

The Impact of an Indiana (United States) Drug Court on Criminal Recidivism

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Abstract: *This study evaluated a drug court located in a metropolitan area of Indiana (United States), focusing specifically on identifying variables that predicted recidivism among drug court participants and comparing criminal recidivism patterns among drug court and probation participants. Drug court participants were most likely to recidivate if they were younger, had a violation within the first 30 days of the program, had a previous criminal record, and were terminated unsuccessfully from the program. Furthermore, drug court participants were less likely to recidivate than probationers who had similar offense and demographic characteristics. Implications for drug court practice, policy advocacy, and future research are discussed.*

Keywords: *Drug court, logistic regression, criminal recidivism, substance use disorders, probation*

The National Survey on Drug Use and Health (NSDUH) is an annual survey that assesses the rate of illicit drug and alcohol use in the United States (Substance Abuse and Mental Health Services Administration [SAMHSA], 2013). There are several notable findings that came out of the 2012 survey. First, findings suggest that an estimated 24 million Americans, or 9% of the population, used illicit drugs and 136 million Americans, or 52% of the population, used alcohol. Second, of all the Americans that used illicit drugs or alcohol, about 9%, or 22 million, met the diagnostic criteria for substance abuse or dependence; however, few actually received treatment for their substance use disorder. Specifically, of the 22 million Americans that needed substance abuse treatment, only 3 million received this type of intervention. Third, 34% of parolees and 37% of probationers met the diagnostic criteria for substance abuse or dependence, whereas only approximately 8% of their counterparts who were not on parole or probation met the same diagnostic criteria.

As a result of the large criminal justice population that has experienced problems related to personal illicit drug and alcohol use and the apparent limited availability of substance abuse treatment, society has relied on the judicial system to offer rehabilitative services to arrestees to minimize their risk of reoffending. One of the ways that the criminal justice system has addressed the high rate of substance use disorders with their population has been through the development of drug courts. This article will conceptualize drug courts, present a review of the literature related to the effectiveness of drug courts, present findings that identify the most predictive factors of drug court

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participants' recidivism during and after the program, discuss how drug court compares to traditional probation in regards to reducing criminal recidivism, and explore implications for drug court practice, policy advocacy, and future research.

Indiana (United States) Drug Court

This section provides an overview of the drug court evaluated for this study, which will be called the Indiana drug court. The Indiana drug court began in 1997 and the court's mission is to "reduce repeated criminal behavior and reverse the destructive effects of drugs upon the individual abuser and health and public safety of the community at large" (St. Joseph County Drug Court, 2014, para. 3). The court's philosophy is that "long-term sobriety involves not only quality substance abuse treatment, but also the prospect for an improved quality of life through better education, employability, and the support of a sober community" (St. Joseph County Drug Court, 2014, para. 4). In order to meet the program's mission and philosophy, the drug court employs a multidisciplinary judicial team, commonly known as the drug court team. The drug court team consists of the judge, drug court coordinator, two drug court case managers, the chief of adult probation, a compliance officer, prosecuting attorneys, defense attorneys, a researcher, and local substance abuse treatment providers. The drug court team meets once a week to discuss the status of participants.

The length of a drug court participant's assignment ranges from 12 to 24 months (St. Joseph County Drug Court, 2014). During this timeframe, participants complete interventions consistent with the key components of a drug court (National Association of Drug Court Professionals [NADCP], 2004), such as attending substance abuse counseling, maintaining abstinence from illicit drug and alcohol use, submitting random urinalysis drug tests approximately 1 to 3 times a week, attending status hearings with the drug court judge approximately 1 to 4 times a month, and completing other interventions that the drug court team may assign due to individualized needs, such as HIV and AIDS education or budgeting classes. If participants are not employed at the time of admission into drug court, they are required to undergo vocational training while in the program. Similarly, if participants do not have at least a high school diploma or equivalent at admission, they are expected to work towards their GED during the program. In order to graduate from the program, participants must have completed their substance abuse counseling, been in the program for at least 12 months, have at least 6 months of consecutive negative drug tests, and pay all program fees, which include a \$500.00 program fee and the cost of drug testing. Based on a participant's economic status, all or a portion of the program fee and drug testing fees can be waived by the drug court team. Prior to admission into drug court, participants plead guilty to the charges filed against them. Upon graduation, the charges are dismissed; however, if a participant is terminated from the program, he or she is convicted of the charge or charges and sentenced accordingly.

Literature Review

Since their inception in 1989, drug courts have seen tremendous growth. There are over 2,700 drug courts and 1,122 other problem-solving courts, such as mental health and

veterans courts, operating in the United States (NADCP, 2014a), and it is estimated that there are over 30 international drug treatment courts operating throughout 11 countries including Ireland, Australia, and the United Kingdom (NADCP, 2014b). In the United States, the proliferation of drug courts is partially explained by a growing trend where states, such as Texas, are beginning to mandate that certain counties have drug courts because policymakers view drug courts as an efficient and effective alternative to incarceration (Gallagher, 2012). Drug courts are perhaps the most researched criminal justice program, and as they continue to increase throughout the United States and internationally, drug court evaluations should continue to be a major part of the criminal justice, forensic social work, and addiction studies literature.

Recent meta-analyses of drug court evaluations have suggested that drug courts are more effective than other types of criminal justice programs, such as traditional probation, at reducing criminal recidivism (Mitchell, Wilson, Eggers, & MacKenzie, 2012; Shaffer, 2011). Mitchell et al. (2012) completed a meta-analytic review of 92 adult drug court evaluations and found that drug court participants were less likely than non-participants to recidivate. Specifically, the average recidivism rate of drug court participants was 38%, compared to a recidivism rate of 50% for non-participants. It is also important to mention that Mitchell and colleagues found that the positive effect of drug court participation on recidivism lasted for three years following admission into the program. Shaffer (2011) calculated 82 effect sizes from drug court evaluations and found that drug court significantly reduced recidivism. The effect sizes suggested that drug court participants had a recidivism rate of 45.5%, whereas the recidivism rate for the comparison group would have been 54.5%. Overall, both meta-analyses provide evidence that the expansion of drug courts and continued funding of these programs is warranted.

Meta-analyses offer valuable insight into the effectiveness of drug courts; however, the majority of studies evaluate single drug court programs. For example, an evaluation of the Douglas County (Omaha), Nebraska drug court found that drug court participants were significantly less likely to be rearrested than a comparable group of felony drug offenders (42% versus 61%) (Spohn, Piper, Martin, & Frenzel, 2001). Furthermore, Spohn and colleagues found that younger offenders, males, and those with a prior criminal record were more likely to be arrested during the follow-up period. In a similar evaluation of the Los Angeles County drug court, Fielding, Tye, Ogawa, Imam, and Long (2002) found that only 24% of drug court participants recidivated within the one year follow-up period, whereas 37% of participants from the drug diversion education program and 51% of felony defendants not in either program recidivated. Fielding and colleagues also note that graduating from drug court decreased the likelihood of recidivating; only 20% of graduates recidivated, compared to 33% of terminated participants. Brown (2011) completed a recent evaluation of a Wisconsin drug court and found that drug court participants were less likely to commit a new crime than a matched comparison group (30% versus 46%), and when a new crime was committed, drug court participants had a longer time to when they recidivated than the matched comparison group (614 days versus 463 days).

While there is a large body of literature suggesting that drug courts are more effective than other types of criminal justice programs, it is important to mention that these

findings are not universal (Bavon, 2001; Listwan, Sundt, Holsinger, & Latessa, 2003; Wolfe, Guydish, & Termondt, 2002). In an evaluation of the Tarrant County (Fort Worth), Texas drug court, Bavon (2001) found that about 13% of drug court participants and 17% of the comparison group were rearrested within one year after last contact with their respective programs, results that were statistically insignificant. Wolfe et al. (2002) also found in their evaluation of the San Mateo County, California drug court that drug court and non-drug court participants had equal likelihoods of recidivating. However, consistent with the findings from Fielding et al. (2002), Bavon (2001) and Wolfe et al. (2002) both found that, when comparing just drug court graduates and unsuccessfully terminated participants, graduates were noticeably less likely to recidivate than those who were terminated from the program. Wolfe and colleagues, for example, found that 53% of terminated participants and only 19% of graduates recidivated within the two year follow-up period.

Methodologically, the present study contributes to the existing literature in several ways. First, the follow-up period to measure recidivism in this study is 36 months, which is noticeably longer than previous studies where the norm is to evaluate recidivism at a one (Fielding et al., 2002) or two year (Wolfe et al., 2002) follow-up period. Additionally, Mitchell et al. (2012) found in their meta-analysis of 92 adult drug court evaluations that, for the articles where the information was available ($n = 79$), 82% measured recidivism with a follow-up period of 24 months or less, further supporting the need to have a longer follow-up period to assess the long-term impact of drug court on recidivism.

Second, this study utilizes a comparison group of offenders who were eligible for drug court but chose probation instead, and while it is common for drug court evaluations to use probationers as a comparison group (Krebs, Lindquist, Koetse, & Lattimore, 2007), previous studies have typically developed comparison groups based on participants having a drug use history, not the fact that they met the admission criteria for drug court and chose to do another program. The method of developing a comparison group for this study, perhaps, may minimize selection bias.

Third, this study assessed two variables that are theoretically associated with drug courts, yet not found in the previous research. A key component of the drug court model is to admit participants as soon as possible after an arrest; theoretically, this will improve outcomes because participants are more motivated to change following the arrest experience (NADCP, 2004). Therefore, this study included a variable labeled "arrest and admission", defined as the total number of days from an individual's arrest to admission into drug court. Next, the variable "first 30 days", which measured whether a participant had a violation within the first 30 days of drug court participation, was added to the analysis because recent evidence has suggested that compliance within the first month of drug court can predict graduation outcomes (Newton-Taylor, Patra, & Gliksman, 2009); however, this variable has not been used to predict post-program recidivism outcomes.

The other variables included in the analysis are consistent with those used in previous research that tested logistic models to predict recidivism and other drug court outcomes, such as graduation. Drug of choice, for example, was dichotomized as cocaine versus all other drugs because previous research has suggested that participants who identify

cocaine as a drug of choice are less likely to have successful drug court outcomes than those who identify other drugs of choice (Dannerbeck, Harris, Sundet, & Lloyd, 2006; Hickert, Boyle, & Tollefson, 2009).

Methodology

Design and Sample

The research design used for this study was approved by the Institutional Review Board (IRB) at Indiana University. This study employs a nonequivalent comparison group, quasi-experimental design to evaluate a drug court located in Indiana; two research questions guided this evaluation. First, what variables most strongly predict recidivism among drug court participants? Second, do drug court participants have a lower rate of recidivism than probation participants? To identify the variables that predicted recidivism among drug court participants, data were collected on all drug court participants ($n = 197$) who graduated or were unsuccessfully terminated from the program from 2006 to 2009. To compare the recidivism patterns of drug court and probation participants, recidivism data were retrieved for the same sample of drug court participants and the electronic charts of probation participants. A list of all probationers ($n = 995$) who were arrested for a Class D Felony and completed their probation or had their probation revoked from 2006 to 2009 was generated. From this initial list, 194 (19%) were included in the final sample because they had a Class D Felony that made them eligible for drug court but they had chosen probation instead. Based upon his experience as the drug court coordinator of the program evaluated in this study, one of the authors suggests that potential participants may be more likely to select probation over drug court because drug court tends to cost more than probation and drug court is more time consuming. Drug court, for example, typically requires drug testing 1 to 3 times a week, whereas probationers may be drug tested only one time a month. Additionally, at the beginning of the program, drug court participants appear before the judge once a week while probationers typically only attend court once every several months. Criminal cases eligible for drug court include: (1) I.C.35-48-4-6 Possession of Cocaine or a narcotic drug, class D felony; (2) I.C. 35-48-4-7 Possession of a Controlled Substance, class D felony; (3) I.C. 35-48-4-8.3 Possession of Paraphernalia, class D felony; (4) I.C. 35-48-4-11 Possession of Marijuana, class D felony; (5) I.C. 35-48-4-13 Maintaining a Common Nuisance, class D felony; and (6) I.C. 35-48-4-14 Acquiring Possession of a Controlled Substance by fraud, class D felony.

Due to the quasi-experimental nature of this research design, participants were not randomly assigned to drug court or probation; therefore, selection bias may compromise the comparability between the groups in the study. To assess the comparability between the drug court and probation groups, demographic data, including gender, ethnicity, age, education status, and employment or student status, were collected and analyzed. This process of comparing the two groups is similar to that used in previous research (Brown, 2011). The results of the comparison are noted in Table 1. There was no difference between the drug court and probation group in regards to gender, ethnicity, age, and employment or student status. The drug court group, however, was less likely to have a

high school diploma or equivalent at admission than the probation group (41% versus 54%).

Table 1. *Demographic Comparisons Between Drug Court and Probation Participants*

| Variables | Drug Court (n = 197) | Probation (n = 194) | χ^2 and t scores |
|--------------------------|--|--|--------------------------|
| Gender | Male = 73% (n = 143) Female = 27% (n = 54) | Male = 72% (n = 140) Female = 28% (n = 54) | $\chi^2 = 0.01$ |
| Ethnicity | White = 51% (n = 101) Black/Hispanic = 49% (n = 96) | White = 51% (n = 98) Black/Hispanic = 49% (n = 96) | $\chi^2 = 0.02$ |
| Age | Range = 18 to 57 years old Mean = 32 years old SD = 10.52 | Range = 18 to 69 years old Mean = 33 years old SD = 12.54 | t = 1.30 |
| Education * | Have high school diploma or equivalent at admission = 41% (n = 80) Do not have high school diploma or equivalent at admission = 59% (n = 117) | Have high school diploma or equivalent at admission = 54% (n = 105) Do not have high school diploma or equivalent at admission = 46% (n = 89) | $\chi^2 = 7.16$ |
| Employment or Student | Employed or student at admission = 38% (n = 75) Not employed or student at admission = 62% (n = 122) | Employed or student at admission = 42% (n = 81) Not employed or student at admission = 58% (n = 113) | $\chi^2 = 0.72$ |

Note. *p < 0.05

Variables and Analysis

All data were recorded and analyzed using SPSS 21 software. There were twelve independent variables and one dependent variable for the logistic regression. The dependent variable was (0 = not rearrested, 1 = rearrested). The conceptualization and coding of the independent variables were as follows: gender (0 = male, 1 = female), ethnicity (0 = white, 1 = African American and Hispanic), age (age at time of admission into drug court), education (0 = have a high school diploma or equivalent at time of admission into drug court, 1 = do not have a high school diploma or equivalent at time of admission into drug court), employment or student (0 = employed or a student at time of

admission into drug court, 1 = not employed or a student at time of admission into drug court), drug of choice (0 = all other drugs, 1 = cocaine), positive drug tests (total number of positive drug tests while in drug court), first 30 days (0 = did not have a violation within the first 30 days of drug court, 1 = had a violation within the first 30 days of drug court), arrest and admission (total number of days between arrest and admission into drug court), mental health (0 = do not have a mental health diagnosis, 1 = have a mental health diagnosis), criminal history (0 = do not have a criminal history prior to the arrest that resulted in admission into drug court, 1 = have a criminal history prior to the arrest that resulted in admission into drug court), and outcome (0 = graduated drug court, 1 = terminated from drug court).

Logistic regression was used to identify which variables significantly predict drug court participants' recidivism. Multicollinearity was assessed by conducting correlations between all of the independent variables. If the phi coefficient was greater than .80, multicollinearity was suspected (Orme & Combs-Orme, 2009).

Last, to compare the recidivism rates of drug court and probation participants, the percentage of drug court and probation participants who recidivated during and after their respective programs were collected through a government software program that tracks and records arrests, charges, and dispositions. Recidivism was defined as any new local (County) arrest for a felony or misdemeanor offense that resulted in charges being filed during drug court / probation and up to 36 months post drug court / probation discharge. The definition of recidivism was provided by the drug court and approved by the Indiana Judicial Center, which is an Indiana Supreme Court agency that certifies Indiana problem-solving courts. The recidivism data were collected in 2013 to assure a follow-up period of 36 months.

Results

For the drug court sample, chi-square tests of independence were used to determine if statistically significant differences existed in recidivism outcomes for the dichotomous variables of gender, ethnicity, education, employment or student, drug of choice, first 30 days, mental health, criminal history, and outcome. The variables of gender ($\chi^2 = 0.64$, $p = .43$), ethnicity ($\chi^2 = 1.10$, $p = .29$), education ($\chi^2 = 1.20$, $p = .27$), drug of choice ($\chi^2 = 0.17$, $p = .68$), and mental health ($\chi^2 = 1.88$, $p = .17$) were not significantly related to recidivism. The variables of employment or student, first 30 days, criminal history, and outcome, however, did show statistically significant associations with recidivism.

First, drug court participants who were neither employed nor a student at the time of admission were more likely to recidivate (54%) than participants who were employed or a student at time of admission (36%) ($\chi^2 = 6.10$, $p < 0.05$). Second, drug court participants who had a violation within the first 30 days of the program were more likely to recidivate (65%) than participants who did not have a violation with the first 30 days of the program (35%) ($\chi^2 = 17.12$, $p < 0.05$). Third, drug court participants who had a prior criminal history were more likely to recidivate (59%) than participants with no prior criminal history (30%) ($\chi^2 = 16.27$, $p < 0.05$). Fourth, for the drug court sample ($n = 197$), 108 (55%) participants graduated successfully from the program and 89 (45%) were

terminated unsuccessfully. Drug court participants terminated from the program were more likely to recidivate (65%) than were those who graduated from the program (32%) ($\chi^2 = 21.01$, $p < 0.05$).

Multicollinearity statistics were not in the problematic area; therefore, all independent variables were included in the logistic regression analysis. The findings from the logistic regression analysis are noted in Table 2.

Table 2. *Logistic Regression of Drug Court Participants' Recidivism (n = 197)*

| Independent Variables (IVs) | b | S.E. | Wald | df | Sig. | Exp (b) |
|-----------------------------|-------|------|--------|----|-------|---------|
| Gender | -.268 | .379 | .498 | 1 | .481 | .765 |
| Ethnicity | .043 | .352 | .015 | 1 | .903 | 1.044 |
| Age | -.045 | .017 | 6.870 | 1 | .009* | .956 |
| Education | -.274 | .357 | .587 | 1 | .444 | .761 |
| Employment or Student | .470 | .356 | 1.748 | 1 | .186 | 1.600 |
| Drug of Choice | -.247 | .370 | .447 | 1 | .504 | .781 |
| Positive Drug Tests | -.003 | .022 | .015 | 1 | .904 | .997 |
| First 30 Days | 1.221 | .356 | 11.752 | 1 | .001* | 3.391 |
| Arrest and Admission | .004 | .007 | .332 | 1 | .565 | 1.004 |
| Mental Health | .444 | .508 | .765 | 1 | .382 | 1.559 |
| Criminal History | .938 | .375 | 6.270 | 1 | .012* | 2.554 |
| Outcome | .846 | .379 | 4.986 | 1 | .026* | 2.331 |

Note. * $p < 0.05$.

Note. -2 Log Likelihood (221.77).

Note. Nagelkerke R Square (0.30).

Note. Hosmer and Lemeshow Test ($\chi^2 = 8.86$, $p = .35$).

Note. Dependent variable was (0 = not rearrested, 1 = rearrested).

As noted in Table 2, four of the twelve independent variables were statistically significant. First, for each year of increase in age, participants' chances of recidivating decreases by about 4%. Second, participants who had a violation within the first 30 days of drug court were 3.4 times more likely to recidivate than those who did not have a violation during this timeframe. Third, participants with a criminal history were 2.6 times more likely to recidivate than participants who did not have a criminal history. Fourth, participants terminated from drug court were 2.3 times more likely to recidivate than were program graduates.

A chi-square test of independence revealed a statistically significant difference in recidivism patterns between the drug court and probation groups ($\chi^2 = 18.26$, $p < 0.05$).

Of all the drug court participants ($n = 197$), the majority (104; 53%) did not recidivate. Conversely, of all the probation participants ($n = 194$), the majority (133; 69%) did recidivate.

Discussion

This study adds to the existing literature by identifying the variables most predictive of drug court participants' recidivating. Participants were most likely to recidivate if they were younger, had a violation within the first 30 days of the program, had a prior criminal history, and were terminated unsuccessfully from the program. Consistent with previous research (Brown, 2011; Krebs et al., 2007), younger participants are more likely to recidivate than older participants. Additional demographic variables, however, were not significant predictors of recidivating, including gender, education status, and employment or student status. While previous research has suggested that being female (Brown, 2011; Listwan, Shaffer, & Hartman, 2009; Wolfe et al., 2002) decreases the likelihood of rearrest, this study found no difference in recidivism patterns by gender. Similarly, no difference was found in the likelihood of recidivism for participants who were or were not employed or a student at the time of admission into drug court, which contradicts the findings from Listwan and colleagues (2009) and Shaffer, Hartman, Listwan, Howell, and Latessa (2011).

Consistent with previous evaluations (Krebs et al., 2007; Listwan et al., 2009; Shaffer et al., 2011), this study found that education status was not a significant predictor of recidivism. Perhaps the variables of education and employment or student status did not reach statistical significance because they were only assessed at admission. Specifically, data were only collected on whether or not a participant had a high school diploma or equivalent or was employed or a student at the time they were admitted to drug court. This method of coding does not account for participants who increased their education or employment status while in drug court or by the time they graduated or were terminated from the program. Additionally, despite the evidence that identifying cocaine as a drug of choice may decrease the likelihood of successful drug court outcomes (Dannerbeck et al., 2006, Hickert et al., 2009), this study did not find cocaine to be a predictor of recidivism. This finding is similar to Gallagher's (2014) recent evaluation of a Texas drug court where equal recidivism rates were found among drug court participants who identified stimulants, including cocaine, and nonstimulants as drugs of choice.

A noticeable strength of this study is that recidivism was measured up to 36 months. With the longer timeframe to measure recidivism, the results remained consistent with those from previous studies. Specifically, drug court participants were less likely to recidivate than probationers who had similar characteristics (Brown, 2011; Fielding et al., 2002; Mitchell et al., 2012; Shaffer, 2011; Spohn et al., 2001). Although drug court participants were less likely to recidivate than probationers, there are important demographic variables that were not assessed when comparing the two groups and these variables may have impacted the results. For example, the variable of socioeconomic status was not available for this study. A majority of probation participants may have come from lower socioeconomic backgrounds and they may have chosen not to enroll in drug court because it was more expensive than probation. Consequently, the higher

likelihood of recidivating for probation participants may be more associated with socioeconomic factors than with the type of intervention.

Racial disparities in drug court outcomes is a concern for many drug courts and the National Association of Drug Court Professionals (NADCP) has recently encouraged drug courts to evaluate their programs to see if racial disparities exist (Marlowe, 2013). Therefore, the results for the Indiana drug court are promising because white and minority participants (African American/Hispanic) had equal likelihoods of recidivating, which is consistent with findings from an evaluation of a Nebraska drug court (Spohn et al., 2001). Researchers have speculated that drug courts in which minority participants are underrepresented are more likely to experience racial disparities in graduation and recidivism outcomes (Gallagher, 2013a). White and minority participants were equally represented in the Indiana drug court (each group made-up about 50% of the program), and this may possibly explain why the variable of ethnicity did not reach statistical significance.

Interestingly, participants with no positive drug tests in drug court and those with multiple positive drug tests had equal odds of recidivating. Presumably, drug court participants who had positive drug tests would be more likely to recidivate because they were continuing to engage in illegal behaviors. However, these same participants would have also received multiple sanctions throughout the program because of the positive drug tests and these sanctions, consistent with the drug court model, would have been therapeutic in nature, as compared to punitive interventions. Perhaps having positive drug tests increased participants' attendance in substance abuse treatment and the knowledge and skills they learned in treatment supported their recovery beyond drug court, hence lowering their risk of recidivism. Similarly, the variable of days between arrest and admission did not reach statistical significance, suggesting that shorter times between arrest and program entry do not result in better outcomes. This finding fails to support a key component of drug court; specifically, key component three recommends that drug courts enroll participants as soon as possible following an arrest, as this will result in better outcomes related to graduation and avoiding recidivism (NADCP, 2004).

Of all the variables assessed in this study, the strongest predictor of recidivism was having a violation within the first 30 days of drug court. This finding adds to the existing literature because the level of participants' compliance during the first month of drug court has not been commonly measured in previous research. Only two known studies have used this variable and these studies predicted completion outcomes, not recidivism. Newton-Taylor et al. (2009) found in the Toronto drug treatment court that participants who had better compliance within the first month of the program were more likely to graduate. Gallagher (2013b), however, found that compliance within the first 30 days of a Texas drug court had no impact of graduation.

Limitations

The findings from this study need to be interpreted within the context of the study's limitations. The most noticeable limitation is that an experimental research design was not used. Randomly assigning arrestees to drug court or probation would have provided

maximum control for the threats to internal validity. As with all research that does not use random assignment, there is the potential for selection bias. While attempts were made to develop a probation group that had characteristics similar to those of the drug court group, the matching process was limited to the data available to the researchers. For example, probation participants were compared to the drug court group based on having similar arrests and comparisons were then assessed on several demographic variables. Last, while the findings from this study can inform other drug courts, they should only be generalized beyond the research sample with caution. While all drug court operate under the same ten key components (NADCP, 2004), the implementation of each component varies from court-to-court based on a community's needs, the type of offenders the drug court serves, the political climate of the community, and the availability of resources in the area. Evaluation of individual drug courts is recommended to assess what predicts recidivism for a specific jurisdiction.

Drug Court Practice

One of the main characteristics of drug courts that differentiates them from probation is that drug court defendants appear before the judge for judicial status hearings more frequently. The Indiana drug court, for example, requires its participants to see the judge weekly at the beginning of the program and no less than once a month during the later phases of the program. For certain populations, however, drug court programs may require more intensive supervision. Participants in this study who had a criminal history were more likely to recidivate than their counterparts without a criminal history, and research has suggested that participants with personality disorders that increase their criminogenic risk factors, and likelihood of having a criminal history, benefit most from frequent contact with a judge (Festinger et al., 2002; Marlowe, Festinger, Dugosh, & Lee, 2005). In order to improve outcomes in drug courts for those with criminal histories, it is recommended that assessment tools be used, like the Texas Christian University (TCU) Criminal Thinking Scales (Knight, Garner, Simpson, Morey, & Flynn, 2006), and that interventions be tailored to participants based on the findings from the assessment. Participants, for example, with multiple criminal thinking patterns and histories of criminal convictions may have improved outcomes if they appear before the judge at least two times per week. This recommendation of increasing judicial status hearings for high-risk participants is also associated with the finding that participants who had a violation within the first 30 days of drug court were more likely to recidivate than those that did not have a violation during this timeframe. Participants who see the judge more frequently may reduce their risk of having program violations, and based on this study, even delaying violations until after the first 30 days seems to result in lower recidivism rates.

Policy Advocacy

Drug courts throughout the United States continue to demonstrate effectiveness at reducing criminal recidivism; as a result, policymakers are beginning to establish laws that require certain counties to have drug courts and require drug courts to become certified through the state. Texas, for example, requires counties with a population of

more than 200,000 to have a drug court program (Texas Legislature, 2007). In Indiana, drug courts are required to be certified through the state, which helps promote fidelity to the drug court model (Indiana General Assembly, 2010). Only five states (Colorado, Iowa, Kansas, Massachusetts, Ohio) have no drug court legislation or state appropriations dedicated to drug court (Huddleston & Marlowe, 2011).

It is recommended that policy advocacy efforts focus on establishing drug court laws and funding in all states. Advocates can use the findings from this study and the evidence from previous research to support the development and expansion of drug courts in their communities. In this study, drug court participants were 22% less likely to recidivate than probation participants (47% versus 69%) and this finding is consistent with meta-analyses of 92 (Mitchell et al., 2012) and 82 (Shaffer, 2011) drug courts that also found drug court to be more effective than similar programs, such as probation, at reducing recidivism for offenders with substance use disorders. Policymakers from the five states that do not have drug court laws or state appropriations may respond favorably to evidence from other states demonstrating that drug courts reduce recidivism, which naturally saves taxpayers money. In Indiana, for example, a statewide evaluation indicated that having drug courts saved state taxpayers 3.5 million dollars a year, and for every \$1.00 invested in drug courts, there can be a return of \$5.37 dollars (Wiest et al., 2007). Additionally, as drug court laws continue to be amended and implemented, it is important that policymakers collaborate with professionals who have expertise in drug court programming to assure helpful laws are being created. It is important that laws require drug courts to offer participants culturally competent, evidence-based treatments to avoid negative unintended consequences, such as racial disparities in graduation and recidivism outcomes (Gallagher, 2012).

Future Research

The majority of drug court research has used quantitative methods to predict graduation and recidivism outcomes, and to compare the recidivism rate of drug court to that of other judicial programs. Often, the quantitative studies leave many questions unanswered. In this study, the data demonstrated that the risk factors for recidivating were being younger, having a violation within the first 30 days of drug court, having a criminal history, and being terminated unsuccessfully from the program. While these findings are informative, they do not offer insight into the challenges participants experience with being successful in drug court. With this said, it is recommended that future research use qualitative methods to answer some of the unanswered questions that arose from this study. For example, what are some of the challenges younger participants face that increase their risk of recidivating? Facilitating individual interviews with different age groups may allow researchers to compare and contrast the experiences of younger and older participants, which may offer an in-depth understanding on how drug court can be enhanced. This compare and contrast method can also be used to explore the barriers participants face in the first month of the program or the factors that contribute to higher recidivism rates for those with criminal histories. Terminated participants are a little more than 2 times more likely to recidivate than graduates; through the use of

qualitative methods, researchers may be able to capture the lived experiences of participants which may inform practice and improve graduation outcomes.

Conclusion

Findings from this study, coupled with the plethora of evidence from previous research, suggest that drug court is more effective than similar types of criminal justice programs at reducing criminal recidivism rates for offenders with substance use disorders. Participants from the Indiana drug court recidivated at a rate of 47%, whereas the recidivism rate for a comparable group of probationers was 69%. Additionally, drug court participants were most likely to recidivate if they were younger, had a violation within the first 30 days of the program, had a criminal history, and were terminated from the program. In order to improve outcomes for drug court participants, especially those more likely to recidivate, the use of assessment tools, such as the Texas Christian University (TCU) Criminal Thinking Scales, may help drug courts tailor interventions to participants' needs. Furthermore, advocating for effective drug court laws throughout the United States is recommended to support the expansion of these valuable programs. Last, future research focused on the use of qualitative methods may help develop an in-depth understanding of drug court from participants' lived experiences, such as focusing on the challenges participants face during the first 30 days of the program or the factors that may contribute to younger participants being more likely to recidivate.

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