RESEARCH

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Examining an Opioid Court for Felony Probationers

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In response to the opioid crisis, specialty opioid courts have emerged, but we know little about those who participate or their outcomes. We examined participant characteristics along with the impact of their sociodemographic, criminal history, substance use, mental health, and other variables on retention and graduation in an opioid court program. Key findings suggest that participants without health insurance, those with multiple mental health problems, and those with early justice system involvement had poorer outcomes. These results suggest that additional interventions both within the court and through community partners for those with more complicated life circumstances may prove beneficial. Indeed, ongoing budget constraints and limited resources may require problem-solving courts to focus on those at the greatest risk for failure. Nevertheless, opioid courts must be prepared to provide all participants with the tools, services, and support they need so they can realistically achieve otherwise extremely challenging goals.

Key words: opioid court, opioids, drug court, OUD

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Introduction

With over 9 million people misusing opioids and 5.6 million with an opioid use disorder (OUD) in the U.S. (Substance Abuse and Mental Health Services Administration [SAMSHA], 2022), this is now considered both an epidemic and a public health crisis; the "most problematic form of drug use globally" (United Nations Office on Drugs and Crime, 2015, p. xi). Indeed, in 2020, 75% of all drug overdose deaths involved opioids (Centers for Disease Control and Prevention, 2022). Although high rates of drug use and overdose are not new in justice-involved populations, the opioid epidemic has raised new challenges for the criminal justice system (CJS) as it navigates this growing population with vast and immediate treatment needs.

Each of the major components of the CJS has been impacted by this crisis. Police increasingly serve as first responders for opioid overdoses and continue to make a growing number of opioid-related arrests (Pike et al., 2021). In turn, escalating arrests have severely impacted the courts. Indeed, the National Judicial Opioid Task Force states that the criminal courts have been exponentially affected by the scope and magnitude of the problem (2019). Finally, over one-quarter of state prisoners report lifetime opiate use (Bronson et al., 2017), but treatment within correctional facilities and on release is sorely limited (Belenko et al., 2012; Reichert & Gleicher, 2019). As such, reentry is a high-risk period for relapse, overdose, and recidivism (Binswanger et al., 2020; Ranapurwala et al., 2018). In fact, the leading cause of death among those released from jail or prison is opioid-related overdose (Joudrey et al., 2019).

One popular intervention for drug-using, justice-involved individuals has been drug court. Based on a problem-solving, non-adversarial approach, drug courts provide judicially-based supervision, community-based treatment and address participant's myriad needs; they've been hailed as one of the most promising advances made in the CJS, significantly reducing drug use and crime at a lower cost (National Association of Drug Court Professionals, 2018). As many of these programs have admitted an increasingly large number of participants with OUD, some have responded by offering medications for the treatment of OUD, while others have been modified specifically for OUD participants, including the Wisconsin Court in the present study. Although treatment courts are well-positioned to address high-risk/high-need individuals with OUDs (DeVall et al., 2023), some research suggests that "drug court benefits have not accrued equally for persons with OUD" (Marlowe, et al., 2022, p. 2).

Despite the high prevalence of OUD participants in treatment courts, there is a dearth of empirical literature on individual-level characteristics of this population for its predictive value on program outcomes; our understanding is even more limited regarding those in opioid-specific courts. This is largely due to their small numbers and relatively short existence. Thus, we are missing a basic understanding of opioid court participants that allows us to respond more proactively to risks and needs that lead to better post-court success. Our study addresses this gap by examining sociodemographic and other individual-level factors on retention and graduation outcomes among participants in a Wisconsin opioid court.

Literature Review

Opioid Dependence and Drug Courts

At year-end 2023, there were over 4,000 treatment courts in the U.S, of which the majority were adult drug courts (National Treatment Court Resource Center [NTCRC], 2024). To date, drug courts have been the primary type of treatment court to respond to OUD offenders. While prevalence rates vary, there has been an increasing number of opioid users in drug courts. Early drug court research by Saum et al. (2001) found that about a quarter of drug court participants indicated any opiate use at program entry. Friedman & Wagner-Goldstein's 2015 profile of drug courts found the percentage of opioid addiction ranged from 33%-75% for participants spanning three different community types. More recently, Marlowe et al. (2022) reported that among 169 drug courts surveyed, more than three quarters of the respondents (78 %) indicated that at least half of their clients had an assessed OUD and roughly half (49 %) reported that most or nearly all clients had an OUD. Following this pattern, a national treatment court survey found that over 80% of adult drug court participants reported heroin/opioid use (DeVall et al., 2023).

Although research clearly suggests an increasing prevalence of OUD participants in treatment courts, studies don't typically report on the characteristics or findings specific to these OUD offenders. Moreover, because drug courts respond to individuals with myriad types of substance use disorders, we can't generalize findings from drug courts and their participants to those in opioid courts. Thus, it's important to examine the characteristics, social support, health, and criminal attributes of those in opioid courts as they may be uniquely different.

Opioid Court Models

Like the initiation of drug courts in response to overwhelming numbers of drug-involved offenders, opioid courts have emerged to manage the high prevalence of opioid users who are involved in the justice system. For the purposes of this paper, we have developed a general definition of *opioid courts* as "problem-solving courts for OUD populations" to encompass the variety of models that have been implemented. As such, the earliest opioid court known to the authors was developed in 2012 in Waukesha, Wisconsin. This court was based on the drug court model and was designated solely to meet the complex and difficult needs of opioid users. Key modifications focused on the intensive treatment demands and overdose risks of OUD offenders. The court included the use of medication-assisted treatment (MAT)[1] and frequent judicial monitoring, but the primary modification was the hiring of a full-time licensed and dedicated substance use treatment counselor who also served as case manager.

1 More recently, the term Medications for Opioid Use Disorder (MOUD) has been used in lieu of MAT which suggested that medication was secondary to other treatment interventions. According to the National Institute on Drug Abuse (2021, p.1), MOUD "aligns with the way other psychiatric medications are understood (e.g., antidepressants, antipsychotics), as critical tools that are central to a patient's treatment plan."

Another opioid court model, the Opioid Intervention Court (OIC), began in 2016 in Buffalo, New York. The OIC court focused on the immediate risks and needs of this population; in fact, it was created as a response to three drug court participants who fatally overdosed in the same week while awaiting their second court appearance (Kahn et al., 2021). An important feature of the OIC is to provide opioid users with more immediate screening for overdose risk along with rapid assessment and treatment engagement than what is typically provided in the standard drug court model (Kahn et al., 2019). In fact, court personnel describe the OIC as an "emergency room" in a drug court, emphasizing how individuals are quickly triaged into the program (Kahn et al., 2021). Another unique difference between drug and OIC courts includes broader legal eligibility. For example, OICs serve more as crisis response and stabilization programs, thus not limiting eligibility to a particular risk-level or type of criminal offense (Center for Court Innovation [CCI], 2019). Finally, OICs require extremely high levels of judicial supervision and monitoring; it is recommended that participants attend court each weekday for at least 3 months and undergo frequent random drug testing (CCI, 2019). To inform and standardize these new specialty courts, the *10 Essential Elements of Opioid Intervention Courts,* a framework based on drug court research and practice, was published in 2019. This guide illustrates OIC objectives including the urgency of addressing overdose risk and the initiation of MAT within 24 hours of arrest (CCI, 2019).

Several other courts have been developed using some or all of the elements in the models described above; these are sometimes referred to as heroin courts or recovery courts. Therefore, it is likely that additional opioid courts have not been captured in the data as they are not recognized independently as "opioid courts"; this definitional issue creates additional barriers to research. At year-end 2023, only 36 total opioid courts in the U.S. had been identified by the NTCRC (2024).

Opioid Court Research

As noted, we have a limited understanding of the characteristics of opioid court participants with much of this confined to the NY OICs. Kahn et al. (2019) examined 295 individuals screened for the Buffalo OIC; most were male (54%), on average 34 years old, and about a quarter (23%) had a high school diploma or GED. Almost everyone (95.3%) reported heroin use, about 25% reported using cocaine or crack and about 25% reported having a co-occurring mental health disorder. Just over half reported safe living conditions and only about 5% reported having health insurance. Cerulli et al.'s (2022) interviews of a small group of women (N = 31) enrolled in the same OIC, found participants to be on average 31 years old, the majority were White, with approximately 68% reporting a GED or high school education and almost 75% were unemployed. Additionally, findings showed many of the women had a co-occurring mental health disorder and reported negative experiences with the CJS prior to entering opioid court. Similar characteristics were reported by Bleasdale et al. (2022) in their study of the same OIC.

Program outcomes for the Buffalo OICs have also been examined. Kahn et al. (2021) studied 384 participants and found that 34% completed the program; of the non-completers, most were out on warrants. In a subset of these cases (n = 206), each day spent in the OIC

was associated with a 1% increase in the odds of completion and those who received MAT were over three times more likely to complete. These researchers also conducted a small convenience sample of those who were enrolled at least 35 days (n = 18); most reported general satisfaction with the program, but most indicated that educational and vocational opportunities should be increased. Carey (2021) studied the same court comparing those in the OIC with opioid users who experienced typical case processing; findings indicated that OIC participants were more likely to engage in treatment and were half as likely to die of a drug overdose within one year of enrollment. It was also determined that the most successful OIC participants were those who tested positive for opioids alone, rather than in combination with cocaine.

Findings of other opioid courts have also shown promising results. For example, the Cumberland County Pennsylvania OIC witnessed a 40% reduction in overdose deaths; no overdose deaths were reported among program graduates (Lucas & Arnold, 2019). Brown County's "Heroin Court" in Wisconsin, which is described as a drug court track for those with OUD, reports that 35 of the 72 participants graduated from the program and a 90% reduction in police contacts and jail placements (Lucas & Arnold, 2019). In 2017, Delaware County Pennsylvania implemented an opioid-specific diversion court within their Court of Common Pleas. Early findings reported by the court suggest appreciable success with many participants engaged in long-term treatment programs, and two participants are now certified recovery specialists (Delaware County Court of Common Pleas, n.d.). An opioid treatment court was established in Gila County Arizona in 2017 which adopted some OIC features such as rapid assessment and treatment engagement. As such, they reduced the average time from arrest to treatment from 6–9 months to 7–10 days (Lucas & Arnold, 2019).

Current Study

If opioid courts hope to serve as models for future replication, it is critical that we understand the characteristics of their participants and examine the factors that may predict successful (and unsuccessful) outcomes. Moreover, this knowledge can help us to better assess how these courts can reduce opioid use and related overdoses, as well as improve recidivism and other long-term outcomes. This study is a step in that direction.

Method

Opioid Court Program

In 2010 when Purdue Pharma released an abuse-deterrent formulation of OxyContin and increasing numbers of physicians limited opioid prescriptions, users turned to heroin; this is thought to have marked the beginning of the heroin epidemic (Berezow, 2018) and is on the heels of the creation of the opioid court studied here. Indeed, it was around this time when community stakeholders in Waukesha, Wisconsin recognized a growing opioid problem in their county, particularly among young adults. As many of these stakeholders had experience implementing a modified drug court for repeat DUI offenders (see Saum et al., 2013), they sought funding from the Bureau of Justice Assistance for an adult opioid

court that targeted younger individuals. The court was implemented in 2012 as a collaborative effort between Waukesha County and Wisconsin Community Services. Referrals came primarily from the probation department and public defenders, as well as from the prosecutor's office, and local jails. Participants were required to be adult residents of the County, diagnosed with opioid dependence based on the Texas Christian University Drug Screen II which corresponds approximately with DSM-IV-TR (American Psychiatric Association, 2000) drug dependence diagnoses, assessed to be high-risk, and to be on probation for a felony offense with no history of violent offenses.[2]

The opioid court followed a standard problem-solving court four-phase structure that involved attending treatment sessions and status hearings, judicial monitoring, meetings with the case manager and frequent random drug testing. Additional supervision and support were provided by probation officers. Participants had to remain in the program at least twelve months and successfully complete the requirements of each phase to graduate. Those who failed to complete the program were subject to revocation of their supervision status.

As a drug treatment court modified to address the complex and intensive treatment needs of individuals with OUD, one important feature was the dedicated case manager who was a Certified Alcohol and Drug Counselor. The case manager worked closely with the participants as well as with community treatment partners to meet their specific needs which included individual and group treatment and the use of MAT. Vivitrol (naltrexone) was provided at no cost through the grant, but participants had to use private insurance for methadone or buprenorphine. Though voluntary, participants were strongly encouraged to use Vivitrol as part of their treatment protocol and it was regularly discussed during status reviews before the opioid court judge. In addition, state health officials attended pre-hearing conferences to share expertise regarding available treatments and services.

Sample, Data Collection and Measures

Our sample consisted of all participants admitted to the Wisconsin Opioid Court between March 2012 and November 2013, yielding a sample of 56 individuals. Following admission, participants completed an in-depth psychosocial intake interview with the case manager that asked questions regarding sociodemographic characteristics, criminal history, substance use and treatment history, mental health, chronic medical problems, abuse and/or neglect and social support (i.e., the independent variables). In addition, some sociodemographic and criminal history data were coded from the publicly available information in the Wisconsin Court System Circuit Court Access website. All participant data were collected and maintained by the case manager in a management information system. A computerized index was developed that linked the identifying information with an arbitrary numeric code unique to the specific person. This de-identified data were then shared with the research team in compliance with Temple University's Institutional Review Board (IRB).

2 Currently, the program also includes users of other drugs (there is no longer a requirement for participants to have a diagnosis of opioid dependence) and now serves as a traditional drug court.

We examined two dependent variables, graduation and retention. Graduation was coded as 1 for successful completion of the opioid court program and 0 for those who failed to complete. Reasons for failure included being discharged for repeated noncompliance with program rules, voluntary withdrawal, absconding, new criminal charges, or medical issues. Of the 56 participants in our study, we found that 43% graduated; among those who failed (57%), the primary reason was noncompliance (46%). The second dependent variable, retention, reflected the length of time in the program by days; this was created by subtracting the entry date from the discharge date. We found that the mean length of stay in the program was 442 days (range 3–1,077 days).

Analytic Plan

Univariate analyses were completed to examine the participants' characteristics. For the analysis of the graduation and retention outcomes, a two-staged approach was taken. The first stage was to do a series of bivariate analyses (i.e., chi-square, t-test, ANOVA) to identify a subset of predictor variables that had at least a marginally significant ($p<.10$) relationship with the dependent variables. The second stage was to use all these variables in multivariable analyses; that is, logistic regression for the binary dependent variables graduated (0 = 'no'; 1 = 'yes') and survival analyses using Cox Proportional Hazards regression for the retention variable, the number of days in opioid court.[3]

Results

Sociodemographic

Most of the 56 participants were white (93%) and male (68%). The median age of participants when they entered the program was 24 (range 17–45), with the majority (64%) being 25 or younger. Most (51%) had a high school diploma or its equivalent; 36% had additional education beyond high school. The majority (57%) were unemployed. Half (49.9%) of the participants had health insurance (many reported their parents as the source for this), and most of these plans (38%) included a behavioral health rider that provided for substance use and mental health treatment.

Table 1. Participant Characteristics (N = 56)

Characteristics		% of Total Sample[a]
Sociodemographics		
Gender		
	Male	67.9
	Female	32.1
Race/Ethnicity		
	White Caucasian	92.7
	Bi-Racial	3.6

3 It should be noted that statistical power was low because of the relatively small number (ranging from 52 to 56 depending on missing data) of participants. Although there may be apparently large differences between groups in the proportion who graduated, only those differences with corresponding large effect sizes reached statistical significance.

Characteristics	% of Total Sample[a]
Hispanic	3.6
Age	
Median Age (range)	24 (17-45)
Under 20	7.3
20 to 25	56.4
26 or older	36.4
Marital Status	
Never Married/Divorced/Separated	98.2
Married	1.8
Education	
Median (Range)	12 (10-16)
< than High School	13.2
High School/GED	51.0
> than High School/GED	35.8
Employment	
Unemployed	56.6
Part-time	18.9
Full-time	24.5
Health Insurance	
w/Behavioral Rider	38.4
w/o Behavioral Rider	11.5
No Insurance	50.1
Criminal History	
Juvenile Arrest Record	32.1
Adult Drug Law Offense	80.0
Possession of a Controlled Substance	75.0
Possession of Drug Paraphernalia	55.4
Operating While Intoxicated (OWI)	30.4
Adult Property Offense	57.1
Adult Public Disorder Offense	57.1
Substance Use (Lifetime)	
Alcohol	92.5
Prescription Opioids	88.7
Heroin	88.7
Cocaine	64.2
Crack	24.5
Marijuana	84.9
Amphetamines/Methamphetamines	11.3
Substance Use (at Intake)[b]	
Alcohol	81.1
Prescription Opioids	73.6
Heroin	79.2
Cocaine	30.2
Crack	11.3
Marijuana	53.8
Amphetamine/Methamphetamines	3.8
Concurrent Drug Use (at Intake)[b]	92.5
Injection Drug Use (at Intake)[b]	79.2
Substance Use Treatment (Lifetime)	73.6
Detox	11.3
Regular Outpatient	15.1
Intensive Outpatient	37.7
Residential	28.3
Medication Assisted Treatment	17.0
Currently in Treatment	18.9
Overdose (Lifetime)	47.2
Any Mental Health Problem (at Intake)[b]	41.8
Anxiety	21.8
Depression	16.3
Bipolar	9.4
PTSD	3.8

Characteristics	% of Total Sample[a]
2 or more Mental Health Problems (at Intake)[b]	9.4
Use of Psychiatric Medication (at Intake)[b]	28.8
Chronic Medical Problem (Lifetime)	13.5
Serious Head Injury (Lifetime)	18.0
Abuse and/or Neglect (Lifetime)[c]	20.8
Social Support (at Intake)[b]	
Supportive Family Member(s)	
None	3.8
1 to 2	40.4
3 or more	55.8
In a Self-Help Group (at Intake)[b]	28.3

[a]Percentages reflect only those with valid data. Numbers may exceed 100% because some categories are not mutually exclusive.

[b]"At intake" refers to the 6-month time period preceding opioid court entry.

[c]Due to limitations in the intake questionnaire, the type of abuse and/or neglect reported was not able to be specified.

Criminal history data showed about one-third (32%) had been arrested as juveniles (median age of first arrest was 15). As adults, 80% had been arrested at least one time during their life for a drug offense; the most common of these was possession of a controlled substance (75%). Possession of drug paraphernalia (55%) and operating while intoxicated (OWI) (30%) were also common. Nearly 60% had been arrested for a property offense including theft of a movable object (45%) and burglary (21%), while over half had been arrested for a public disorder offense (57%) including bail jumping (45%).

Participants reported using a myriad of substances throughout their lifetimes. All participants reported lifetime use of at least one of two forms of opiates; nearly 90% had used prescription opioids and about 90% had used heroin. Lifetime use of other drugs included alcohol (93%), marijuana (85%), cocaine (64%) crack (25%), and amphetamine/methamphetamine (11%). The fact that close to half (47%) had ever experienced a drug overdose is extremely troubling.

At program intake, participants were also asked about their substance use within the past 6-months; all participants reported using opiates, with 74% indicating the use of prescription opioids and 79% using heroin. Other drugs reported included alcohol (81%), marijuana (54%), cocaine (30%), crack (11%); and amphetamine or methamphetamine (4%). Unfortunately, injection drug use was found to be prevalent (79%). Moreover, the pervasiveness of substance use was evident with the large majority (93%) of participants reporting concurrent use of two or more drugs. Findings also indicated that most participants (74%) had at least one experience with substance use treatment in their lifetime. Common treatment types were intensive outpatient (38%) and residential (28%). Though there are several FDA-approved MATs for treating opioid addiction, only 17% of the participants reported "ever" using MAT. Finally, at program entry, 19% of participants reported being in substance use treatment.

Any mental health problem(s) was reported by over two-fifths (42%) of the participants at intake. These mental health problems included, 22% who reported anxiety, 16%

depression, 9% bipolar disorder and 4% Post Traumatic Stress Disorder (PTSD); more than 9% of the sample reported 2 or more mental health problems. Twenty-one percent of participants indicated histories of abuse and/or neglect. Close to one-third (29%) reported they were taking psychiatric medications (e.g., antidepressants) at the time of intake.

Relatively few participants (14%) reported having chronic medical problems and almost one-fifth of participants (18%) reported they had experienced serious head injuries. Finally, two measures of support were examined; 56% of the participants reported that they had three or more family members who provided positive social support (almost all had at least one supportive family member) at the time of court entry, and over a quarter (28%) of the participants were involved in a self-help group.

Table 2. Correlates of Graduation and Retention

Characteristic/Value		% Graduated	Days Retained Mean (SD)	Log(10) Days Retained Mean (SD)
Demographic Information				
Gender				
	Male	42.1	400.8 (236.3)	2.45 (.51)
	Female	44.4	530.2 (259.0)	2.65 (.30)†
Race/Ethnicity[a]				
	White/Caucasian	41.2	441.9 (250.5)	2.51 (.46)
	Other	50.0	386.8 (257.8)	2.45 (.47)
Age[b]				
	Age - 17-25	40	486.7 (261.8)†	2.57 (.39)*
	Age - 26 or older	45	352.3 (203.4)	2.39 (.54)
Education				
	< than High School	42.9	448.1 (309.0)	2.48 (.51)
	High School/GED	37.0	386.3 (224.4)	2.45 (.49)
	> High School/GED	47.4	524.6 (242.2)	2.68 (.20)
Employment				
	Unemployed	33.3	424.2 (244.3)	2.50 (.47)
	Employed[c]	52.2	469.9 (251.6)	2.58 (.33)
Health Insurance				
	No	26.9	353.4 (207.9)	2.40 (.50)
	Yes	57.7*	549.6 (238.2)**	2.70 (.19)**
Criminal History				
Juvenile Arrest Record				
	No	52.8	466.9 (257.1)	2.55 (.43)
	Yes	17.6*	395.7 (220.8)	2.48 (.38)
Drug Law Violations				
Possession of a Controlled Substance				
	No	50.0	507.2 (245.9)	2.64 (.30)
	Yes	40.5	420.8 (249.2)	2.48 (.49)
Possession of Drug Paraphernalia				
	No	44.0	422.1 (235.6)	.42 (.08)
	Yes	41.9	458.8 (262.0)	.49 (.09)
Operating While Intoxicated (OWI)				
	No	46.2	479.8 (262)†	2.57 (.41)
	Yes	35.3	356.7 (197.3)	2.40 (.55)
Property Crimes				
Petty or Retail Theft				
	No	44.2	419.6 (231.6)	2.48 (.49)
	Yes	38.5	517.9 (297.2)	2.63 (.30)
Theft of Moveable Object				
	No	38.7	423.4 (261.2)	2.45 (.55)
	Yes	48.0	465.9 (236.2)	2.59 (.30)
Burglary				
	No	43.2	443.9 (238.4)	2.52 (.48)
	Yes	41.7	437.0 (296.4)	2.52 (.39)
Forgery/Fraud				
	No	39.5	423.2 (252.1)	2.47 (.51)
	Yes	50.0	482.9 (244.4)	2.61 (.31)

Characteristic/Value		% Graduated	Days Retained Mean (SD)	Log(10) Days Retained Mean (SD)
Public Disorder Crimes				
Bail Jumping				
	No	48.4	472.6 (246.4)	2.56 (.41)
	Yes	36.0	404.9 (252.1)	2.49 (.51)
Disorderly Conduct				
	No	45.7	470.9 (245.0)	2.57 (.41)
	Yes	30.0	311.6 (235.9)†	2.26 (.59)
Resisting Arrest				
	No	42.9	433.8 (248.8)	2.50 (.47)
	Yes	42.9	502.7 (261.8)	2.62 (.33)
Substance Use (at Intake)				
Heroin				
	No Use	55.6	401.8 (294.5)	2.5 (.37)
	< Daily Use	50.0	347.3 (173.7)	2.5 (.20)
	Daily Use	35.1	471.7 (234.4)	2.6 (.47)
Prescription Opioids				
	No Use	44.4	516.1 (235.1)	2.6 (.35)
	< Daily Use	25.0	288.5 (217.9)	2.3 (.36)
	Daily Use	42.9	462.9 (249.7)	2.6 (.45)
Alcohol				
	No Use	9.1*	246.0 (216.7)**	2.1 (.66)***
	< Daily Use	52.8	502.5 (220.4)	2.7 (.21)
	Daily Use	33.3	456.5 (293.0)	2.6 (.35)
Cocaine				
	No Use	41.7	433.1 (238.2)	2.5 (.46)
	< Daily Use	33.3	480.9 (219.5)	2.6 (.23)
	Daily Use	42.9	462.1 (355.3)	2.5 (.42)
Marijuana				
	No Use	30.0	394.6 (236.3)	2.5 (.32)
	< Daily Use	38.5	462.8 (295.5)	2.6 (.38)
	Daily Use	44.8	454.9 (236.4)	2.5 (.48)
Injected Drugs				
	Never	45.5	352.5 (285.9)	2.4 (.35)
	Yes	40.5	468.1 (232.6)	2.6 (.43)
Concurrent Use of Drugs[d]				
	Yes	27.3	319.3 (304.4)†	2.2 (.70)†
	No	45.2	476.7 (221.4)	2.6 (.26)
Any Mental Health Problem (at Intake)[e]				
	No	45.2	444.3 (231.1)	2.6 (.30)
	Yes	36.4	443.7 (271.7)	2.5 (.54)
Anxiety				
	No	47.6	461.5 (249.2)	2.6 (.30)
	Yes	18.2†	377.6 (233.4)	2.4 (.69)
Depression				
	No	44.4	456.3 (235.3)	2.6 (.30)
	Yes	25.0	375 (309.5)	2.3 (.79)
Bipolar				
	No	41.7	447.0 (250.7)	2.5 (.43)
	Yes	40.0	415.4 (219.5)	2.5 (.34)
Two or More Mental Health Problems (at Intake)				
	No	45.8	465.8 (241.3)	2.6 (.30)
	Yes	0.0*	235.6 (209)*	2.0 (.90)
Use of Psychiatric Medication (at Intake)				
	No	43.2	472.6 (237.6)	2.6 (.28)
	Yes	40.0	399.5 (254.8)	2.4 (.61)
Substance Use Treatment (Lifetime)				
	Never	28.6	377.4 (203.2)	2.5 (.33)
	At least once	46.2	468.0 (258.1)	2.6 (.45)
In Treatment at Intake				
	No	39.1	402.3 (235.8)	2.5 (.48)
	Yes	60.0	627.1 (234)**	2.8 (.16)†
Chronic Medical Problem (Lifetime)				
	None	37.8	417.8 (243.7)	2.5 (.44)
	At Least One	71.4	595.1 (235.9)†	2.7 (.28)
Serious Head Injury (Lifetime)				
	None	41.5	421.8 (241.4)	2.5 (.44)
	At Least Once	22.2	437.3 (232.1)	2.6 (.31)
Abuse and/or Neglect (Lifetime)				
	Not Abused	42.9	426.6 (231.8)	2.5 (.43)
	At Least One Type of Abuse	36.4	510.9 (298.0)	2.6 (.35)

Characteristic/Value		% Graduated	Days Retained Mean (SD)	Log(10) Days Retained Mean (SD)
Social Support (at Intake)				
Supportive Family Members				
	1 or fewer	40.0	354.3 (217.8)	2.3 (.70)
	2 or more	42.9	473.2 (247.0)	2.6 (.31)
In a Self-Help Group (at Intake)				
	No	34.3	412.9 (233.0)	2.5 (.47)
	Yes	55.6	504.6 (266.3)	2.6 (.26)

†$p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$

[a]This variable was dichotomized in to White/Caucasian and other for analysis because too few biracial or Hispanic participants were available to permit separate analyses of each category.

[b]This variable was dichotomized into ages 17 to 25 and ages 26 and older because there were too few individuals in the under 20 group to permit separate analysis of this category.

[c]Employed includes both those with part-time and full-time employment.

[d]Concurrent abuse of drugs reflects whether the participant entered opioid court abusing a single drug or multiple (concurrent) drugs.

[e]This does not necessarily reflect a medical diagnosis of a mental health disorder. Participants self-reported whether they had mental or emotional problems, and then were asked which type of problem. It is assumed (but cannot be ascertained) that participants were reporting based on what they had been told by a mental health professional.

Bivariate Analyses: Identifying Correlates of Graduation and Retention

Sociodemographic information and graduation and retention.

Examining the relationships between sociodemographic information and graduation can identify specific subgroups of participants who are most likely or not as likely to graduate. Findings presented in Table 2 showed only one variable, having health insurance [χ^2 (1, n = 52) = 5.04, p = .025)], to be significantly related to a higher likelihood of graduating from the opioid court. Other variables that we typically find associated with drug court graduation, including gender, age, ethnicity, education level and employment, were not associated with graduating from the opioid court.

Another set of analyses examined the relationships between retention (measured as the number of days in the opioid court program) and the sociodemographic variables described in the preceding paragraph. To reduce large standard deviations, a logarithmic transformation was used to create a variable with more limited dispersion. Findings are presented in Table 2 for both the retention and the log-transformed variables. For retention, results were similar to the analysis of graduation, with a few exceptions. In this set of analyses, being female (mean = 530.2, SD = 259) was marginally related to longer stays (males mean = 400.8, SD = 236.3) [t(54) = -1.86, p = .069], as was being younger [t(53) = 1.97, p = .053; for the log-transformed variable, t(53) = 2.12, p = .039]. Findings for health insurance mirrored findings for graduation, with those who had insurance having longer stays in opioid court than those without it [t(54) = -3.16, p = .003]. Race/ethnicity, education and employment status were not associated with retention in the court.

Criminal history and graduation and retention.

As shown in Table 2, analysis of the associations between graduation and criminal history showed only one statistically significant relationship. That is, those who had a juvenile arrest history were significantly less likely to graduate from the opioid court [χ^2 (1, n = 53) = 5.87, p = .015)]. With respect to retention, only two variables were found to be marginally related; participants with an offense history that included an OWI had shorter stays in the program than those without an OWI [t(54) = 1.72, p = .089] as did those with a history of disorderly conduct [t(54) = -1.87, p = .06]. Findings showed no statistical relationship between graduation or retention and having a criminal history that included arrests for possession of a controlled substance, possession of drug paraphernalia, petty or retail theft, theft of a moveable object, burglary, forgery/fraud, bail jumping, or resisting arrest.

Substance use, substance use treatment, and graduation and retention.

The next set of analyses examined the relationship between different substance use variables and graduation and retention. The only drug that was statistically significantly related to graduation and length of stay was alcohol. More specifically, those who didn't use alcohol or reported daily use (in the last 6 months) were less likely to graduate than those reporting alcohol use on a less than daily basis [χ^2 (2, n = 53) = 6.81, p = .033)]. This also was true for the length of stay, with those who didn't use alcohol and those who reported daily use having shorter stays in opioid court [F(2, 50) = 5.35, p = .008]. Findings also showed those who used two or more drugs (i.e., concurrent use) were marginally more likely to remain in the opioid court longer than those who did not [t(51) = -1.94, p = .058], which also was true for the logarithmic transformation of the number of days in opioid court [t(51) = -1.87, p = .088]. Finally, having ever participated in substance use treatment was unrelated to graduation or retention; however, those in substance use treatment at intake had significantly longer stays than those who were not [t(54) = -2.74, p = .008)].

Mental health, psychiatric medicine and graduation and retention.

Findings summarized in Table 2 showed that having any mental health problem or taking psychiatric medication were not associated with graduation or retention. This was also true for depression and bipolar disorder diagnoses. There was, however, a marginal difference noted for anxiety, with those who reported having anxiety having lower graduation rates (18%) compared to those who did not have it (48%) [χ^2(1, n = 53) = 3.11, p = .078)]. Participants with 2 or more mental health problems were less likely to graduate from the program [χ^2(1, n = 53) = 3.92, p = .048)] and were found to have overall shorter stays in the program.

Health problems, social support, and graduation and retention.

Findings presented in Table 2 show only one variable, having a chronic medical problem, was marginally related to graduation compared to those who did not [χ^2(1, n = 53) = 3.11, p = .078)]. Although it falls outside of the marginal threshold of p = .10, being

involved in a self-help group at opioid court entry appears to improve the likelihood of graduation [$t(51) = -1.29$, $p = .20$)].

Table 3. Summary of Hierarchical Logistic Regression Analyses for Predicting Graduation from Opioid Court

	Model 1			Model 2			Model 3			Model 4[b,e]			Model 5[b,e]		
Predictors	**B**	**OR**	**95%[a] CI**	**B**	**OR**	**95%[a] CI**	**B**	**OR**	**95%[a] CI**	**B**	**OR**	**95%[a] CI**	**B**	**OR**	**95%[a] CI**
Health Insurance	1.3*	3.7	[1.15, 11.86]	1.3*	3.8	[1.11, 13.00]	1.1	2.9	[.73, 10.4]	1.2	3.2	.79	1.0	2.8	[.62, 12.2]
Juvenile Arrest Record				-1.6*	.20	[.05, .88]	-1.5*	.22	[.05, .98]	-1.5	.2	[.05, 1.3]	-1.1	.4	[.06, 2.09]
No Alcohol Use[c]							-1.4	.25	[.01, 4.4]	-1.5	.2	[.01, 5.7]	-1.3	.3	[.01, 15.1]
Daily Use[c]							.5	1.7	[.21, 12.7]	.2	1.3	[.11, 14]	1.2	3.3	[.1, 97.2]
Anxiety										-1.4	.2	[.03, 1.8]	-1.7	.2	[.02, 1.9]
Two or More Mental Health Problems[d]										—[d]			—[d]		
In Treatment										1.2	3.3	[.6, 19.8]	1.0	2.7	[.5, 15.9]
Chronic Medical Problem													2.1	8.2	[.6, 117]
Model Fit Statistics															
Model χ^2		5.1*			10.4			14.1			17.8			20.9	
-2 Log Likelihood		65.7			60.5			56.7			53.1			48.8	
Cox & Snell		.09			.18										
Nalgerke R^2		.13			.24			.32			.39			.45	

	Model 1			Model 2			Model 3			Model 4[b,e]			Model 5[b,e]		
Predictors	B	OR	95%[a] CI	B	OR	95%[a] CI	B	OR	95%[a] CI	B	OR	95%[a] CI	B	OR	95%[a] CI

[†]$p < .10$; *$p < .05$; **$p < .01$; *** $p < .001$

[a]Odds ratios below 1 indicate a reduced likelihood of graduating and odds ratios above 1 indicate an increased likelihood. By convention the 95% confidence intervals are shown alongside the odds ratio. The interval can include negative and positive values and can provide both an assessment of a variable's statistical significance (i.e., variables who 95% confidence intervals include 1 cannot be conclusively declared as statistically significant). The 95% CI also helps diagnose predictor/model instability.

[b]The general rule of thumb is to have a minimum of 10 subjects for each parameter in the logistic regression model to achieve some degree of model stability. To run a full model that also included anxiety, being in treatment at drug court intake, and chronic health problems, a total of 80 participants are needed.

[c]The referent category for this contrast was less than daily alcohol use. The interpretation of the coefficients, therefore, is the difference between the no alcohol use versus less than daily, and less than daily versus daily alcohol use, respectively.

[d]COD2 = two or more mental health problems at intake. This variable was excluded from analyses because of high multicollinearity with anxiety.

[e]This is a statistic used for comparing model fit. It represents subtracting the -2 Log Likelihood for the models being compared. The resulting value is distributed as a chi square with one degree of freedom. Whether the value achieved is statistically significant can be ascertained by examining a table showing critical value thresholds.

Logistic regression for predicting graduation from opioid court.

As shown in Table 3, a hierarchical series of logistic regression models were computed using the variables shown in the bivariate analyses to be significantly ($p < .05$) or marginally (p<.10) related to graduating from opioid court. The first model (model 1) presents findings for a logistic regression that included demographic variables only, and each subsequent model adds a different type/category of predictors (e.g., model 2 adds juvenile arrest record; model three adds alcohol use). Both unstandardized coefficients (B), odds ratios (OR), and the 95% confidence interval (CI) for each predictor is presented for each model iteration. The analyses were limited by the small sample size; for the current findings, the models become progressively less precise and more unstable in terms of their estimates of parameters and overall fit of each model.

Model 1 shows that health insurance was statistically significantly related to graduation (B = 1.3, Wald $\chi^2 = 4.85$, $p = .028$), with those who had insurance when they began opioid court were 3.7 times more likely to graduate than those who didn't. The wide 95% confidence interval (CI 1.2—11.9) shows some imprecision in the calculation of the B coefficient; but the confidence interval does not include 1, so there is some degree of certainty regarding the significance of this finding. Overall, this model provided an equivocal fit to the data, with insurance explaining about 10% of the likelihood that someone will graduate from opioid court. Model 2 added whether the participant had a juvenile arrest record, and this also was found to be a statistically significant predictor of graduation (B = -1.6, Wald $\chi^2 = 4.53$, $p = .028$). Those with a juvenile arrest record were 80% less likely to graduate from opioid court. In this model, having insurance remained a statistically significant predictor and overall, the model provided a nominal fit to the data (Cox and Snell $\chi^2 = .18$), explaining 18% of the variation in opioid court graduation.

Model 3 adds two alcohol use variables (i.e., no alcohol use and daily use) which set up orthogonal comparisons of these against less than daily alcohol use. Neither of these coefficients were statistically significant. Only having a juvenile charge remained a statistically significant predictor in this model, with having insurance no longer significantly related. For this model, the pattern of findings for insurance and alcohol use were similar to the findings from the preceding bivariate (and for insurance similar to the multivariable) analyses. The lack of statistical significance in the third model is likely the result of low statistical power due to the small sample size (n = 52) for this model. With the large 95% CI for multiple predictors, caution must be exercised in interpreting models 4 and 5; however, the valence (+ or -) of relationships is the same directional patterns supporting findings reported in the bivariate and multivariable analyses.

Table 4. Summary of Cox Proportional Hazards Regression for Prediction Retention in Opioid Court

Predictor	B	SE	Wald χ^2	Risk Ratio (RR)	95% CI for RR
Health Insurance	-.78	.36	4.72*	.46	[.23, .93]
Prior OWI Arrest	.59	.35	2.79†	1.81	[.90, 3.61]
Prior Disorderly Conduct Arrest	.32	.45	.48	1.37	[.56, 3.35]
No Alcohol Use[a]	.75	.65	1.60	2.11	[.59, 7.57]
<Less than Daily Alcohol Use[a]	.28	.57	1.53	1.33	[.44, 4.03]
2 or More Mental Health Problems	1.6	.71	1.56*	4.78	[1.18, 19.28]
In Treatment	-.35	.40	.79	.70	[.32, 1.53]

†$p < .10$; *$p < .05$

[a]The referent category for this contrast was daily alcohol use. The interpretation of the coefficient, therefore, is the difference between the no alcohol use versus daily, and less than daily versus daily alcohol use, respectively.

Proportional hazards regression prediction program retention.

The final analytic step was to examine retention via a multivariable Cox Proportional Hazards regression for predicting the length of time spent in opioid court. When interpreting Cox regression, it is important to remember that a positive (+) coefficient predicts an increased hazards for drop out (i.e., worse retention/shorter stays in the program); whereas a negative (-) coefficient indicates a lower hazards of drop out (i.e., longer retention/longer stays in the program). Overall, model 4 was statistically significant ($\chi^2(7) = 291.57$, $p = .001$), with two predictors reaching significance. Having health insurance at program intake was found to be associated with better retention (B = -.78, $p = .03$). Participants with 2 or more mental health problems were found to have poorer retention (B = 1.56, $p = .028$); however,

caution in interpretation of the findings is suggested due to the wide CI. Finally, participants with a history of OWI had marginally poorer retention (B = .59, p = .094).

Limitations

Although our study advances the dearth of literature on opioid courts, it was based on a cross-sectional sample of opioid court participants limited to one county in one state. Moreover, there was little variation in the participant characteristics with most being male, white, younger, not married, and fairly educated. Thus, caution should be exercised in generalizing these findings to all OUD offenders in opioid courts. In addition, due to the small sample size, low statistical power was evident, making it difficult to detect anything other than a large effect size; this may lead to Type II errors so that significant relationships may not have been identified. This was, however, offset to some degree by reviewing the Odds Ratios as measures of effect size, as well as the 95% confidence intervals. One obvious improvement for future evaluations is to add more participants to improve model precision and stability. However, as opioid courts are relatively new and few in number, small sample sizes are likely to be a limitation of opioid court research for the near future.

In addition, while we recognize that the data are older, this study was conducted at a critical time when the opioid epidemic was marking a new wave with the change from prescription opioids to heroin and subsequent increase in overdose deaths. Thus, these courts were responding to participants with different and additional risk factors including IV drug use (NIDA, 2018). Waukesha was also likely one of the first modified drug courts to exclusively serve opioid dependent participants. Therefore, our findings provide a greater understanding of modified drug courts for opioid users, which remains sorely limited and provides a baseline against which researchers may compare their own results and examine changes over time. Lastly, for participants who reported using MAT, we were not able to ask the type of drug used; this would have been interesting to consider in relation to outcomes.

Summary and Discussion

Increasing numbers of opioid users are entering our court systems; one response has been the development of opioid-specific treatment courts. Because they are relatively new and few in number, we have little information about these courts or their participants. The current study adds to our knowledge of opioid courts by exploring individual participant characteristics and how these factors may influence graduation and retention outcomes. At the bivariate level, sociodemographic variables (e.g., race, education, employment) typically related to retention and graduation in drug court (Hepburn & Harvey, 2007; Shaffer et al., 2008), were not statistically significantly associated with these outcomes. We did, however, find marginally significant relationships in that women and younger participants were likely to be retained longer in the program. But, as we explain below, whether length of stay in a specialty court is a beneficial finding or not is complicated. Overall, these findings suggest that there may be distinct differences between participants in opioid courts and those in drug courts and, as such, there may be different predictors of program outcomes.

The only sociodemographic variable to reach statistical significance was having health insurance. We found participants with health insurance had longer stays in the court and were more likely to graduate. This supports a survey of treatment court professionals that identified resource gaps and unmet needs of participants; respondents voiced concerns that a lack of insurance and limited access to behavioral health providers resulted in poorer outcomes (Easter et al., 2021).

Having health insurance could represent stability through family support and/or employment which could also be motivating factors for therapeutic engagement and ultimately, graduation. Indeed, knowing that many parents were the providers of their adult children's insurance is an indicator of participants having more familial networks and resources, demonstrating higher degrees of social capital. Moreover, having insurance likely provides participants with access to beneficial health and medical services both in and outside of opioid court. As mentioned, methadone and buprenorphine were only available to participants through their health insurance, limiting options for the uninsured participant. Finally, having an insurer pay some or all of one's health care costs may allow participants the stability to focus on their treatment rather than on financial concerns.

Some criminal history variables were related to the outcome variables at the bivariate level. Unsurprisingly, participants with an earlier history of offending (i.e., having an official juvenile arrest record) were statistically significantly less likely to graduate. Indeed, more extensive criminal backgrounds have been associated with negative CJ outcomes (Houser et al., 2019). In addition, participants with arrests for OWI and/or disorderly conduct offenses had shorter rates of retention, though the relationships were only marginally significant.

Bivariate results related to substance use and treatment variables may appear contradictory. For example, concurrent drug use was marginally associated with longer stays in opioid court; yet one may expect that a user of multiple drugs would be more apt to drop out. Understanding the way individuals progress through specialty courts may provide some context. Because court teams are trained to understand addiction as a medical condition (Davis & Cates, 2017), participant setbacks are handled differently than in traditional courts (Thompson et al., 2007). By way of example, participants in specialty courts who continue to use substances may be required to remain longer in a program phase, while a participant in a traditional probation program may receive a probation violation or jail time. Thus, an opioid court participant who is struggling may remain in the program longer indicated by higher rates of retention as they continue in the recovery process. At the same time, the related finding that participating in substance use treatment at the point of opioid court entry was related to longer retention coincides with a longer recovery process and the benefit of the continuity of treatment model (Hiller et al.,1999).

The final bivariate results demonstrated that opioid court participants with anxiety and/or two or more mental health problems were less likely to graduate. This result is unsurprising given that having a co-occurrence of a mental health disorder is more likely to hinder recovery and is often associated with lower treatment completion rates and poorer medication compliance (Lehman et al., 2000; Peters et al., 2008). At the same time, although not statistically significant, participants who reported having a chronic medical problem had

better graduation outcomes. Perhaps the opioid court team was not properly trained to help with complex psychological needs, while they were able to provide more basic support and referrals for those with physical health issues. Indeed, Pinals et al. (2019) report that treatment court personnel often express a lack of skills and limited guidance with which to respond to populations with both substance use and mental health disorders. These findings demonstrate the importance of assessment for mental health disorders with a concomitant focus on integrated treatment services, which are considered essential to successful treatment outcomes (Hills, 2000). Indeed, treatment specialists argue that the failure to address both disorders is equivalent to offering no treatment or could even have iatrogenic effects (SAMHSA, 2009). This is important as recent estimates suggest 64% of adults with OUD report a co-occurring mental illness in the past year (Jones & McCance-Katz, 2019). Moreover, Carey's (2021) study of the Buffalo OIC found that participants were more likely to have been treated for mental illness and to have experienced trauma than a matched group of defendants in jail prior to the start of the OIC.

Multivariate findings provide a further understanding of participant characteristics that help predict opioid court graduation. Health insurance and juvenile arrest records were both found to demonstrate a statistically significant relationship with graduation. As was found at the bivariate level, the participants who did not have health insurance and those who had been arrested as juveniles were the least likely to successfully complete the opioid court program. Indeed, the model that included only these predictors explained nearly 20% of the variance in graduation.

Two important areas of focus are highlighted by this research which may help to improve the performance of opioid users in specialty courts: 1) better healthcare access and services, and 2) extra support and ancillary provisions for the most challenging offenders. For example, the value of having health insurance underscores the fact that those without it may have been at a disadvantage as additional health care and related services could have served to improve overall life circumstances including better opioid court outcomes. Our findings further suggest that participants with official justice involvement beginning at a younger age, and those with more complicated clinical pictures (e.g., two or more mental health disorders occurring with a substance use disorder) may benefit from receiving additional services. Our results reinforce the need for a more proactive approach to identify and respond to opioid court participants who may face the most barriers to success. Additional programming and support for myriad issues may also improve the primary problem, in this case, OUD. Indeed, ancillary assistance through medical, trauma, housing and family support services are considered an essential element of OICs (CCI, 2019). While this approach would be ideal for all participants, ongoing budget constraints and limited resources may require courts to focus on those at the greatest risk for failure. Nevertheless, opioid courts must be prepared to provide all participants with the tools, services, and support they need so they can realistically achieve otherwise extremely challenging goals.

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