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Behavioral Neuropharmacology?

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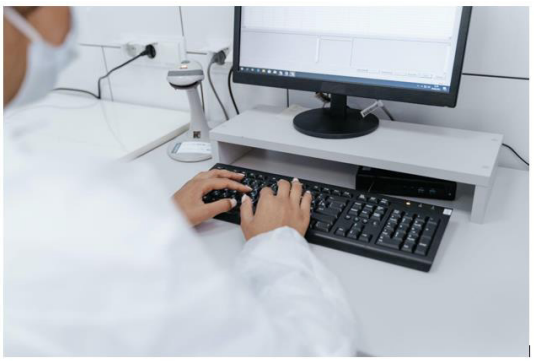

Figure 1: Photo by Tima Miroshnichenko from Pexels.

[Figure 1] Behavioral pharmacology is a cross-disciplinary field of science that investigates and interprets the impact of chemicals, drugs, and hormones on experimental and animal behavior.

The primary objective of behavioral pharmacology includes the following:

- Understanding the neurobiological aspect of behavior
- Assisting in the development of therapeutic and pharmacological tools for neuroscience research.

Behavioral pharmacology research has significant implications for topics surrounding the behavioral impact of drugs. Additionally, this discipline may also offer insight into behavior in general. Scientific advancements in behavioral pharmacology can offer fresh perspectives on how the human mind operates and instantiates behavior. You may continue reading to learn more about behavioral pharmacology and its applications.

Understanding Behavioral Neuropharmacology

Behavioral neuropharmacology concentrates on the study of drug addiction and how drug dependence affects the human mind. This field's scope may encompass areas such as:

- Anxiety
- Autism
- Neural activity measurement in drug abuse cases
- Alcoholism

- Post-traumatic stress disorder (PTSD)
- Borderline personality disorder (BPD)
- Clinical depression

Drug addiction interferes with neurotransmission, the process by which nerve cells communicate with one another. Consequently, this condition alters people's thoughts, feelings, and behaviors. Behavioral neuropharmacology can offer valuable interpretations regarding the drug-induced changes above. Linking behavioral and neuropharmacological research aims to develop a comprehensive, mechanistic understanding of the neural pathways and circuits affecting a wide range of behaviors and pharmacological responses in the nervous system. That combination of knowledge areas is essential in developing safe and effective therapeutic solutions for complex neurological disorders.

For example, despite its relatively short history, behavioral pharmacology has significantly contributed to our understanding of environmental and behavioral factors. This application specifically pertains to the effect of drugs and chemical substances on the actions of humans or other organisms' health. Consequently, experimental, and clinical procedures in behavioral pharmacology have facilitated the discovery of natural or synthetic substances and their potential role in the treatment of central nervous system disorders such as anxiety, depression, Alzheimer's, and Parkinson's disease.

Neurology and Behavioral Pharmacology

Neuropharmacology is the study of how medications affect the cellular processes in the nervous system and the neural processes that affect behavior. Experts divide the discipline into two parts, namely behavioral neuropharmacology, and molecular neuropharmacology. Behavioral neuropharmacology concentrates on the study of how drugs affect human behavior, which includes the study of how drug addiction and drug dependence influence the human brain. Moreover, behavioral neuropharmacology concerns itself with understanding the neural and pharmacological mechanisms of complex behavior and the behavioral abnormalities accompanying neuropsychiatric disorders using animal models. In contrast, molecular neuropharmacology focuses on the study of neurons and their neurochemical communication to develop drugs with a beneficial impact on neurological health. Some well-known neuroactive medications include anticonvulsants, antidepressants, antipsychotic drugs, and antianxiety medications.

Drugs and Behavioral Processes

Drugs can be a means or tool for analyzing complex behavioral processes. This application has significantly impacted behavioral studies. The following sections describe how the effects of drugs can influence the understanding of specific behavioral processes.

Drug-Reinforced Behaviors

The study of drugs as reinforcers is a vast subject of analysis known as research on drug self-administration. This area of inquiry has made significant contributions to the understanding of addiction's neurobiology and the development of better treatments for drug addiction. However, related studies have also contributed to understanding reinforcement as a behavioral process.

Drug Addiction

Substance use disorder, also known as drug addiction, is a disorder that impacts an individual's brain and behavior, resulting in an inability to regulate the use of an illegal or legal substance or medication. Several examples include substances like alcohol, marijuana, and nicotine. Individuals with drug addiction typically continue using these products despite having adverse consequences. Addiction can begin with the use of a recreational drug in social situations [1,2].

Drug use has become more common for some people. Others develop a drug addiction after exposure to prescribed medications or receiving medications from a friend or relative who requires drug prescriptions. The risk of addiction differs depending on the drug. Some medications, such as opioid pain relievers, are more dangerous and can cause addiction more quickly than others. As time passes, you may require higher drug doses to get high. You may soon require the drug to feel good. You may find it increasingly challenging to avoid drugs as your use increases. Attempting to refrain from drug use may result in intense cravings and make you physically unwell. These are common withdrawal symptoms. To overcome your drug addiction and remain drug-free, you may require assistance from your physician, family, friends, support groups, or an organized treatment program. You may need help if your drug use is out of control or causing problems. The earlier you seek assistance, the better your chances of long-term recovery.

Acknowledgment

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Conflict of Interest

No conflict of interest.

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2. Steven I. Dworkin (2019) Behavioral Neuropharmacology. OBM Neurobiology.