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Methadone maintenance treatment may improve completion rates and delay opioid relapse for opioid dependent individuals under community corrections supervision

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ABSTRACT

Aims: Several studies have demonstrated the importance of agonist therapies such as methadone and buprenorphine for preventing relapse for individuals being released from jail or prison to the community. No studies have examined the impact of methadone for increasing the completion of community supervision requirements and preventing opioid relapse for individuals under community corrections supervision. This observational study compared the community corrections completion rate and opioid relapse rate of individuals receiving methadone maintenance therapy (MMT) to individuals who did not.
Methods: Of the 2931 individuals enrolled under criminal justice supervision in the community, Treatment Accountability for Safer Communities (TASC), and who met criteria for opioid dependence, 329 (11%) individuals reported receiving MMT in the community.
Results: The majority of participants were White (79.8%) and male (63.5%), with a mean age of 31.33 years ($SD = 9.18$), and were under supervision for 10.4 months ($SD = 9.1$). MMT participants were less likely to fail out of supervision compared to individuals not in MMT (39.0% vs. 52.9%, $p < 0.001$), and had a lower rate of relapse (32.9%) and longer time to relapse (average days = 89.7, $SD = 158.9$) compared to the relapse rate (55.9%) and time to relapse (average days = 60.5, $SD = 117.9$) of those not on MMT.
Conclusions: While the observational nature of this study prevents causal inferences, these results suggest that utilization of MMT in community corrections may increase the likelihood of completing supervision requirements and delay time to opioid relapse. Providing agonist therapies to opioid dependent individuals under supervision appears to be a critical strategy in this important population.

1. Introduction

Illicit opioid use in the criminal justice population is widespread and is associated with both drug-related and non-drug-related criminal behavior as well as the spread of infectious disease (e.g., Inciardi, 2008; Sorensen & Copeland, 2000). An established literature demonstrates the importance of methadone maintenance treatment (MMT) and other agonist pharmacotherapies for the treatment of opioid dependence and its associated harms among those in the criminal justice system (Anglin, McGlorthlin, & Speckart, 1981; Anglin & McGlothlin, 1984; Hubbard, Rachal, Craddock, & Cavanaugh, 1984; Simpson, Joe, & Brown, 1997). For example, initiating MMT in prison reduces heroin use both during incarceration (Dolan, Shearer, MacDonald, Mattick, Hall, & Wodak, 2003; Stallwitz & Stöver, 2007) and after release (Gordon, Kinlock, Schwartz, & O'Grady, 2008; Lobmaier, Kunoe, Gossop, Katevoll, & Waal, 2010), and is associated with lower rates of recidivism (Dolan, Shearer, White, Zhou, Kaldor, & Wodak, 2005; Keen, Oliver, Rowse, & Mathers, 2003), lowered rates of non-opioid drug use, higher prevalence of enrollment in drug treatment programs (Kinlock, Gordon, Schwartz, & O'Grady, 2008; Lobmaier, Kunoe, Gossop, Katevoll, & Waal, 2010), decreased mortality (Peles, Schreiber, & Adelson, 2013), and fewer hepatitis infections (Dolan, Shearer, White, Zhou, Kaldor, & Wodak, 2005; Warren, Viney, Shearer, Shanahan, Wodak, & Dolan, 2006).

While most studies of MMT have targeted the critical time of release from prison back to the community (Gordon, Kinlock, Schwartz, & O'Grady, 2008; Lobmaier, Kunoe, Gossop, Katevoll, & Waal, 2010), in practice, individuals maintained or returning to the community from jail or prison are the least likely to receive methadone or other agonist therapies (Friedmann, Hoskinson, Gordon, Schwartz, Kinlock, Knight, et al., 2012). Specifically, less than 1% of individuals under criminal justice supervision with opioid dependence are engaged in MMT during their time under community supervision (Cropsey, Binswanger, Clark, Taxman, 2011). The reasons for low utilization of MMT in this population are complex and multifactorial. While individuals under community corrections represent 70% of the seven million Americans in the criminal

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justice system, the constitutional mandate to provide health care for those who are incarcerated does not extend to those under community supervision (U.S. Census Bureau, 2011; Pollack, Khoshnood, & Altice, 1998; Estelle v. Gamble, 1976) and there appears to be a strong bias against providing MMT and similar treatments to criminal offenders despite the demonstrated efficacy of these approaches (Dolan, Shearer, MacDonald, Mattick, Hall, & Wodak, 2003; Gjersing, Butler, Caplehorn, Belcher, & Matthews, 2007; Heimer, Catania, Newman, Zambrano, Brunet, & Ortiz, 2006; McMillan & Lapham, 2005).

Previous studies have compared criminal justice samples receiving MMT to non-criminal justice samples receiving MMT and found comparable drug use outcomes across samples (Anglin, McGlorthlin, & Speckart, 1981; Desmond & Maddux, 1996). No prior studies have compared individuals under community corrections supervision receiving MMT to their peers not receiving MMT. The primary objective of the present study was to evaluate the impact of MMT in a large, observational sample of individuals under community corrections supervision. We hypothesized that for individuals who were able to engage in MMT, this would be a strong predictor of successful completion of supervision requirements and opioid abstinence.

2. Methods

2.1. Sample description

Participants (initial sample > 25,000) were individuals with a felony charge enrolled in a criminal diversion program in the Southeastern U.S., Treatment Accountability for Safer Communities (TASC). Per TASC requirements, enrollees were required to provide random, non-scheduled observed urine drug screens and to meet regularly with their case managers. Treatment referrals vary dependent upon individuals' particular problem areas; however, this report focuses on 2931 (15%) individuals who met criteria for opioid dependence. Opioid dependence was determined through a semi-structured clinical interview conducted by TASC personnel trained and met the diagnostic criteria outlined in the Diagnostic and Statistical Manual; DSM-IV-TR; American Psychiatric Association; (APA, 2000). Participating in MMT was not a requirement of TASC or the legal system and was based upon individual preferences and ability to access to MMT. Of the 2931 opioid dependent TASC participants, 329 individuals (11%) enrolled in the community-based MMT program. The final sample of opioid dependent individuals (N = 2931) had a mean age of 31.33 years (SD = 9.18) and were predominantly White (79.8%) and male (63.5%). TASC clients remained under TASC supervision for an average of 10.4 months (SD = 9.1).

2.2. Data collection

Intake interviews assessed sociodemographic variables, medical histories, criminality, employment status, and DSM-IV-TR substance use disorders. The current study utilized the same program outcome classification system as the TASC program for determining effectiveness of MMT. Upon discharge, TASC participants were assigned a discharge outcome classified as positive, negative, or indeterminate: positive outcomes comprised successful TASC completion or transfer to a lower level of supervision (i.e., drug court or probation); negative outcomes comprised noncompliance with TASC regulations, reincarceration, failure to appear in court, or death; indeterminate outcomes comprised dropped cases, incarceration due to a prior infraction, and medical exemptions. Individuals' treatment outcome was dichotomized as positive or negative/indeterminate for the purposes of the current analysis.

2.3. Data analysis

Univariate analyses (chi-square tests or ANOVA) were used to compare the characteristics of opioid dependent participants receiving MMT to the opioid dependent participants not on MMT. Variables that significantly differed between the two groups were included as covariates in two multivariate analyses. The first analysis was a binary logistic regression analysis designed to determine if MMT was independently associated with supervision failure after controlling for relevant covariates. The second analysis was a Cox Proportional Hazards Survival Regression. This model was used to determine the proportion of risk independently contributed by MMT to time to positive urine drug test for opioids. Time to positive urine drug test was measured in days from the time of the initial TASC intake. The analyses were set to predict a positive urine drug test; those individuals who never had a positive urine drug test for opioids were censored in the analysis on the day that they were discharged from the TASC program. Hazard ratios for the independent variables are reported, with higher hazard ratios indicating a great risk of relapse, or a faster time to a positive urine drug screen. Institutional Review Board approval was obtained from the University of Alabama at Birmingham to analyze this de-identified dataset.

3. Results

The results of the univariate analyses are displayed in Table 1. Individuals receiving MMT were older, more likely to be White, married, living with their spouses and children, insured, and employed, and less likely to be living in a shelter. Moreover, MMT participants were more likely to be receiving medication for a mental or physical condition and were less likely to meet dependence criteria for alcohol, amphetamines, cannabis, cocaine, hallucinogens, and sedatives.

A binary logistic regression was calculated to determine which variables were associated with MMT participation. As reported in Table 2, MMT was associated with older age, White race, having government health insurance, and not living in a shelter. They were more likely to be taking medication for a physical problem and less likely to meet dependence criteria for alcohol, amphetamines, cannabis, and sedatives. As predicted, MMT participants were less likely to obtain an outcome of supervision failure compared to individuals not in MMT (OR = .65, p = .001).

As shown in Table 3, MMT was associated with a lower probability of opioid relapse at all times during supervision. The participants receiving MMT had a lower rate of relapse (32.9%) and longer time to relapse (average days = 89.7, SD = 158.9) compared to the relapse rate (55.9%) and time to relapse (average days = 60.5, SD = 117.9) of those not on MMT. The probability of relapse across time for those on MMT and those not on MMT can be seen in Fig. 1, with individuals on MMT demonstrating a significant delay in time to opioid relapse.

4. Discussion

The current study was the first to compare individuals with opioid dependence on MMT to those not on MMT under community corrections supervision. MMT was protective against supervision failure such that individuals who were on MMT were less likely to have a negative supervision outcome compared to those who were not on MMT, above and beyond the influence of sociodemographic and other factors associated with receiving this intervention. MMT also was associated with a lower probability of opioid relapse at any given time during community corrections supervision. These results demonstrate the benefits associated with MMT to individuals under criminal justice supervision for reducing opioid use and successful completion of community supervision. This is important as technical violations, including testing positive for illicit drug use during supervision, account for more than 25% of the individuals returning to prison (Langan & Levin, 2002) and exert a tremendous cost to both society and the individual.

When the sociodemographic characteristics of those in MMT were compared to those who were not in MMT it becomes clear that the MMT group was much more stable. This conclusion is supported by the MMT group's higher level of education, marriage rate, more stable