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RESEARCH ARTICLE

ADVERSE EFFECT OF PSYCHOACTIVE DRUGS

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ABSTRACT

The aim of this review is to find out in detail about adverse effect of psychoactive drugs. A drug is any substance other than food, that when inhaled, injected, smoked, consumed, absorbed via a patch on the skin or dissolved under the tongue causes a physiological change in the body. However, it can cause adverse effect to the human body. Example for psychoactive drugs are cocaine, heroin, marijuana and etc. Psychoactive drugs can be classified into three types which are depressants, stimulants and also hallucinogens. These drugs can be administered through oral route as well as IV route.Cocaine is a powerfully addictive stimulant drug. The uses of cocaine in the medical field is not practically used anymore. Nicotine is an example of stimulant psychoactive drug that increase the dopamine levels in the brain. Marijuana is an hallucinogenic psychoactive drug that induces in its users a surge of spontaneous unrelated ideas. These drug had been abused by some individual due to the adverse effect that is produced by the drugs.

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INTRODUCTION

Psychoactive drug or psychotropic substance is a chemical substance that acts primarily upon the central nervous system where it alters brain function, resulting in temporary changes in perception, mood, consciousness and behavior. Examples of this drug are cocaine, heroin, marijuana and etc. These drugs are commonly used to treat anxiety and other neurological disorder. Many people have used these drugs but some have abuse these drugs and used them for addiction purpose. These drugs can be administered through oral route as well as IV route (Psychoactive drug, 2010). Psychoactive drugs can be classified into three types which are depressants, stimulants and also hallucinogens. Drugs that act as depressants can slow down the physical and mental activity of the human body are known as depressants. Example of these drugs are alcohol, barbiturates, narcotics and tranquilizers. Stimulants are drugs that increase the activity of the brain. Examples are amphetamines, caffeine, cocaine, ecstasy and nicotine. Hallucinogens can modify the perceptions and produce unusual visual images seen by the individual.Example of such drugs are marijuana, lysergic and etc (What Are Psychoactive Drugs and How Do They Affect Behavior? 2017).

Content

Cocaine is a powerfully addictive stimulant drug. The origin of the drugs is from South America from the coca leaves which is known as Erythroxylon coca. The purified chemical, cocaine hydrochloride, was isolated from the plant more than 100 years ago. In the early 1900s, purified cocaine was the main active ingredient in many tonics and elixirs developed to treat a wide variety of illnesses and was even an ingredient in the early formulations of Coca-Cola. Surgeons used cocaine as a substance to numb pain before the production of synthetic local anaethesia. Study has shown that cocaine can cause addiction to the user if the usage is not monitored (Calatayud and González, 2003). Cocaine can be in the form of two types, which are water soluble hydrochloride salt and the water-insoluble cocaine base. These two kind are the most abused kind of drugs.Hydrochloride salt which is in the form of a powder is snort by the user. Meanwhile, the base form of cocaine is created by processing the drug with ammonia or sodium bicarbonate (baking soda) and water, then heating it to remove the hydrochloride to produce a smokable substance (Goldstein *et al*., 2009). A study had shown that a pregnant women that uses cocaine will have an adverse effect towards the fetus. It will cause low birth weight and also pre-term babies (Mayes, 1994).

Nicotine is an example of stimulant psychoactive drug that increase the dopamine levels in the brain to improve attention and alertness, reduce anger and anxiety, and relieve pain. Cigarette and smokeless tobacco contain nicotine. Nicotine can cause addiction in user if used in a long term of time. The withdrawal symptoms for nicotine last for months or longer. They include irritability, craving, inability to focus, disturbed sleep, and increased appetite. Wineke *et al*. (1999) state that

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nicotine damages the genetic make-up of the body. This is because his research shows that age onset of smoking is much predictive of the extent of nicotine damage to the body than heaviness of consumption (What Are Psychoactive Drugs and How Do They Affect Behavior? 2017). Nicotine can effect pregnant woman who indulge in smoking. The concentration of nicotine in fetus may be higher than the maternal serum concentrations. Nicotine can cause hypoxia, undernourishment of the fetus, and direct vasoconstrictor effects on the placental and umbilical vessels (FROM THE AMERICAN ACADEMY OF PEDIATRICS, 2017). Nicotine can also cause an effect to the development of the brain of the newborn. This includes alterations in brain metabolism and neurotransmitter systems and abnormal brain development (Luck *et al*., 1985). It can also cause oral facial cleft (Nora *et al*., 2014; Bauer *et al*., 2005).

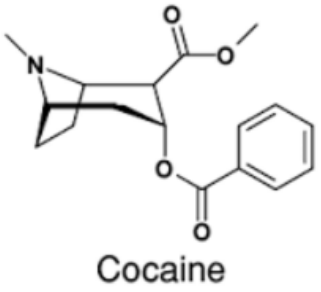

Figure 1. Structure of cocaine

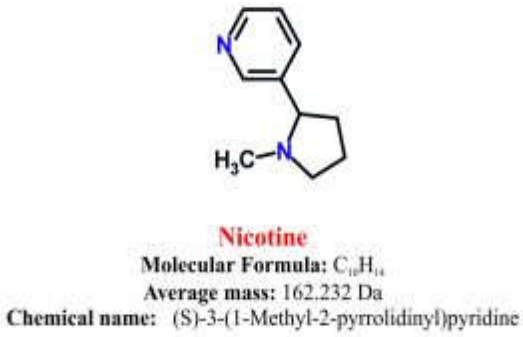

Figure 2. Nicotine structure

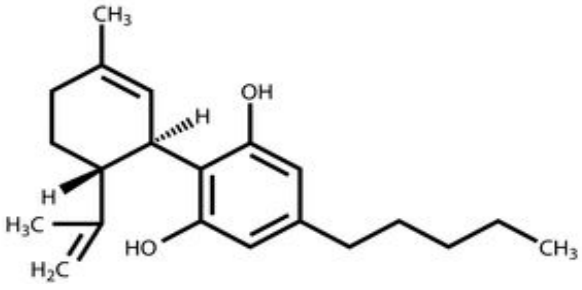

Figure 3. Structure of marijuana

Marijuana is an hallucinogenic psychoactive drug that induces in its users a surge of spontaneous unrelated ideas; distorted perception of time and place; raised sensory activity to sounds, taste, smells, and colors; erratic verbal behavior; and impaired attention and memory. Marijuana comes from the dried resin, called hashish, of the leaves and flowers of the plant Hemp Cannabis Sativa, which originated in Asia, but is now grown almost everywhere.

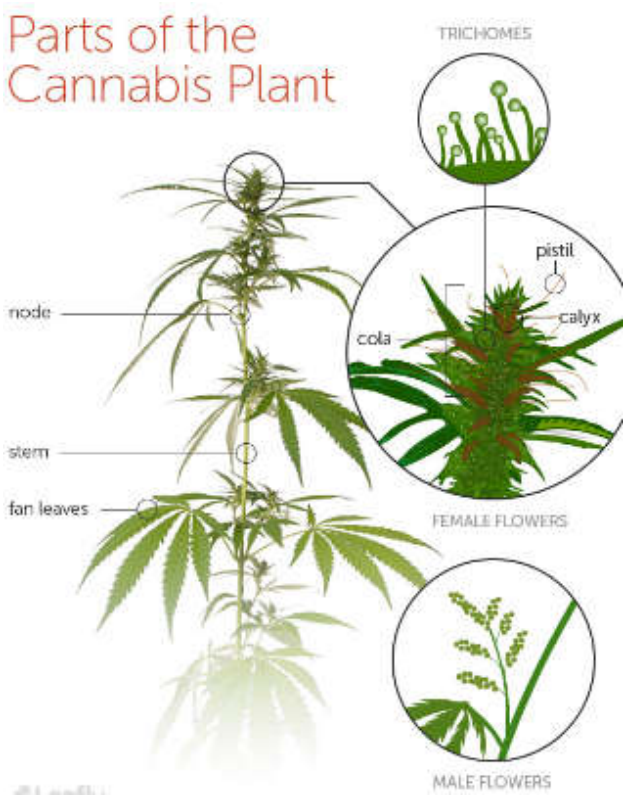

Figure 5. Parts of Cannabis plant

It has an active ingredient which is THC (or delta-9-tetrahydrocannabinol), which can cause disrupts neuronal membranes, and affects neurotransmitter and hormonal activities (What Are Psychoactive Drugs and How Do They Affect Behavior? 2017). The physical effects of marijuana include increased pulse rate, high blood pressure, reddening of eyes, coughing, and dryness of mouth. Regularly consuming large amounts of marijuana can alter sperm count and biological clocks. Psychological effects of using marijuana include a mixture of excitation, depression, and mild hallucination, making the drug difficult to classify. High school students are most likely the consumer of marijuana Marijuana has affinity towards lipid which is human milk (Jakubovic *et al*., 1974).

Conclusion

In a nutshell, psychoactive drugs have many adverse effect on the human body. Hence, every individual need to be know the side effects of every drug before consuming it.

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