-hypnotics** including benzodiazepines (such as Xanax® , Ativan®)
3. **Stimulants** (such as Adderall® , Dexedrine® , Ritalin®, amphetamine)"

Currently, of these three classes of medications, the most commonly diverted and abused medications are the opiate drugs. The rapidly increasing distribution of prescription opioids (whether from legitimate prescriptions or Internet pharmacies) has helped increase the abuse of these medications, as well as the threats posed by a diversion of the medications (ONDCP 2011).

Drug use becomes a habit due to a positive reinforcement (pleasure) or a negative reinforcement (temporary relief from problems such as anxiety, depression, etc.). Drugs, alcohol, etc. do help to relieve the problems but this is a temporary effect. People, rather than fight out or try to resolve their problems, resort to drugs to cope with them. Once a person continues use of a drug for a long time, a negative reinforcement sets in. Continual use of these drugs leads to a state of addiction, withdrawal from which produce

unpleasant symptoms and signs. The longer the use, greater the intensity of the withdrawal features. People then continue the use of the drug to avoid those unpleasant symptoms. Many times the sight, smell, or availability of the drug in the vicinity is enough to stimulate the craving and elicit a conditioned response in the addict. Advances in scientific knowledge have revealed that prolonged use of addictive drugs alters the biochemical structure and function of the brain causing neuroadaptive changes (NIH, 2012).

The medications that are most often implicated in prescription drug abuse such as opioid analgesics, benzodiazepines, stimulants, barbiturates, and sedative-hypnotics are associated with positive reinforcement, compulsive self-administration, and increased dopamine activity. Each is habit forming and mood altering and scheduled by the Drug Enforcement Agency (DEA) and Food and Drug Administration (FDA). Although all scheduled drugs have abuse potential and are being abused, some drugs are more highly sought and more commonly abused than others. This is a result of the specific pharmacologic properties of the drug itself. In general, mood-altering substances are most highly reinforcing to (and hence sought by) patients with chemical dependence if the substance has a rapid onset of action, a high degree of potency or intensity, a brief duration of action, high purity and water solubility (for intravenous use), or high volatility (ability to vaporize if smoked). A representative sample of DEA scheduled drugs is given below:

Table 2. Drug Enforcement Agency Scheduled Substances.

Schedule	Medical Use	Abuse Potential	Substance/chemical
Schedule 1	No accepted medical use	High abuse potential	Heroin, ecstasy, LSD
Schedule 2	Accepted medical use	High abuse potential with severe dependence liability	Morphine, methadone, oxycodone, amphetamines, OxyContin, Ritalin
Schedule 3	Accepted medical use	Less abuse potential than schedule 1 and 2 substances	Acetaminophen with limited quantities of certain narcotic drugs, Vicodin, Anadrol
Schedule 4	Accepted medical use	Less abuse potential than schedule 3 substances	Phenobarbital, benzodiazepines, propoxyphene, pentazocine, Xanax, phentermine, Valium,
Schedule 5	Accepted medical use	Least abuse potential of scheduled substances	Buprenorphine, propylhexedrine, Robitussin AC

(Parran, 1997).

According to Substance Abuse and Mental Health Services Administration (SAMHSA, 2003), the main prescription drugs used are psychotherapeutics, pain relievers, tranquilizers, stimulants, and sedatives. Stimulants are actively used by people to help increase alertness, attention, and energy. These are used classically to deal with Attention Deficit Hyperactivity Disorder (ADHD) as well as for conditions like narcolepsy, obesity, and depression. Stimulants abuse is mostly found in college students. The relative freedom found after completing high school, and academic pressures in college, have lead to students experimenting with these drugs. They use it to stay up late to study. For these students, the main source of the drugs is their friends. Sweeney and co-authors found that those who misuse these prescription drugs (PD), already show trends of drug abuse and misuse of other illicit drugs (Sweeney et al., 2013).

The commonly used drugs such as Ritalin and Adderall, though considered safe for their prescribed purpose of treating ADHD, are amphetamine based and hence habit forming and are classified by U.S. Drug Enforcement Agency as schedule II controlled substances with a high risk of abuse. As the number of children diagnosed with ADHD is increasing, so is the production of medications such as methylphenidate and amphetamines. The American consumer spending on ADHD medications has grown to nearly $7.5 billion in 2010. These numbers include not only their prescribed use but also the non-medical use. Gazzaniga (2005) has reported that Ritalin is commonly thought to improve SAT scores, with or without ADHD, by more than 100 points. College students experiment with these drugs for various purposes such as improving concentration,

reducing hyperactivity, to ‘get high’, curiosity, to augment exercise, to counter effects of alcohol and other drugs, and weight loss.

A study conducted by Caplan et al. to assess the neuropsychiatric effects of prescription drug abuse, showed certain characteristics of people abusing the different categories of drugs:

1. Sedative-hypnotic medications - usually males, young to middle ages, lower income (but higher education), single status, with psychiatric co-morbidities such as major depression and anxiety disorders were most common abusers (Goodwin & Hasin, 2002).
2. Stimulants - adolescents and young adults with ADHD may be prone but in non-ADHD population, college students (i.e men, Caucasians, those in fraternities/sororities, with lower grade point averages) and polydrug users (Greenhill, 2006).
3. Anabolic steroids - usually amateurs and professional athletes, bodybuilders and male adolescents are the most common groups abusing these drugs (Kanayama et al., 2001).
4. Anticholinergic - young, male, single, unemployed and poorly functioning in multiple life sectors. Other high-risk groups are adolescents, prisoners and marginalized young males (Nappo et al., 2005).

Prescription drug distribution network differs from those of the traditional street drugs because PDs can be obtained from multiple sources such as doctors, pharmacies, friends and street-level dealers as against illicit drugs where neighbourhood conditions, as

well as the level of social control are important deciding factors. But in the case of PDA, little information is available about the relationship with the type of physical environment (White, Ready, & Katz, 2015). The uniqueness about the drug problem in the U.S. is that the patterns of drug-taking and drug-seeking continually shift and change. Some drugs become a hot choice and then disappear. Still, others are rediscovered, revitalized, repackaged, and recycled. Each time there is a new drug comes up, there is a frenzy of uproar calling for 'war on drugs'. In present times, deaths from drug overdose surpass those of homicides, gunshots and suicides and most of these overdose deaths are linked to non-medical prescription drug use (ONDCP, 2011).

Though all the three types of drugs - opiates, stimulants, and depressants are rampantly used, opiate use surpasses the other two. Among various reasons mentioned, 'to get high', and 'to fit in with peers' have been cited as most common reasons. Young adults use stimulants to help stay awake and concentrate on their studies whereas adults continue use of stimulants because they have become addicted to the painkillers after having used them for long for legitimate reasons. The use of prescription drugs to improve concentration, focus, and memory has many contributory factors such as low cost of the prescription drugs relative to illegal drugs, the availability of these drugs through several channels other than traditional prescriptions and the emergence of online pharmacies. Hence the non-medical use of pharmaceuticals has created a source of growing medical and ethical problems. Prescription drug abuse is a potentially growing health problem and one that needs sincere attention to prevent it from being blown out of control.

Along with other effects of misuse of prescription drugs, there is also a risk of increased resting heart rate, cognitive impairment, mental health issues, organ damage, and a potential for overdose and death. Overuse of opioid medications may also lead to chronic headaches. In women, it may lead to endocrine disruption, infertility, neonatal health risks, increased risk for anxiety and depression as well as cardiac health problems (NIH, 2015). Patients taking a prescription stimulant are at increased risk for psychological dependence on the drug due to its effects of mood elevation and euphoria. Physical tolerance for the drug will occur in three areas: mood elevation, appetite suppression, and cardiovascular events (Lehne, 2013). To receive the same euphoric effects, patients may take larger doses of the drug, which also increases their risk for more severe cardiovascular events. An overdose of a prescription stimulant will be expressed through a combination of general body pains, a high fever, signs and symptoms of dehydration, insomnia, and hyperactivity (Skidmore-Roth, 2015). Some people may combine a stimulant with over-the-counter cold medications such as decongestants. This drug combination could result in dangerously high blood pressure or cardiac dysrhythmias (NIDA, 2014a). Barbiturates have the potential to be abused as they produce CNS depressant effects similar to alcohol intoxication. An overdose of barbiturates could lead to coma, and even death. Prolonged use could lead to tolerance and psychological dependence (Skidmore-Roth, 2015). Benzodiazepines pose a danger for patients if taken in combination with alcohol (Lilley et al., 2014). When CNS depressants are stopped abruptly, rebound effects may occur (NIDA, 2014a). Withdrawal signs and symptoms for CNS depressants include a severe headache, nausea and

vomiting, muscle pain, and generalized weakness (Skidmore-Roth, 2015). A rebound seizure effect also may occur (NIDA, 2014a). Other signs and symptoms of CNS depressant withdrawal may include episodes of hallucinations, depression, disorientation, and suicidal thoughts (Felicilda, 2015).

The number of students using prescription drugs for non-medicinal use is on the rise and this problem becomes more worrisome since individuals abusing prescription drugs are more likely to become polysubstance abusers (Johnston et.al. 2013; SAMHSA, 2010). Students who abuse prescription drugs can also suffer from illness, injury, and unintentional death, academic problems, and addiction. Problems of overdose can develop when drugs are taken mixed with alcohol.

The other angle to this problem is the relationship of non-medical use of prescription drugs and lifestyle choice. This factor comes from the perspective that advances in medical technology can help us not only in sickness but also to achieve the best in life. And if technology aids a person to do the same work with lesser efforts and efficiently, then under similar conditions drugs like methylphenidate can be dubbed as ‘study aid’ or a ‘smart drug’(Garreau, 2006; Khan, 2003; Phillips, 2006). The marketing strategies used by the pharma companies to promote drugs like these as ‘miracle drugs’ create an impression that these drugs are safe and their advertised effects are acceptable. There is a discrepancy between the perspectives of these drugs being labeled as ones which are being abused versus them being acceptable cognitive enhancers or lifestyle choice (Laurance, 2003). An important aspect to consider is whether it is ethical to resort to means of ‘cognitive enhancement’ or performance enhancement. If performance

enhancement is an accepted paradigm and means are available for the same then the issue is whether everyone has the autonomy to select these means to compete with others. This would be comparable to the utilization of other medical practices for enhancing qualities such as cosmetic surgeries for beautification, use of viagra for enhancing sexuality, etc (Racine & Forline, 2008).

Research has shown that though the illegal drug use is declining among adolescents, its place has been taken up by prescription drugs. Partnership for Drug-free America (2005) has noted an increase in the abuse of prescription and over-the-counter (OTC) medications (Alemagno, Stephens, Shaffer-King, & Teasdale, 2009). The Drug Enforcement Administration has listed medications for treatment of Attention Deficit Hyperactivity Disorder (ADHD) and Attention Deficit Disorder (ADD) to be widely abused by the middle school and high school adolescents (Meadows, 2001). There are studies that show a relationship between early onset of non-medical use of stimulants and chances of dependence as well as between chances of abuse and the children who are being treated for ADHD with stimulants (Poulin, 2001; Wu & Schlenger, 2003). Analyses by the National Survey on Drug Use and Health have shown that there is an increased risk in certain groups of adolescents namely females, those with favourable attitudes towards illicit drugs and those with detached parents, as also in those whose friends use illicit drugs. The survey also confirmed that those who use some illicit drugs/substances such as alcohol, cigarette smoking, marijuana, etc. have an increased propensity towards prescription drug abuse (Sung, Richter, Vaughan, Johnson, & Thom, 2005).

Physicians are at fault in this problem due to the practice of misprescribing. Misprescribing can be broadly defined as prescribing scheduled drugs in quantities and frequencies inappropriate for the patient's complaint or illness. This may include prescribing controlled substances in large quantities or at frequent intervals and progression to multiple medications in the same medication class. Other misprescribing issues include prescribing controlled substances for family members or for friends and colleagues without a true physician/patient relationship. Often in the above situations, inadequate records are kept by the prescribing professional (Wesson, 1990). Below are the most commons reasons for abusing prescription drugs as compared to illegal drugs:

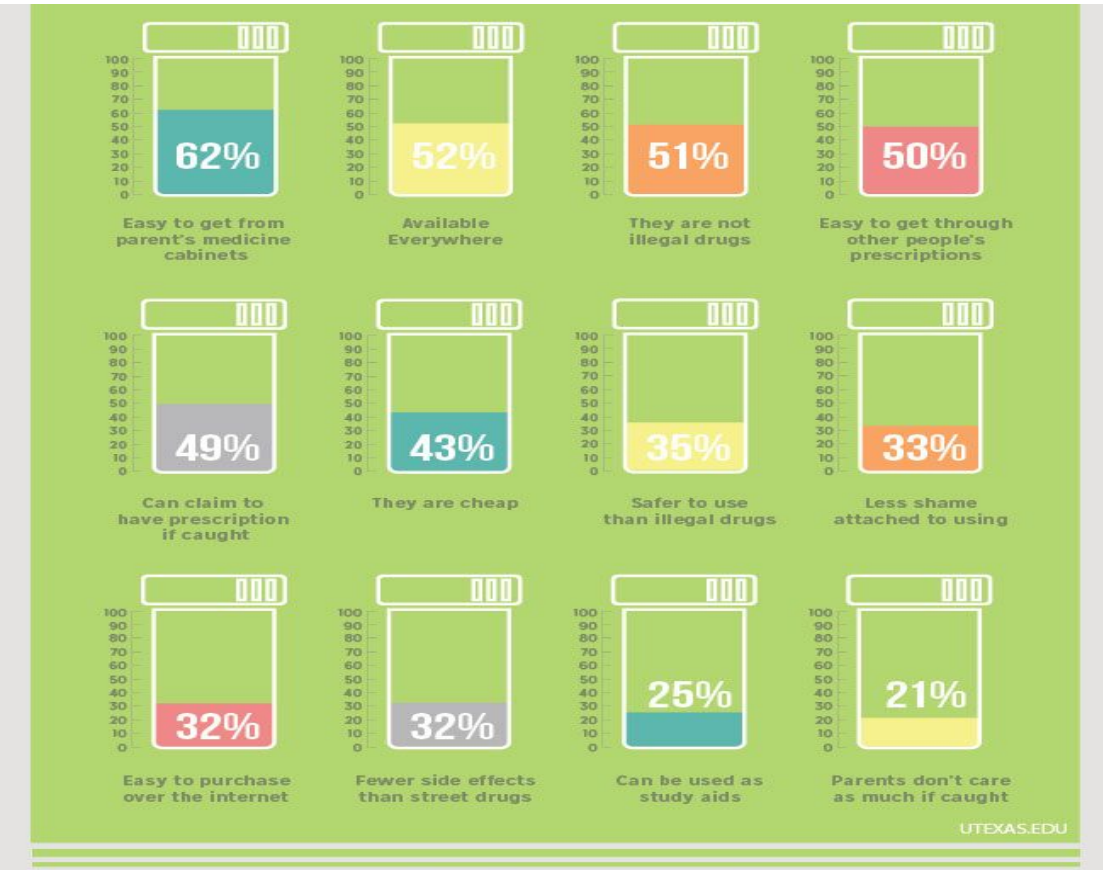


Figure 3. Twelve Reasons Teens Use Prescription Drugs (NIH, 2014)

Chapter 3

CONTRIBUTORY FACTORS

The three main contributors for PDA, according to Ted Parran, are:

1. Medication mania - a belief among doctors that the patient deserves a prescription for some complaint at each visit. This results in over-prescribing which can lead to problems such as antibiotic resistance and abuse.
2. Hypertrophied enabling - a need felt by the physician to do whatever possible to improve the present or potential disability state of the patient. This can give a chance to chemically dependent patients to manipulate such physicians to prescribe the drugs they want.
3. Confrontation phobia - in an attempt to build a physician-patient relationship, the physician gets forced into submitting to the patient's demands. Physicians' fear of confrontation plays into the hands of such patients (Parran, 1997).

Researchers have found that people with 'negative emotionality', also known as negative affectivity, had higher rates of drug abuse. Negative emotionality is a personality trait that dictates how frequently or intensely people experience dark emotions like anger, stress or sadness- feelings that contribute to impulsivity and people who are prone to experiencing these negative emotions are more likely to turn to drugs for relief, comfort or escape from their negative states. Other studies have revealed that various factors such as marital status, social contents, leisure activities, ethnicity, and religiosity play their parts in PDA. Residential living arrangements, affiliation with social organisations, and social norms are also some contributory factors (Garland, et al., 2015).

Youth culture plays an important role in the social organization of drug trends among young people. Peer networks, musical tastes, a generational shift, and broader social trends influence how and why young people use drugs. Young who participate in such cultures get influenced by the thinking style, acceptable behaviors, what is valued, and esteemed within a culture; and these forces shape the way the young behave. Research by Kelly and colleagues related to the extent of PDA across different youth cultures showed that drug misuse was found to be highest among those involved in electronic dance music (52.1%), indie rock (52.5%), lesbian parties (53.8%), and alternative rock (50.9%) (Kelly et al., 2012).

Certain qualities of the prescription drugs such as: they are legal, have no apparent deleterious effects make them be widely accepted and utilized. Many of these drugs are used to improve performance, which is seen as a positive effect rather than the harmful effect of these drugs. Also, they are familiar, easily available, and considered, though wrongly, harmless. These drugs are openly advertised and promoted on the public media and so their use seems appropriate. The attractive feature of prescription drugs is in spite of their use, it allows its user to function in a normal manner and at the same time producing a high. Sometimes these are used as standby drugs in the absence of or insufficiency of the other drugs. People find prescription drugs easy to experiment with, without fear of addiction as with the hard drugs. There is a sort of familiarity with the drugs and combinations are tried with other substances such as alcohol. They also reduce the amount of other substances to be taken to achieve the same level of excitation and thus turn out to be economical (Weathermon, Crabb, 1999).

Users in college believe that this is a passing phase and once one enters a professional college/career, the drug abuse is bound to go as one gets caught up in one's priorities. This belief is what leads them to enjoy their time in college, experimenting. Most first time users report being introduced to it by friends or partners. Other factors suggesting use are curiosity, a friend's suggestion to try it, to get high and everybody seemed to be doing it. Young adults consider prescription drugs to be more 'responsible', 'controlled' and 'safe' compared to the street drugs. Also, they are available through legal prescriptions from doctors so they are bound to be safe (Mui, Sales & Murphy, 2013). Most studies have indicated that the initiation is usually in a social setting and it is a social process. The determinants that contribute heavily to prescription drug abuse are :

1. The drugs actual pharmacological properties and actions
2. Personal characteristics and personality attributes of the user which include user's past experiences, mood, motivators, and expectations.
3. The physical and social environment in which the drug use occurs
    a. Physical setting includes the place, people and things present during the time of use and
    b. Social environment encompasses the social situation and the set of other people present, the beliefs and values of the social group.

Zinberg's Theoretical Model of Drug, Set, and Setting explains how the physical and social settings contribute towards PDA. It states that an individual is a part of a society and hence both his personal attributes as well as social context are important considerations for understanding drug use initiation. A person undergoes many events

throughout his life and these experiences build on his basic beliefs and values, attitudes and expectations. These, in turn, are influenced by the social setting of the person. (Mui, Sales, & Murphy, 2013). Akers's Social Learning Theory explains the abusive behaviour with the help of the progression of a person through the following stages:

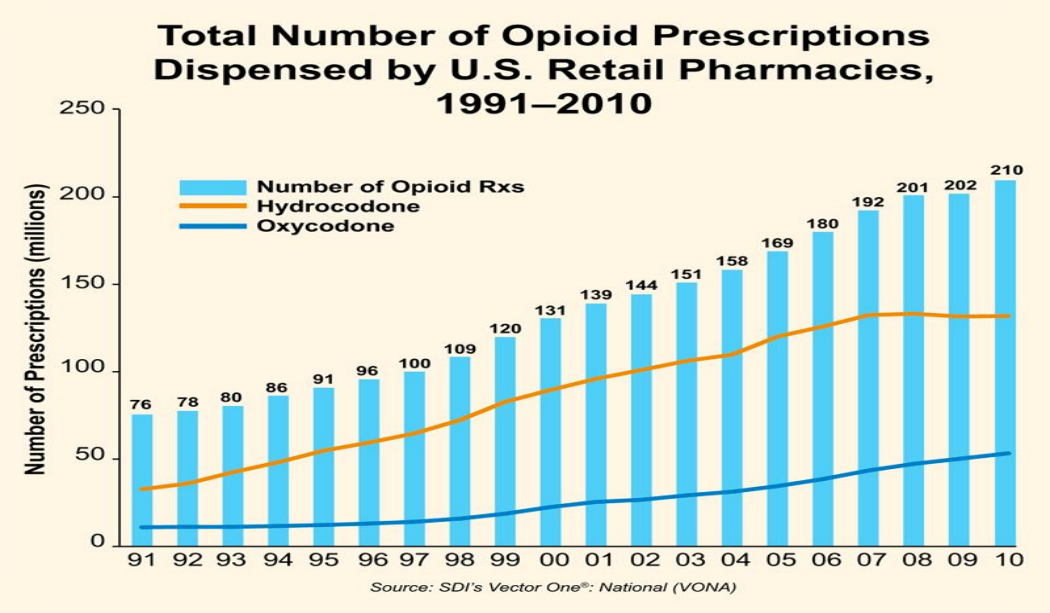
1. Differential association
2. Imitation
3. Definitions
4. Differential enforcement

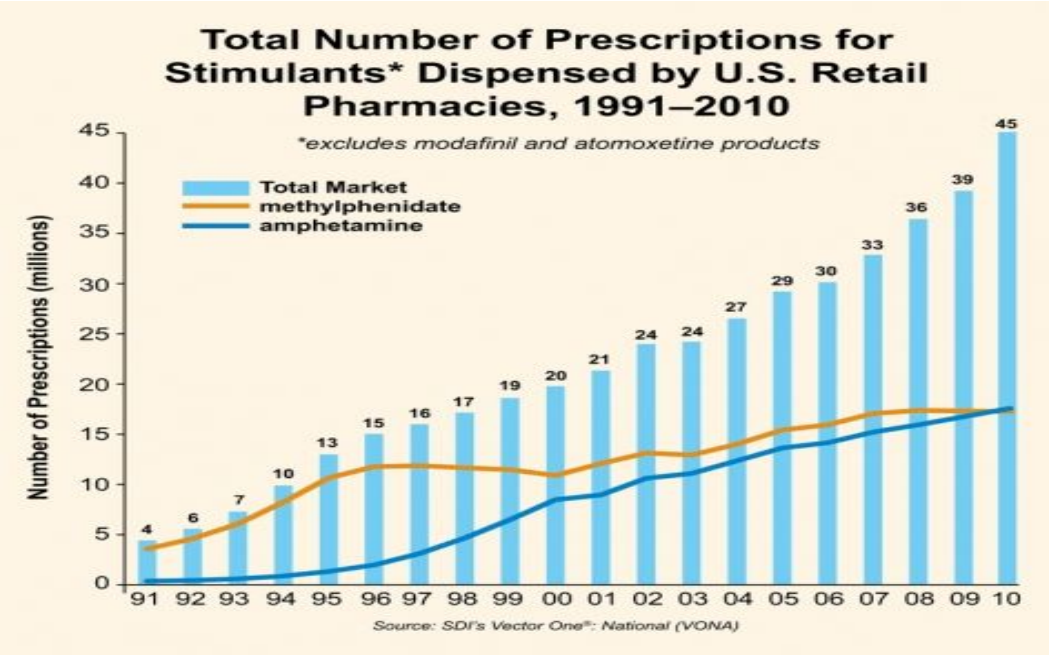
Differential association means values, attitudes which are learned through interactions with others such as family, friends, and peers. These interactions impact one's behaviour and build up one's experiences. The person then through imitation of actions and behaviours will adapt desirable and justifiable behaviours. The more a person associates with people who exhibit such behaviour, the more he finds it as normal and more the exposure more are the chances of learning and accepting this behaviour as normal. If such a person is in close and constant contact with an abuser, then through the above four steps, he/she will slowly accept the habit as justifiable and imitate it (Akers, 1977).

A bigger contributory factor for PDA is the change in the policy of dealing with pain in the U.S.. Treating pain, which was just an accompaniment to other symptoms of an illness and was not considered as the main complaint, has now become a fundamental human right. Consequently, it is being considered as a disease in itself. In 1992, the Agency for Healthcare Research and Quality (AHRQ) declared that most surgical patients are not receiving enough of postsurgical analgesics due to fear of developing a dependency to opiates which according to them is baseless, unproven (AHRQ, 1992, part

1 & 2). They argue that if opiates are given for a short duration of time, there is rarely any chance to develop an addiction. They also declared pain management as a right. Later in 1995, American Pain Society, which deals with research, education, and treatment of pain, developed guidelines for treatment of acute and cancer pain. The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) in 2001, released pain management standards. These mandates have now become the driving force for the health providers. The Veterans Health Administration (VHA) joined the antipain movement and even adopted recording of pain as 'fifth vital sign'. They emphasised that routine assessment of pain be done at all patient settings on a numeric rating scale of 1-10 (U.S. Department of VA, 2000). Governmental, non-governmental and pharmaceutical organizations campaigned vigorously for aggressive treatment of pain. All these movements affected, though subtly, the health sector for labeling pain as the 'fifth vital sign' and gave it undue importance. Many agencies had vested interests in propagating this concept such as the pharmaceutical industry (Van Zee, 2009; Allen, & Richards, 2008). The movement in the health sector gave rise to a social policy in the form of pain-centered mandate and this lead to an increase in the use of opiates. Slowly the amount consumed by Americans increased. The hike in consumption was also due to Americans' health option's payment conditions that links 'patient experience' to reimbursement which further lead to overprescribing (Fenton et al., 2012). All this resulted in an outstanding increase in the number of opiate prescriptions over the last decade. In 2007, Americans who were just 5% of the world's population, consumed 80% of the world's opiates, and 99% of world's hydrocodone. The economic impact of this

can be guessed by the sheer numbers- revenue of $11 billion in 2009 and expected to reach $15 billion by 2016 (Manchikanti, Helm, Fellows et al., 2012). Increased medical use of opiates resulted in increased abuse and subsequent morbidity and mortality as seen in the graphs below:





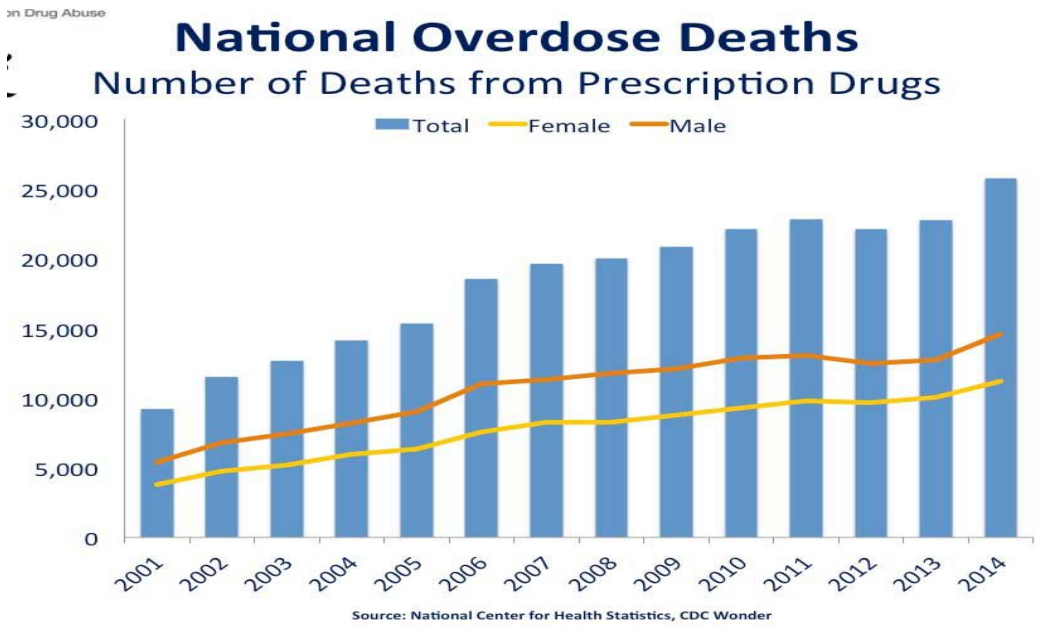


Figure 4 a) Trend In Opioid Prescriptions from 1991-2000, b) Trend In Prescriptions For Stimulants From 1991-2000, c) Deaths From Prescription Drugs. (NIDA, 2014)

According to National Center on Addiction and Substance Abuse at Columbia University (CASA), in 2005, 15.1 million people abused prescription drugs, more than those who abused cocaine, hallucinogens, inhalants and heroin combined. Their report also states that during the time when the population of U.S. increased by 13%, the number of drug prescriptions increased by 154%. The current situation is quite alarming. In 2011, CDC reported that the number of deaths from opiates far exceeded those from cocaine and heroin combined. Not only are the death rates alarming but the financial burden of misuse also needs to be looked into. The paradox of the situation is that in spite of increasing use of opiates for pain management, there is not much data to prove that this opiate use for non-cancer pain is efficacious. There is limited evidence to support any

significant improvement in the quality of life of opiate users. The medical system needs to learn from this and take early action (Kotecha, Sites, 2013).

The free market economic style in America has made health care organisations overtly for-profit entities. Today, these corporations are bureaucratic, uncaring, and having tremendous capability to lobby and sustain their self-interests. In U.S. markets, profitability drives much of pain medicines (Meghnani, 2011). Direct-to-consumer drug advertising has a major role to play in causing a substantial increase in the number of drugs being sold and used by Americans. 91% of American public claims to have seen, heard a broadcast or read a printed prescription drug advertisement (Kaiser Family Foundation, 2000, page 7). About half of all Americans now take one or more prescription drugs and there is an ever increasing trend in the use of prescription drugs across all age groups (Gu, 2010; Langli, 2012). Vigorous advertising has led to prescription drugs and their brand names rapidly entering public consciousness and this, in turn, has led to increased acceptance of drugs by the public. Aggressive marketing is of course for economic benefits to the drug companies, but these have created prospects for overuse by creating a culture that accepts prescriptions as necessary for a good life. Marketing strategies have transformed long, complex chemical compound contents of the drugs into ‘catchphrases’ which create a beautiful sensation/feeling of good. Eg. Ambien, derived from the word ‘ambient’ has become synonymous with ‘a good night’s sleep’ (Spiegel, 2009; La Barbera, 2012).

Among the three types of direct-to-consumer type of advertisements: i)reminder advertisements, ii) help-seeking advertisements, and iii) product-claim advertisements,

the reminder advertisements provide no actual product information regarding the use, function or risks of using the drug. These ads usually have pleasing audio-visual schemas. These advertisements are uninformative and hence irresponsible advertising. These ads provide suggestive or inaccurate information and as they are exempt from regulation they do not make any necessary disclosures. The way these ads are made, they imprint the brand names on the minds of the public without giving any information about the drug's actual functions or risks. The language used for marketing is ambiguous or the words used are contradictory or even confusing. Eg. ads for sleeping medication claim that they are 'non-addictive' but may be 'habit-forming'. Consumers, with this half-knowledge, experiment with the drugs and the problem of abuse ensues. Advertisements clearly foster an artificial demand for drugs. As per CBC news 2007, the United States and New Zealand are the only two countries that permit drug companies to market directly and fully to consumers (La Barbera, 2012; AMA, 2015).

According to Drug Abuse Awareness Network (DAWN) data, people who abuse prescription drugs generally tend to:

- Be white
- Be younger (when stimulants are the drug of choice)
- Use opiates
- Be women; women tend to use tranquilizers and sedatives
- Mix their medications with alcohol
- Use prescription and OTC medication in conjunction with alcohol as a vehicle for suicide
- Obtain the prescription medication by prescription from their physicians or dentists, as gifts from friends, or purchase them on the black market (NIH, 2014).

Whereas a study by Oscar Bukstein and Caroline Nguyen related to PDA by adolescents revealed that:

1. Misusing prescription drugs before the age of 16 years leads to a greater risk of substance use disorder later in life.
2. Almost half of adolescents surveyed believed that prescription medicines are much safer than illegal drugs.
3. Opiate analgesics are the most misused group of prescription medications by adolescents.
4. Psychoeducation, screening and proper safeguarding of prescription drugs can decrease misuse.

The main reasons for PDA according to them, are poorer academic performance, major depression in the past year, higher risk taking levels and past year use of other substances like alcohol, marijuana, cocaine etc. as well as the ease in acquiring these medications. The main affected group is adults age 18-34 years. The general justification given is that one can get hold of the drugs without having to go to the doctor (ease in availability), have known friends or relatives who take pills regularly, these are prescription medicines so must be right and hence much safer than street drugs (Bukstein, & Nguyen, 2009).

A study by Mary and Matt Varga concerning prescription stimulants by graduate students indicated that these students used the drugs primarily for academic reasons such as improving concentration while studying, with a desire to increase alertness, to study longer, and to increase concentration while working. Some students justified the use for improving academic performances or to help keep track of academic assignments. Some gave non-academic reasons such as use for social and psychological purposes. And others took drugs to prolong the effect of other substances like alcohol. Most students perceived

them to be safer than street drugs; others reported the use for self-medication, losing weight, to increase alertness while driving, and to help calm down during stressful activities. Matt and Mary Varga also found that the graduate students showed a greater use of PD when compared to undergraduate students. The study also showed that graduate students who abused prescription stimulants were more likely to use marijuana, cocaine, and ecstasy later. Thus the prescription stimulants acts as a gateway to other illicit substance use by creating a desire to experiment with other drugs such as cocaine, producing similar chemical and psychological responses. Students tended to rely more on information from peers than from doctors. They also believed that sharing of drugs is harmless and not a violation of the law (Varga, 2015).

Model or Observational Learning Theory explains the risk of substance abuse problem on the basis of observation of the people in the immediate surroundings. If a child grows up in a household where parents exhibit excessive use of illicit drugs/substances, there are more chances of the child developing these addictive features in the future. So also it happens when being with close friends who show similar behaviours (McLeod, 2016). A theoretical explanation for the non-medical prescription drug use is the social learning theory which states that deviant and/or criminal behavior is learned and the justification for such a behavior are learned from the intimate social group. The conditions for the social learning theory include both external as well as internal factors. External factors relate to the social group (eg. impact of friends who abuse such drugs) and internal factors relate to the individual himself or herself such as physiological or psychological preconditions to substance abuse (Peralta & Steele, 2010).

Social Control Theory (Hirschi, 1969) states that a single moral order exists and that motivation for deviance is invariant across individuals. This theory states that conformity to societal rules depends on the internalization of societal values and norms. When a bond develops between an individual and the society, it deters him/her from violating the rules. The social bond consists of four parts:

1. Attachment - this is between the individual and significant others such as parents, teachers, relatives, etc. which constrain the behaviour of the individual lest the social relationships are harmed.
2. Commitment - being a part of the social activities and goals which make the individual a stakeholder in the activities by conforming to them (eg. education). The person's aspirations and thus his/her commitment to the social activities acts as a constraint to any deviant behaviour.
3. Involvement - when an individual gets involved in social activities, he/she spends his/her valuable time, energy and at times finances in them and thus finds less time to indulge in deviant behaviour.
4. Beliefs - when he/she is doing all the above, a firm belief develops in the person regarding the social norms and values; he/she not only internalizes them but would also transfer them to the next generation. Thus he endorses them.

According to this theory, stronger the bond, more the chances that the individual conforms to the social order. When there is a weakening of the bond due to any reasons, the likelihood of deviant behaviour increases. Thus adolescents who have strong bonds with parents are less likely to abuse drugs. Similarly, schools are areas where adolescents

are provided with setting to develop bonds with peers, teachers, coaches, etc. When such a bond has developed there are less chances that the individual would abuse drugs. A strong bond with parents results in close monitoring of behaviour, limiting free time spent with peers in unstructured settings, with increased chances of getting punished for deviant behaviour. All these constrain the adolescents who value their parental bond and would not want to harm it by any unfavourable action/activity. Similarly a strong bond at school increases involvement in activities which are appreciated such as better performances, whether in academics or co-curricular. These act as motivators for favourable behaviours and raise a fear that any deviant action would jeopardize the present and future aspirations (Ford, 2008).

A person's expectations and beliefs play an important role in determining the influence of abusive substances. If he believes that a certain drug/substance is a must to boost his performance, then there is a significant change in the attitude of the person towards the substance. This effect is also seen when similar strong beliefs are promoted by his close friends. Similarly substance use/addiction is determined by, though to some extent, whom we live with, spend most of our time with and also the cultural norms experienced and grown up with. Certain cultural factors such as attending church/religious places, beliefs valued at home/by elders in the family generally are associated with abstinence from substance abuse. Those willing to engage in culturally sanctioned activities are more likely to follow/adopt the prohibitions of the particular culture. Support from family members, relations, social groups can reduce the negative influences of the drug-using peers.

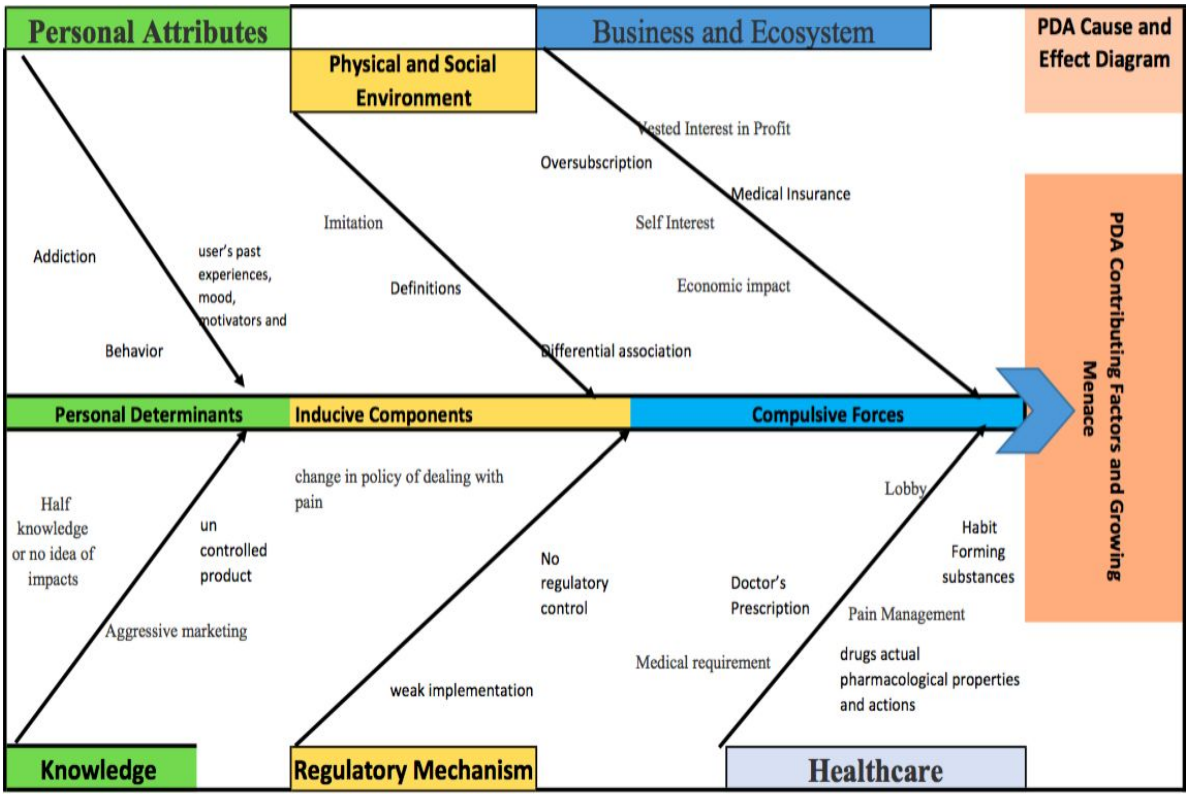
The reports of various studies detail the categories of abusers:

1. Simoni-Wastila & Strickler (2004) and Simoni-Wastila et al. (2004) found that females, whites, those with poor health, daily alcohol users and illicit drug users were more likely to use analgesics, stimulants, sedatives and tranquilizers for non-medical purposes.
2. Huang et al. (2006) found males, people with less than a high school diploma and people living in rural areas are generally more prone to have problems with non-medical drug use.
3. Merline and colleagues (2004) found non-blacks, those with a college degree, unemployed and unmarried more likely to abuse prescription drugs.
4. McCabe and colleagues (2005) found college students, males, whites, fraternity and sorority members from colleges that had more competitive admission standards and receiving lower grade point averages were more likely to use stimulants for nonmedical purposes.
5. Curarie says that there is a correlation between prescription drug abuse and feelings of exclusion at school (Webster, 2012).
6. Lifetime use of opioid prescription drugs is significantly higher among White 12th grade students (16.1%) than Hispanic (7.9%) or black (3.6%) students. The findings for sedative drugs also reflect this pattern: 11.8% of Caucasian, 9.4% of Hispanic and 3.3% of African American students in grade 12 report misuse of these drugs (Johnston et al. 2006).

7. Among teens aged 12–17, females are somewhat more likely than males to misuse prescription drugs across all drug classes, including painkillers, stimulants, and sedatives. Furthermore, girls have higher dependency and abuse rates of prescription drugs across all drug classes (SAMHSA 2004; Simoni-Wastila et al. 2004).
8. A study conducted by Arria et al. (2008), in which a random sample of 1253 first years college students ages 17-20 years participated, revealed that the non-medical users of analgesics and stimulants had significantly lower grades (GPA) in high school as compared to non-users in college. They skipped classes more often, spent more time socializing and spent less time studying. Though the reasons for using the drugs was to improve concentration and focus while studying, other reasons have also been seen such as to stay awake longer, to party or drink more alcohol for a longer period of time. The probable justification behind the use of stimulants/performance enhancers is that these students who have missed classes or have put less efforts in studies, due to socializing and drinking more, try to 'catch-up' with their studies. Rather than putting in regular hours of work and improve the grades, these groups of students seek ways to make their few study hours more efficient through the use of prescription stimulants i.e to stay afloat academically while continuing with their partying lifestyle (Hall et al., 2005; Low & Gendaszek, 2002; Teter et al., 2003).

People who have coverage of medical insurance may have easier access to prescription drugs. Simoni-Wastila (2000) did find people with insurance showing higher

rates of abuse of narcotics and anxiolytics. They also found that people who are prescribed drugs such as analgesics for legitimate reasons such as for arthritis or insomnia have a greater likelihood of abusing these drugs later. Research has found that mental illnesses are a risk factor for prescription drug abuse. The use of medication begins with a prescribed purpose but later shifts to the patient acquiring it illegally. Also, pharmacists tend to be less vigilant when filling prescriptions for individuals with mental illnesses as they have filled similar prescriptions in the past (White, Ready, & Katz, 2015). **Figure 5. Summary Of Contributory Factors**



The fishbone figure above is a cause and effect diagram of PDA showing the interconnectedness of the various factors such as personal attributes, the physical and social environment of an individual, the regulatory forces, and the healthcare sector.

Chapter 4

SOCIO-CULTURAL ASPECTS

Prescription drug abuse is a disease, whose causes are more social than personal. Various entities are involved in its initiation, sustenance, and growth. Certain components of a society foster it whereas others help prevent it. A close study of these variables will lead to solutions to this growing problem. According to Fischer et al. prescription opioid related harm is classically found in North America and the rate exceeds other low-income, middle-income, and high-income countries. The reasons they presume for this high rate of PDA in the U.S. as against other high-income countries (HIC) are:

1. The volume of prescription opioids available in U.S. is huge and this creates a higher use by the population. Reports do show that U.S. consumes a vast majority of prescription opioids than the rest of the world.
2. Lesser level of control and restrictions on prescription opioids in U.S., as compared to other HIC such as European countries, with regards to prescribing opioids for chronic cancer pain, and with no post-dispensing control mechanisms in place.
3. There is a big shift in attitudes towards pain management in U.S.; the management becoming more vigorous than needed, with greater use of prescription opioids in the young population, and with extensive use of opioids.
4. Development of ‘psychopharmacological society’ in U.S. where there is an elevated use of psychotropic medications for treating mental health disorders including ADHD.

5. The for-profit medical care providers feel prescribing more and more medications is the most desirable, feasible, and incentivized intervention. Many patients too prefer that (Fischer, Benedikt, Keates, Bühringer, Reimer, & Rehm, 2013).

A report by National Institute of Drug Abuse (NIDA) lists various factors that act as predisposers to the risk of initiating or continuing to abuse drugs such as exposure to drugs, socio-economic status, quality of parenting, peer-group influence, and biological/inherent predisposition towards drug addiction. Besides these, personal characteristics such as low harm avoidance, poor impulse control, parents with a history of alcoholism or drug abuse, high levels of family conflict, lack of parental discipline, history of academic failure and history of antisocial aggressive behavior also act as contributory factors. The other driving forces for the increased non-medical prescription drug use are increases in the number of prescriptions, easy internet access to prescription drugs and consistent changes in drugs for mutation and prescribing practices (Chakravarthy, Shah, & Lotfipour, 2013).

Socio-economic conditions such as medical insurance coverage/status, family income, results of treatment-all have a significant impact on prescription drug expenditures among children. Research done to investigate the relationship between the above factors and prescriptions drug expenditures showed that:

1. White children have a higher rate of prescription drug expenditures when compared to Black, Asian, Native American, and Hispanic children.
2. The wealthy tended to spend almost twice as much as poor children on prescription drugs.
3. Those with insurance coverage spent much, 3 times, more than uninsured.

4. It has been found that there is a greater access to stimulants for treating ADHD and this is seen to be more prevalent in Whites than in Hispanics, Blacks or Asians (Chen, & Chang, 2002).

Addiction is a complicated affliction affecting people of all ages, intelligence levels and backgrounds. The factors responsible are a complex mix of family backgrounds, genetics, environment, stress and personality traits. Children of parents who abuse drugs are 45-79% more likely to abuse drugs themselves than the general population. This means that there is a genetic component but it also means that the immediate environment plays a very important role such as the family setup in which the child grows up. Young adults show various trends in drug abuse. Peer networks, tastes, generational shifts, and broader social trends influence how and why young people use drugs. Reports from SAMHSA reveal that women tend to exhibit higher rates of prescription opioid misuse. Women have a longer life expectancy than males and are more likely to experience chronic pain. Also, they are more sensitive to pain. Women tend to make more and frequent health care visits and more often get targeted by pharma-marketing. There is an increased availability of prescription medication as drugs with abuse potential are more often prescribed to women; physicians prescribe higher doses to women and females are more likely to be prescribed opioids. Women are more likely to ingest medications than men. All the above factors result in women showing higher rates of prescription drug abuse (Hemsing, Greaves, Poole, & Schmidt, 2016).

Each of the parties below play a role in PDA:

1. Pharmacists - their education in the past thirty years has been more on pharmacology and on advising patients on the use of what has been

prescribed. There has been a lessening in the communication between the pharmacists and the prescribers outside the hospital setup. Pharmacists do not make much contribution towards educating the patients about abuse of drugs.

2. Patients - nowadays information about medications is freely available to the patients. They can buy medications without prescriptions and have become quite autonomous about their use. But they do not have any access to the knowledge about the harmfulness of the drugs.
3. Physicians - today's physicians are caught in conflicts of interest - financial, personal, and political. There is a huge shift in their attitude towards prescribing - 'patients have to be prescribed something for their every complaint'.
4. Big Pharma - the rate of discovery and development of new drugs has slowed down in the last decade. Today, the main emphasis of the pharma companies is marketing, promotion, public relations, and political lobbying. It has overt and covert influences on clinicians, government, medical research, biomedical journals, and patients' organizations.
5. Drug Regulators - for a drug to be made available to the public, the main criteria is that it should be safe and effective. But there is no compulsion that it should be better than the previous one. Though this rule was followed to allow competition and regulate price, now this competition has been boiled down to claims made by the product and the ways of promotion. This has created confusion among doctors. There is no information available about the scientific comparison between similar drugs and neither do the drug regulators enforce it.
6. Health care organizations - most developed countries have health-care provisions paid by medical insurance. These insurers are only bothered

about paying for the services rather than paying attention to the details or the quality of the care provided (Herxheimer, & Sanz, 2008).

Culture is an important factor which is believed to provide a protection against substance abuse of any kind and this extends to prescription drugs too. Cultural variables operate as significant factors in the mental and behavioral health of people. There are certain aspects of ethnic identity such as positive self-concept, feelings of ethnic pride and a strong relationship to ethnic identity, all contribute to protection against substance abuse. These features not only protect the individuals from succumbing to drug abuse but can also be used successfully to facilitate treatment and prevent relapse in those cases where the protective feature has not been so effective. Cultural variables such as ethnic pride as well as familial norms influence the health outcome against addictives such as alcohol use. For example among Asian American families, use of alcohol is discouraged in the youth whereas a modernistic (liberal) family system might give a message that 'a little alcohol use is acceptable'. This means greater the youth identification with his or her ethnic culture, lower the likelihood of his or her use of alcohol or drug abuse. Increasing life stresses increases the probability of an unhealthy 'health outcome' such as depression. But a cultural variable such as familism (family cohesion and support) reduces such adverse effects of the stressors on the individual (Castro, Alarcon, 2002).

The rates of illicit drug use are relatively less among Asian-American women compared to other racial and ethnic groups for similar reasons. Among women, family ties, loyalties, cultural expectations, and beliefs serve as protective factors against substance abuse. Moreover, the concept and value of interrelatedness among family,

community, environment and the spiritual world are essential and integral in many Asian cultures and these tenets are woven within their lives and their actions/choices in life. Many Asian Americans usually live with their immediate and extended family members or at least maintain close ties with them. Their familial bonds are much closer than typical White Americans families. What their family thinks about them, and what others think about their family matters a great deal to them. Many will pursue traditional treatment methods such as counselling from a family elder or traditional medications before they seek help from western medicine. Another important factor is that Asian race possesses the CYP2C19 genetic mutation which makes 20% of them poor metabolizers of certain drugs set as diazepam. Their disastrous initial experience with such a drug may curb their chances of any second episode in future (Fong, Timothy, & Tsuang, 2007; Fong, 2008).

The low prevalence of prescription drug misuse among Asians is consistent with lower rates of substance use in Asians as compared to other races (Watkins, & Ford, 2013). But those Asian generations who are born in the U.S. show more chances of substance abuse. This is due to stress as per many study reports. The Asian groups are caught between the threads of linkage with their native country's culture and the need to adapt to U.S. culture and norms. This effect is pronounced in adolescents who feel the pressure to be acceptable to their peers and hence have to abandon their traditional culture and beliefs and conform to the peer group's culture in the U.S. But stronger the ties with their traditional beliefs, lesser the level of substance abuse as well as the lowest number of drug-using peers (Landale, Oropesa, Llanes, & Gorman, 1999; Harris, 1995).

In Indian society, the family holds a central position. The parent-child relationship is a hierarchical one and children are expected to uphold family traditions and obligations such as showing good or high performances in schools. Family obligations and loyalty, as well as self-sacrifice and obedience towards the elders, are of paramount importance. When these children are exposed to the individualistic culture of the European American children at school, they tend to face internal conflicts of balancing between family obligations and peer acceptance (Fong, 1992; Furuta, 1992). Indian parents are usually the decision makers of their children's career and life goals. Academic success, upholding cultural values and family beliefs have utmost importance in most Indian families. Parents usually monitor their children's choice of friends as well as their everyday activities. This does deter the younger generation from immediate gratification and acts as a protection against substance abuse. Drug abuse is seen as a moral issue and one that brings dishonor to the family; the family thus losing pride and prestige in the community. It gives a stigma to the abuser as well as his/her family. Drug abuse is seen as a sign of faulty upbringing and in the person as a lack of emotional control (Bhattacharya, 1998).

Cultural orientations, norms, and values greatly influence health communication patterns (Alcalay & Bell, 1996; Backer, Rogers & Sopory, 1992). Research conducted by Gauri Bhattacharya, in the city of New York, to assess the percentage of young (13-18 years) Asian American children showing drug abuse, pointed to the influence of the parent-child communication on drug problem prevention as one of the important reasons for the low percentage of occurrence of drug abuse among the young. Consistent parental

messages about the harmful consequences of drug use have been responsible for the adolescents acquiring social competence to resist drugs (Bhattacharya, 1998). Parental attitudes to children's peer network encourage the adolescents to associate with peers who do not use drugs and who have similar values that reinforce the ones transmitted at home. Certain preventive messages among the Indian families, which is common to many other Asian cultures, such as countering the falsehood about drug use (like it is a normal part of growing up), and stressing the benefits of non-use (like emphasis on achieving good health and academic scores) have been seen to be very effective. Also, the parents who model themselves to their children with acceptable behaviours tend to reinforce and validate the importance of refraining from drug abuse (Castro & Alarcon, 2002). As against to this study of western societies have shown that youth between 18-25 years experience a 'time-out' period during which they are supposed to sort out their identities and college life provides the setting for this 'time-out' period. Various allowances are accepted during this 'time-out' such as consumption of alcohol and drugs as well as smoking. One is expected to experiment, fail and learn from experiences during this time in life. But this can provide ideal situations for a weak-minded person to use drugs and the habit continues later in life (Cote & Allahar, & Weinstein, 1996, p.74; Maguire, Ball, & Macrae, 2001).

Asian Americans and Native Hawaiians/Pacific Islanders face problems due to their cultural background where these problems are looked at as a stigma, shame. Hence the person/family tries to hide the problem/keep it within the family if such issues arise. Substance abuse is associated with a strong stigma in Asian cultures. Hence most Asian

Americans choose to deal with their problems alone or with the help of their immediate family members rather than risk public exposure. The second and later generation of young adults face a lot of stress trying to uphold the same social, moral, and religious values as their parents at home and at the same time gain acceptance from their American peers outside.

High involvement in prosocial behaviors decrease the odds of drug abuse. Students who have parents, teachers, and schools who frequently discuss the harms of drug abuse and who have set and enforced rules, are at a lesser risk of drug abuse. A study done by Vidourek, & King, found that employed students were more likely than unemployed ones to abuse over the counter (OTC) drugs. This is because employed youth tend to have increased participation in unhealthy behaviors including use of tobacco and alcohol and those who work for longer hours show more anti-social behaviors and lower school involvement. On the other hand, pro-social behaviors such as involvement in school activities, getting good grades, spiritual and religious activities participation all can serve as protective factors against substance abuse. Their study also showed that parents are significant protective factors against anti-social behaviors and thus substance abuse. Youth living with both parents are much less likely to abuse drugs as compared to those living with a single parent. Also, youth whose parents utilize drugs is more prone to abuse drugs themselves. The perception of parent disapproval itself acts as a force against drug abuse. Research has shown that youth who were never engaged in substance abuse have had a supportive and positive relationship with parents, relatives, teachers, school, peers etc. (Vidourek, & King, 2013).

A few societal changes which have contributed to the dangers of PDA in the U.S.:

1. Supply of prescription drugs with abuse potential (especially prescription opioids) has increased both in terms of a number of formulations and the absolute numbers produced.
2. There is an escalation in the demand for prescription medications with psychoactive properties mostly due to direct-to-consumer advertising. These advertisements have served to decrease the fear of these drugs.
3. There is a change in the ways to obtain these drugs - i.e. through family, friends, obtaining under false pretenses, or from drug dealers. Also many are available through online purchasing.
4. A limited number of practising physicians have received training related to PDA. This can contribute to instances of doctor-shopping by the abusers (Caplan et al., 2007).

According to anthropologists, perception, and expression of pain is a learned behaviour and culture specific. Although pain fibres which take the information to the brain for a person to feel pain are same in all humans, yet the perceptions and control of pain varies between societies (Free, 2001). The expression of pain depends on the sensory, emotional, cognitive, cultural and developmental makeup of a person and is also based on the reception one receives from those around-the social and cultural environment. Studies by Zborowski and Irving Zola have shown that there are ethnic/cultural differences in perception of pain and subsequent reaction to pain (Finley,

Allen, Kristjánsdóttir,& Forgeron, 2009). Pain management studies conducted in the U.S. have shown that the treating physicians exhibit racial biases when prescribing for pain. Whites tend to receive more opiate analgesics than African Americans, non-Hispanic whites or Asian Americans or they were more likely to get adequate analgesic medications than others. This is seen in both acute and chronic pain. Whereas NSAIDs, rather than opiate analgesics and that too in lower doses, are more likely to be prescribed to African Americans, Hispanics and Asians even though they exhibit the same level of pain. Racial/ ethnic minority individuals tend to underreport their pain levels due to factors like being intimated by the higher social status of the physician or due to pressure to appear 'stoic' (Mossey, 2011).

According to Denisco et al. the greatest reason for increasing rate of prescription opioid misuse is an increase in prescriptions of these medications for treatment of non-cancer pains. They feel alternatives should be used as far as possible and in those cases where their use is warranted, a balance should be maintained between relieving non-cancer pain with the least amount of opioid abuse (Denisco, Chandler, & Compton, 2008).

To test the hypotheis, a survey was conducted for a group of students in India to find the current status of PDA and its awareness. A google form was created with a set of questions for a group of students of a pharmacy college in Pune, India. The age group of responding students is 17-26 years. Since these students fall in the adolescent age group and are future pharmacists, they were optimal candidates for the study. The questions are pertaining to the pressure felt when with friends to experiment with drugs, whether this

has caused problems in their personal life, and whether they as future pharmacists are aware of the problem of prescription drug abuse. The detailed questionnaire with responses is attached in the appendix. The results of the survey confirm the hypothesis of this study that cultural values do play an important role in preventing the youth from succumbing to the addictive substances. The questions in the survey were framed such that they test the students' capacity to handle changes in the adolescent life in terms of academic stress, peer-group acceptance stress, and stress due to change in physical and social environment on entering college. For questions like, 'I use drugs when I feel anxious' or 'I feel confident when I drink or use drugs' or 'Drinking or doing drugs helps me forget my problems'-about 95% of youth in the sample population have given answers as 'No'. This shows that using substances for relief of anxiety and stress is not a common phenomenon in Indian culture. 31.7% have said that they have friends who use drugs and 22.8% have said that they know of people who take drugs to 'get high'. But these numbers include both alcohol users as well as drugs users. No exact numbers are available for those who take alcohol and drugs separately. This indicates that the younger generation is showing inclination towards these addictions, though in small numbers, and these need to be nipped at the bud stage before the picture gets blown out of control. Overall the survey presented a picture reinforcing the opinion of the experts regarding the importance of culture and family morals in playing a preventive role against substance abuse. No information was taken from these students as to whether they are staying with their families or in university dorms, which could be an important variable to see the

effect of family cohesion and parental control versus peer pressure on the stress coping skills.

Another short survey was carried out for the general population in which a very small number (5) people participated. The results show that about 20%-40% of people change doses of their medications without doctor's advice and do not find anything wrong in taking medications prescribed for friends, relatives, etc. Also about 60% have admitted to taking medications directly from the pharmacy for common complaints. This conforms with the situation commonly seen in most Asian countries where patients do not see much harm in taking medications from others, if prescribed for similar conditions and proven efficacious. Also their dependence on pharmacists and pharmacy attendants can be seen by the number of people taking over-the-counter medications. This is the class of people who need to be educated about the danger of developing resistance or even anaphylactic/allergic reactions to the medications if taken without a valid prescription. A detailed study needs to be conducted with still more variables to further test the hypothesis but this is a topic for future.

Chapter 5

SOLUTIONS SUGGESTED

Just as the causes of PDA are social, so also are the solutions. Studies by different researchers have shown that the most important step would be creating awareness among the population. Along with this acceptance of societal norms, family and cultural values and a reciprocal and consequential change in the public policies should bring about positive outcomes.

Standards of good clinical practice require that prescribers forge a therapeutic alliance between their patients and themselves, meaning that they fully inform and educate patients about their diagnosis, directions for medication use, dose, targeted symptoms, anticipated duration of treatment, adverse effects, drug interactions, and the rationale for taking scheduled drugs. But many times these standards are not followed and problems arise (Riggs, 2008).

Four basic steps are deemed necessary to control prescription drug abuse: 1) education, 2) monitoring, 3) proper medication disposal and 4) enforcement. It is also important for prescribers and pharmacists to understand and assess their own perceptions regarding prescription drug abuse, and their role in interpersonal communication to deter from such an abuse (Hagemeier, Gray, & Pack, 2013). Physicians should be vigilant in detecting drug-seeking behaviours in their patients.

Possible drug-seeking behavior in a patient may include:

- Manipulative behavior
- Assertive personality, often demanding immediate action
- Pressures the professional for a particular medication
- Has no interest in diagnostic tests
- Refuses to see a consultant for a second opinion
- Resists attempts to verify history or get old records
- Fails to keep their appointments
- Feigns physical or psychological problems
- Self diagnoses
- Will not accept alternative medications
- Rapid increases in amount of medication used
- Frequent, early refill requests
- Utilizes a child or an elderly person when seeking controlled substances, particularly stimulants (Brown et al., 2012).

Some measures suggested to control/prevent prescription drug abuse are:

1. Doctors should provide sound medical advice when issuing prescriptions, e.g. if a sedative has been prescribed, then the dangers of overdosing (such as causing respiratory depression) and erratic use (such as seizures) should be clearly explained as well as dangers due to continued use of these drugs for long periods of time without review.
2. The chemist shop attendants need to be sensitized to the problems of drug abuse. Chemist shops are the main source of obtaining drugs non-medically and advice of the chemist shop attendants is highly valued by customers especially in Asian

countries. These attendants need to be made aware of laws relating to irresponsible dispensing.

3. Raising awareness of the general public to these issues. Though many are educated, a big chunk of people believe that doctor's prescription is not required for common complaints or that it is alright to deviate from the prescribed dosage, in case one does have a legitimate prescription (Nattala et al., 2015).

Strategies to achieve balance in controlled drug prescribing

- Screen out chemical dependence-learn the differential diagnosis and management of acute versus chronic pain, anxiety, insomnia
- Document the diagnosis and time course whenever prescribing
- Use a controlled drug refill flow chart
- Report Dishonest Docs
- Use reputable sources for pharmacology information
- Identify common scams. Learn anti-scam techniques
- Say no
- Carefully write prescriptions
- Communicate with pharmacy colleagues (ACPM, 2011).

Prevention strategies suggested by Oscar Bukstein and Caroline Nguyen are:

1. Parent and family education of drug misuse. This responsibility lies with physicians and pharmacists.
2. Patients need to be made aware of the importance of safe and secure storage of their medications.
3. Physicians to try and prescribe medications with less potential for addiction.

4. Screening of youth and their families for high-risk characteristics and behaviors.
5. Proper documentation of diagnoses and the rationale for prescription medications and tracking their refills (Bukstein, & Nguyen, 2009).

Some other steps that can be taken by the practitioners:

1. Physicians need to be vigilant and quickly identify doctor-shoppers, those who use scams and other means to acquire the drugs. They should be firm in their decision making and be capable of saying 'no' and meaning 'no'.
2. Practitioners need to be careful while relying on pharmaceutical industry representatives regarding pharmacologic information.
3. Limit prescribing to short therapeutic courses, refusal to prescribe when pushed, and have careful documentation practices (Parran, 1997).

Herzberg et al.(2016) feel that drug monitoring systems and criminal justice approaches, which are a part and parcel or any U.S. drug policy, are unlikely to reduce the problem because these approaches, rather than solving the problem, result in a shift to newer substances with their own negative effects. They feel there is a need for an innovative preventive technique that will reduce initiation and escalation of pharmaceutical misuse and it should have components to deal with medical as well as non-medical users.

Twombly & Holtz are of the opinion that drug prevention programs should include components of prescription drug abuse in the form of information related to the risks involved in the misuse of medications. These programs should provide in concrete terms the risks involved, the identifying symptoms and signs and strategies to control the

misuse problems. The parents should be made aware of safekeeping and proper disposal of their prescription medications. At the same time measures to be tried should address the very motivations which induce the adolescents to abuse drugs such as to get high, to enhance the pharmacological effects or as cognitive enhancers. Similar programs can be introduced at the school level to educate the high schoolers about the risks involved in self-medication and misuse. This information can be incorporated in science classes and such that it will have a greater impact (Twombly & Holtz, 2008).

Normally most corrective programs are directed towards control and prevention of illicit drug use but prescription drug abuse has not yet received similar attention. These are some of the areas which need to be addressed in the preventive/corrective programs:

1. Youth who abuse prescription drugs appear to have significant alcohol and other substance abuse problems. Also, there could be serious implications of mixing prescription drugs with binge drinking.
2. Adolescents who are PD (prescription drug) abusers have serious problems related to trauma and violence. So the programs need to incorporate the associated risk factors.
3. The intervention measures should be such that they integrate abuse and mental health services. This is because PD abusers may need intense psychosocial services.
4. PD abusers also report risky sexual behaviours such as high rates of unprotected sex. So the programs need to consider sexually transmitted disease and HIV prevention aspects too (Alemagno, Stephens, Shaffer-King, & Teasdale, 2009).

PDA is usually found in individuals with sensitive/addictive personalities. There is a maximum chance of finding a comorbidity in such individuals and hence even the approach needs to be such that it addresses both the issues. Affected youth are usually 'sentenced' to rehab which in itself creates a stigma and hence not many are ready to disclose their addictions for the fear of being stigmatized. People who are struggling mentally, physically and emotionally are more likely to resort to drugs to alleviate their complaints. Family love and attention can be very supportive for such individuals and this support can bring about positive outcomes. But coercion may or may not work in all individuals and hence each case has to be dealt in an individual manner. It is important to try and understand why someone would knowingly succumb to such self-injuring habits rather than passing hasty judgements and stigmatizing them. Affected people need to looked at as patients needing help and not criminals to be branded and ostracised. There is a need for a change in the mindset to address these social diseases with a social approach.

CONCLUSION

The intention of this research paper was to draw attention to the nature of the problem of prescription drug abuse, to understand the various factors at play behind the menace. Since long, we humans have been relying completely and totally on scientific facts and lab-based findings to figure out solutions to our health problems. But there are many affections, the cure for which go beyond the confines of four walls and into the society concept and structure. Various research mentioned in the previous chapters have shown with numbers/statistics that today's problems are more a result of the ways of living. PDA has been seen to be conclusively less in many cultures due to their inherent ways of living, and values and attitudes and this information need to be used to frame policies while seeking solutions for this problem. Certain aspects of minority cultures like the family cohesion have served as a protective factor for the youth against substance abuse. It is fortunate that due to the presence of varied cultural groups in the U.S., researchers have had the opportunity to test various factors and come to conclusions. The suggestions provided by the experts need serious attention. There is a need to explore further the pros and cons of the family types-Individualistic versus Interdependent and what aspects of these family patterns offer best preemptive basis for the youth against substance abuse.

Certain policies in the U.S. have granted a free hand to some industries which have to some extent exploited the situation. There is more attention given to the business interests of these companies than the well-being of common man. Their intense lobbying has resulted in pushing the people into situations where they have less choice. The

constant presence of their products has impacted the ways of thinking and has resulted in ‘a choice by force’. A feeling has developed that ‘it has to be used because it is there’. The industries first put out their products and then devise ways to make people use them. It is time to give a serious thought to the harmful effects generated by this excess production and then forced use.

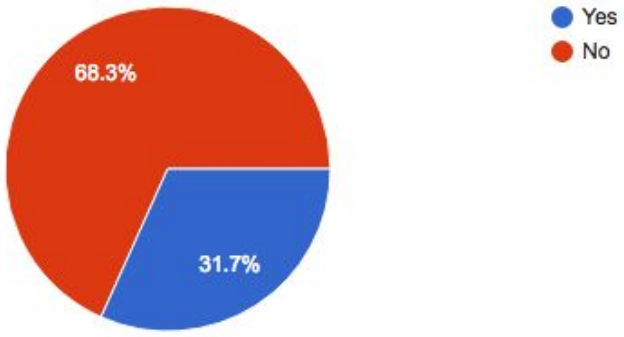
The regulatory agencies should try to incorporate those positive features of the minority races which have served to keep the families intact as well as serve as deterrents to bad influences in the surroundings. More work is needed to look more closely into the anthropological and sociological aspects of the this as well as new and similar diseases and if possible predict and prevent any such maladies in future.

APPENDIX

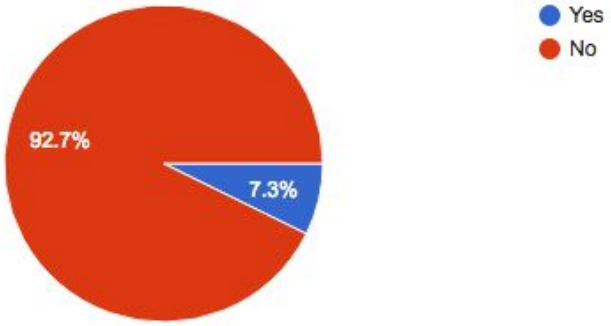
Appendix 1

Questionnaire for students:

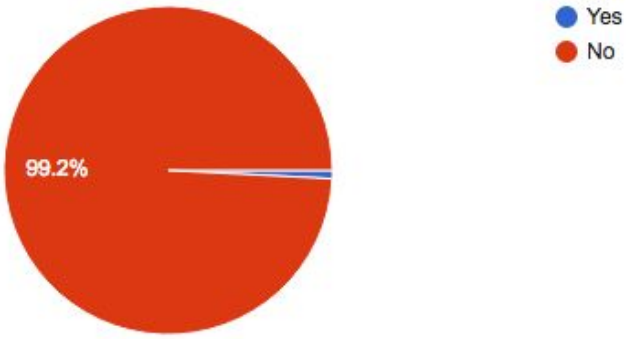
Many of my friends drink or use drugs. (123 responses)



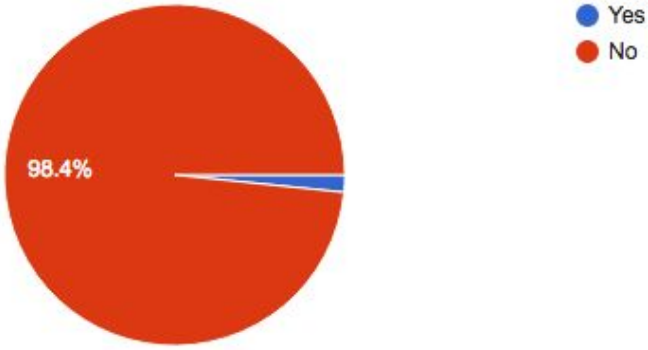
Have you used drugs other than those required for medical reasons?
(123 responses)



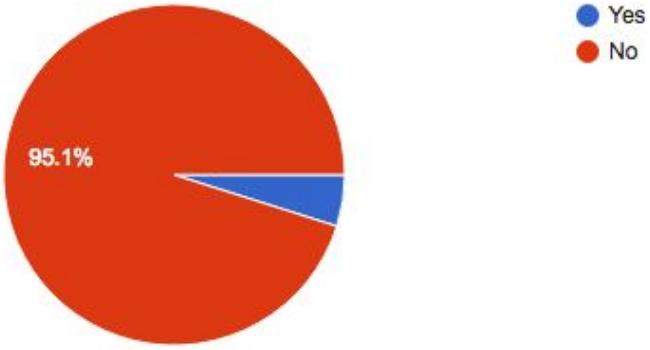
I drink/use drugs when I feel anxious. (123 responses)



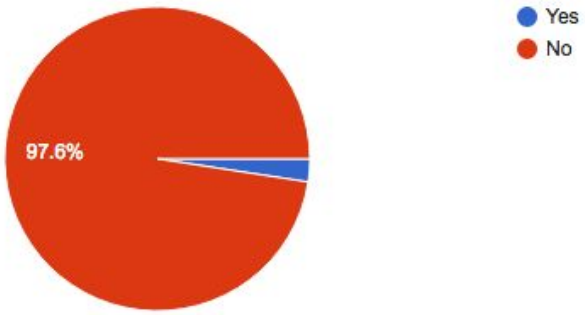
I drink/use drugs when I feel depressed. (123 responses)



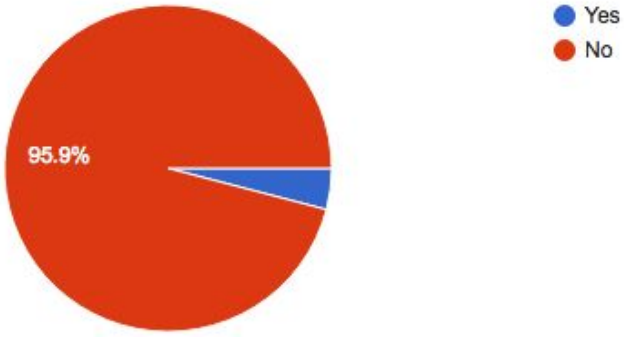
I feel more confident when I drink or use drugs. (123 responses)



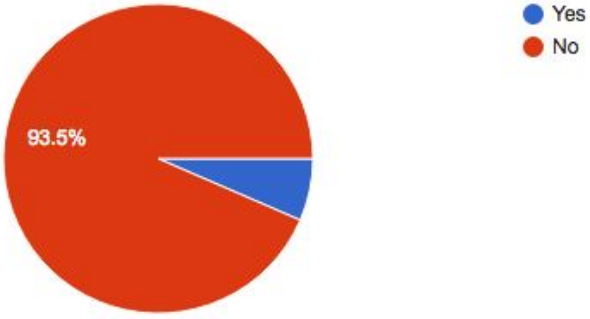
I become very anxious if I am unable to have a drink or do drugs. (123 responses)



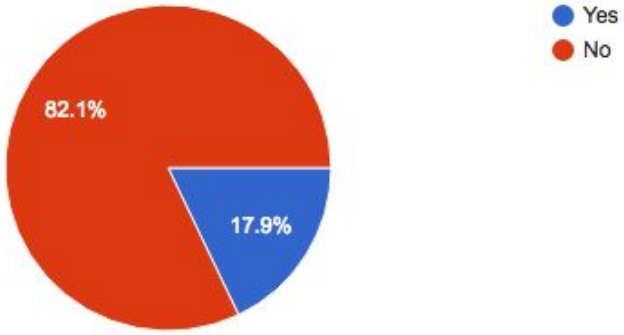
I think better when I have a few drinks or use drugs. (123 responses)



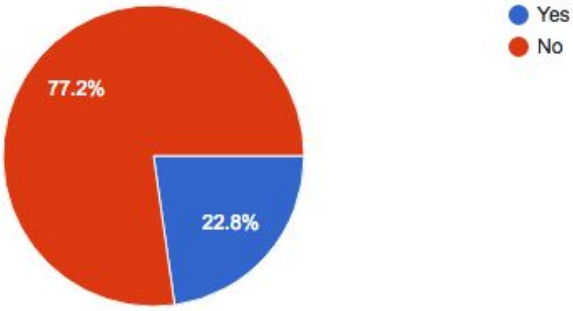
Drinking or using drugs helps me forget about my problems and relax. (123 responses)



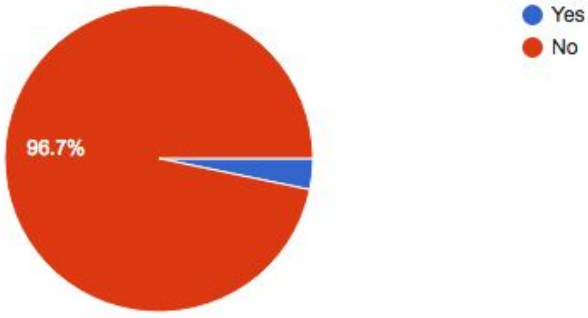
I take medications without doctor's advice. (123 responses)



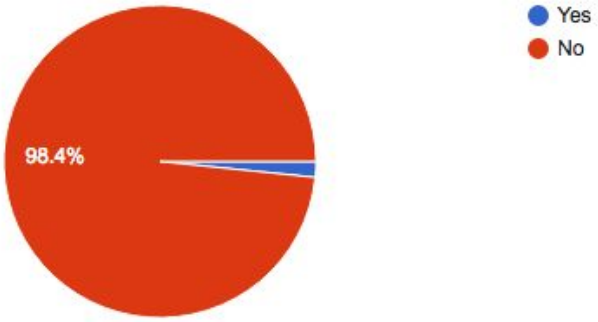
I know of many people who take medications to 'get high'. (123 responses)



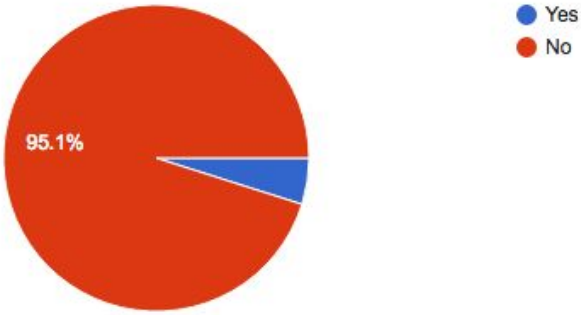
If I stopped using drugs or drinking, I would lose many of my friends. (123 responses)



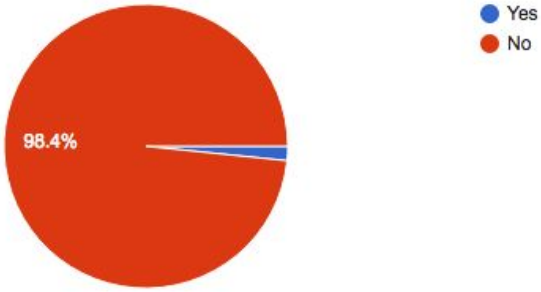
I have been engaged in illegal activities in order to obtain drugs/medications
(123 responses)



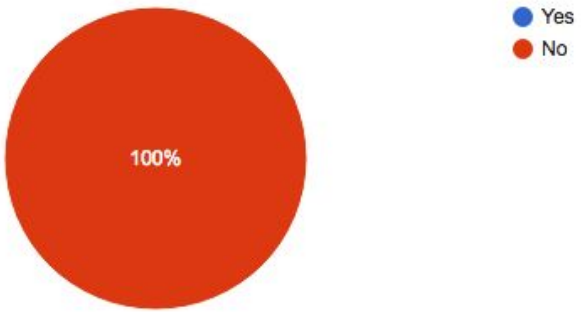
I have been forced by my friends to experiment with certain substances for fun.
(123 responses)



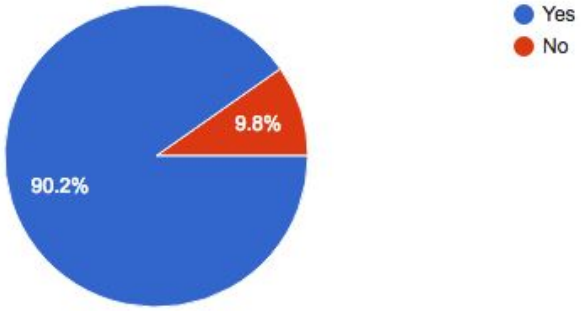
I think it is okay to change the doses of the medications without doctor's advice.
(123 responses)



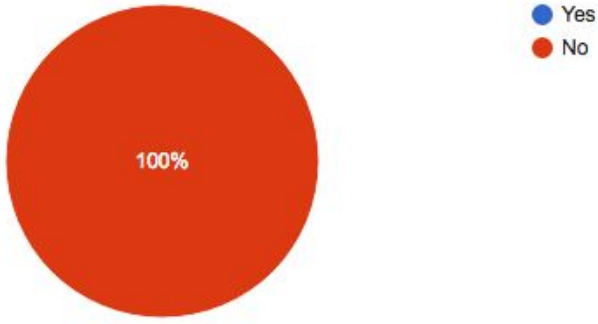
I have experienced withdrawal symptoms (felt sick) after stopping some drugs.
(123 responses)



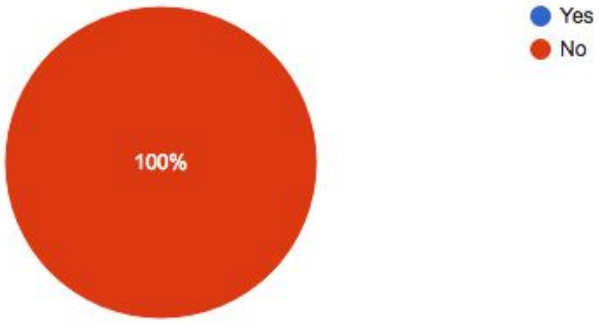
I am aware that certain medications can be abused if continued for long/without doctor's orders.
(123 responses)



I have been in trouble in college/ at home due to my drug habit. (123 responses)



I sometimes use false pretenses to get the drugs. (123 responses)



Appendix 2

Questionnaire for general population: **Y** **N**

1. I have been taking medications for a long time for my pain.

40% Y 60% N

2. I have been prescribed pain medications/stimulants/antidepressants.

20% Y 80% N

3. I change the doses without my doctor's advice.

20% Y 80% N

4. I take medications prescribed for my family members/ relatives/ friends.

40% Y 60% N

5. I know that it is unsafe to use others medications.

100% Y 0 N

6. I dispose my unused medications properly.

100% Y 0 N

7. I am dependent on my medications and feel uneasy if I do not take them.

0 Y 100% N

8. I frequently take medicines straight from a pharmacy without doctor's order.

60% Y 40% N

9. I don't think it is necessary to seek doctor's advice for common complaints.

20% Y 80% N

10. My doctor often gives higher doses of painkillers on my demand.

0 Y 100% N

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