Alcohol Use Disorder

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**Introduction and overview**

Mental disorders have both behavioural and biological explanations, and the field of biopsychology attempts to look at mental disorders from both perspectives. According to biopsychology, mental health is a product of genetic and physiological factors. Alcohol use disorder, for instance, is one of the mental disorders studied under biopsychology. Alcohol use disorder refers to excessive dependence on alcohol. Alcoholics often drink too much, despite legal and health restrictions. Alcohol use disorder has enormous social and economic effects. For example, alcohol-dependent people are often disorderly, losing their manners and causing social disturbances. Also, people who develop an addiction to alcohol end up using all their incomes on alcohol, which leaves them destitute. Alcoholism is a cause of many domestic problems, including domestic violence. Child neglect may also result from alcoholism because a drunk parent cannot efficiently provide basic needs for a child. Alcohol use disorder is, therefore, one of the most problematic mental diseases.

**Biopsychology methods used to study and treat alcohol use disorder**

Thanks to the developments in neuroscience, addiction is no longer just a matter of people's bad choices and behaviours. Neuroscience focuses on establishing the relationship between the brain and alcohol addiction. According to studies, alcohol affects the brain by altering its crucial function and processes. For example, alcohol interferes with brain chemistry and communication patterns. It also affects its structure and, therefore, the functioning (Winger et al., 2005). The neuroscientific perspective aims for brain changes as a result of alcohol use. According to neuroscientists, excessive consumption of alcohol stirs some changes on the brain, which, in turn, cause a loss of control, hence compulsive drinking. Under this perspective, therefore, treating alcoholism should go beyond behavioural techniques to include neurological interventions.

**Annotated bibliography**

Winger, G., Woods, J. H., Galuska, C. M., & Wade‐Galuska, T. (2005). Behavioural perspectives on the neuroscience of drug addiction. Journal of the Experimental Analysis of Behavior, 84(3), 667-681.

This article examines drug addiction from both neuroscientific and alternative approaches. According to the authors, alcohol addiction is a product of the interaction of brain functions and behaviours. The authors explain the neuroscientific perspective of drug addiction, including the associated areas of the brain. The study also examines the brain changes that alcohol causes, including how these changes create a compulsion to drinking. The authors explain that drinking too much alcohol affects brain functions, which, in turn, affects people's ability to control their drinking behaviours. This article is particularly useful in defining the relationship between addiction and the brain. It shows how biopsychology relates to addition.

Herman, M. A., & Roberto, M. (2015). The addicted brain: understanding the neurophysiological mechanisms of addictive disorders. Frontiers in integrative neuroscience, 9, 18.

The authors of this article describe alcoholism as the process of consuming chemical compounds of neurological significance. Authors explain that the chemical compounds found in alcohol interact with peptide and neurotransmission systems. For example, the central amygdala of rats has impaired GABAergic transmission from consuming morphine. Authors suggest that drinking alcohol interferes with crucial neuron activities, which cause addiction. This article is beneficial in further understanding the link between alcohol abuse and the brain. While alternative approaches focus on behavioural interventions, the neuroscientific methods look at the brain function, and they offer a different approach to treating alcohol use disorder.

Gilpin, N. W., & Koob, G. F. (2008). Neurobiology of alcohol dependence: focus on motivational mechanisms. Alcohol Research & Health, 31(3), 185.

A lot of research undertaken to understand the causes of alcoholism focuses on the neural basis. The authors of this article talk about moving from using alcohol to becoming addicted or dependent on alcohol. The article explains how the chemical compounds found in alcohol interfere with neural circuits and processes, such as stress, reward, and arousal. The study also examines positive and negative reinforcement, showing how each affects addiction. Furthermore, the authors explain the neuroadaptation process, noting that alcohol use relies on its positive reinforcement impacts on the user. This article is useful because it outlines the development process of alcohol addiction, paying attention to the neurological processes involved.

Chodavadia, S. (October 18, 2015). Alcoholism: A Neurological Perspective. The National High School Journal of Science. Retrieved from <https://nhsjs.com/2015/alcoholism-a-neurological-perspective/>

This source describes why alcohol addiction occurs. According to the author, a regular intake of alcohol causes the body to develop tolerance, required to protect the liver and the brain. As a person drinks alcohol, the liver produces alcohol dehydrogenase, an enzyme that digests alcohol. The more a person consumes alcohol, the more the body produces this enzyme. With time, the body starts to demand more and more alcohol to make use of the enzyme, hence addiction and dependence. The brain, through dopamine signalling, also adapts to higher levels of alcohol. The authors explain that there are many biological factors at play in the body of an alcoholic. Thus, no single drug can treat it. This article helps to demystify the biological processes involved in addiction, and it is, therefore, crucial in understanding the biopsychology behind alcohol use addition.

Azevedo, C. A., & Mammis, A. (2018). Neuromodulation therapies for alcohol addiction: a literature review. Neuromodulation: Technology at the Neural Interface, 21(2), 144-148.

The authors describe several alternative neurological therapies used to treat alcoholism. Authors explore the effectiveness of each method. This paper established that the administration of intrathecal is more effective, especially among people with severe alcohol use disorder. The article is useful in providing neurological interventions for treating this disorder.