



The Evaluation of effects of uses of drugs in human body

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Abstract

Drugs are chemical substances that alter the normal functioning of the body. They can be used for medicinal purposes to treat various diseases, but they can also be abused for recreational purposes. The effects of drugs on the human body depend on the type of drug, the dose, route of administration, and the individual's physiological and psychological characteristics. While some drugs are medically necessary, others produce serious negative effects on the human body. This paper discusses the effects of various types of drugs on the human body, including their benefits and harms.

Introduction

Stimulants

Stimulants are drugs that stimulate the central nervous system and produce a temporary increase in alertness, attention, and energy. They include caffeine, nicotine, cocaine, amphetamines, and methamphetamine. Caffeine is a mild stimulant and is found in coffee, tea, energy drinks, and chocolate [1]. It might make you more anxious and have a faster heartbeat. Nicotine is a powerful stimulant found in tobacco products. It can cause increased heart rate, blood pressure, and addiction. Cocaine is a highly addictive stimulant that causes a feeling of euphoria, increased heart rate, and blood pressure. It also causes damage to the heart and blood vessels, leading to heart attacks and strokes. Amphetamines and methamphetamine are prescription drugs used to treat attention deficit hyperactivity disorder (ADHD) and narcolepsy [2]. They can also be abused for recreational purposes. They cause increased heart rate, blood pressure, and addiction. They can also cause mental health problems, such as paranoia and psychosis.

Depressants

Depressants are drugs that depress the central nervous system and produce a feeling of relaxation and sedation. They include alcohol, benzodiazepines, barbiturates, and opioids. Alcohol is a legal and widely used depressant that causes impaired coordination, judgment, and memory [3]. It can also cause liver disease, cancer, and mental health problems. Benzodiazepines and barbiturates are prescription drugs used to treat anxiety, insomnia, and seizures. They can also be abused for recreational purposes. They cause drowsiness, confusion, and addiction. They can also cause respiratory depression, leading to death. Opioids are prescription drugs used to treat pain. They can also be abused for recreational purposes [4]. They cause pain relief, sedation, and addiction. They can also cause respiratory depression, leading to death. They are highly addictive, and their abuse has led to the opioid epidemic in the United States.

Hallucinogens

Hallucinogens are drugs that alter perception, mood, and thought. LSD, psilocybin, mescaline, and DMT are some of them. They cause hallucinations, altered sense of time, and mood changes. They also cause changes in perception, such as seeing colors or hearing sounds that are not present. They can cause long-term psychological problems, such as flashbacks and psychosis [5].

Cannabis

Cannabis is a drug that comes from the cannabis plant. It contains a chemical called THC (tetrahydrocannabinol), which produces a feeling

of euphoria and relaxation. It is used for medicinal purposes to treat pain, nausea, and anxiety. It can also be used recreationally. Its use can cause impairment of coordination, judgment, and memory. It can also cause respiratory problems and mental health problems, such as paranoia and anxiety [6].

Effect of chemical drugs to human

Drugs interact with the body in multiple ways. After ingesting the drug, the body absorbs it into the bloodstream and it is carried throughout the body to various organs and tissues. The drug molecules then bind to specific receptors or enzymes to initiate a biological response. This can affect the normal functioning of the body in both beneficial and harmful ways. The body may metabolize the drug to break it down into inactive components that can be eliminated from the body through the liver, kidneys, or other excretory organs. The side effects of drugs can vary from mild symptoms such as drowsiness to more severe consequences such as organ damage, addiction, or even death [7]. The ultimate effects of a drug on the body depend on factors such as the dosage, frequency of use, duration of exposure, and individual susceptibility.

Drug-related risk factors

The type and strength of a medicine, how it was created, your height, weight, age, and metabolism, the amount you take, how frequently or how long you have used the drug, and how it is taken are all factors that affect the effects of a drug and how long they persist (orally, snorting or injecting). Snorting and injecting have a higher overdose risk compared to ingesting [8]. Tetanus, infection, and vein damage are all heightened risks when injecting medications. Hepatitis B, hepatitis C, and HIV/AIDS are all at higher risk if injecting equipment is shared.

For those who have a history or family history of mental health concerns, using drugs may raise their chance of developing these problems.

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Mixing drugs— including over-the-counter or prescribed medications – can be unpredictable and dangerous.

Effects of drug use

Health, both physical and mental, can be negatively impacted by drug use both immediately and over time.

Individuals may go through some of the following:

Participating in dangerous behaviours like unprotected sex or driving while intoxicated behavioural adjustments, such as mood swings or an increase in hostility towards others, Having trouble sleeping or having negative effects, issues with cognition or memory, lack of a balanced diet or a decreased hunger, consistent colds and flu, chronic health effects include cancer or issues with the liver, kidneys, heart, or blood vessels (depending on the type of drug used and how frequently it was used), issues with one's teeth (cavities and gum disease), difficulties with the mind, such as depression and anxiety, Infection via sharing injecting equipment, addiction, overdose, psychosis, hazardous injection techniques that cause vein damage issues with money, the job, or society, etc [9].

Drug effect on human brain

Medications affect how neurons use neurotransmitters to send, receive, and process signals. Because some drugs, like heroin and marijuana, have molecular structures that are similar to those of natural neurotransmitters in the body, they can activate neurons. This enables the medications to bind to and stimulate the neurons. Despite the fact that these pharmaceuticals imitate the brain's natural chemicals, they don't activate neurons in the same manner that a natural neurotransmitter does, which results in the network sending incorrect messages [10].

Cocaine and methamphetamine are two examples of additional drugs that can either produce exceptionally high amounts of neurotransmitter release naturally from neurons or halt the regular recycling of these brain chemicals by interfering with transporters.

Substances have the power to change crucial brain regions required for vital functioning and can be the cause of obsessive drug use that characterises addiction. Drug usage affects several brain regions, including: The basal ganglia are crucial for habit and routine building as well as positive kinds of motivation, such as the enjoyable results of healthy behaviours like eating, socialising, and sex. These regions serve as a crucial node in what is occasionally referred to as the brain's "reward circuit." The euphoria of the drug high is produced when this circuit is over activated by drugs [11]. But, after repeated exposure, the circuit becomes less sensitive to the drug's presence and finds it more difficult to experience pleasure from sources other than the drug.

Stressful emotions like worry, anger and uneasiness which define withdrawal after the drug high fades and encourage the person to seek the drug again, are influenced by the enlarged amygdala. As drug usage increases, this circuit becomes more sensitive. With time, a person with an addiction utilises drugs less to get high and more to temporarily alleviate this discomfort [12].

Thinking, making plans, problem-solving, decision-making and exercising self-control over urges are all functions of the prefrontal cortex. Teenagers are particularly vulnerable because this is the final

portion of the brain to develop. When the balance between this circuit, the basal ganglia, and extended amygdala shifts the result is obsessive drug seeking and impaired impulse control in a person with a substance use disorder [13].

Conclusion

The effects of drugs on the human body vary depending on the type of drug, dose, route of administration, and individual's physiological and psychological characteristics. While some drugs are medically necessary, others produce serious negative effects on the human body. It is important to use drugs responsibly and follow medical recommendations to avoid negative consequences. Education and awareness about the dangers of drug use can help prevent drug abuse and its associated harms.

Conflict of Interest

There is no conflict of interest declared.

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