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An examination of the impact of drug court clients' perceptions of procedural justice on graduation rates and recidivism

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KEYWORDS

Drug courts; problem-solving courts; procedural justice; recidivism

ABSTRACT

Over the years, researchers have found drug courts reduce recidivism for participants. Scholars have hypothesized that drug courts are effective at producing positive outcomes for participants due in part to a case management approach that implements concepts of procedural justice. Using a convenience sample of participants involved in one drug court, this study adds to the limited body of research on procedural justice and drug courts by examining whether variation in drug court clients' perceptions of procedural justice is related to their likelihood of graduation from drug court and recidivism. Results, policy implications, and recommendations for future research are discussed.

Introduction

The United States has experienced a substantial increase in the correctional population over the past four decades and approximately two thirds of offenders are rearrested within three years of release from prison (Durose, Cooper, & Snyder, 2014). The increase in the correctional population, high recidivism rates, and unique needs of offenders has led correctional administrators, policy makers, and researchers to devise alternatives to incarceration (i.e., intermediate sanctions). These intermediate sanctions aim to reduce prison crowding, be cost-effective, and provide additional treatment services to offenders that may not otherwise be available in an incarcerative setting (Petersilia, Lurigio, & Byrne, 1992). One intermediate sanction that has garnered the attention of researchers and policymakers alike is drug courts. Drawing on various punishment philosophies, but with overarching goals of holding offenders accountable and providing rehabilitation through effective treatment, drug courts are designed to provide an alternative to incarceration for offenders with distinct needs stemming from substance abuse (Berman & Feinblatt, 2001; MacKenzie, 2006). Considerable research has been conducted to examine the effectiveness of drug courts, with much of the research concluding that participation and completion of treatment through a drug court significantly reduces recidivism for participants (Gottfredson, Najaka, & Kearley, 2003; Mitchell, Wilson, Eggers, & MacKenzie, 2012; Wil- son, Mitchell, & MacKenzie, 2006). Limited research examines the mechanisms contributing to the positive effects demonstrated in many drug court outcome studies. Proverbially labeled the “black box” of drug courts, Goldkamp, White, and Robinson (2001) call for research to examine the dynamics attributable to the success of drug courts.

Many aspects of drug courts have been suggested to positively contribute to behavioral change of participants including preadjudication structure (Shaffer, 2011), a formal system to respond to infractions (Shaffer, 2011), and intensive treatment (Shaffer, 2011; Taxman & Bouffard, 2005). A less often examined component of drug courts is the impact of using a non- adversarial, therapeutic approach to handling cases of behavioral change (Bureau of Justice Assistance, 2004). A non-adversarial, therapeutic approach in a drug court context characteristically involves employing concepts of procedural justice during judicial interactions with offenders assigned to their docket. The concept of procedural justice suggests that the greater the extent to which individuals believe they are treated fairly by legal authorities (e.g., police, lawyers, judges), the more likely individuals will hold more positive attitudes toward legal authorities (Thibaut & Walker, 1975), view the legal system as legitimate (Sunshine & Tyler, 2003; Tyler, 2006), and in turn be more likely to comply with the law and follow the directives of the police and courts (Sunshine & Tyler, 2003; Tankebe, 2013; Tyler, Sherman, Strang, Barnes, & Woods, 2007). Simply stated, the focus of procedural justice is on the process experienced by individuals encountering legal authorities (Poythress, Petrila, McGaha, & Boothroyd, 2002; Sunshine & Tyler, 2003; Thibaut & Walker, 1975; Tyler, 2006; Tyler & Folger, 1980).

Within the past decade limited research has emerged that examines the impact of procedural justice in the context of problem-solving courts (Canada & Watson, 2013; Gottfredson, Kearley, Najaka, & Rocha, 2007; Gover, Brank, & MacDonald, 2007; Henry, 2011; McIvor, 2009; Poythress et al., 2002; Wales, Hiday, & Ray, 2010). Overall, this research suggests that perceptions of a higher level of procedural justice for problem-solving court clients are positively related to both intermediate and long-term outcomes including increased program compliance, satisfaction with the court, reduced drug use, and reduced

criminal behavior. This study moves beyond studying inter- mediate perceptual outcomes (i.e., client satisfaction with the courts) to instead examine the impact of drug court clients' perceptions of judicial procedural justice on graduation rates and recidivism. The current study utilizes data from a well-established drug court in a Southern state to build upon the limited research examining the impact of drug court clients' perceptions of procedural justice on program graduation and recidivism. This study seeks to expand upon the literature by focusing on the clients' perceptions of procedural justice as it relates to their judge (hereafter termed judicial procedural justice). Further, we examine how these perceptions of procedural justice impact likelihood of graduating from the drug court and recidivism, while also controlling for an important but often ignored factor—outcome of the judicial encounter on the day of the survey. Outcomes stemming from the judicial encounter not only serve as a proxy to capture the ongoing performance of the individual as it pertains to their substance use issues (i.e., a negative outcome would indicate a potential relapse or failure to comply with drug court rules, whereas a positive outcome would indicate compliance with court orders as part of the drug court treatment process), it could also have lasting psychological effects (e.g., impact self-efficacy and/or defiance).

Literature review

The focus of procedural justice is on the fairness of the process experienced by individuals encountering legal authorities (Poythress et al., 2002; Sunshine & Tyler, 2003; Thibaut & Walker, 1975; Tyler, 2006; Tyler & Folger, 1980; Walker, Lind, & Thibaut, 1979). According to Walker et al. (1979), procedural justice is defined as "the belief that the techniques used to resolve a dispute are fair and satisfying in themselves" (p. 1402). The importance of this concept is ever growing in the field of criminal justice. The implications are vast if, as the idea suggests,

individuals who believe they are treated fairly by the legal authorities in which they come in contact (e.g., police officers, lawyers, judges) possess more positive attitudes toward those authorities, and as a result are more willing to comply with the law (Tyler, 2006). The concept of procedural justice is multifaceted and researchers have found many factors to impact whether an alleged offender believes they are treated in a procedurally just manner, including neutrality of the authority figure (Tyler, 1988, 1989, 2006), trustworthiness (Tyler, 1989), having a voice (Casper, Tyler, & Fisher, 1988; Tyler, 1988, 2006), honesty of the authority figure (Tyler, 1988), ethicality (Tyler, 1988), and being treated with dignity/respect (Tyler, 2006). Relatedly, Sherman's (1993) defiance theory proposes, in part, that individuals who perceive unjust sanctions, feel disrespected by authorities, and are poorly bonded to the sanctioning agent will perceive sanctions as unfair, be more likely to defy the sanctioning agent, and continue to engage in future offending.

In court proceedings specifically, feelings of procedural justice are said to occur when individuals are given an opportunity to state their case (Tyler, 1987) and when those individuals believe that the judge listens to and considers their argument before making a decision (Casper et al., 1988). If people perceive the procedures used in a legal or social situation to be fair, the outcome an individual receives is more likely to be perceived as fair, even if the outcome of the encounter is unfavorable (Leventhal, 1980; Sherman, 1993). As Sunshine and Tyler (2003) assert "people are more accepting of and cooperative with authorities when they are treated with fairness and respect" (p. 536).

Applications of procedural justice

Since the conceptual recognition of procedural justice four decades ago by Thibaut and Walker (1975), there has been

significant maturation in procedural justice research. The research has evolved from laboratory experiments with undergraduate students focusing on intermediate out- comes such as perceived fairness of outcomes (Thibaut & Walker, 1975; Walker et al., 1979), to an examination of procedural justice in real-world settings such as courtrooms and police-citizen encounters, albeit with a continued focus on intermediate outcomes (Casper et al., 1988; Heinz, 1985; Landis & Goodstein, 1986; Tyler, 1984, 1988; Tyler & Folger, 1980). These early studies examining procedural justice in a courtroom setting held that perceptions of procedural justice do indeed contribute to perceptions of outcome satisfaction independent of actual outcome (Casper et al., 1988; Landis & Goodstein, 1986; Tyler, 1984) with Landis and Goodstein (1986) reporting procedural justice to have the greatest substantial impact on out- come satisfaction in the courtroom.

Although limited, more current research on procedural justice in the court- room seeks to replicate these early findings and extend the examination of procedural justice to determine if perceived fairness impacts long-term outcomes, such as whether someone is likely to comply with the law (e.g., accepting and complying with court mandates; Tyler & Huo, 2002; Tyler et al., 2007). Compliance with the law is arguably a more practical outcome to examine as compared to perceived satisfaction given that reducing criminal behavior is the primary goal of many criminal justice professionals. In a study of over 200 individuals who had contact with California courts, Tyler and Huo (2002) found that in addition to having more positive evaluations of the court system, those individuals who reported a higher level of perceived procedural justice were significantly more willing to accept the decision made by the judge compared to those who felt unfair procedures were used. Furthermore, research has found procedural justice to have a direct, as well as indirect, effect on behavioral outcomes. In an examination of the impact of procedural justice on future self-reported

drunk driving of offenders in Australia, Tyler et al. (2007) found that offenders who perceived a higher level of procedural justice were significantly more likely to view the law as legitimate. Legitimacy, in turn, reduced the likelihood of recidivism.

According to Sunshine and Tyler (2003), "legitimacy is a property of an authority or institution that leads people to feel that that authority or institution is entitled to be deferred to and obeyed" (p. 514). Thus, if citizens believe legal authorities have an inherent right to dictate citizens' behavior, then citizens may voluntarily obey the law (Tyler, 2006). Moreover, if the legitimacy of an institution is undermined then compliance with the directives of that institution will be less likely to occur (Tyler, 2006). Procedural justice researchers have suggested that people who feel they are treated fairly by legal authorities (i.e., have greater perceptions of procedural justice) will in turn view those legal authorities as more legitimate in their ability to exercise power (Mazerolle, Antrobus, Bennett, & Tyler, 2012; Sunshine & Tyler, 2003; Tyler, 2006; Tyler & Huo, 2002). Therefore, increasing perceptions of procedural justice could have a positive and direct effect on legitimacy and an indirect effect on compliance (being mediated by legitimacy).

Drug courts

Drug courts are an ideal setting in which procedural justice may be found to exist at varying levels and allow for further theoretical exploration. Drug courts are typically nonadversarial in nature, and instead of two parties vying against each other to win a case, drug courts utilize a collaborative approach. Judges, defense attorneys, prosecutors, supervision officers, and treatment personnel work together with the goal of reducing court participants' drug use. Judges take a hands-on approach to managing drug court clients through presiding over hearings, listening to clients share updates about their progress in treatment, providing encouragement and support, sanctioning clients who are unable

to comply with mandates, and presiding over graduations. In essence, drug courts were developed to combine intensive drug treatment for clients with the structure and accountability of frequently appearing in front of a judge (Goldkamp, 1994). As Bouffard and Taxman (2004) succinctly stated, “The drug court integrates aspects of the treatment and criminal justice system to form a unique service delivery system” (p. 196). This unique service delivery system arguably involves judges and other legal authorities employing concepts of procedural justice (i.e., giving clients a voice, treating clients with dignity and respect).

Not only are drug courts a setting in which high levels of procedural justice might be found, the drug court environment is one in which a positive impact of procedural justice on outcomes can be measured across individuals experiencing a similar encounter with a judicial authority. First established at the height of the war on drugs in 1989 in Dade County, Florida, drug courts are now seen as an effective alternative to incarceration and consequently have flourished throughout the country. At midyear 2012, a total of 2,734 drug courts were operating within the United States, up from 492 in 1999 (National Association of Drug Court Professionals, n.d.). Moreover, in an effort to significantly reduce the drug using behavior of offenders involved in the criminal justice system, developers of the drug court model determined that drug courts needed to differ substantially from traditional courts in their case management approach (Goldkamp, 1994).

In response to the proliferation of drug courts across the United States, the Bureau of Justice Assistance (2004), in collaboration with the National Association of Drug Court Professionals, sought to outline the fundamental components of drug courts. These 10 Key Components (hereafter Key Components) were designed to serve as the framework for future drug court programs (Huddleston & Marlowe, 2011). They highlight, among other things, the importance of using a

nonadversarial approach to handling cases (Key Component 2) and ongoing judicial interaction with drug court participants (Key Component 7; Bureau of Justice Assistance, 2004). Although it is unknown whether all drug courts incorporate the Key Components into their programs, research does suggest that drug courts that adhere to the Key Components and do not "water down the model" are more effective at producing behavioral change compared to drug courts that do not adhere to the Key Components (Huddleston & Marlowe, 2011, p. 14). Moreover, the integration of these components into a drug court could result in an environment perceived as more procedurally just, as the components mentioned above align with the procedural justice framework.

Procedural justice in drug courts

Since the inception of drug courts in 1989, researchers have used a variety of methods to examine the impact of drug courts on reducing drug use and recidivism of drug court participants. Although some researchers have concluded that drug courts are no more effective in reducing recidivism relative to a comparison group (Guydish, 2002), or find that drug court participants are more likely to recidivate (Miethe, Lu, & Reese, 2000), a number of others have found drug courts significantly reduce drug use and recidivism for drug court participants (Mitchell et al., 2012; Peters & Murrin, 2000; Wilson et al., 2006). Even using the most rigorous standards of evaluation (i.e., randomized experiments), researchers have found drug courts to be effective at producing a long-lasting change in the behavior of drug-involved offenders (Deschenes, Turner, & Greenwood, 1995; Gottfredson et al., 2003; Gottfredson, Najaka, Kearley, & Rocha, 2006). Additionally, research suggests that drug courts that adhere to the Key Components are more likely to see positive results in drug court clients compared to drug courts that do not adhere to the core components (Huddleston & Marlowe, 2011). Given the promising findings regarding drug courts and the fact that they are now

labeled as an evidence-based practice (MacKenzie, 2006), an examination of the contribution of procedural justice as one mechanism that contributes to the effectiveness of drug courts is critical (see Goldkamp et al., 2001).

To date, a limited number of scholars have examined the existence of procedural justice in drug courts. In an attempt to examine the role of procedural justice in an adult drug court in Scotland, McIvor (2009) used interviews and systematic observations to determine the existence of three antecedents of procedural justice. The antecedents included ethicality, judges making an effort to be fair, and representation (or allowing participants an opportunity to state their case). Although McIvor (2009) did not examine the impact of procedural justice on recidivism, the qualitative data suggested elements of procedural justice were evident in the studied Scottish drug court. In an attempt to uncover mediators of participation in a drug treatment court and reductions in future crime and drug use, Gottfredson et al. (2007) found drug court participants had greater perceptions of procedural justice as compared to a treatment as usual group. Results also indicated that greater perceptions of procedural justice resulted in a reduction in crime variety, but did not reduce drug use. Additionally, in a large multisite study of drug courts in the United States, Henry (2011) examined the role of drug court participants' experiences, particularly as they related to procedural justice and how these experiences impacted program compliance, criminal behavior, and drug use. Results suggested that perceptions of procedural justice (as measured by attitudes toward the judge) were a significant predictor of program compliance, criminal behavior, and drug use. Specifically, individuals who indicated more positive attitudes toward their judge were significantly less likely to violate their supervision, be involved in criminal activity, or use drugs. These findings were evident even when controlling for the perceived fairness of the outcome (i.e., distributive justice), perceptions of legal coercion, and perceptions of sanctions (Henry, 2011).

Although we cannot generalize from the few studies above that procedural justice exists in all drug courts, the studies provide preliminary evidence that elements of procedural justice are evident in some drug courts (McIvor, 2009). Further, preliminary studies suggest that drug court clients who have greater perceptions of procedural justice are more likely to change their criminal behavior (Gottfredson et al., 2007; Henry, 2011). While much of the existing research focuses on intermediate outcomes, two studies have examined how procedural justice impacts future behavior of drug court participants (Gottfredson et al., 2007; Henry, 2011). This research seeks to add to the growing body of literature on the impact of drug court clients' perceptions of procedural justice and the impact these perceptions have on future behavior, including graduating from the drug court and recidivism.

Current study

Focusing specifically on participants in the unique context of a drug court, this study extends initial work by examining the relationship between perceptions of procedural justice and long-term outcomes (i.e., graduation rates and recidivism). The current study builds upon the limited but critical studies that examine the impact of procedural justice on future behavior of drug court participants (Gottfredson et al., 2007; Henry, 2011). We address a limitation of previous work on this subject by controlling for court outcome on the day of the procedural justice survey. The procedural justice literature argues that regardless of the outcome the defendant received in court that day, perceptions of procedural justice will continue to impact intermediate outcomes such as satisfaction with the court (Leventhal, 1980; Walker et al., 1979); how- ever, its effect on long-term outcomes is unknown. It is possible that receiving a negative outcome in court could impact a person's perceived self-efficacy and have lasting psychological effects beyond mere satisfaction with the courts, such as resulting in defiance of the sanctioning agent. It is also possible that negative court outcomes could serve as a proxy for poor

ongoing court performance and/or continued substance use. Two hypotheses serve as the focus of this study:

> *H1:* Drug court clients with higher perceptions of procedural justice will have higher graduation rates than drug court clients with lower perceptions of procedural justice.
> *H2:* Drug court clients with higher perceptions of procedural justice will have lower recidivism rates than drug court clients with lower perceptions of procedural justice.

Methods

Survey administration

Researchers surveyed clients from a well-established drug court over a 2-week period. Survey administration occurred at the conclusion of the court session after the participant appeared in front of the presiding judge and after the judge left the courtroom. The drug court coordinator introduced the researchers to the drug court participants, after which, the researchers explained the purpose of the study—described as measuring their perceptions of their interactions with the judge. Participants were informed of the voluntary and confidential nature of the survey and were told they could skip any questions that made them feel uncomfortable. Researchers then handed out the self-administered surveys, which participants completed on their own, prior to leaving the courtroom. Researchers were available while participants were completing the survey to answer any questions. All courtroom actors, including the drug court coordinator and judge, were aware of the research and its purpose. All procedures and methods were reviewed and approved by the appropriate Institutional Review Board.

Drug court characteristics

The drug court for this study was established in 2003 and is a felony adult drug court in a large metropolitan area in a Southern state. Defendants are eligible to participate in the drug court if they meet the following requirements: (a) have a prior drug conviction, two prior drug related arrests, or have a history of drug/alcohol dependency; (b) have a pending felony drug, credit card abuse, felony prostitution, felony forgery, felony theft, or tampering/ fabricating evidence charge; (c) be an adult or a juvenile certified to stand trial as an adult; (d) be a legal resident of the United States and the county; and, (e) have a drug dependency. The drug court consists of a three-phase program where clients receive intensive supervision and treatment, submit to random drug testing, and frequently appear before their judge. Once a client successfully completes the three phases, they are required to complete 12 months of a specialized aftercare program. In addition to all other drug court requirements, drug court clients are required to serve 4 years of intensive supervision probation.

The drug court has four dockets with a different judge presiding over each docket. Upon enrollment in the drug court, clients are assigned to a docket and typically interact solely with the judge assigned to that docket. At times, clients may interact with judges from other dockets, due to the judges' conflicting schedules or a client attending a different docket. While this is rare, it is possible that survey participants had interactions with other drug court judges. Unfortunately, we do not have data to examine if clients have had interactions with multiple judges. However, during the weeks of survey administration, the drug court judges presided over the hearings for their regularly assigned docket.

Participant characteristics

At the time of this study, a total of 207 clients were involved in the drug court and 150 drug court clients were contacted by researchers to participate in the survey.[1] Despite a lack of compensation and the fact that participants had to stay after court on their own time to complete the survey, a relatively high response rate of 75.3% was achieved for a total of 113 surveys. As indicated in Table 1, the typical drug court client who completed the survey was a 37 year old female, with an extensive criminal history (10 prior arrests). Approximately equal numbers of Caucasian (42%) and African American (45%) individuals responded to the survey. On average, participants appeared before their judge 24 times and had been enrolled in the drug court for 1 year and 3 months prior to survey completion.

Table 1. Participant descriptive statistics (*N* = 113).

Variable	*N*	%	*M*	*SD*
Rearrested[a]	26	23.0		
Graduated[a]	91	81.0		
Male[a]	50	44.2		
White[a]	47	41.6		
African American[a]	51	45.1		
Hispanic[a]	15	13.3		
Offender's age at time of survey (years)			37.39	9.56
Number of prior arrests			10.25	7.13
Days enrolled in court			459.44	347.57
Appearances in front of judge prior to survey			24.08	13.53
Negative outcome on day of the survey[a]	6	5.3		
Judicial procedural justice			3.84	.28

[a]Binary indicator where 1 = yes and 0 = no.

Measures

Dependent variables

Two dependent variables are of interest in this study: graduation from drug court and recidivism. Graduation was operationalized as graduation from the drug court during the follow-up period and was dichotomized as yes (coded as 1) and no (coded as 0). In order to allow all participants to matriculate through the program, graduation data was obtained from the drug court coordinator approximately three and a half years postsurvey. Recidivism was operationalized as rearrest for a new crime subsequent to survey completion and was dichotomized as yes (coded as 1) and no (coded as 0). Rearrest data was obtained from

official Department of Public Safety records. The official records did not provide information on out-of-state arrests. Therefore, arrest data was limited to in-state arrests. The time between survey completion and follow-up recidivism check ranged from just over 2 years (789 days) to approximately 2.5 years (869 days), with the average follow-up time being approximately 2 years and 3 months (844 days).

Independent variable

A Perceptions of Judicial Procedural Justice index was comprised of 12 items adapted from Henderson, Wells, Maguire, and Gray (2010). This index was chosen because the items queried respondents regarding their encounter with a specific individual (i.e., the judge) instead of general perceptions, and the items were easily adaptable to refer to the drug court judge. Items on the Perceptions of Judicial Procedural Justice index were based on a 4-point, Likert-type scale (1 = *never*, 2 = *seldom*, 3 = *sometimes*, and 4 = *always*). The 12-item index reflected overall fairness, quality of decision-making, and quality of treatment experienced by drug court clients. Questions include: "How often does your judge in the drug court treat you fairly?" and "How often does the judge in the drug court make decisions based on facts and not their personal biases or opinions?" Questions were coded such that higher scores indicate greater perceptions of judicial procedural justice.

The Perceptions of Judicial Procedural Justice score was computed by summing the items and dividing by 12 (the number of items in the index). Three participants answered some but not all of the items on the index (ranging from 5–11 items answered). In the three cases with missing data, the answered items were summed and divided by the total number of items answered.[2] A reliability analysis indicated that the index demonstrated strong internal consistency (α = .905). Factor analysis was conducted to examine the con- struct validity of the judicial procedural justice index. Despite the multiple dimensions of the

procedural justice index, results supported retention of all items in a single-factor structure. See Appendix for all index items and factor loadings.

Control variables

A number of control variables were used in the analyses, including age, gender (coded as 1 for male and 0 for female), race/ethnicity categorized as Caucasian, African American, and Hispanic (coded as 1 for each category and 0 for the contrast group of Caucasian), number of arrests prior to completing the survey, number of appearances before the judge prior to completing the survey,[3] and the outcome received in court on the day of the survey. The procedural justice literature argues that perceptions of procedural justice will impact satisfaction with the court regardless of the outcome the defendant received in court that day (Leventhal, 1980; Walker et al., 1979). The outcome received in court on the day of the survey is operationalized as a positive (i.e., incentive; coded as 1) or negative outcome (i.e., sanction; coded as 0).

Analytic plan

All survey, graduation, and recidivism data were coded and entered into IBM SPSS Statistics version 22. Independent-samples *t* tests were conducted to compare the group mean differences in the judicial procedural justice scores, age, total prior arrests, and court days before the survey for those who did and did not graduate, for those who did and did not recidivate, and for those who did and did not receive a negative court outcome on the day of the survey. Pearson correlation coefficients were also used to investigate the bivariate relationship between judicial procedural justice, age, total prior arrests, and court days before the survey. Logistic regression was used to test the hypotheses that higher levels of perceived procedural justice are related to higher graduation rates and lower levels of recidivism among the drug court clients.

Logistic regression was used because graduation and recidivism are dichotomous (yes/no) outcomes, and the focus is on predicting group membership (i.e., whether or not a drug court client will graduate/recidivate based on the predictor variables; Tabachnick & Fidell, 2007).

Results

As indicated in Table 1, the average judicial procedural justice scale score was 3.84 (out of 4) with a standard deviation of .283, indicating very high perceptions of procedural justice among drug court clients. In other words, the drug court clients in this court feel they are treated in a procedurally just manner nearly all the time. High graduation rates were present in this sample, with 81% of survey participants graduating during the follow-up period. Interestingly, official data showed only 23% of respondents recidivated during the approximately two-year follow-up period.

Independent-samples *t* tests were conducted to examine whether differences existed in the judicial procedural justice score and the two outcome variables of interest (graduation and recidivism) as well as negative outcome on the day of the survey. As indicated in Table 2, no significant differences emerged in the procedural justice scores for those who graduated compared to those who did not graduate, for those who were rearrested compared to those who were not rearrested, nor for those who received a negative court outcome on the day of the survey compared to those who received a positive outcome. However, significant differences did emerge for age as it relates to graduation, where participants who graduated were significantly older compared to those who did not graduate. A significant difference was also found for total number of prior arrests between those who recidivated and those who did not. Specifically, participants who recidivated had significantly more prior arrests.

Table 2. Independent-samples *t* test.

	Yes		No			
Variable	*M*	SD	*M*	SD	*df*	*t*-test
Graduated						
Judicial procedural justice	3.82	.382	3.88	.210	111	.651
Age	38.61	9.64	32.37	7.46	111	−2.830**
Total prior arrests	9.90	7.29	11.68	6.67	111	1.052
Court days before survey	24.85	13.30	20.91	14.32	111	−1.228
Rearrested						
Judicial procedural justice	3.90	.156	3.81	.390	111	−1.147
Age	34.62	8.56	38.22	9.73	111	1.698
Total prior arrests	13.42	6.38	9.30	7.10	111	−2.658**
Court days before survey	28.42	16.99	22.78	12.13	111	−1.887
Negative outcome on day of survey						
Judicial procedural justice	3.88	.306	3.83	.359	111	−.313
Age	35.97	12.02	37.47	9.47	111	.374
Total prior arrests	10.50	6.54	10.23	7.19	111	−.089
Court days before survey	25.17	10.53	24.02	13.71	111	−.201

**$p < .01$.

Table 3. Correlation matrix.

	1	2	3

1. Judicial procedural justice	1.0		
2. Age	.012	1.0	
3. Total prior arrests	.045	.300***	1.0
4. Court days before survey	−.027	−.025	−.249**

**$p < .01$. ***$p < .001$.

Pearson correlation coefficients, shown in Table 3, demonstrated significant relationships existed between prior arrests and age and between total prior arrests and number of court days attended. No significant collinearity existed between independent variables to the extent that exclusion of variables from further multivariate analyses was necessary (all correlations were below .8 and all tolerance statistics were above .1).

Binary logistic regression was used to test the two hypotheses, which stated that higher levels of perceived procedural justice would be related to higher graduates rates (Model 1) and lower levels of recidivism (Model 2) among drug court clients. Results indicate that both models were significantly different from the baseline models with no predictors, Model 1: $\chi^2(8, N = 113) = 24.538$, $p = .002$; Model 2: $\chi^2(8, N = 113) = 37.859$, $p = .000$. Additionally, the Hosmer-Lemeshow goodness of fit tests indicated that the models fit the data well. Model 1 as a whole correctly classified 81.4% of cases, with pseudo-R^2 values ranging between 0.195 (Cox and Snell R^2) and 0.311 (Nagelkerek R^2). Model 2 as a whole correctly classified 83.2% of cases, with pseudo-R^2 values ranging between 0.285 (Cox and Snell R^2) and 0.431 (Nagelkerke R^2).

Importantly, as seen in Table 4, results indicated perceptions of procedural justice did not significantly influence likelihood of graduation nor recidivism.

Table 4. Influence of perceptions of procedural justice on graduation and rearrest.

	Model 1: Graduation		Model 2: Rearrest	
Variable	Exp (*B*)	*SE*	Exp (*B*)	*SE*
Judicial procedural justice	.661	1.173	1.719	1.427
Negative outcome on day of survey	.043**	1.222	34.674**	1.348
Age	1.144**	.045	.907*	.042
African American	1.064	.647	.173*	.698
Hispanic	.724	.802	.553	.888
Male	2.057	.591	.576	.585
Total prior arrests	.913	−.091	1.209***	.051
Court days before survey	1.024	.023	1.061**	.023
Constant	.277	4.841	.069	5.793
Nagelkerke R^2	.311		.431	

*$p < .05$. **$p < .01$. ***$p < .001$.

With regards to likelihood of graduation (Model 1), participants who received a negative outcome on the day of the survey and were younger were significantly less likely to graduate from the drug court. Participants who received a negative outcome (i.e., were sanctioned by the judge) on the day of the survey were almost 96% less likely to graduate compared to those who received a positive outcome on the day of the survey (i.e., given incentive or praised by judge). Additionally, for each year older the odds of graduation increased by 14.4%.

With regard to recidivism (Model 2), offenders who received a negative outcome on the day of the survey, were younger, had a greater number of days in court prior to taking the survey, had a greater number of prior arrests, and were White (compared to African American) resulted in significantly higher likelihood of recidivating. Participants who received a negative outcome on the day of the survey were over 34 times more likely to recidivate compared to those who received a positive outcome on the day of the survey. Additionally, for each year older the odds of the respondent recidivating decreased by 9.3%, while for every additional prior arrest the odds of recidivating increased by 20.9%, and for every additional day in court the odds of recidivating increased by 6.1%. Results also indicate that the odds of recidivism among African Americans were 82.7% lower than White respondents. In contrast to the hypotheses, perceptions of procedural justice do not relate to long-term outcomes (i.e., graduation or recidivism) of drug court participants in this study.[4] Instead, a behavioral indicator of participant program performance, as measured by court outcome on the day of the survey administration, was a vastly more robust predictor of the participants' eventual success.

Discussion

Drug courts have been in existence for over a quarter century, with

much research providing evidence that drug courts are effective at producing positive changes in their participants (Deschenes et al., 1995; Gottfredson et al., 2003; Gottfredson et al., 2006). Yet, researchers are just now directing their attention to developing a better understanding of the factors responsible for producing such positive change. One reason drug courts are effective at changing behavior might be attributable to the way in which drug courts were designed to be implemented based on the Key Components—nonadversarial and therapeutic in nature. If implemented in this way, judges assigned to drug courts should indeed take a "hands-on" approach to managing cases, where they not only sanction participants who are unwilling to comply with court mandates, but also listen to participants and provide encouragement and sup- port. This distinct approach when handling clients is similar to many of the concepts discussed in the procedural justice literature.

Indeed, results from this study indicate that drug court participants perceive high levels of procedural justice in their judicial interactions within the drug court. Participants perceive that they are almost always treated in a procedurally just manner by their judge. These findings are similar to the limited research on procedural justice in problem-solving courts that suggests elements of procedural justice are oftentimes evident in drug courts (McIvor, 2009), and that problem-solving court participants frequently perceive being treated in a procedurally just manner by their judge (Canada & Watson, 2013; Gover et al., 2007; Poythress et al., 2002; Wales et al., 2010).

As suggested earlier, it is not surprising that a procedurally just environment would be found to exist within a drug court setting given the nonadversarial nature around which drug courts are intended to be designed. While it appears that the drug court participants internalized the procedural justice attributions within the judicial dyad, results indicate these perceptions were not related to behavioral outcomes. Findings demonstrated perceptions of procedural justice were not significantly

related to the participant's likelihood of graduation nor recidivism. Instead, age was related to likelihood of graduation, while factors that are typically related to recidivism such as being younger and having a greater number of prior arrests were predictive of rearrest in this sample. These findings are in contrast to the two other studies that found participants who perceived fair treatment were significantly less likely to be involved in criminal activity or drug use (Gottfredson et al., 2007; Henry, 2011).

One reason for this null finding may be the limited variation within perceptions of judicial procedural justice, as measured. Surprisingly, participants were relatively consistent in reporting high levels of perceived judicial procedural justice within the drug court. Had a greater amount of variation existed within this measure, its impact on graduation and recidivism may be statistically significant, but in light of these results, we believe the impact would be more limited than originally anticipated. Initial expectations were developed based on prior literature within the policing realm and traditional courtroom settings where interactions with authority figures (i.e., police officers and traditional judges) are likely to differ from typical interactions with a drug court judge. We conclude that the concept of procedural justice is likely to be more impactful in settings other than drug courts, where greater variation in perceptions of judicial procedural justice are likely to be encountered.

Since the development of drug courts in the late-1980s, researchers and professional organizations (i.e., the National Association of Drug Court Professionals and the Bureau of Justice Assistance) have worked diligently to improve and refine drug courts. Key components identified by the Bureau of Justice Assistance (2004) for successful implementation of drug courts specifically target increased education and training of drug court judges and staff (Key Component 9). The court in this sample has been in operation for over 10 years, allowing adequate time for improvement in practices in accordance with best practices outlined by these organizations. In this sample, drug court

participants have extremely high perceptions of procedural justice with limited variation in these scores. Although not appearing to influence graduation rates or recidivism as measured here, the drug court participants in this sample do feel they are treated fairly by their judge, they do feel that the judge gives them an opportunity to state their case (or a voice), and they do feel they are treated with dignity and respect. We would expect similarly high levels of procedural justice to exist in other courts implementing a similar therapeutic approach.

Other interesting findings did emerge such that drug court participants who received a negative outcome from the judge on the day of the survey (i.e., were sanctioned by the judge) were significantly less likely to graduate from the court and significantly more likely to be arrested during the follow-up period. Additionally, clients who had more prior court days were significantly more likely to recidivate, which is in contrast to findings by Gottfredson et al. (2007) who found that number of hearings reduced drug use.

The procedural justice literature argues that perceptions of procedural jus- tice will impact satisfaction with the court or other intermediate outcomes, regardless of the outcome the defendant received in court that day (Leventhal, 1980; Walker et al., 1979). This study finds that while perceptions of judicial procedural justice are not related to long-term outcomes, receiving a negative outcome on the day of the survey is related. Further, the impact of the day's outcome on the likelihood of graduation and recidivism was more robust than all other predictors (67% participants who received a negative outcome on the day of the survey went on to recidivate, while only 33% went on to graduate). Moreover, procedural justice was not a significant predictor of recidivism even when removing court outcome on day of the survey from the model. Other studies examining procedural justice in drug courts have not taken into account outcome on the day of the survey, so it is unclear whether these findings are specific to this sample.

We attribute the robust nature of the finding that a negative outcome on the court date significantly relates to graduation and recidivism to this measure serving as a proxy to the client's prior and ongoing poor performance regarding substance use. This finding could also be attributed to psychological effects related to a person's self-efficacy or defiance to the court. As a post hoc comparison, we tested the group mean difference in perceptions of judicial procedural justice between those participants with negative court outcomes and positive outcomes. Still, we found no difference in mean levels of perceptions of judicial procedural justice. This finding indicates that even with poor program performance (which is related to an increased likelihood of recidivism and decreased likelihood of graduation), participants perceived just treatment by the drug court judge. Although Sherman (1993) suggested that individuals who perceive sanctions as unjust will be more likely to defy the sanctioning authorities and thus more likely to recidivate, in this study those who received a negative outcome were not likely to perceive the process as unjust. Instead, regardless of whether drug court participants received an incentive such as praise by the judge or another positive outcome, or were sanctioned by the judge (i.e., negative outcome), they perceived the process as fair and the judge as just. This finding speaks to the legitimacy of the procedural justice construct as measured here.

Program and policy implications

Although results from this study did not find perceptions of procedural justice to impact graduation rates or recidivism to a statistically significant degree, important policy and program implications remain. The Key Components underscore the importance of interdisciplinary training and education for all court staff, including judges, supervision officers, treatment providers, court managers, and all others involved in the implementation and operation of drug courts to maintain the high level of procedural justice that was evident in this study (Bureau of Justice

Assistance, 2004). Training and education should continue to encourage methods and concepts that support procedural justice in drug courts so that clients perceive that they are given a voice and are treated with dignity and respect. These concepts are commonly discussed in treatment models, but the extent to which the judiciary is encouraged to maintain a procedurally just approach is less clear. While perceptions of procedural justice as measured at one point during the participants' time in drug court does not relate to graduation rates or recidivism in this study, a supportive and constructive environment, judicial or otherwise, that adheres to the Key Components of drug courts is a critical component to a successful recovery for drug offenders (Huddleston & Marlowe, 2011).

Drug courts should also continue to encourage the maximization of judicial interaction with drug court participants. While the court in this study, perceived as a highly just court, uses a three-phase model with frequent interaction between judges and court participants, not all drug courts utilize this approach to managing cases. Some courts utilize a system of managing cases wherein participants are limited to judicial interaction only when they are noncompliant with court mandates. At this point, it may be too late to develop a judicial environment that is supportive or conducive to behavioral change.

Limitations

To contextualize the merits of the results presented, it is necessary to discuss the limitations of the data collected for this study. As noted, participants consisted of a convenience sample of drug court clients who voluntarily participated in the court and who voluntarily responded to the survey. Choosing to participate in the research could produce a biased response set. Individuals who possess more positive feelings about their judicial interactions could have been more likely to participate in the research as compared to those who had neutral or negative opinions about their judge. If this is the case, nonresponse bias could be a concern where those with

neutral or negative perceptions were not included, thus skewing the results and limiting generalizability of the findings.

These findings could also be due to the environment in which the survey was administered. Survey administration occurred in the courtroom after the judge had left the room. Participants were explicitly informed that their responses were confidential and would not be disclosed to the drug court staff or judge, and all efforts were made to reinforce these statements. Yet, the feelings of participants due to the location of survey administration, or the distrust of the researchers with whom they were unfamiliar could have impacted results. For example, participants may have felt compelled to report more positive feelings toward the judge than they might have reported had survey administration occurred outside of the courtroom or with individuals who had gained their trust.

Additionally, recidivism data was limited to in-state arrests, which could skew the results. While unlikely, it is possible that some respondents left the state and were arrested out-of-state without the drug court staff being privy to this knowledge. If so, the recidivism rate would be greater than 23%. However, due to the location of this drug court (the drug court is not close to any state borders) and the fact that all drug court clients were on intensive supervision probation for 4 years and not allowed to leave the state, we do not believe this data parameter had a substantial impact on the results.

Moreover, the sample size was relatively small ($N = 113$) compared to the number of clients enrolled in the drug courts ($N = 207$). Even though the response rate was approximately 75.3% (150 drug court participants were contacted), when taking into account all the drug court clients enrolled in the court only 55% participated in the survey. The inability to contact all drug court clients was due to the scope and constraints of this project. Additionally, data on the entire drug court population was unavailable. Thus, we are unable to determine if the study sample is representative of the drug court population. Despite the exploratory nature of this study, these factors limit its generalizability.

Indeed, a larger and more representative sample of drug court participants would be beneficial to furthering this line of research in the future.

Another limitation of this study is the lack of a legitimacy measure within the survey that was administered. Recently, researchers have proposed that while procedural justice is an important factor when examining compliance with legal authorities, the effects of procedural justice operate through the concept of legitimacy such that people who feel they are treated fairly by legal authorities (i.e., have greater perceptions of procedural justice) will in turn view those legal authorities as more legitimate in their ability to exercise power (Mazerolle et al., 2012; Sunshine & Tyler, 2003; Tyler, 2006; Tyler & Huo, 2002). Ultimately, it is argued that it is legitimacy itself, not procedural justice, which has a direct impact on compliance with the law. The lack of significant findings regarding procedural justice in the present study could be due to a lack of internalization of the legitimacy of the drug court and the judiciary by the drug court client.

Directions for future research

Although this study did not find procedural justice to be related to graduation rates or recidivism, a number of areas for future research emerge. Researchers seeking to examine procedural justice in problem-solving courts should continue to move beyond drug courts and examine other problem-solving courts, including mental health, domestic violence, veterans', reentry, and prostitution courts to examine perceptions of judicial procedural justice and its relationships with outcomes. Previous research examining procedural jus- tice and outcomes occur only in drug courts (Gottfredson et al., 2007; Henry, 2011). Further research should examine the impact of procedural justice on multiple outcomes within a variety of courts. Much can be learned from examining procedural justice in different problem-solving court settings

to further unpack the “black box” of the effectiveness of problem-solving courts.

Another important area for future research is the examination of legitimacy in drug courts. Despite the growing evidence that effects of procedural justice are mediated by perceptions of legitimacy, no study to date has examined the importance of legitimacy in the context of drug courts. It is plausible that perceptions of legitimacy, or the belief that the legal authority should be obeyed, as opposed to procedural justice are actually driving outcomes. Whereas previous research on legitimacy and procedural justice is conducted on samples who have come in contact with the police due to police-initiated traffic stops, drug court clients, for the most part, choose to volunteer for or enroll in the court. That drug court participants volunteer for the court, could indicate that they already view the court as legitimate. Future research could attempt to disentangle this potential relationship.

Finally, as part of the “what works” movement, researchers should move beyond a focus on the drug court judge and begin to examine all the court actors to determine what can be done to further enhance the effectiveness of drug courts. Specifically, researchers should focus attention to the super- vision officers who work directly with drug court participants. In most instances, drug court participants are required to be on probation as a condition of being involved in the court. Many courts not only require clients to be on probation, but clients are typically on intensive supervision probation, where they are required to meet with their supervision officer more frequently than being on a regular probation caseload. In addition to super- vision officers, drug court clients also have continuous interaction with their treatment providers. Examining the way clients perceive they are treated by the treatment staff is another avenue for future research.

Notes

1. Due to the structure of the drug court (i.e., drug court client in different phases attend court on different weeks), and the fact that data was collected over a two-week period, the researchers were unable to contact all 207 clients.
2. Scale scores were also computed by summing all items together, thus creating a "summated scale." Participants who did not answer all items in the scale were excluded from the analysis, resulting in more missing cases, Analyses were run using both the scores described above and the summated scale. There were no substantive differences between results therefore we chose to retain as many cases as possible for the analyses.
3. Number of appearances before the judge was highly correlated with number of days a participant was enrolled in the court. Therefore, only number of appearances before the judge was included in the models.
4. In addition to the full logistic regression model, we also conducted step-wise logistic regression models with the perceptions of procedural justice variable as the only predictor in the model. Even with no control variables in the model, results indicate that perceptions of procedural justice are not significantly related to graduation rates nor recidivism. Please contact the authors of this study for results.

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Appendix

Items on Judicial Procedural Justice Scale	*M*	Factor loadings[a]
How often does your judge in the drug court:		
Make decisions in a fair way	3.79	.469
Treat you fairly	3.88	.942
Treat you with dignity and respect	3.93	.895
Accurately understand and apply rules	3.88	.846
Make decisions based on facts, not opinions	3.81	.737
Try to get facts before deciding how to act	3.80	.749
Give honest explanations for actions	3.89	.864
Apply rules consistently to different people	3.49	.263
Treat everyone equally	3.86	.870
Respect your rights	3.89	.933
Give you a chance to express views before making decision	3.83	.833
Treat you politely	3.89	.918

Note. All item scores ranged from 1–4 (1 = *never* to 4 = *always*).

[a]Stevens (2009) suggested that components with four or more loadings above 0.60 in absolute value are reliable. Even though two items have factor loadings below the 0.60 threshold, we chose to retain all 12 items in the analyses. Analyses were also run with a 10-item judicial procedural justice index (omitting items 1 and 8). There were no substantive differences in results.