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The Relationship Between Methadone Familiarity and Methadone Opinions Among Community Corrections Staff

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THE RELATIONSHIP BETWEEN METHADONE FAMILIARITY AND METHADONE
OPINIONS AMONG COMMUNITY CORRECTIONS STAFF

by

LUIS ISRAEL CULCAS

A thesis submitted in partial fulfillment of the requirements
for the Honors in the Major Program
in Health Services Administration in the Department of Health Management and Informatics
in the College of Community Innovation and Education
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Thesis Chair: Danielle N. Atkins

ABSTRACT

The United States is in the midst of an opioid crisis. Fortunately, effective treatments for opioid use disorder exist (OUD); however, they are underutilized. Medications for opioid use disorder (MOUDs) decrease death by 50 %. These MOUDs are particularly relevant in the criminal justice population given that this population has a higher OUD disease burden but is less likely than the general population to receive this life-saving treatment. Research has identified negative attitudes toward MOUDs among corrections staff as a barrier to utilizing MOUDs. This thesis examines the relationships between community correction staff familiarity with methadone, one type of MOUD, and their opinions toward methadone using extant data from the Criminal Justice Drug Abuse Treatment Studies 2 (CJ-DATS 2) series. These data were collected between 2010-2012. The study was guided by the Knowledge-Attitude Behavior (KAB) model. The data are described using descriptive statistics, and I estimate logistic regressions to examine the relationship between respondent familiarity with methadone and their attitude toward methadone while controlling for other covariates. With a sample of 167 corrections employees, I found that corrections staff who agreed or strongly agreed with the statement that they were familiar with methadone had more positive methadone attitudes. Future research should examine the relationship between familiarity/knowledge, attitudes, and behaviors in other criminal justice settings and for other MOUDs (i.e., buprenorphine and naltrexone).

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DISSEMINATION

Dissemination with limited access to the UCF community for a period of 1, 3, or 5 years.

Worldwide access after that period.

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INTRODUCTION

Since 1999, overdose fatalities involving opioids have increased more than six-fold (CDC, 2020). In 2019, opioids were involved in over 70% of drug overdose deaths (CDC, 2020). Opioids are substances that act on the nervous system of the body or receptors in the brain (CDC, 2020). Even though whites have higher rates of opioid usage than Blacks on a national scale, Blacks have had a larger increase in opioid mortality (43%) than whites (22%) during the previous five years (James & Jordan, 2018). Furthermore, in certain states, the incidence of opioid overdose deaths among Blacks has already surpassed whites (James & Jordan, 2018). Fortunately, effective treatments for opioid use disorder (OUD) exist. Specifically, medications for opioid use disorder (MOUDs). MOUDs are the standard of care for OUD and can decrease overdose death by nearly half (Mancher & Leshner, 2019); however, they are underutilized (Wakeman et al., 2020).

OUD is common among individuals under community supervision. Data from the National Survey of Drug Use and Health (NSDUH) showed that individuals on probation are 4.2 times more likely to have a substance use disorder than the general population. Moreover, there is a high risk of overdose death after release from prison/jail. Drug overdose is the primary source of fatalities after being released from jail. For example, within the first two weeks after release, the risk of death from drug overdose is 12.7 times higher than in the general population, and the risk of death in women is even higher (Waddell et al., 2020).

Individuals involved in the criminal justice system are more likely to have OUD and experience negative outcomes, so understanding the underutilization of MOUD is particularly important in this context. Compared to the general population, individuals in the criminal justice

system are more likely to have OUD and less likely than the general population and to get MOUD (Bahji, Carlone, & Altomare, 2020; Krawczyk, Picher, Feder, & Saloner, 2017).

In 2017, methadone and buprenorphine were available in 30 of the country's 5,100 prisons (Williams, 2017). In 2018, 14 states provided methadone or buprenorphine treatment to incarcerated individuals. (Vestal, 2018). In a 2017 survey, around half of drug courts asked individuals to stop using methadone or buprenorphine within 30 days (Andraka-Christou, 2017). Fendrich and LeBel (2019) collected data on utilization of MOUD in an urban Midwestern drug treatment court and found that, among drug court clients with OUD, less than half received MOUD, and injectable naltrexone was the most common MOUD used (Fendrich & LeBel, 2019). Research has identified that much of the resistance among criminal justice staff to support MOUD stems from negative MOUD beliefs among MOUD staff (Grella et al., 2020). Other research has examined various barriers to MOUD utilization among this population; however, to my knowledge, no research has examined the relationship between community correction staff familiarity with methadone and their methadone opinions. Therefore, the primary goal of this study is to examine the relationship between community court staff opinions about methadone, in particular, and their self-reported familiarity with methadone. This study examines the opinions about methadone among community corrections staff using the Criminal Justice-Data 2 (CJ-Data 2) dataset.

REVIEW OF LITERATURE

Evidence suggests that MOUD is effective in decreasing overdose, improving retention, decreasing crime, decreasing relapse, among other outcomes. Methadone has been shown to decrease the likelihood of overdose death by 59% and is associated with improved outcomes for individuals in probation/parole (Larochelle et al., 2018). Gryczynski and colleagues (2012) examined predictors of treatment retention, drug use, and crime among probationers using MOUDs. The findings indicated that there were declines in drug use as well as crime relative to treatment entry. About 50% of participants were retained in MOUD treatment at one year. According to a study by Clark et al. (2014), participants involved in the Methadone Maintenance Treatment (MMT) were less likely to fail out of supervision compared to individuals not in MMT (39.0% vs. 52.9%, $p < 0.001$). They also showed a decrease in 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. Moreover, evidence indicates that methadone clients on probation/parole displayed advancements comparable to clients not on probation/parole, regardless whether they obtained counseling during the first four months of treatment (Kelly et al., 2013). Unfortunately, methadone is underutilized among the criminal justice population. For example, only 4.6% of individuals referred to specialty substance use disorder treatment facilities by the criminal justice system even had MOUD in their treatment plan, compared to 40.9% of clients referred from non-criminal justice sources (Krawczyk et al., 2017). So, the broader hospital treatment personnel seems more willing to utilize MOUDs than those in the criminal justice. This thesis attempts to shed some light on why this discrepancy might occur.

Research has examined reasons for underutilization of MOUD in the criminal justice system. Prior research identified that much of the resistance among criminal justice staff to support MOUD stems from a misconception of the drugs' mechanisms of action (Grella et al., 2020). Some authorities and practitioners believe that these drugs are substituting one addictive substance for another (Grella et al., 2020). Many argue that forcing opioid withdrawal is a necessary element of maintaining a "clean lifestyle" (Grella et al., 2020). Andraka-Christou and Atkins (2020) found that, among criminal problem-solving and dependency court staff in Florida, only one-third of court staff thought MOUD was more effective than treatments that were nonpharmaceutical (e.g., counseling), and beliefs were most positive for naltrexone, followed by buprenorphine, and then naltrexone.

With respect to community corrections staff specifically, who are the focus of this study, research has identified barriers to MOUD among this subpopulation of corrections staff. Streisel (2018), using the same CJ-DATS data employed in the current study found that community correctional staff were less likely to intend to refer clients to methadone treatment if they believed methadone was a replacement for addiction; however, methadone training was associated with an increased likelihood of intent to refer (Streisel, 2018). Kennedy-Hendricks et al. (2021) interviewed 31 community supervision staff to examine factors associated with utilization of MOUD of those on parole. Questions asked were associated to the community correctional agency and its format, culture, and OUD treatment policies and practices, communication and coordination with adjacent organization in the criminal justice, structures for financing treatment, and connections with community treatment providers. They found

individuals who were more rehabilitation-oriented were also more tolerant of relapse and supportive of MOUD use (Hendricks et al., 2021).

Yet, little is known about the methadone familiarity and attitudes among community corrections staff, and, if a relationship exists between familiarity and attitudes. Thus, the objective of this thesis is to describe methadone familiarity and attitudes among community corrections staff, as revealed in the CJ-DATS database, and to estimate the relationship between methadone familiarity and attitudes among this population.

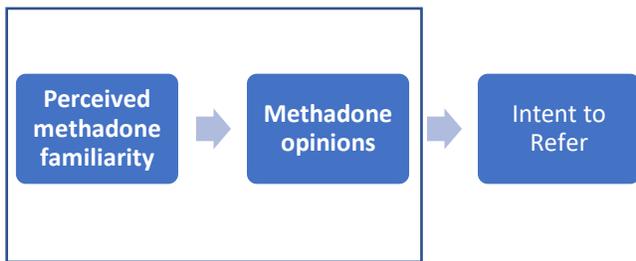
Theoretical Model

The study is guided by the Knowledge-Attitude Behavior (KAB) model (Holmes, 2021). The KAB model posits that knowledge is related to attitudes and that attitudes are related to behavior (Figure 1). I adapted the KAB model to this study which assumes methadone familiarity is related to methadone opinions, which could be related to behaviors (such as intent to refer a client to methadone). However, for the purposes of the current study, I do not examine this relationship between methadone opinions and staff behavior (Figure 2). The KAB model helped me better understand the relationship between community corrections staff familiarity with methadone and their opinions about methadone. Based on the adapted version of the KAB model, I hypothesize that the higher familiarity is related to more favorable opinions.

Figure 1: Knowledge, Attitude, Behavior (KAB) Model



Figure 2: Adaptation of the KAB Model



METHODS

Data

This study uses secondary data from the Criminal Justice Drug Abuse Treatment Studies 2 (CJ-DATS 2) dataset, gathered between 2010-2012 (Friedmann et al., 2016). The CJ-DATS 2 surveyed community corrections staff, specifically those involved in community supervision (i.e., probation and parole), regarding methadone. Although these data are relatively old, they are the only publicly available, secondary data to examine questions regarding community corrections staffs' methadone familiarity and methadone beliefs. These data are publicly available for download from the Inter-University Consortium for Political and Social Research. I excluded respondents who were directors of agencies because I wanted to focus on beliefs of staff who are working with clients, which dropped 56 respondents. The final sample size for this study, after removing missing data for individuals who did not answer the methadone questions, is 167 community corrections staff members.

Measures

Dependent variables of interest include the correction staff MOUD opinions about methadone (see Table 1). The independent variable of interest is the correction staff's familiarity with methadone. I also included individual characteristics, such as education, the number of years working in the substance use, and work setting, measured at the baseline as control variables (see Table 2).

Table 1: Dependent variables - Methadone attitudes

Methadone is just substituting one addiction for another.
Methadone maintenance reduces addicts' criminal activities.
Methadone maintenance decreases addicts' risk of dying.
Methadone maintenance reduces addicts' consumption of illicit opioids.
Helpful to client for opioid dependence

Note: The respondent had the options of 1) strongly disagree; 2) disagree; 3) uncertain; 4) agree, or 5) strongly agree for each of the statements concerning, I developed dichotomous outcome measures equal to 1 if the participant chose agree or strongly agree and 0 otherwise.

Table 2: Individual-level control variables

Education
Years working in the substance use / corrections field as a counselor, therapist, or clinician
Work setting (i.e., community treatment or corrections)

Analysis

The outcome of interest was correction staff methadone beliefs. Participants were asked to rate their agreement with a series of statements concerning methadone on a Likert scale (see Table 1). One of the statements, for example, was “Methadone is just substituting one addiction for another.” The respondent had the options of 1) strongly disagree; 2) disagree; 3) uncertain; 4) agree, or 5) strongly agree. For each of the statements concerning each methadone listed in Table 1, I developed dichotomous outcome measures equal to 1 if the participant chose agree or strongly agree and 0 otherwise.

The independent variable of interest is familiarity with treatment. In this case, for the Likert scale, the respondent had the options of 1) not at all, 2) not very, 3) uncertain, 4)

somewhat, or 5) a lot/very much so. I therefore created dichotomous indicator variables equal to 1 if the participant “somewhat” or “a lot/very much so” and 0 otherwise.

The following will be included as control variables: counseling credentials education, work setting, and years worked in community / corrections for substance use treatment. I created a dichotomous indicator variable for whether the respondent reported having counseling credentials. I created three dichotomous indicators for education. Education variables included whether or not the respondent had an associate/bachelor degree, a graduate degree, or other education (i.e., the respondent selected some college, high school diploma, no high school diploma or “other”). I created two measures to capture work setting. Criminal justice setting equals 1 if the respondent indicated their job role is “corrections officer” and 0 otherwise, and community treatment setting equals 1 if the respondent indicated their role was “treatment staff” and 0 otherwise. I created multiple dichotomous variables to indicate time in field. The question in the survey was “How long have you been working the substance abuse / corrections field as a counselor, therapist, or clinician?” I dichotomized the responses based on the options from the survey (e.g., less than 5 years; 5-9.99 years).

First, I examined the data descriptively using summary statistics and graphs. To investigate the relationship between familiarity and outcome indicators, logistic regressions were completed. Odd ratios were used to report the results. All analyses were conducted in Stata.

RESULTS

Descriptive Statistics

The final sample size was a total of 167 community corrections staff. Table 3 shows descriptive statistics for covariates. Approximately 43% of the community corrections staff reported they were familiar with methadone treatment. About one-quarter of the sample had counseling credentials. More than half had an associate or bachelor's degree, about 40% had a graduate degree, and 8% had "other" education. An estimated 65% worked in a criminal justice setting followed by 35% who works in a community treatment facility. Most respondents have more than 10 years of experience in a criminal justice setting, but less than 20 years of experience in the field (40%). These descriptive statistics were followed by less than 5 years of experience (26%), 20-29 years (18%), 5-10 years (13%), and 30 or more years (2.5%).

Figure 3 presents the percentage of criminal justice and community treatment respondents who agreed with the 6 statements asked. About 35% of respondents agree that methadone is a substitute addiction. Almost 50% agree that methadone is helpful to clients for opioid dependence. Nearly half agree that methadone decreases the risk of death. More than 60% agree that methadone minimizes opioid use. More than half agree that methadone recues crime.

Figure 4 shows the comparing percent of community corrections staff who agree with statements by self-reported methadone familiarity. More than a quarter of the community corrections staff who were familiar with methadone agreed that methadone is substitute addiction medication, compared to 41% who were not familiar with methadone. Of those familiar with methadone, 76% agree that methadone is helpful to clients for opioid dependence compared to 30% who said they were not familiar with methadone. Nearly 70% of those familiar with

methadone agreed it reduces risk of death, as compared to about 30% who disagree. About 80% of respondents who were familiar with methadone agreed that methadone decreases opioid use compared to half who say they are not familiar. Approximately 69% of community corrections staff who are familiar with methadone agree that methadone decreases crime compared to 45% who are not familiar.

Figure 3: Percentage of Respondents who Agree with Statement

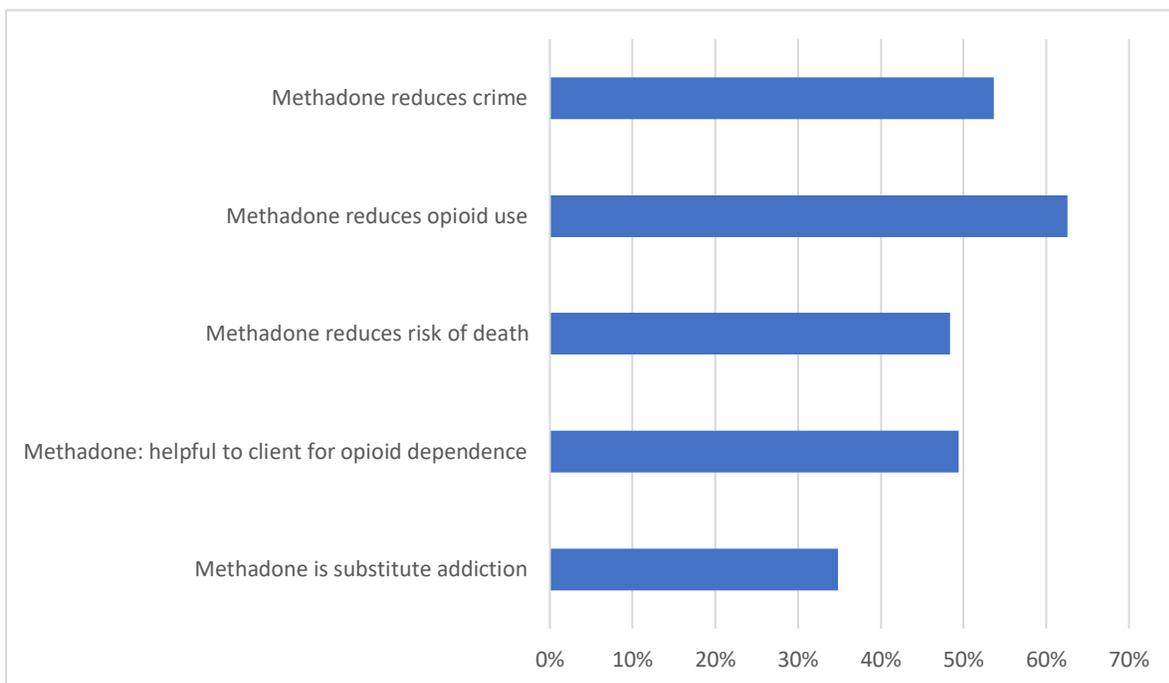


Figure 4: Comparing Percent of Community corrections staff who Agree with Statement by Self-Reported Methadone Familiarity

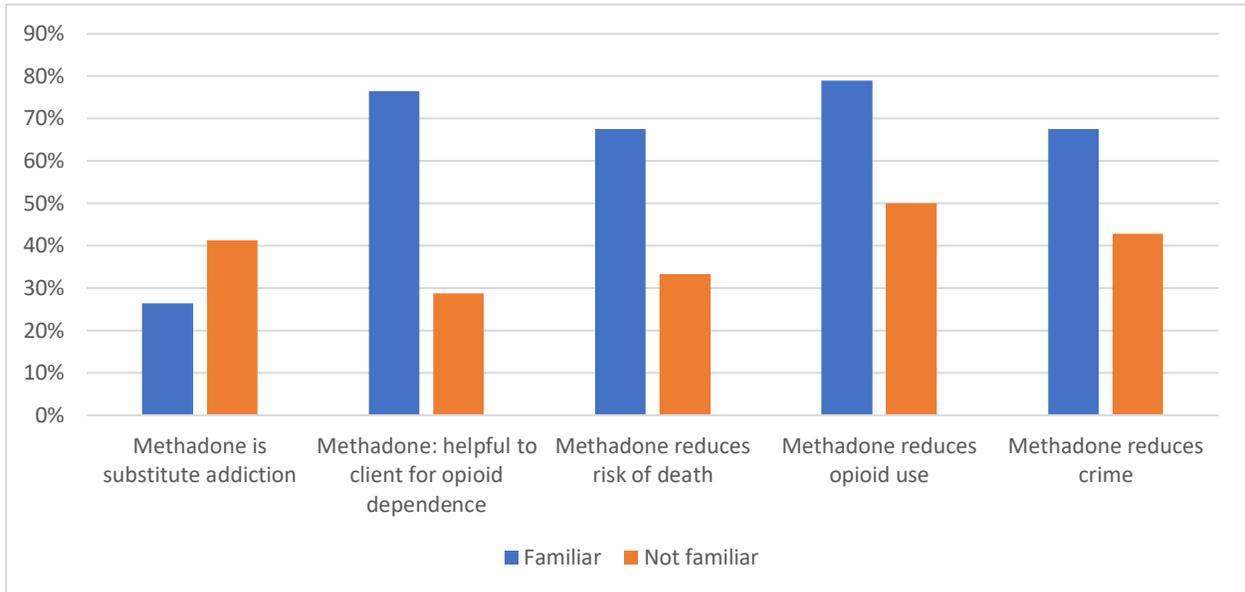


Table 3: Descriptive Statistics

Methadone: familiar with treatment	0.431
Counseling credentials	0.240
Associate/Bachelor degree	0.533
Graduate degree	0.389
Other education	0.0778
Work setting - Criminal justice	0.647
Work setting - Community treatment	0.353
Time in field: Less than 5 years	0.257
Time in field: 5-9.99 years	0.126
Time in field: 10-19.99 years	0.413
Time in field: 20-29.00 years	0.180
Time in field: 30 or more years	0.0240
Observations	167

Logistic Regressions

The current study used logistic regression because the outcome variables were dichotomous. Results from the logistic regressions are present in Table 4, and are reported as odds ratios for each of the five medication beliefs. Interestingly, there is no relationship between methadone familiarity and agreement that methadone is a substitution for addiction. Individuals who are familiar with methadone are more likely to agree that methadone reduces crime (OR 1.32, $p < 0.001$), reduces risk of death (OR 1.37, $p < 0.001$), reduces opioid use (OR 1.31, $p < 0.001$), and is helpful to client for opioid dependence (OR 1.61, $p < 0.001$). Counseling credentials were not associated with any outcomes. There was also no relationship between education levels and agreement with the medication belief measures. Length of time working in the corrections field was also not related to outcomes of interest.

Table 4: Odds Ratios for Methadone Beliefs - Agree or Strongly agree Response

	(1)	(2)	(3)	(4)	(5)
	Methadone is substitute for addiction	Methadone reduces crime	Methadone reduces risk of death	Methadone reduces opioid use	Methadone: helpful to client for opioid dependence
	OR	OR	OR	OR	OR
Methadone: familiar with treatment	0.86	1.32***	1.37***	1.31***	1.61***
Work setting – Criminal justice	0.90	1.03	0.91	1.01	0.93
Counseling credentials	0.98	1.03	0.85	1.02	0.84
Associate/Bachelor degree	0.88	1.01	1.02	1.02	0.83
Graduate degree	0.93	1.13	1.10	0.99	0.80
Time in field: Less than 5 years	0.91	1.45	1.07	1.45	1.24
Time in field: 5-9.99 years	0.94	1.40	1.29	1.60	1.41
Time in field: 10-19.99 years	0.88	1.45	1.10	1.48	1.38
Time in field: 20-29.00 years	0.93	1.51	0.99	1.33	1.24
Observations	165	163	162	164	167

Exponentiated coefficients

OR=Odds Ratio

* p<0.05, ** p<0.01, *** p<0.001

DISCUSSION

Using existing data from the CJ-DATS2 (Fendrich & LeBel, 2019), this study examined the relationship between methadone familiarity and methadone attitudes among 167 community corrections staff. I hypothesized that staff who were familiar with methadone would be associated with more positive attitudes towards methadone. The results of the current study did show that community corrections staff who agreed that they were familiar with methadone were more likely to have positive methadone attitudes. I did not find an association between other covariates of interest, such as years of experience, counseling credentials, or methadone attitudes. This information is important, especially in light of the KAB model. Notably, the KAB model assumes that attitudes are related to behavior, which suggests that positive methadone attitudes may be related to increased intent to refer (see Figure 2), which has life-saving implications. MOUD is effective in reducing overdose, decreasing crime, and decreasing relapse, among other positive community outcomes. Methadone has been shown to reduce the likelihood of overdose death by 59% and is associated with improved outcomes for individuals on probation/parole (Laroche et al., 2018).

Prior studies have found that one barrier to MOUD utilization in the criminal justice population is a lack of knowledge among criminal justice staff. This current study finds that methadone familiarity is associated with more positive attitudes toward methadone. This implies that more training and education to increase familiarity for correctional staff may increase intent to refer to methadone treatment among correctional staff. For example, the National Association of Drug Court Professionals (NADCP) could make it a priority to increase MOUD training for these criminal justice personnel. Additionally, probation and parole agencies should consider

training staff on different types of MOUD. Furthermore, attempts to better drug treatment efforts in the U.S.'s community surveillance environment could influence readmissions, morbidity, and fatalities in people with OUD who are also under surveillance (Kennedy-Hendricks et al., 2021).

Limitations

One limitation familiarity is self-assessed, and familiarity does not necessarily equate to knowledge. One may be familiar with methadone without possessing a great deal of knowledge. Another limitation is that the data were collected between 2010 and 2012, and thus might be lagging in terms of current attitudes, familiarity, knowledge, and behavior. However, this study has the ability to provide some insights into the barriers and relationships among the study's factors. Thus, future research should examine the relationship between objective MOUD *knowledge* and MOUD attitudes among corrections staff. These studies should also consider including intent to refer, or actual referrals of individuals to MOUD treatment as an outcome. Moreover, additional future research could focus on organizations in the justice system outside of community corrections to assess whether these results extend to those populations. Some organizations might include the courts, law enforcement, and community treatment providers that partner with the justice system. In addition to examining the relationship between objective MOUD knowledge and attitudes, future research should also examine behaviors (e.g., referrals to MOUD, MOUD utilization). Future research should examine the relationship between familiarity/knowledge, attitudes, and behaviors in other criminal justice settings and for other MOUDs (i.e., buprenorphine and naltrexone).

CONCLUSION

The United States is in the midst of an opioid crisis. Fortunately, effective treatments for opioid use disorder exist (OUD); however, they are underutilized. Medications for opioid use disorder (MOUDs) decrease death by 50 %. These MOUDs are particularly relevant in the criminal justice population given that this population has a higher OUD disease burden, but is less likely than the general population to receive this life-saving treatment. Research has identified negative attitudes toward MOUDs among corrections staff as a barrier to utilizing MOUDs. This thesis examined the relationships between community correction staff familiarity with methadone, one type of MOUD, and their opinions toward methadone using extant data from the Criminal Justice Drug Abuse Treatment Studies 2 (CJ-DATS 2) series. These data were collected between 2010-2012. The study was guided by the Knowledge-Attitude Behavior (KAB) model. The data are described using descriptive statistics, and I estimate logistic regressions to examine the possible relationships between respondent familiarity with methadone and their attitude toward methadone while controlling for other covariates. With a sample of 167 corrections employees, the current study found that corrections staff who agreed or strongly agreed with the statement that they were familiar with methadone had more positive methadone attitudes. Future research should examine the relationship between familiarity/knowledge, attitudes, and behaviors in other criminal justice settings and for other MOUDs (i.e., buprenorphine and naltrexone).

Other research has examined various barriers to MOUD utilization among this population; however, to my knowledge, no research has examined the relationship between community correction staff familiarity with methadone and their methadone opinions. Using

extant data from the CJ-DATS 2, this study found that community corrections staff that self-assessed a strong familiarity with methadone had more positive methadone attitudes.

Implications include increasing MOUD familiarity training for criminal justice correctional staff. Increased utilization of MOUDs among the probation/parole population has been shown to have positive effects (Kumar et al., 2021).

These findings underscore the importance of training interventions about MOUD for corrections staff. About 35 percent of respondents agreed that methadone is a substitute for addiction. This stigma toward methadone has life-saving implications. This research shows that increased familiarity with methadone is associated with improved attitudes, which implies that increasing familiarity among corrections staff will likely have life-saving implications for individuals under community supervision. More corrections agencies should consider providing MOUD training for their staff.

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