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Adaptation of contingency management for stimulant use disorder during the COVID-19 pandemic



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ABSTRACT

The current coronavirus disease (COVID-19) pandemic has rapidly spread across the world. Individuals with stimulant use disorder are a vulnerable population, who are particularly at risk of negative outcomes during this pandemic due to several risk factors, including mental and physical comorbidities, weakened immune responses, high-risk behaviors, and barriers to healthcare access. Engaging patients with stimulant use disorder in regular treatment has become even more difficult during this pandemic, which has resulted in many cuts to addiction treatment programs. The most effective treatment options for stimulant use disorder are psychosocial interventions, which rely heavily on in-person interactions, posing an added challenge during physical distancing. In particular, contingency management (CM) is a behavioral therapy that utilizes tangible reinforcements to incentivize targeted behavior changes, and is an effective treatment intervention used for stimulant use disorder. This paper highlights the treatment challenges for individuals with stimulant use disorder and the importance of adapting CM programs during COVID-19. We present strategies for how CM can be adapted and its role expanded in a safe way during the COVID-19 pandemic to help prevent infection spread, stimulant use relapse, and worsened psychosocial consequences.

1. Effectiveness of contingency management (CM)

Contingency management (CM) is a behavioral therapy based on operant conditioning, in which behavior is modified through rewards and/or consequences for target behaviors. Psychosocial interventions are first line treatment for stimulant use disorders, with pharmacological interventions being largely ineffective (Chan et al., 2019; De Crescenzo et al., 2018). There is strong evidence that CM is an effective intervention for stimulant use disorders (Carrico et al., 2018; De Crescenzo et al., 2018; Higgins, Wong, Badger, Ogden, & Dantona, 2000; McDonnell et al., 2013; McPherson et al., 2018; Petry, Alessi, Olmstead, Rash, & Zajac, 2017; Rawson et al., 2006; Shoptaw et al., 2005; Shoptaw, Landovitz, & Reback, 2017; Vocci & Montoya, 2009).

2. Need for CM for treatment of stimulant use disorders during the COVID-19 pandemic

Stimulant use disorders pose a significant individual and societal

challenge, of which amphetamines and cocaine are most common (De Crescenzo et al., 2018). The COVID-19 pandemic is likely to precipitate an increase in drug relapse, which will be exacerbated by cuts to many drug treatment services (The New York Times, 2020). Some municipalities have already noted increase in overdose deaths (City of Vancouver, 2020). Utilizing and adapting CM to treat stimulant use disorders can help to mitigate these negative effects (Marsden et al., 2020).

Individuals who use substances also have additional risk factors for contracting and developing complications of COVID-19, including health comorbidities, high-risk behaviors, weaker immune responses, and decreased healthcare access (Carrico et al., 2020; Farhoudian et al., 2020; Volkow, 2020). Additionally, they may have increased inflammation and damage to lung tissue (Restrepo et al., 2007), as well as greater cardiovascular disease risk (Schwartz, Rezkalla, & Kloner, 2010), both of which may increase COVID-19 mortality and complications (Marsden et al., 2020). In this paper, we present practical adaptations to CM groups at our concurrent disorders facilities to help

Abbreviations: CM, contingency management; UDS, urine drug screen

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treat this vulnerable population.

3. Adapting CM for stimulant use disorders during the COVID-19 pandemic

A group setting for CM builds support and reduces costs. With physical distancing restrictions, group programs are facing new challenges in adapting treatment. CM programs often faced challenges even before COVID-19, including cost barriers and initial staff hesitation due to lack of awareness. Many issues related to staff hesitation can be addressed through education. Henggeler et al. (2008) found that when therapists were provided modest training and access to resources, the majority attempted to implement CM. The same approach needs to be emphasized now, through increasing staff support and communication, as there may be additional concerns with how to continue CM safely. Staff working with individuals who use drugs during this time should perform frequent hand hygiene and wear appropriate personal protective equipment (Farhoudian et al., 2020).

CM programs would benefit from increased protocol flexibility. Participants should be informed that these extraordinary times have resulted in some temporary adjustments. The ability to run group programs will vary with how affected a particular region is and some restrictions are likely to persist after the COVID-19 peak has passed to prevent its resurgence (Prem et al., 2020). A phased approach to CM program adaptation is useful as the pandemic continues to evolve.

CM often includes components of direct physical exchange including drawing vouchers from a shared bowl (fishbowl), redeeming vouchers, group activities, and urine drug screens (UDS). These potential infection transmission points should be minimized or eliminated during COVID-19. In our inpatient CM program, fishbowl draws have been replaced with one staff member drawing instead of each patient. Patients must sanitize their hands before and after receiving prizes/vouchers. Group sizes have been halved and duration decreased from 1 h to 30 min, with increased physical distancing. Further, voucher stores used to redeem vouchers for prizes can lead to crowded line-ups. One alternative is to replace stores with prize delivery. In our CM program, patients now complete an order form for their item, which is then delivered to their hospital unit. Additionally, creative approaches, such as using cognitive behavioral therapy worksheets in exchange for vouchers, can be considered in place of meetings.

Further, programs should consider virtual CM. Research has shown Internet and phone-based CM to be beneficial for treating nicotine and alcohol use disorders (Dallery et al., 2017; Dallery, Raiff, & Grabinski, 2013; Dallery, Raiff, Grabinski, & Marsch, 2019; Getty, Morande, Lyskey, Weaver, & Metrebian, 2019). Implementing virtual CM for stimulant use disorder has been challenging, as CM often uses an abstinence-delivery model based on a negative UDS (Roll et al., 2006), which is difficult to implement virtually. During the pandemic, we suggest adjusting CM to a virtual attendance-based approach to balance relapse prevention with safety precautions. Petry, Alessi, Rash, Barry, and Carroll (2018) found that attendance-based CM also improved treatment engagement and decreased stimulant use, especially when provided during later stages of treatment and for longer. This could be supplemented by providing UDS at a lab while attending CM sessions virtually to maintain physical distancing. Patients can receive prize incentives by using text message reinforcements as well as prepaid debit cards, which can be electronically loaded once the target behavior is completed (Getty et al., 2019). This method allows for immediate prize delivery, which research has shown to be important in CM success (Lussier, Heil, Mongeon, Badger, & Higgins, 2006). Mental health services have benefitted from adapting to teletherapy during this pandemic, including expanded patient access and improved attendance (Sequeira et al., 2020). We suggest CM for stimulant use disorder would similarly benefit from virtual adaptations to preserve this important intervention during the pandemic.

4. Expanding the use of CM during the COVID-19 pandemic

Given the broad applicability of CM, including promoting healthy behaviors (Landovitz, Fletcher, Shoptaw, & Reback, 2015; McPherson et al., 2018; Rash, Stitzer, & Weinstock, 2017; Shoptaw et al., 2017), we suggest expanding its use during the COVID-19 pandemic.

First, we suggest using CM to incentivize hand hygiene and infection control protocols. Reportedly, at least 50 inpatients and 30 staff became infected with COVID-19 at a psychiatric hospital in Wuhan, China (Xiang et al., 2020). Possible explanations for the spread included a limited awareness of risk, inadequate infection control and protective equipment, as well as more group treatments, such as counseling, compared to other hospitalized patient groups. There is significant comorbidity between mental illness and substance use disorders (Sheidow, McCart, Zajac, & Davis, 2012; Toftdahl, Nordentoft, & Hjorthoj, 2016), and many patients on psychiatric units receive concurrent treatments. Increasing hand hygiene education in this population during the COVID-19 pandemic is, therefore, necessary.

Second, we suggest a role for CM in money management during COVID-19. Due to the pandemic's financial impact, government support has increased, especially for low-income individuals (Government of British Columbia, 2020). Consequently, many of our patients are now receiving a temporary monthly subsidy. Although helpful to ease financial distress, this influx of money is a known risk factor for substance relapse (Levy, 2008) and expanding CM to include money management could help to mitigate that risk. At our inpatient program, patients develop an individual plan prior to receiving the subsidy, including specific goals for the money, and they receive vouchers if they adhere to these goals. Following this intervention, we have noted a reduction in AWOLs and relapses, although other factors may also be contributing to this outcome.

5. Implications and future directions

Many scholars have suggested mental health and substance use crises are inevitable in the aftermath of the COVID-19 pandemic (Balanza-Martinez, Atienza-Carbonell, Kapczynski, & De Boni, 2020; Bao, Sun, Meng, Shi, & Lu, 2020; Chatterjee, Barikar, & Mukherjee, 2020; Farhoudian et al., 2020; Lima et al., 2020; Sun et al., 2020; Volkow, 2020; Yao, Chen, & Xu, 2020). Social isolation, economic depression, and fear increase psychological distress and can lead to the emergence and exacerbation of mental illness and substance use (Farhoudian, Hajebi, Bahramnejad, & Katz, 2013).

Despite the evidence supporting CM as a cost-effective treatment tool, due to policy-makers' lack of knowledge on its efficacy and funding barriers, significant disparities in CM's availability for stimulant use remain. Because research has warned of a worsening substance use crisis, awareness of treatment resources such as CM is important.

6. Conclusion

The COVID-19 restrictions on healthcare resources significantly affect vulnerable and marginalized populations, such as individuals with stimulant use disorder, for whom the most effective treatments are psychosocial interventions, including CM (De Crescenzo et al., 2018). Consequently, they are at increased risk of negative outcomes, including substance use exacerbation; they are also at increased risk of contracting COVID-19 (Farhoudian et al., 2020). We hope that this paper will provide some practical strategies for adapting and expanding CM in stimulant use disorder treatment to help decrease the likelihood of stimulant use relapse and limit the spread of COVID-19.

CRediT authorship contribution statement

Evelyn Zastepa: conceptualization, original draft writing, and review/editing.

Jane C. Sun: conceptualization, review/editing.
 Jennifer Clune: review/editing.
 Nickie Mathew: supervision, conceptualization, and review/editing.

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Declaration of competing interest

None.

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