Contingency Management, Substance Use Disorders, and Criminal Justice

Contingency management (CM) has been studied as an intervention for substance use disorders (SUDs) for decades. Despite extensive evidence of its effectiveness, CM is among the least widely adopted evidence-based practices, a reality called out by the Biden-Harris Administration’s priority of “identifying and addressing policy barriers related to contingency management interventions (motivational incentives) for stimulant use disorder.”

Understanding the basic principles of CM and why it works are critical to its prospects for wider adoption, both generally and among populations whose circumstances may pose greater challenges to CM implementation, including individuals with criminal justice involvement.

What Is Contingency Management?

Far more structured than the colloquial term “carrots and sticks” implies, CM is an intervention based on the principles of operant conditioning, a term coined by B. F. Skinner in 1938 to describe the roles reinforcement and punishment play in modifying behavior. Reinforcement is intended to increase a targeted behavior; punishment is intended to decrease a targeted behavior. Reinforcement and punishment can be either “positive” (adding a contingency to effect change) or “negative” (removing a contingency to effect change), as exemplified in the table at right. Repeated reinforcement or punishment gradually leads to new behaviors. (“Consequence” is used hereafter to avoid the now-aversive connotation of “punishment.”)

The Science Behind Contingency Management

The long-established use of CM to treat SUDs is driven partially by the belief that SUDs are also a form of operant conditioning. Simply put, drugs release massive amounts of dopamine, the chemical in the brain that regulates emotion and motivation. This reinforcement (“reward”) leads an individual to repeatedly use drugs. CM provides an opportunity to provide “tangible and immediate reinforcement that can effectively compete with drug reinforcement to promote abstinence and alternative non-drug-related behaviors.” Sustained abstinence helps the brain recover naturally from the damaging effects of dopamine dysregulation (figure 1).
Salience, Immediacy, and Consistency

The effectiveness of the reinforcement or consequence is influenced by its salience (relevance to the individual), immediacy (how quickly it is administered), and consistency (how reliably it is administered).\(^5\) Researchers found this to be true during a 4-year study of the impact of positive behavioral reinforcement on engagement in a prison-based drug treatment program. Participants in Project Behavioral Reinforcement to Increase Treatment Engagement (BRITE) earned treatment, programming, and behavior points (collectively referred to as Motivational Points) that could be redeemed for items from the prison commissary; increased privileges ranging from low to very high value (see figure 2); or donations to an approved charity. The opportunity to earn privileges was far less alluring than expected due to the lag time associated with the institutional effort to accommodate the privilege (lack of immediacy) and the value of the privilege itself to the participants (lack of salience).\(^6\)

Salience, immediacy, and consistency were also identified as critical factors in an intervention that featured CM-based goal-setting groups led by a probation officer and clinician. Supporting Offenders to Avoid Recidivism and Initiate New Goals (SOARING) in Baltimore County, Maryland, aimed to promote abstinence from drug use and attainment of life goals among individuals on probation through the following:

- Positive reinforcement
  - Charting progress and certificate of achievement
  - Verbal praise from probation agent, clinician, and peers
- Negative reinforcement
  - Removal of the group session requirement upon achievement of goals
  - Less frequent urinalysis when abstinence is sustained

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**Figure 2: Project BRITE**

Examples of Earnable Privileges

- Low value: Extra lunch
- Medium value: Extra blanket for 30 days
- High value: Additional family visits
- Very high value: Cell change
• Positive consequences
  o Requests for more information on why goals were not achieved
  o Sanctions for failing to attend group (e.g., written/verbal reprimand, daily sign-ins, summons to court)

Program participants’ unwillingness or inability to choose achievable and meaningful goals, weekly meetings not conducive to providing timely reinforcement, and subjectivity in probation officers’ administration of sanctions were all noted as areas in need of improvement for better outcomes.7

Evolving Use in Criminal Justice Settings

CM facilitates treatment engagement among individuals with SUD, opioid use disorder, and other drug disorders.8 The longer individuals stay in treatment, the higher the probability is of desired outcomes, and those who complete treatment are far more likely to reduce their substance use and avoid criminal activity.9 In one study, fewer than half of the individuals who participated in in-prison treatment programs and had a referral to community treatment actually went to their appointments after release from custody due to a variety of barriers.10,11

“The first appointment is a big hurdle for people when they are released from custody, but according to research conducted by Dr. Julia Hood, our project’s lead evaluator, the tipping point for full treatment engagement is five appointments. If people go to five appointments to receive their medication for treating opioid use disorder, they are more likely to complete their treatment,” says Dr. Ericka Turley, program manager of the 2019 Comprehensive Opioid Abuse Program (precursor to the Comprehensive Opioid, Stimulant, and Substance Abuse Program [COSSAP]) project for Seattle & King County Department of Public Health’s Jail Health Services Division in Washington State.12 “We designed our program to provide free transportation and cash incentives for getting to appointments, but we have learned that the relationships that individuals develop with the community health workers who provide transportation to those appointments are far more important to full engagement than the financial incentives. We are exploring ways to continue this support when our grant ends this year and perhaps expanding it past five visits, especially for individuals who are engaged but lack other natural supports.”

A review specific to reentry interventions that address substance use13 found that only 2 of the 21 interventions described using incentives or contingent reinforcers to encourage positive behavior, but none explicitly identified CM as the primary modality.14 Barriers to adopting CM include the difficulty of implementation, cost, and non-alignment with political or philosophical values.15

Interestingly, a survey of key decision-makers (i.e., probation officers, federal defenders, judges, and assistant U.S. attorneys) about specialized problem-solving courts indicated a moderate to high level of acceptance for using either material incentives (tangible items with a monetary value) or social incentives (e.g., positive affirmations by officers, offender access to office phones and computers, decreased probation sentence) in treating SUDs.16 Although drug courts incorporate CM principles into their work, they have been criticized for failing to attend to salience, immediacy, and consistency and for relying more heavily on negative reinforcement (most commonly, reducing the number of supervision requirements) than positive reinforcement.17

Implementation in Jails

A recent review of 11 modalities for treating stimulant use disorder18 identified CM as “the strongest evidence-based approach for the treatment of stimulant use disorder at this time” and noted the benefits of its use in conjunction with other interventions, such as cognitive behavioral therapy (CBT) and community reinforcement.19 With stimulant use disorders rising and now the most prevalent type of SUD in some rural jails,20 it is time to more fully apply lessons learned from research and current CM programming to fulfill the promise of this intervention in jail settings.

For More Information

Drugs and the Brain: Drugs, Brains, and Behavior: The Science of Addiction, from NIDA


“Contingency Management Interventions/Motivational Incentives (Alcohol, Stimulants, Opioids, Marijuana, Nicotine),” from NIDA’s Principles of Drug Addiction Treatment: A Research-Based Guide (Third Edition)
“Practice Profile: Contingency Management Interventions for Substance Use Disorders,” from the National Institute of Justice

Treating Clients With Methamphetamine and Stimulant Use Disorders, from the Bureau of Justice Assistance’s (BJA) Residential Substance Abuse Treatment (RSAT) Program for State Prisoners

Treatment of Stimulant Use Disorders, from the Substance Abuse and Mental Health Services Administration’s (SAMHSA) Evidence-Based Resource Guide Series

Treating Concurrent Substance Use Among Adults, from SAMHSA’s Evidence-Based Resource Guide Series

To request training and technical assistance related to SUDs and criminal justice, contact BJA’s COSSAP Resource Center at https://www.cossapresources.org/Program/TTA.

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Endnotes


12. Note: while COSSAP funds may not be used to provide monetary incentives, grantees are encouraged to consider non-monetary incentives as part of a CM intervention.

13. The most commonly used modality among the 21 interventions studied was CBT, followed by psychoeducation. Other modalities included motivational interviewing, medication-assisted treatment, and therapeutic communities.


18. The 11 modalities included 3 behavioral interventions (CM, CBT, and acupuncture) and 8 pharmaceutical interventions (antidepressants, dopamine agonists, antipsychotics, anticonvulsants, disulfiram, opioid agonists, N-Acetylcysteine, and psychostimulants).
