Neuroscience-based framework for addiction diagnosis

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When it comes to an addictive disorder, you either have it or you don't. But this dichotomous nature of the diagnosis fails to recognize the complexity and diversity of addiction's origins and manifestation in people. A new review in *Biological Psychiatry* proposes an Addictions Neuroclinical Assessment (ANA) to incorporate more clinical information into the diagnosis of addictive disorders.

According to first author Laura Kwako from the National Institute on Alcohol Abuse and Alcoholism in Bethesda, Maryland, although treatment options exist, capitalizing on the burgeoning knowledge of the neurobiological origins of addiction could help find treatments that address the diversity within the addiction diagnosis. The ANA is an effort to meet the need for a neuroscience-based framework for diagnosis which the researchers hope will advance understanding of how addictive disorders emerge and how to classify them..

Past efforts have been made to categorize addictive disorders based on the substance of abuse, for example, alcohol versus cocaine. But differences and similarities between addictions are not constrained by the type of drug. In the review, the researchers propose a dimensional framework, incorporating behavioral measures with brain imaging and genetic data.

"It is evident that the current diagnostic categories are broad and encompass enormous clinical heterogeneity," said Dr. John Krystal, Editor of Biological Psychiatry. "The development of dimensional

approaches to complement current diagnostic categories may help to provide more effective individualized treatments for addictions."

The ANA incorporates previous efforts of several other initiatives and adopts the framework from the National Institute of Mental Health's Research Domain Criteria (RDoC), a research framework for studying psychiatric disorders. The researchers considered domains of RDoC that were most relevant to addiction and built a framework that can be used in a clinical setting. It assesses processes related to three areas of functioning: organizing behavior toward future goals (executive functioning), altered perception of an object or event that makes it seem more attractive or important (incentive salience), and increased negative emotional responses (negative emotionality).

In the review, the researchers emphasize the need to also collect brain imaging and genetic information from patients. Although they currently have little utility in the clinic, the researchers hope that the comprehensive measures will facilitate future understanding of the origin of addiction at a biological level.

"The proposed Addictions Neuroclinical Assessment described in our article leverages knowledge of the neuroscience of addiction to identify a package of assessments that may be used to more precisely identify different subtypes of addictive disorders," said Kwako, adding that the effort will improve diagnosis of addictions and alleviate the enormous societal burden of addictive disorders.

More information: "Addictions Neuroclinical Assessment: A Neuroscience-Based Framework for Addictive Disorders," DOI: 10.1016/j.biopsych.2015.10..024

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