

## **Weaponizing Neuroscience**

### **The Myths That Fuel the War on Drugs**

The USA's War on Drugs has left an undeniable mark on public policy, social attitudes, and, most importantly, has destroyed many lives and families. Central to the underlying philosophy of this "war" is a long-standing narrative against drug use, rooted in the Brain Disease Model of Addiction ([BDMA](#)), which frames addiction as a chronic and irreversible brain condition. While the neuroscientists that deemed this term initially intended to reduce stigma, the model has often been misinterpreted and misapplied, reinforcing punitive policies and stigmatization.

### **Flawed Neuroscience Underlies The Brain Disease Model**

The BDMA states addiction is a chronic condition in which drug use causes permanent damage to the brain which is, to some degree, irreversible. As with other diseases, neuroscientists emphasized the genetic factors that underlie addiction. However, critics argue that the BDMA oversimplifies addiction; reducing it to brain abnormalities while ignoring the cultural, social, and environmental factors that contribute to substance use and addiction. Dr. Wayne Hall, Emeritus Professor at the National Centre for Youth Substance Use Research at the University of Queensland, Australia, has published extensively on the issue. According to Hall and other researchers, the research that underlies the BDMA is dubious at best. Specifically, many of these papers compare images of brain activity between drug users and non-users, frequently showing a decreased amount of activity in the brains of those who've used drugs (Think "[This is your brain on drugs](#)"). Hall highlights the limitations of current neuroimaging techniques and their applications to drug use: "While they've provided insights into how drugs affect the brain, they're far from conclusive in proving addiction as a chronic brain disease. The emphasis on pharmacological solutions often neglects more comprehensive approaches like psychosocial support."

### **The BDMA Neglects Effective Treatments**

This narrow framing of addiction has had profound implications. Treating addiction as a purely neuroscientific medical issue has led to over-reliance on drug-based treatments and sidelined more holistic interventions. Researchers have looked for an "elixir of abstinence"- a drug-based treatment for addiction that will "cure" drug users. This miracle treatment has yet to be found, but thousands of hours and millions of dollars have been poured into drug-based treatments; money that could have gone toward more effective treatments. Hall notes, "Contingency management, which involves giving small rewards for staying abstinent, has shown promise in treating drug users but doesn't align with the BDMA's framework, thus it hasn't been emphasized. The model's focus has often come at the expense of environmental and psychological interventions that could be equally, if not more, effective."

## **Policy Impacts of Misapplied Neuroscience**

The US government's War on Drugs has weaponized neuroscience to justify harsh punitive policies. During its early years, government-backed research often exaggerated the detrimental effects of drugs. The research that was used to support the War on Drugs was the same research that was used to create and support the Brain Disease model, resulting in an increase in stigmatization of drug use, which is the antithesis of the original intentions of the BDMA. Dr. Carl Hart, a Columbia University neuroscientist and social activist, stated in a [2015 TED Talk](#): "Any observed difference in brain scans between drug users and non-users was immediately classified as a deficiency, even when cognitive tests showed normal results... These findings were promoted as fact to support punitive policies."

This misrepresentation extends globally. A jarring [example](#) was seen in the Philippines, where former President Duterte claimed that methamphetamine use permanently shrinks the brain, thus addicted individuals did not deserve to live, legitimizing thousands of extrajudicial killings. Such pseudoscience has been used to dehumanize drug users and excuse state violence. It's a clear example of how flawed science, influenced by the government, can lead to devastating real-world consequences.

## **A Legal Perspective on the BDMA**

Jessica Hunter, a Cook County public defender, has witnessed firsthand the intersection of drug policy and the criminal justice system. "Almost all the people I encounter with drug issues are impoverished," she says. "For them, the punitive system in place often provides little more than a revolving door."

Hunter describes how the threat of imprisonment can sometimes motivate individuals to seek rehabilitation. "Some clients tell me they needed that threat to commit to treatment," she acknowledges. However, she emphasizes that this approach doesn't work for everyone. "For those with little to lose, prison isn't a deterrent. What they need is comprehensive support: housing, mental health care, and community resources."

Hunter also highlights the gendered dimensions of addiction and social support. "Men are more socially isolated and less likely to have community-based support systems," she explains. "This makes them less likely to succeed in treating their addictions without external help."

Hunter recommends we shift our focus towards social programs that can help people that are struggling with addiction. "Someone that views themselves as having little to nothing to lose is a very common profile of a severe drug user," she states. Providing support systems for these individuals has been very effective, and the idea of shared experiences and support is the philosophy that underlies groups such as Alcoholics Anonymous or Narcotics Anonymous.

## Need for a Shift Toward a Holistic Approach

Silvana Santilli, who supervises Problem-Solving Courts for Cook County's Office of the Public Defender, offers a nuanced perspective on the BDMA, recognizing its strengths while pointing out its limitations. "In my experience in the legal system, portraying addiction as a disease has helped secure rehabilitative resources for defendants. The BDMA's framing has been instrumental in shifting public perceptions away from viewing addiction as a moral failing," she explains. Because of this, she is cautious against completely abandoning the model. "While it's true the BDMA has its flaws, it's also allowed us to approach addiction more holistically in some cases. Treatment is prioritized over incarceration more often now, and that's a critical step forward."

As for future steps for more effective treatment, Santilli emphasizes the importance of tailoring treatments to individual needs. "Most people with addiction have underlying experiences that trigger their substance use. Addressing these factors is crucial for effective treatment," she argues.

## Redefining Drug Policy: Possible Steps

Most people would not argue with the fact there needs to be a change in drug policy. In June 2024, activists and experts gathered at a [United Nations summit](#) to address the global failures of the War on Drugs and to discuss next steps. An independent expert at the event made a compelling case for change, stating, "Ending criminalization, stigmatization, and discrimination... will improve access to information, goods, services, and facilities for those with drug addiction." This call to action showed how punitive drug policies often worsen the problems they aim to solve; perpetuating poverty, addiction, and societal marginalization. While the recommendations leaned heavily toward harm reduction and public health-focused strategies, the summit also highlighted the complexity of achieving lasting change, urging policymakers to consider both compassion and practicality in replacing outdated approaches with evidence-based solutions.

In 2001, Portugal decriminalized [all drugs](#), taking a radical approach, shifting the focus from punishment to public health. The initial success of Portugal's decriminalization model provides a compelling counterpoint to punitive approaches and a framework for future legislation; however, recent years have revealed some [challenges](#), including resource limitations for treatment programs and concerns about complacency in addressing addiction's root causes. Portugal initially saw significant decreases in overdose deaths, HIV infections, and drug-related incarceration rates. However, these shortcomings highlight the need to reassess societal frameworks like the brain-disease model to ensure they balance public health solutions with sustained investment and accountability. While public health-focused policies can reduce harm, they must be dynamic and adaptable to the evolving needs of the community.

## **Conclusion**

As the neuroscience community revisits the BDMA, the societal and policy implications are becoming clear. Addiction is not just a condition of the brain, but a dynamic interaction of biological, psychological, and social factors. Advocates like Dr. Hart and Dr. Hall call for a shift towards harm reduction and evidence-based approaches, along with societal change.

The War on Drugs has long been fueled by flawed neuroscience and punitive policies. By revisiting the science, acknowledging the failures of the BDMA, and investing in holistic, individualized treatment, society can take meaningful steps toward addressing addiction as a multifaceted issue. It's time to replace myths with facts and punishment with compassion.