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Predictors of graduation and criminal recidivism: Findings from a drug court that primarily serves African Americans

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ABSTRACT

Drug courts are an alternative to incarceration for individuals who have substance use disorders. The drug court model is guided by key interventions (e.g., required treatment, frequent status hearings with a judge, continuous drug testing, prosecutors and defense attorneys collaborating in a non-adversarial manner) that are designed to promote recovery and well-being, as compared to traditional, punitive approaches to criminal justice. Evidence suggests that, in some drug courts, African Americans may graduate less, compared to their white counterparts. This is alarming because graduating drug court has consistently been a predictor of participants not being rearrested following participation in the program. This study predicted graduation and criminal recidivism outcomes for a drug court that primarily serves African Americans. The focus of the research is to inform drug courts about best practices in treating and retaining African American participants. Females, participants who were employed or were students, those whose drug of choice was marijuana, and participants with no criminal history were most likely to graduate. Participants with a criminal history and those who were terminated from drug court were most likely to recidivate. Implications for drug court practice are discussed, particularly in regards to enhancing resources for employment and the need to develop evidence-based treatments for African American drug court participants.

KEYWORDS

African American; drug court; graduation; recidivism; substance use disorder

Introduction

The link between having a substance use disorder and continuous involvement in the criminal justice system has been well documented, often referred to as the *revolving-door crime cycle* (Warner & Kramer, 2009). Among adults incarcerated in state and federal prisons in 2014, 15.7% were sentenced for drug-related offenses (Carson, 2015). In their evaluation of 18,388 prisoners, Fazel et al. (2017) estimated that 24% of all prisoners had alcohol use disorders and 30% of male prisoners and 51% of female prisoners had drug use disorders. In comparison with the general population, the Center for Behavioral Health Statistics and Quality (2015) estimated that only 16% of 18- to 25-year olds and 7% of adults over 26 years met the diagnostic criteria for a substance use disorder. In 1989, the first drug court was pioneered in Florida to stop the cyclical contact of these offenders and to divert them from prison by offering treatment for substance use disorders, in lieu of incarceration, as the substance use disorder was assumed to be at the core of their offending. Drug court participants reside in their communities while participating in the program and they engage in multiple interventions to treat their substance use disorders and enhance their recovery support system (e.g., attending recovery support groups, such as Narcotics Anonymous) (National Association of Drug Court Professionals [NADCP], 2004).

Since the effectiveness of that first drug court was demonstrated, the courts have multiplied across the United States and internationally. Today, more than 3,100 drug courts can be found throughout the United States, with courts in all 50 states (U.S. Department of Justice, Office of Justice Programs, 2018). Drug courts vary considerably in operational structure, eligibility criteria, and treatment models, though they all assume that substance use disorders negatively impact criminal recidivism rates. Key components of drug courts have been developed to guide the establishment and conduct of these programs, and to distinguish them from other criminal justice interventions (e.g., prison, probation). These include a non-adversarial, recovery-oriented approach to criminal justice, court-mandated treatment for substance use disorders, specialized training for judges who meet with participants frequently for status hearings, and collaboration with a multi-judicial team that consists of the drug court judge, prosecution and defense attorneys, case managers, and counselors, to name a few (National Association of Drug Court Professionals [NADCP], 2004). Drug court participants volunteer for the program with potentially positive (e.g., criminal case dismissed) or negative (e.g., incarceration) legal outcomes contingent on their compliance with program rules and progress throughout the program. Drug courts have been rigorously evaluated in the past 30 years, and meta-analyses (Mitchell et al., 2012; Shaffer, 2011) found that drug courts are associated with reductions in criminal recidivism and drug use, increases in employment and income, and, overall, improved individual and family functioning.

However, according to Ho et al. (2018), a noticeable gap in the drug court literature is that there are few studies that focus specifically on the impact of race and ethnicity on drug court outcomes. There is a need to expand the knowledge base in this area, particularly as it relates to how drug courts serve African American participants (Ho et al., 2018). This study offers four main contributions to the existing knowledge base on drug courts. First, some studies have found that African Americans, and other racial and ethnic minorities, are underrepresented in some drug courts, and Marlowe (2013) presented a goal of increasing racial and ethnic minority admission to drug court by approximately 7%. The drug court in this research primarily serves African Americans, so clearly African Americans are not underrepresented in the program. The findings, however, do offer insight into the predictors of graduation and criminal recidivism, which can inform drug courts on the best practices in treating and retaining African American participants.

Second, there is a trend in some drug courts where African Americans have a lower graduation rate than their white counterparts, further highlighting the need for more research in this area. Gallagher (2013b), for instance, found in a Texas drug court that the graduation rate for white participants was 65.42%, but only 45.71% of African Americans graduated in the program. Similarly, a recent study of over 14,000 adult drug court participants found that African Americans graduated less than other participants (Ho et al., 2018). Actually, African Americans had the lowest graduation rate (36.2%) in the sample, compared to that of white participants (52.8%), Hispanic/Latino participants (45.7%), and those who identified with another race and ethnicity (53.9%). Findings from the largest known qualitative meta-synthesis of African Americans' experiences in drug court suggest that a variety of factors may contribute to racial disparities in graduation rates; a common concern was related to their relationship with treatment providers (Gallagher & Nordberg, 2018). Specifically, some African Americans did not trust their treatment providers, felt stigmatized while participating in treatment, and were dissatisfied with the availability and quality of mental health care they received (Gallagher & Nordberg, 2018). The underrepresentation of African Americans in some drug courts and racial disparities in graduation outcomes is alarming. This study adds to the existing knowledge base on the predictors of graduation for African American drug court participants, and the research is recommended by the National Association of Drug Court Professionals [NADCP] (2015), which called all drug courts to evaluate their programs to assess whether they are achieving their intended goals and objectives.

Third, this research contributes to the existing knowledge base by measuring criminal recidivism up to 36 months following drug court discharge. This is a noticeable strength because the majority of

previous studies did not provide a long enough follow-up period to assess the long-term impact that drug courts have on criminal recidivism. In their meta-analysis of 92 adult drug courts, Mitchell et al. (2012) found that, for the articles where the information was available ($n = 79$), 82% of the studies used a follow-up period of 24 months or less. This further evidences the need for research to assess the long-term impact that drug court has on African Americans.

Fourth, this study predicts both who was most likely to graduate drug court and who was most likely to recidivate, which provides a more comprehensive understanding of drug court. Many previous studies only predict graduation outcomes (Gill, 2016; Hickert et al., 2009; Wu et al., 2012) or recidivism outcomes (Brown, 2011; Gallagher, 2014a; Gallagher et al., 2014b; Krebs et al., 2007). Also, this is the first known study to predict graduation and criminal recidivism outcomes with a drug court that almost entirely serves African Americans. Previous work has compared and contrasted drug court outcomes among white and African American participants (Dannerbeck et al., 2006; McKean & Warren-Gordon, 2011) or white and nonwhite participants (Shannon et al., 2018), but again, this is the first known study to predict graduation and criminal recidivism outcomes in a drug court where over 90% of the participants are African American.

From a theoretical standpoint, critical race theory (CRT) assumes that racism is a central and normative part of society, and the oppressive and socially unjust consequences of racism are experienced frequently by racial and ethnic minorities (Delgado & Stefancic, 2007). The injustices associated with racism are not limited to certain settings or environments. Conversely, social injustices are evident in all settings, including criminal courts and even courts that are designed to provide rehabilitation, such as drug courts. Jeffers (2019) utilized CRT to propose factors that may contribute to the over-incarceration of racial and ethnic minorities, including the misuse of power in the criminal justice system and misguided discretionary practices.

It is important to consider these factors (e.g., misuse of power, misguided discretionary practices) as theoretical explanations for racial disparities in drug court outcomes. In a Texas drug court, for instance, African American participants felt that they were treated differently than their white counterparts when they were receiving sanctions from the judge (Gallagher, 2013a). Actually, some African Americans reported being laughed at during drug court and observing other disrespectful behaviors, and it is important to note that these behaviors seemed to be directed to African American participants (Gallagher, 2013a). It is not possible to explain the behaviors of this one Texas drug court; however, CRT can be used to explore the underpinnings of drug court programming and how drug courts serve racial and ethnic minorities.

Methodology

Data collection and sample size

This research was approved by the Institutional Review Board (IRB) at Indiana University. The drug court was located in a city in Indiana (United States) with a population of nearly 80,000 people. There are two research questions. First, which drug court participants were most likely to graduate? Second, which drug court participants were most likely to recidivate? To answer both research questions, a list of all drug court participants ($n = 148$) who were terminated from or graduated in the program from 2010 to 2015 was compiled. The entire sample had an outcome of either being terminated from or graduating drug court; therefore, the final sample size for the first research question was 148. From the entire sample, criminal recidivism data were not able to be collected on four participants; therefore, the final sample size for the second research question was 144.

The sample sizes of 148 and 144 are justified for this study. Orme and Combs-Orme (2009), for example, suggest that a sample size of at least 100 be used when doing hierarchical binary logistic regression that has 10 or fewer independent variables. The first research question predicting who was most likely to graduate drug court had seven independent variables, and the dependent variable was terminated or graduated. The second research question predicting who was most likely to recidivate

had eight independent variables, and the dependent variable was did not recidivate or recidivated. Data were collected through the electronic charts of each participant and an online docket the county used to track recidivism outcomes. Recidivism was defined as any new local arrest (within the county) for a felony or misdemeanor offense that resulted in charges being filed during drug court and up to 36 months post drug court discharge. The definition of recidivism was provided by the drug court and approved by the Indiana Judicial Center, which is the government agency that certifies Indiana problem-solving courts. The recidivism data were collected in 2018 to allow for the 36 month follow-up period. Please see [Table 1](#) for coding scheme and descriptive statistics for model variables.

Please note that three variables were not able to be used in the multivariate analyses due to lack of variability in the responses; these variables were race/ethnicity, mental health, and first 30 days, which was whether the participant had a violation within the first 30 days of drug court. A violation was considered a positive drug test indicating new drug use, a dilute drug test, missed treatment or court appointment, or new arrest. The majority of the sample identified as African American (92.6%), did not have a mental health diagnosis (92.5%), and had a violation within the first 30 days of drug court (91.6%). Also, 85.1% of the sample identified marijuana as their primary drug used at their time of entry to drug court. Therefore, this variable was dichotomized as not marijuana or marijuana.

Analytic approach

Hierarchical logistic regression was used to analyze the data. Two models were tested, one predicting graduation (0 = terminated, 1 = graduated) and one predicting criminal recidivism (0 = did not recidivate; 1 = recidivated). For both models, predictors included gender (0 = female, 1 = male), age at the time of entry to drug court, education (0 = no high school diploma or equivalent at the time of entry to drug court, 1 = had a high school diploma or equivalent at the time of entry to drug court), employment status (0 = not employed or student at the time of entry to drug court, 1 = employed or student at the time of entry to drug court), primary drug (0 = not marijuana, 1 = marijuana), # of days from arrest to admission to drug court, and criminal history (0 = no previous criminal case(s) prior to current charge, 1 = previous criminal case(s) prior to current charge). Demographics were added in the first block and then primary drug, # of days, and criminal history were added in a second block for

Table 1. Coding scheme and descriptive statistics for model variables.

Predictor	Range	Key	M(SD)	%
Drug court outcome	0–1	0 – Terminated 1 – Graduated		59.5 40.5
Gender	0–1	0 – Female 1 – Male		18.9 81.1
Race/ethnicity^a	0–1	0 – Caucasian 1 – African American		7.4 92.6
Age	18–64	Age at time of admission (in years)	27.09(10.53)	
Education	0–1	0 – No high school diploma or equivalent 1 – Had high school diploma or equivalent		51.7 48.3
Employment status	0–1	0 – Not employed or student at entry 1 – Employed or student at entry		67.3 32.7
Primary drug	0–1	0 – Not marijuana 1 – Marijuana		14.9 85.1
Mental health^a	0–1	0 – No mental health diagnosis 1 – Mental health diagnosis		92.5 7.5
No. of days	0–3205	Number of days between arrest and admission to drug court	181.97(422.36)	
Criminal history	0–1	0 – No previous criminal case prior to current charge 1 – Previous criminal case prior to current charge		40.7 59.3
First 30 days^a	0–1	0 – No violation in the first 30 days 1 – Had a violation in the first 30 days		8.4 91.6
Recidivism	0–1	0 – Did not recidivate 1 – Recidivated		50.7 49.3

^aVariable not used in analyses due to highly unequal group sizes/lack of variability in responses.

the analysis. When predicting criminal recidivism, drug court outcome, terminated or graduated, was also added as a predictor in the second block. Prior to multivariate analysis, data were screened to check for missing data or potential violations to assumptions. T-tests and chi-squares were used to examine the bivariate relationships between all model variables and the two dichotomous dependent variables. All statistical analyses were performed using SPSS 25.0.

Who was most likely to graduate drug court?

Approximately two-fifths of the drug court sample graduated (40.5%). Statistically significant predictors of graduation were gender, employment status, primary drug, and criminal history (please see Table 2). First, participants who were female were significantly more likely to graduate than participants who were male (60.7% versus 35.8%, $\chi^2 = 5.83, p=.016$). Second, participants who were employed or were students at the time of entry to drug court were more likely to graduate than participants who were not employed or were not students (56.3% versus 33.3%, $\chi^2 = 7.03, p= .008$). Third, participants who were using marijuana as their primary drug of choice were more likely to graduate than participants who identified another drug of choice (44.4% versus 18.2%, $\chi^2 = 5.36, p= .021$). Fourth, participants who did not have a criminal history were more likely to graduate than participants who had a criminal history (55.9% versus 31.4%, $\chi^2 = 8.69, p= .003$).

Findings from the logistic regression revealed that four variables significantly predicted drug court graduation (please see Table 3). First, male participants were 74% less likely to graduate than females (Exp(B) = - 1.34, Wald $\chi^2 = 6.66, p = .012$). Second, participants who were employed or were students at the time of entry to drug court were 3.69 times more likely to graduate than participants who were not employed or were not students (Exp(B) = 1.31, Wald $\chi^2 = 8.18, p = .004$). Third, participants who were using marijuana as their primary drug of choice were 8.93 times more likely to graduate than participants who identified another drug of choice (Exp(B) = 2.19, Wald $\chi^2 = 6.38, p = .012$). Fourth, participants who had a criminal history were 68% less likely to graduate than participants who did not have a criminal history (Exp(B) = - 1.14, Wald $\chi^2 = 7.70, p = .006$).

Table 2. Baseline characteristics by completion status.

Demographic category	N	Completion status (% or M)		χ^2 or t
		Graduated (n = 60)	Terminated (n = 88)	
Gender				
Female	28	60.7	39.3	5.83*
Male	120	35.8	64.2	
Age		27.00	27.15	.08
Education				
No HS diploma	76	43.4	56.6	.44
HS diploma	71	38.0	62.0	
Employment status				
Not employed or student	99	33.3	66.7	7.03**
Employed or student	48	56.3	43.8	
Primary drug	126	44.4	55.6	5.36*
Marijuana	22	18.2	81.8	
Not marijuana				
No. of days		231.10	148.83	-1.15
Criminal history				
No previous criminal case	59	55.9	44.1	8.69**
Previous criminal case	86	31.4	68.6	

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$.

Table 3. Hierarchical logistic regression results predicting graduation.

	Model 1				Model 2			
	B	Wald	Exp(B)	95% C.I.	B	Wald	Exp(B)	95% C.I.
Gender	-1.06	5.31*	.35	.14-.85	-1.34	6.66**	.26	.09-.72
Age	-.01	.31	.99	.95-1.03	.04	2.09	1.04	.99-1.11
Education	-.59	1.94	.55	.24-1.27	-.60	1.76	.55	.23-1.33
Employment status	1.20	7.92**	3.31	1.44-7.61	1.31	8.18**	3.69	1.51-9.04
Primary drug					2.19	6.38**	8.93	1.63-48.80
No. of days					.00	1.74	1.00	1.00-1.00
Criminal history					-1.14	7.70**	.32	.14-.72
Block χ^2	13.92**				18.65***			
Model χ^2	13.92**				32.57***			
Nagelkerke R²	.13				.28			
-2LL	176.35				157.70			

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$.

Who was most likely to recidivate?

Findings from the bivariate analyses revealed that only two variables were significantly associated with criminal recidivism (please see Table 4), and both of these variables are not surprising. First, participants who had a criminal history were more likely to recidivate than participants who did not have a criminal history (64.3% versus 25.9%, $\chi^2 = 20.28$, $p \leq .001$). Second, participants who were terminated from drug court were more likely to recidivate than participants who graduated (61.2% versus 32.2%, $\chi^2 = 11.70$, $p \leq .001$).

Findings from the logistic regression revealed that the same two variables significantly predicted criminal recidivism in the multivariate analysis (please see Table 5). First, participants who had a criminal history were nearly 7 times more likely to recidivate than participants who did not have a criminal history (Exp(B) = 1.94, Wald $\chi^2 = 19.22$, $p \leq .001$). Second, participants who graduated drug court were 63% less likely to recidivate than participants who were terminated from the program (Exp(B) = -.99, Wald $\chi^2 = 5.20$, $p = .023$).

Table 4. Baseline characteristics by recidivism group.

Demographic category	N	Recidivism group (% or M)		χ^2 or t
		Recidivated (n = 71)	Did not recidivate (n = 73)	
Gender				
Female	28	46.4	53.6	.12
Male	116	50.0	50.0	
Age		25.66	28.50	-1.62
Education				
No HS diploma	75	50.7	49.3	.19
HS diploma	68	47.1	52.9	
Employment status				
Not employed or student	96	52.1	47.9	1.15
Employed or student	47	42.6	57.4	
Primary drug	123	50.4	49.6	.41.02
Marijuana	21	42.9	57.1	
Not marijuana		181.94	183.13	
No. of days				
Criminal history				
No previous criminal case	58	25.9	74.1	20.28***
Previous criminal case	84	64.3	35.7	11.70***
Drug court outcome	85	61.2	38.8	
Terminated	59	32.2	67.8	
Graduated				

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Table 5. Hierarchical logistic regression results predicting recidivism.

	Model 1				Model 2			
	B	Wald	Exp(B)	95% C.I.	B	Wald	Exp(B)	95% C.I.
Gender	-.03	.00	.97	.41–2.31	-.37	.48	.69	.25–1.95
Age	-.02	1.75	.98	.94–1.01	-.04	2.25	.96	.90–1.01
Education	.19	.24	1.21	.56–2.61	-.14	.09	.87	.36–2.13
Employment status	-.45	1.26	.64	.29–1.40	-.28	.38	.75	.31–1.85
Primary drug					.29	.16	1.34	.32–5.61
No. of days					.000	.05	1.00	1.00–1.00
Criminal history					1.94	19.22***	6.99	2.93–16.66
Drug court outcome					-.99	5.20*	.37	.16–.87
Block χ^2	3.18				33.55***			
Model χ^2	3.18				36.73***			
Nagelkerke R²	.03				.31			
-2LL	188.10				154.55			

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$.

Discussion

The drug court for this study, which primarily serves African Americans (92.6%), had a graduation rate below the national average, which one study found as 48.8% (Ho et al., 2018) and others as high as 59% (Marlowe et al., 2016). Specifically, only 40.5% of participants graduated, whereas 59.5% were terminated from the program. It is important, however, to not draw conclusions on the effectiveness of a drug court based solely on the graduation rate. Some drug courts may have high graduation rates, but they may serve participants with low criminogenic risk. Conversely, other effective drug courts may have much lower graduation rates because they are serving participants with high criminogenic risk and other high needs, such as needing intensive treatment because of a severe substance use disorder. What is known, from previous research and the findings from this study, is that participants who graduate drug court are less likely to recidivate than those who are terminated from the program. Graduates being less likely to recidivate is a trend that dates back to over a decade-and-a-half (Fielding et al., 2002; Wolfe et al., 2002) and is also found in recent studies (Gallagher, 2014a; Gallagher et al., 2014b). These findings suggest that retention in the program may improve graduation rates and lower criminal recidivism rates. It is promising to note, though, that even with a 36 month follow-up period, half (50.7%) of the participants did not recidivate.

In order to improve graduation rates for African Americans which, in turn, may result in lower criminal recidivism rates, two recommendations are offered. First, it is recommended that drug courts enhance the resources they offer participants to support employment. The drug court literature has consistently suggested that being employed is one of the strongest predictors of positive outcomes (Dannerbeck et al., 2006; Gallagher et al., 2015; Listwan et al., 2009; Mullany & Peat, 2008), and this study adds to that evidence. Participants who were employed or were students at the time of entry to drug court were more likely to graduate than participants who were not employed or were not students.

As part of the drug court model, it is expected that drug courts support participants in gaining and sustaining employment (National Association of Drug Court Professionals [NADCP], 2004). Gallagher et al. (2019) recently completed a qualitative study that explored African American participants' experiences in drug court in order to develop insight into how drug courts can best serve African Americans. On a positive note, African Americans in that study viewed the drug court judge, and other staff, as compassionate and supportive. Conversely, they also felt that the drug court could have supported them more in developing a sustainable career, like welding. Therefore, drug courts may benefit from not just encouraging participants to be employed, but also to develop employment skills that can be sustained after the program. In order to develop employable skills, for those who do not already have some, it is recommended that drug courts invite employers, local colleges and universities, and vocational counselors to join the drug court team. This type of

collaboration could provide apprenticeships and other similar on-the-job training to drug court participants.

Second, it is recommended that future research focus on developing an evidence-based intervention focused on treating the individualized needs of African Americans in drug court. Consistent with a key component of the drug court model (National Association of Drug Court Professionals [NADCP], 2004), the drug court for this study referred participants to local counseling agencies to receive treatment for their substance use disorders. Previous qualitative research, however, suggests that African Americans may be dissatisfied with the quality of treatment they receive. Some African Americans felt they were not receiving individualized treatment (Gallagher, 2013a) and felt their counselors pressured them to self-identify as an addict, which they viewed as a stigmatizing label (Gallagher & Nordberg, 2018). Consistent with CRT, it is important to understand the lived experiences of African American drug court participants, and their dissatisfaction with the quality of treatment they received should not go unnoticed. CRT proposes that treatment norms (e.g., not providing individualized treatment, stigmatizing labels) may contribute to the oppression of racial and ethnic minorities and the priority should be to offer best practices to all drug court participants.

Unfortunately, there are limited evidence-based practices in treating African Americans who are involved in the criminal justice system and have substance use disorders (Marlowe et al., 2018). This is especially true for young African American males. Sanders and Powell (2012) discussed best practices in working with African American men who have substance use disorders, such as incorporating religious and other spiritual interventions into the treatment process, encouraging discussion about African American culture and historical norms, and collaborating with a nutritionist. While these best practices are recommended in working with African American men, unfortunately, there are limited formalized interventions in working with this population, especially African American men who have substance use disorders and are involved in the criminal justice system. A promising intervention, however, that should be the focus of future research, and incorporated into drug court programming when available, is Habilitation Empowerment Accountability Therapy (HEAT).

HEAT is designed for African American males between the ages of 18 and 29 and is guided by a trauma-informed, strengths-based curriculum. The 9-month curriculum focuses on a variety of topics, such as traditional relapse prevention, but also topics specific to the target population, such as exploring and challenging myths and stereotypes of young African American men (Marlowe et al., 2018). HEAT would be especially important to use in the drug court for this research because the average age of participants was 27.09 years old, and the large majority of participants were male (81.1%) and males were less likely to graduate than females. Furthermore, participants who had a criminal history were more likely to recidivate than participants who did not have a criminal history, and HEAT has shown promise in treating African American males who had criminal histories (Marlowe et al., 2018). HEAT is designed to empower individuals and enhance their resiliency, and this approach with participants who have criminal histories may be a factor that supports positive outcomes (Marlowe et al., 2018). Clearly, self-empowerment and building resiliency are protective factors, especially as it relates to no longer engaging in criminal behavior. Marlowe et al. (2018) found that 90% of HEAT participants completed the program and had higher than average scores related to rapport with their counselor, engagement in treatment, and satisfaction with treatment. These are promising findings, especially because the sample had significant criminal histories; the sample averaged more than 10 prior criminal convictions. At this point, however, HEAT is limited to pilot studies and, as noted by Marlowe et al. (2018), more rigorous evaluations are needed.

The findings should be interpreted within several limitations. First, the findings add to the existing knowledge base and inform drug court practice and future research, but they should not be generalized beyond the research sample. Drug courts must complete their own evaluations to assess the predictors of graduation and criminal recidivism for their specific programs. It is also important to mention that nearly all participants were African American (92.6%), but 7.4% did identify their race and ethnicity as Caucasian. The small percentage of Caucasian participants were not excluded from the study, as the goal was to provide a complete analysis of the drug court. The small percentage of

Caucasian participants does need to be noted, however, because their presence may have impacted the overall findings, yet the discussion is specific to African American participants. Future research should compare and contrast outcomes between Caucasian and African American participants when there is enough variability in responses.

Second, important variables, such as mental health and first 30 days, which measured whether participants had a violation within the first 30 days of drug court, were excluded from analyses due to the lack of variability in responses. These seem to be important variables, as research has suggested that participants' compliance within the first month of drug court can predict graduation (Newton-Taylor et al., 2009) and recidivism (Gallagher et al., 2014b) outcomes. Also, recent research has suggested that African Americans are not being appropriately assessed and treated for mental health symptoms (Gallagher & Nordberg, 2018). Other variables, such as perceived level of family support, engagement in social supports, and the race and ethnicity of drug court team members (e.g., judge, treatment providers) were not included in this study because the data were not available, but they are logically associated with drug court outcomes. Last, criminal recidivism was conceptualized as any new local arrest (within the county) for a felony or misdemeanor offense that resulted in charges being filed during drug court and up to 36 months post drug court discharge. This definition is approved by the Indiana Judicial Center, which is the government agency that certifies Indiana problem-solving courts, but clearly, it does not include those who recidivated outside the county. If feasible, it is recommended that future research measure criminal recidivism with state-level data, or even national data, if possible.

Conclusion

Drug courts have demonstrated effectiveness in reducing criminal recidivism rates and other positive outcomes for individuals who have substance use disorders. Contemporary drug court research is focused on specific populations that drug courts serve, such as African Americans. In order to improve graduation rates for African Americans, it is recommended that drug courts enhance their programming related to helping participants develop sustainable, employable skills. Drug courts, for example, can collaborate with local colleges, universities, vocational schools, and employers to support participants in a variety of areas, such as developing careers, maintaining current employment, or improving employability by learning a new skill or trade. Furthermore, future research should assess the employment patterns of drug court participants during and after the program. A longitudinal study, for instance, would offer multiple data points related to employment patterns and this could provide insight into the barriers or challenges to employment that some participants may face. Another benefit of longitudinal studies is that researchers would be able to assess the timeframe (e.g., beginning of drug court, following participation in drug court) where employment patterns change most, for the positive or negative.

Future research is also needed on the quality and effectiveness of treatment interventions that African Americans receive in drug court. This future research should be a priority to assure participants are receiving the highest quality of care. One such intervention that has shown promise in improving graduation rates for African Americans, which, in turn, may also decrease criminal recidivism rates, is Habilitation Empowerment Accountability Therapy (HEAT). Qualitative studies using individual interviews and focus groups with African Americans will provide a behind-the-scenes, in-depth understanding of how the treatment is perceived, what is working best, and areas for improvement. This type of research is needed to expand programs, like HEAT, and to develop new, evidence-based treatments for African Americans. As more effective treatments become available to African Americans, this will hopefully lead to higher graduation rates and less involvement in the criminal justice system. Additionally, having a criminal history and being terminated from drug court increased the likelihood of recidivating; therefore, qualitative studies are also recommended to explore the relationship between these variables and recidivism. For example, participants who were terminated from drug court could offer insight into the challenges they experienced during the program that

prevented them from doing well. It is suspected that drug courts will be part of the criminal justice system for years to come; therefore, ongoing research is needed to assure that drug courts are effective for all races and ethnicities.

Disclosure statement

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