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NARCOTIC DRUGS: THE VEHICLES TO HELL

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ABSTRACT

A substance used to treat moderate to severe pain. Narcotics are like opiates such as morphine and codeine, but are not made from opium. They bind to opioid receptors in the central nervous system. A more current term for these drugs, with less uncertainty regarding its meaning, is "opioid." Examples include the illicit drug heroin and pharmaceutical drugs like OxyContin®, Vicodin®, codeine tramadol, oxycodone, fentanyl, methadone, dextromethorphan, meperidine, buprenorphine, morphine, methadone, and fentanyl. Thus narcotic analgesics are usually administered for the relief of severe pain associated with fractures, burns, renal colic, coronary occlusion, etc., while the non-narcotic analgesics are generally given for headaches, muscular aches and pains of inflammatory origin.

KEYWORDS: Endogenous opioids, narcotics, non-narcotics, psychedelics, psychoactive drugs.

INTRODUCTION

Narcotic drugs are psychoactive compounds that have numbing or paralyzing properties. In the United States, the term is commonly associated with opiates and opioids, like morphine and heroin. The term 'narcotic' in the legal sense is quite different from that used in the medical context which denotes a sleep-inducing agent. Legally, a narcotic drug could be an opiate (a true narcotic), cannabis (a non-narcotic) or cocaine (the very antithesis of a narcotic, since it is a stimulant). Usually, narcotic analgesics are commonly used narcotic drugs. The most common narcotic analgesic in use is Morphine, may that be in a battlefield or a surgery, any emergency case, and it has got you covered. But not always are narcotic drugs used in good interests.

Narcotic Analgesics: Narcotic analgesics tend to be opioids. They bind to opioid receptors which are G protein-coupled receptors distributed in brain, spinal cord, digestive tract, peripheral neurons.

Mechanism: There are three types of opioid receptors: mu (μ-opioid receptors), delta (δ), and kappa (κ-opioid receptor). Endogenous opioids (enkephalins, dynorphin, and endorphin) do not bind specifically to any particular opioid receptor. Receptor binding of the opioid causes a cascade leading to the channel opening and hyperpolarization of the neuron. The opioid receptors have the following channel types: mu, K^+ channel; l delta, K^+ channel; kappa, Ca^{2+} channel. Hyperpolarization can lead to post-synaptic neural inhibition and presynaptic inhibition of neurotransmitter release. Post-synaptic neural inhibition can reduce analgesia and central hyperactivity may reduce its efficacy. The mechanism of kappa receptors is slightly different from mu and delta, in that Ca^{2+} channels close instead of K^+ channels, and K^+ channels open in mu and delta.[1]

Pharmacodynamics: The pharmacodynamics of narcotic drugs, also known as opioids, involves the binding of opioids to opioid receptors, which then causes a cascade of events that can lead to neural inhibition.

OPIOID RECEPTOR	CHANNEL TYPE
Mu (μ-opioid receptor)	K^+ Channel
Delta	K^+ Channel
Kappa (κ-opioid receptor)	Ca^{2+} Channel

The binding of opioids to receptors can cause: channel opening, hyperpolarization of the neuron, post-synaptic neural inhibition, and presynaptic inhibition of neurotransmitter release. Endogenous opioids like enkephalins, dynorphin, and endorphin don't bind specifically to any one opioid receptor.

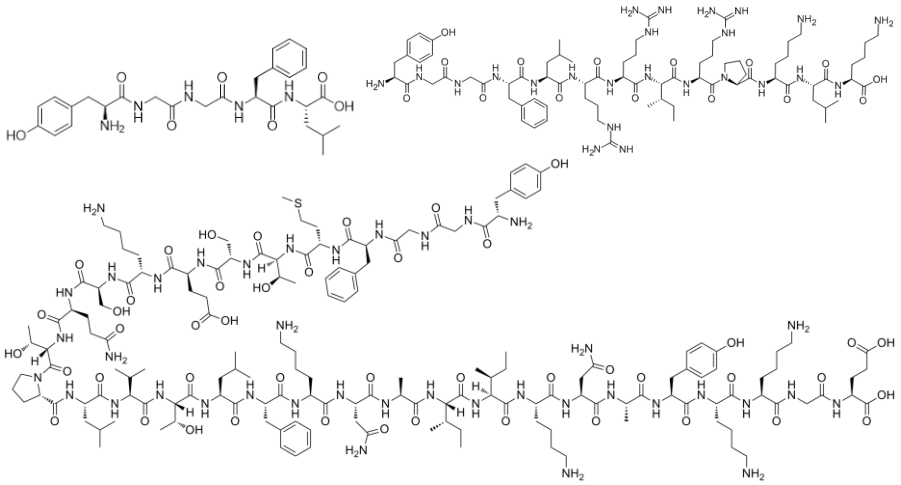

Figure 1: Endogenous opioids.

Street Drugs/Recreational Drugs

Street drugs/recreational drugs are defined as any illegal substance taken for non-medical purposes. The dangers and side effects of taking illegal drugs depend on the type of drug, the method of taking them, the dose and the circumstances. Street drugs may also contain harmful impurities. In the wake of drug use, one can follow the crimes associated with it. Violent crime in the Western Cape has increased enormously and is attributed to the dramatic rise in the use of tick. Tick changes the brain chemistry and numbs the moral reaction of user. There are three main classes: uppers (stimulants), downers (depressants) and hallucinogens (which cause you to see strange things).

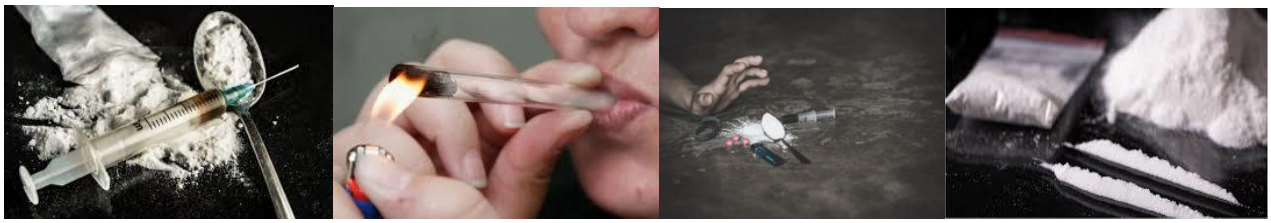

Figure 2: Narcotics addiction.

Why street drugs/recreational drugs?

Many researchers have explored the etiology of recreational drug use. Some of the most common theories are: genetics, personality type, psychological problems, self-medication, sex, age, depression, curiosity, boredom, rebelliousness, a sense of belonging to a group, family and attachment issues, history of trauma, failure at school or work, socioeconomic stressors, peer pressure, juvenile delinquency, availability, historical factors, or socio-cultural influences. There has been no consensus on a single cause. Instead, experts tend to apply the bio psychosocial model. Any number of factors may influence an individual's drug use, as they are not mutually exclusive. Regardless of genetics, mental health, or traumatic experiences, social factors play a large role in the exposure to and availability of certain types of drugs and patterns of use.[2]

According to addiction researcher Martin A. Plant, some people go through a period of self-redefinition before initiating recreational drug use. They tend to view using drugs as part of a general lifestyle that involves belonging to a subculture that they associate with heightened status and the challenging of social norms. Plant states: "From the user's point of view there are many positive reasons to become part of the milieu of drug taking. The reasons for drug use appear to have as much to do with needs for friendship, pleasure and status as they do with unhappiness or poverty. Becoming a drug taker, to many people, is a positive affirmation rather than a negative experience".

The severity of impact and type of risks that come with recreational drug use vary widely with the drug in question and the amount being used. There are many factors in the environment and within the user that interact with each drug differently. Many researchers suggest that alcohol is the most dangerous street drug. But still tobacco, cannabis is no less dangerous and is quite detrimental to health.

Effects

➢ **Uppers:** They include tick, ecstasy, and methamphetamine. These are more commonly used by younger consumers, since they make them feel stronger, energetic and decisive. Typical signs of stimulant use are a reduced appetite, high energy levels, insomnia, dilated pupils, talkativeness, irritability, anxiety, increased excitability and hyperactivity, abrupt mood changes, impatience and nervousness. It is not that they are only abused, but also used as prescription medicine. They come in tablet or capsule forms, whereas the ones abused are crude and administered by injections or snorting.

- **Short Term:** It is the stage when it is not addictive. It makes the person feel a little bit better.
- **Long Term:** Stimulants are very addictive if used in long run. It can cause arrhythmias and irregular body temperatures.

➢ **Downers:** Downers include sleeping pills and depressants. Some common examples are Xanax, Clonopins, etc.

- **Short Term:** Slow brain function, slowed pulse and breathing, Lowered blood pressure, Poor concentration, Confusion, Fatigue, Dizziness, Slurred speech, Fever, Sluggishness, Visual disturbances, Dilated pupils, Disorientation, lack of coordination, Depression, Difficulty or inability to urinate, Addiction. Higher doses can cause impairment of memory, judgment and coordination, irritability, paranoia and suicidal thoughts. Some people experience the opposite of the intended effect, such as agitation or aggression. Using sedatives (drugs used to calm or soothe) and tranquilizers with other substances, particularly alcohol, can slow breathing and the heart rate and even lead to death.

- **Long Term:** Tolerance too many depressants can develop rapidly, with larger doses needed to achieve the same effect. The user, trying to reach the same high, may raise the dose to a level that results in coma or death by overdose. Long-term use of depressants can produce depression, chronic fatigue, breathing difficulties, sexual problems and sleep problems. As a dependency on the drug increases, cravings, anxiety or panic are common if the user is unable to get more. Withdrawal symptoms include insomnia, weakness and nausea. For continual and high dose users, agitation, high body temperature, delirium, hallucinations and convulsions can occur. Unlike withdrawal from most drugs, withdrawal from depressants can be life-threatening. These drugs can also increase the risk of high blood sugar, diabetes, and weight gain (instances of up to 100 pounds have been reported). In a study conducted by USA Today, based on Food and Drug Administration data over four-year period, antipsychotics (a type of depressant) were the prime suspects in forty-five deaths caused by heart problems, choking, liver failure and suicide.

➢ **Hallucinogens**: Hallucinogens can be divided into three broad categories: psychedelics, dissociative, and deliriums. They can cause subjective changes in perception, thought, emotion and consciousness. Unlike other psychoactive drugs such as stimulants and opioids, hallucinogens do not merely amplify familiar states of mind but also induce experiences that differ from those of ordinary consciousness, often compared to non-ordinary forms of consciousness such as trance, meditation, conversion experiences, and dreams. Psychedelics, dissociative, and deliriums have a long worldwide history of use within medicinal and religious traditions. They are used in shamanic forms of ritual healing and divination, in initiation rites, and in the religious rituals of syncretistic movements such as União do Vegetal, Santo Daime, Temple of the True Inner Light, and the Native American Church. When used in religious practice, psychedelic drugs, as well as other substances like tobacco, are referred to as entheogens.[3]

Some Known Drugs

➢ **Cocaine:** It is available as a white powder, which is insufflated ("sniffed" into the nostrils) or converted into a solution with water and injected. A popular derivative, crack cocaine is typically smoked. When transformed into its freebase form, crack, and the cocaine vapour may be inhaled directly. This is thought to increase bioavailability, but has also been found to be toxic, due to the production of methylecgonidine during pyrolysis. This white powdery substance is commonly abused for its euphoric stimulant effects. It will make you feel exhilarated, hyperactive, increased self-confidence and reaction time. Some users will experience headaches, tremors, apprehension and insomnia after a single dose. Larger doses may lead to teeth grinding and compulsive acts such as scratching and finger tapping. Users may hear voices and suffer from extreme paranoia, extreme anxiety, irrational ideas and aggression. An overdose can result in a seizure, panic attack, cardiac arrest, stroke, difficulty breathing and death. Your pulse rate increases, your blood pressure rises and your pupils dilate. After long-term use, you'll look emaciated, your sex drive will decrease, your nose will always be running and you'll get frequent colds. Cocaine is psychologically and physically addictive. Once the high wears off, addicts are left craving more stimulation. Cocaine interferes with the natural secretion of dopamine and serotonin, two of the brain's chemical messengers that transmit feel-good sensations. As a result, these neurotransmitters accumulate and trigger the trademark "high". The scary fact is cocaine eventually depletes the level of neurotransmitters to such an extent that depression, apathy, fatigue, anxiety and suicidal depression can set in and may last for months. If the depletion is total and permanent, even the best antidepressants will be futile and the user may never be able to escape from the darkest depression. Some also develop Parkinson's disease which leaves them with a tremor at an early age.

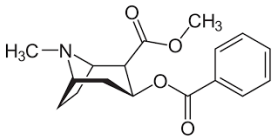

Figure 3: Cocaine.

➢ **Crack:** While the use of coca leaves as an intoxicant date back three thousand years, crack cocaine, a crystallized form of cocaine, was developed during the cocaine boom of the 1970s and its use spread in the mid-1980s. The yellowish rock known as "crack" is a version of cocaine that is smoked to produce an intense, immediate, and short-lasting high. Feelings of wellbeing, mental exhilaration and euphoria. The high is intense but lasts little over 10 minutes. The euphoric feeling is quickly followed by devastating depression equal in intensity, creating the need to smoke again and again. This cycle of highs and lows causes an addiction that takes hold faster than with any other drug. The same as for cocaine but intensified. Users may see snow lights or halos. Their heart rate may become irregular, increasing the risk of a heart attack. Because it's smoked it delivers a high dose of the drug to the brain in less than 10 seconds – with a potency five to 10 times greater than snorted cocaine. The assault on the brain is quicker and more profound. It alters the biochemical state of the brain by changing the dopamine and serotonin receptors and depleting the stores of these two feel-good neurotransmitters. This damage can be permanent, leading to severe paranoia, lasting suicidal depression or murderous rage.

➢ **Ice (Crystal Methamphitamine):** This newer and deadlier form of crystallized methamphetamine is nearly 100 per cent pure methamphetamine. Odourless and smoked in glass pipes, it is more lethal than crack and cocaine and seemingly more addictive. Within seconds smokers feel an intense wave of physical and mental exhilaration. The effects may last from four to 14 hours. Intense feelings of anxiety, depression, sleeplessness and fatigue, and eventually psychosis. Toxic psychosis similar to paranoid schizophrenia can also result from heavy, short- or long-term use. Users need ever-heavier doses to reach the same high. Prolonged use damages the lungs, liver and kidneys. Brain damage is similar to tick, but to a greater degree.

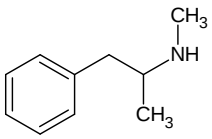

Figure 4: Methamphetamine.

➢ **Heroin:** This substance, which is essentially a modified form of the morphine alkaloid derived from opium poppies, can be consumed numerous ways (e.g., snorting, smoking, or injection) leading to an intense and addictive high. Heroin is produced from the resin of the opium poppy and is the most dangerous and addictive narcotic. Pure heroin is a white, odourless crystalline-like powder with a bitter taste. The browner the colour, the more impurities it contains. It is often diluted with starch, sugars such as glucose, powdered milk, and baby powder, washing powder, strychnine or other poisons before being sold. It is smoked, snorted or injected. A profound sense of warmth and wellbeing envelops the user and blocks feelings of pain and insecurity. Within six to eight hours symptoms such as nausea, vomiting, chills, excessive sweating and muscle and bone pain may follow. The real hell starts with the withdrawal symptoms which can set in within two days after the last fix. First it leads to suppression of pain, drowsiness, heaviness of the limbs, shallow breathing, a weak pulse, dry mouth and pinpoint pupils. Long-term use causes liver damage, poisoning as a result of additives, bacterial infections, abscesses, arthritis and infection of the heart lining and valves. High dosages can result in a seizure, coma and death. Babies born to mothers who abuse heroin during their pregnancy may be born addicted. Heroin is quickly changed to morphine in the brain, which acts on certain receptors to give that feeling of utter bliss. But the brain reacts by creating fewer of its own feel-good endorphins. Heroin destroys the chemical balance in the brain to such an extent that the user starts to experience pain in the absence of any injuries. Rapid mood changes and confusion are the result of the chemical changes in the brain.[4]

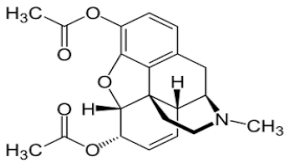

Figure 5: Heroin.

➢ **Cannabis:** In South Africa cannabis is grown in rural areas and sold as a means to put food on the table. Cannabis contains more than 426 known chemicals, including the mind-altering substances known as THCs (tetrahydrocannabinols). You feel euphoric and relaxed. But in the contrary, Panic attacks, hallucinations, flashbacks and memory loss are some common side effects. It causes frequent sinusitis and bronchitis and may cause infertility in men and women. Lung cancer is a real risk. It may harm an unborn baby, leading to miscarriage, stillbirth or early death. Foetal marijuana syndrome - characterized by lower birth weight and developmental abnormalities - is five times more common than foetal alcohol syndrome. THC changes the brain chemistry that governs feelings, memory, the senses and co-ordinated movement. Its common forms include marijuana and hashish, which are smoked or eaten. It contains at least 85 cannabinoids. The primary psychoactive component is THC, which mimics the neurotransmitter anandamide, named after the Hindu ananda, "joy, bliss, delight."

➢ **Marijuana:** This psychoactive drug substance with the active ingredient delta-9-tetrahydrocannabinol (THC) is used frequently with increased legal status.

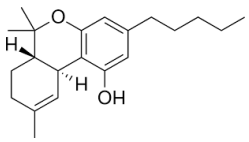

Figure 6: 9-Tetrahydrocannabinol.

➢ **Hashish:** A concentrated form of delta-9-tetrahydrocannabinol (THC) produced from the same plants that produce marijuana, it is available as an oily substances or a hard resin.[5]

CONCLUSION

Illegal drugs are drugs which have legal limitations on their ownership or use. They are illegal in certain situations (meaning a person is not allowed to have them). A drug is any chemical that affects the human body or mind when it is swallowed, breathed in, or consumed in another way. A psychoactive drug is a drug that affects the brain. Most laws against drugs are against psychoactive drugs. Some controlled drugs are allowed if you have permission (called a "prescription") from doctor. Other drugs are illegal—meaning you are never allowed to have them. Individual countries and places have different laws about different drugs, and there are also international treaties against some drugs. The most used drugs are not illegal, for example tobacco.

There are many categories (types) of psychoactive drugs. These categories have subcategories (categories within categories). For example, benzodiazepines and opiates are both subcategories of depressants. Some drugs such as ketamine have elements of two categories (hallucinogens and depressants). Every drug is different, so it is important to know the effects of each individual drug, not just the general group. Their types are determined by their effects or better to be said adverse effects.

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