Strengthening the Foundation for Drug Court Research

The Use of Sanctions and Service Adjustments in Adult Treatment Courts

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Executive Summary

The Center undertook this project to identify critical gaps in treatment court research and to collaborate with national experts to address those gaps. Working with five nationally recognized researchers, the Center supported the development of four pilot research proposals. These proposals were developed by the researchers in collaboration with Center staff and the Strengthening the Foundation Advisory Board. Each pilot study addresses a distinct gap in the treatment court knowledge base and is intended to supplement more than 30 years of existing research on treatment court programs.

Beginning in October 2020, the Strengthening the Foundation Advisory Board convened quarterly to assess the treatment court field and identify priority areas for future research. Over the course of a year, the Advisory Board engaged in in-depth discussions about the evolving needs of the field and provided critical guidance on the focus of the pilot studies. In early 2022, five nationally renowned researchers developed and presented pilot research concepts to the Bureau of Justice Assistance (BJA). In September 2022, BJA invited the Center to apply for funding to support four of these pilot projects.

Each pilot project explores a research question that has not been fully examined within the treatment court field. The pilot studies focus on the following areas:

1. Drug court treatment risk assessment and quality
2. Health risk prevention in adult treatment courts
3. The use of jail sanctions in adult treatment courts
4. Racial and ethnic disparities in drug court outcomes

Collectively, this research aims to advance the treatment court field by strengthening the evidence base and promoting best practices that emphasize treatment over incarceration.

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THE USE OF SANCTIONS & SERVICE ADJUSTMENTS IN ADULT TREATMENT COURTS

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INTRODUCTION

It is well known that the treatment court model calls for a much more therapeutic approach to addressing the needs of high-risk/high-need, justice system-involved individuals with substance use and mental health disorders, as compared to the traditional justice system. We are now more than thirty-five years beyond the implementation of the first adult treatment court and as of December 31, 2024, more than 4,276 programs were in operation within US states/territories.[1] Each component of the model (e.g., interdisciplinary team, non-adversarial approach, judicial supervision, access to treatment and recovery support services, random drug/alcohol testing) is critical to program operations. Therefore, ensuring that programs are operating with fidelity to the model remains a vital task for practitioners, funders, researchers, and policymakers alike. While all model elements are critical to producing the intended outcomes, the practice of sanctioning participants within the treatment court environment likely stands in stark contrast to sanctioning that occurs within the traditional criminal justice system and represents one of the most notable distinctions between these two models. Anecdotal evidence suggests that "incentives, sanctions, and service adjustments" is one of the most misunderstood aspects of adult treatment courts and one of the most popular topics for training and technical assistance requests. At present, a dearth of empirical evidence exists regarding how sanctions are being used within ATCs and the impact these sanctions (and jail specifically) have on outcomes of interest (i.e., program retention, graduation, and post-program recidivism). This is critical given the consistent finding that the most effective and cost-effective treatment court programs use jail infrequently (Brown et al., 2011; Carey et al., 2012; Carey et al., 2008; Hepburn & Harvey, 2007).

The Adult Treatment Court Best Practice Standards (All Rise, 2025) provide very clear guidelines as to the appropriate use of sanctions and service adjustments within the treatment court context. In summary, adult treatment courts should develop a graduated set of sanctions and list of service adjustments to respond to participant behaviors (All Rise, 2024). Programs should employ these graduated sanctions in response to behaviors that participants have demonstrated can be sustained over time. Service adjustments should be delivered in response to behaviors related to distal goal achievement. of proximal goals or when participants engage in behavior that endangers public safety."

Guidance specific to the use of jail sanctions asserts that they should not be used in response to participant substance use prior to participants achieving psychosocial stability and entering early

[1] See https://ntcrc.org/maps/interactive-maps/.

remission from substance use and mental health disorder. Additionally, jail sanctions should be used sparingly and only after and only after "low- and moderate-magnitude sanctions have been unsuccessful in deterring repeated infractions" (All Rise, 2025). The only time jail should be issued without imposing lower magnitude sanctions first is if there is a serious and imminent threat to public safety. Finally, when jail sanctions are imposed, confinement should last for no more than 3-6 days.

These aforementioned guidelines articulate one key difference between the treatment court model and the traditional system (business-as-usual). While the treatment court model was developed without an expressed theoretical foundation, the principles of therapeutic jurisprudence, deterrence, and social learning theories provide a framework for understanding the vital role that behavior responses (sanctions and service adjustments) play within the model. Therapeutic jurisprudence is a legal theory that examines the effects of law on involved parties. Central to this theory is an emphasis on healing versus punishment and the inclusion of an interdisciplinary team of professionals working collaboratively to address the factors that led to individuals' criminal involvement. Furthermore, within this perspective there is a recognition that the law has the potential to produce both therapeutic and anti-therapeutic outcomes for involved individuals. Thus, the application of therapeutic jurisprudence within the treatment court context encourages stakeholders to be mindful of the impact (both positive and negative) program operations can have on participants and actively work to minimize negative effects. According to Winick & Wexler, 2015), "Therapeutic jurisprudence and the drug treatment court share a common cause: how legal rules and court practices can be designed to facilitate the rehabilitative process" (485).

An additional theoretical approach that has been considered in treatment court research is deterrence theory. This theory posits that individuals will weigh the costs and benefits of engaging in a specific behavior prior to decide if the benefits outweigh the costs (Paternoster, 2010). For example, an individual contemplating shoplifting will decide to steal if the benefits (e.g., the item) outweigh the costs (e.g., jail). Thus, one considers the possible sanctions associated with the behavior. Theorists have identified three key characteristics of sanctions include certainty, severity, and swiftness. Certainty refers to how likely a sanction will be imposed, while severity considers the magnitude of the sanction. Swiftness is how quickly a sanction will be imposed. These three elements have guided the development of laws premised on the idea that the more certain, more severe, and swifter a sanction, the greater likelihood that one will not commit a crime. Not surprisingly, giving the centrality of sanctions, deterrence theory has been utilized in treatment court research examining the effect of sanctions for noncompliant behavior. However, Fisher (2014) argues that the assumption of deterrence theory of rational actors making rational

decisions "…does not apply with same force to individuals suffering from severe substance use disorders…" (p. 762).

Additionally, social learning theory asserts that individuals learn behaviors (positive and negative) through interacting with and observing "models" (e.g., parental figures, peers, authority figures, etc.) within their social environment. More specifically, individuals "learn" about expectations, norms, and values within these various environments through both verbal and non-verbal cues. The degree of intensity and frequency of the interaction with these "models" influences the likelihood that individuals will retain the information and be able to apply it in the future and in varied contexts (Akers, Sellers, & Jennings, 2020; Lilly, Cullen, & Ball, 2018). According to social learning theory, the process by which individuals learn both prosocial and criminal behaviors is the same it is the content that is different. Thus, individuals need multiple opportunities to learn positive behaviors and opportunities to practice this learning over a period of time so that these new behaviors can be replicated in other environments/contexts. DeVall, Gregory, & Hartmann (2012) argued that "Social learning theory provides a sensible underpinning for the way in which drug court practitioners approach the treatment process and explains the mechanisms of action" (326).

Treatment court program activities seek to structure participants' environments such that they are exposed to positive role models (e.g., peer recovery support specialists, mentors, meet with probation officer/case manager) and provide opportunities for prosocial development (e.g., attend employment readiness classes, engage in recovery-oriented activities). These also represent specific examples of various types of service adjustments treatment court programs can/should use in response to participant behaviors as they are working toward achieving distal goals. Social learning theory outlines that the learning process is multifaceted, takes time, and involves obtaining the knowledge and skills necessary to change behavior. In light of social learning theory principles, it would be counter-intuitive (and counter-productive) for programs to respond to participant behaviors related to distal goals with sanctions (which seek to punish) as opposed to service adjustments (which facilitate connections with the treatment and recovery supports, opportunities for learning, and interaction with positive models).

LITERATURE REVIEW

This section summarizes the extant literature focusing on the use of sanctions and service adjustments within treatment courts.

PROGRAM DISPOSITION

A plethora of research has examined the individual factors that might influence one's likelihood of successfully completing a treatment court program. Demographic measures such as age, gender, race/ethnicity, education and employment status, etcetera have been found, to some degree, to be related to treatment court program completion and/or termination. For example, a consistent finding is the relationship between a participant's age and program exit status. Generally, participants who enter the treatment court at an older age tend to have higher rates of successful completion as compared to their younger counterparts (Gill, 2016; Lochman et al., 2023; Shannon et al., 2020). A statewide study of Alabama drug courts examining predictors of treatment court completion found that older participants had significantly higher odds of successfully completing the program (Lochman et al., 2023). The inclusion of measures for race/ethnicity in assessing program success have produced mixed results. While several studies have found that people of color complete adult treatment courts at a lower rate (DeVall & Lanier, 2012; Ho et al., 2018; Sheeran & Heidman, 2021), contradictory results have also been noted (Breno et al., 2023; Brown et al., 2011). For example, in their statewide examination of adult drug courts, Shannon et al. (2016) found a significant relationship between race/ethnicity and program completion. Specifically, non-White participants had a 60% decrease in odds of graduation as compared to White participants. However, Wu et al. (2012) found race/ethnicity to have no effect on program completion. A participant's employment status has been identified in several studies as being significantly related to disposition with most finding employed participants are more likely to successfully complete treatment court programs (Brown, 2010; Gallagher et al., 2015). Roll et al.'s (2005) examination of factors related to disposition among participants in a Southern California drug court revealed that employed participants were 14 times more likely to graduate than unemployed participants. In fact, employment was found to be the "…strongest predictor of graduation" (Roll et al., 2005).

RECIDIVISM

Previous meta-analyses examining the relationship between treatment court participation and recidivism have found that participants in these courts have lower rates of reoffending as compared to non-participants (Latimer, 2006; Mitchell et al., 2012; Shaffer, 2011; Trood et al., 2021). Mitchell and colleagues (2012) found that "[F]or adult drug courts, the average effect of

participation is equivalent to a reduction in general recidivism from 50% to approximately 38% and a reduction in drug-related recidivism from 50% to approximately to 37%" (p. 69). More recently, Trood et al. (2021) conducted a meta-analysis which included adult drug courts, DWI courts, and mental health courts. While some differences emerged between court types, the authors found a 33% overall reduction in recidivism for treatment court participants compared to business-as-usual case processing. When examining the relationship between recidivism and program completion, the majority of studies find that individuals who successfully complete treatment court programs have lower recidivism rates than participants who are unsuccessful (Gallagher, 2014). In Gibbs et al.'s (2019) comparison of post-program recidivism between felony adult drug court graduates and unsuccessful participants, participants not completing the program had 1.72 greater odds of post-program recidivism.

Researchers have also attempted to identify specific demographic factors that may be related to recidivism among treatment court participants. Conflicting findings have emerged as to the relationship between various demographic factors such as gender, race/ethnicity, and age and the likelihood of recidivism. Sheeran and Heidman's (2021) study of a Milwaukee adult drug treatment court found that race/ethnicity did not play a significant role in predicting post-program recidivism. Conversely, other studies have found this relationship to be significant and indicative of an increased likelihood of post-program recidivism among persons of color (Gallagher et al., 2020; Kalich & Evans, 2006; Rossman et al., 2011). A participant's age has also been of interest in studies looking at post-program recidivism, however, the findings have been mixed. Many studies have identified age as a significant factor in the likelihood of re-offending with older participants having lower rates of recidivism as compared to younger participants (Krebs et al., 2007; Sheeran & Varline, 2024; Shannon et al., 2018). As such, it has been suggested that age may act as a protective factor for re-offending (Wilson et al., 2018). Findings from a multi-site drug court evaluation support this notion as the results indicated that older participants had a significantly lower likelihood of recidivism (Rossman et al., 2011). Similarly, a study compared the likelihood of post-program recidivism between four intervention groups: treatment court graduates, treatment court terminations (e.g., revoked), individuals serving probation-as-usual, and individuals who were incarcerated (Sheeran & Varline, 2024). Regardless of the group comparison, age was significantly related to the likelihood of recidivism with older individuals having lower rates. The question of whether or not gender impacts post-program re-offending has produced equivocal results. Roman et al.'s (2003) study of treatment court graduates and post-program arrests found females to have significantly fewer arrests and a lower likelihood of any arrest as compared to male graduates. Others have found no relationship between gender and re-offending (Kalich & Evans, 2006; Rossman et al., 2011; Sheeran & Varine, 2024).

PROGRAM SANCTIONS AND PROGRAM DISPOSITION

One element of the treatment court program model examined in previous research is that of sanctions. As noted above, sanctions should be delivered in response to behaviors that participants can sustain over time. Several studies have examined the relationship between sanctions and the likelihood of successful completion of treatment courts, and most have found that sanctions tend to increase the probability of termination (Gonzales & Cho, 2024; Sheeran & Heideman, 2021; Wu et al., 2012). For example, Brown et al. (2011) focused on the effect that short-term jail sanctions may have on program completion. The authors analysis of 573 treatment court participants revealed participants receiving a jail sanction within the first 30 days of enrollment had a significantly greater failure hazard (e.g., termination), even after controlling for demographic measures such as education and employment. Similarly, a statewide evaluation of 14 treatment courts also found receiving a sanction within the first 30 days to significantly increase the "hazard of termination" for the treatment court (Shannon et al., 2022). In both studies, the authors found that there was a decrease in failure hazard as time in program increased indicating the need to closely examine the timing of jail sanctions. Timing of sanctions was also a key determinant, along with the number of sanctions, in the analysis conducted by McRee and Drapela's (2012) examination of a drug court in Washington State. The authors multivariate findings revealed that participants sanctioned within the first 30 days of enrollment had a 68% increased likelihood of not successfully completing the program. Moreover, participants whose first sanction included jail time were significantly less likely to graduate (McRee & Drapela, 2012). The authors suggest that receiving a sanction within the first 30 days of enrollment may lead to "…lower levels of commitment to drug court…" (p. 927). Similar to the work of McRee & Drapela (2012), research has consistently found that the imposition of a jail/incarceration sanction, negatively impacts the likelihood of successful completion of treatment court programs (Shannon et al., 2020; Sheeran & Heideman, 2021; Wu et al., 2012).

PROGRAM SANCTIONS AND RECIDIVISM

As the review above demonstrates, sanctions have been found to influence participants' successful completion of treatment court programs. However, given the centrality of program sanctions to the treatment court model and overall objective of reducing criminal activity among treatment court participants, the impact of sanctions on recidivism is an important relationship worthy of examination. Few studies have considered this question (Gallagher, 2014; Goldkamp et al., 2001; Shannon et al., 2018). Shannon et al. (2018) examined factors related to recidivism two years after program separation. Arrests, convictions, and incarcerations were included in the analysis to tap into multiple definitions of recidivism. Multivariate analyses looking at a

combination of these measures found that receiving any type of sanction or therapeutic response significantly increase the odds of post-program recidivism by 89% (Shannon et al., 2018). In other words, sanctions/therapeutic responses matter. Similar findings from Gallagher (2014) support the notion of the importance of examining sanctions with regard to recidivism but with a focus on the timing of sanctions. The study found that if a participant received a sanction with the first 30 days of program enrollment, they were significantly more likely to recidivate compared to those participants that did not have a sanction within the first 30 days. Goldkamp et al.'s (2001) investigation of drug courts in Portland and Las Vegas found that the number of sanctions and the number of those sanctions that were for jail significantly increased the probability of rearrest.

While treatment court programs continue to be one of the most researched criminal justice interventions in the last 40 years, there is relatively little extant research on the impact of behavior responses (i.e., sanctions and service adjustments) on outcomes of interest. The current study seeks to fill this identified gap in knowledge. More specifically, this study goes beyond previous research and examines the impact of sanctions and service adjustments independently on both program disposition and 2-year post-program recidivism. In addition, the study examines the impact of the timing of the first jail sanction on these same outcomes.

MEASURES

A total of three dependent variables were analyzed within this study. The first dependent variable is treatment court program disposition. All participants in the analysis were coded as either an unsuccessful discharge (0) or graduate (1). The second dependent variable is post-program recidivism. All participants in the analysis were coded as either no post-program recidivism (0) or post-program recidivism (1). For this study, recidivism was defined as any conviction for a felony or misdemeanor offense. Traffic and ordinance offenses were excluded, with one exception. DWI/DUI offenses classified as a traffic or ordinance violations on the criminal history report were coded as a recidivism event and included in the analyses. The third dependent variable was the number of days to the first recidivism event in the two years following program discharge.

Additionally, several independent variables were included in this study. Age at program entry represents the age (in years) at the time participants entered the program. Sex was operationalized as male (0) and female (1). The number of dependents represents the number of children participants had at the time of program entry.

Race was collapsed into five groups, White (0), Black/African American (1), Hispanic/ Latino(a) (2), other[2] (3), and multiracial (4). Marital status was collapsed into three groups, (1) single, (2) married, and (3) divorced, separated, widowed.

Educational level at program entry represented the highest level of education completed at the time of program entry and was recoded to represent those with less than a high school diploma/General Equivalency Degree (GED) (0), high school diploma/GED (1), and some college/trade school or higher (2). Education level at program exit was included to represent the highest level of education completed at the time of program exit and utilized the same set of attributes. Employment status at program entry was coded to include those unemployed (1), employed part-time/student/disabled/retired (2), and full-time (3). Employment status at the time of program exit was included to represent participants' employment status at the time of program exit and utilized the same set of attributes.

The drug of use measure was recoded to create seven categories. Alcohol (1) and marijuana (2) were retained as stand-alone categories; however, five categories were created by combining specific drugs of use: cocaine, crack, methamphetamine, stimulants (3) heroin and opioids, poly drug (4), and "other" (which includes barbiturates, benzodiazepines, club drugs, hallucinogens,

[2] Due to small cell sizes, the following categories were combined to comprise the "other" category Native American, Arabic, Asian, and other

PCP, sedatives/hypnotics, other, steroids) (5).[3] Mode of program entry was comprised of three categories diversion (0), sentenced (1), and voluntary (2). Diversion participants were eligible to have the charges dismissed upon successful program completion. Participants sentenced to the program were ordered to complete the program through an order from the court. Participants entering the program voluntarily enrolled on their own volition.

Several program variables were included to capture activities during program enrollment. In terms of drug alcohol testing, two variables were calculated. The average number of drug/alcohol tests per week was created by dividing the total number of drug/alcohol tests by the number of weeks participants spent in the program. The percentage of drug/alcohol tests that were positive/missed/dilute was calculated by summing the total number of drug/alcohol tests that were positive/missed/tampered and dividing it by the total number of drug/alcohol tests ordered during program enrollment.

In terms of behavior responses, variables were included for both service adjustments and sanctions. Four separate variables were created for service adjustments. First, sum totals of supervision service adjustments, treatment and recovery support service adjustments, and learning service adjustments were calculated independently of each other. Second, a sum of service adjustments across the three types was created.

In terms of sanctions, seven separate variables were created. First, sum totals of low-level sanctions, moderate-level sanctions, high-level sanctions, and high-level sanctions (excluding jail) were created independently of each other. The low-level sanctions total was the sum of all warning sanctions. The moderate-level sanctions total was the sum of the following: courtroom observation with assignment, community service work, curfew, travel restriction, tether/ electronic monitoring, and deferred jail sanction. The high-level sanction total was the sum of the following: formal court hearing, team roundtable/meeting, stay in other facility, and jail. The high-level sanction (excluding jail) was the sum of formal court hearing, team roundtable/ meeting, and stay in other facility.

Second, the total number of sanctions was calculated by summing all low-level, moderate-level, and high-level sanctions. Third, the sum of all jail sanctions was created, as well as the sum of the number of days spent in jail due to sanctions. Finally, a categorical variable indicating whether a jail sanction was received during the first 60 days of program enrollment (0=no 1=yes) was created.

[3] The “other” category was created because the sample size for each category was too small to retain them independently.

PILOT SITES

A total of ten treatment court programs were selected for inclusion in this study. In order to be included, programs had to 1) agree to participate, 2) have been collecting data on program participant demographics and program activities for the entire study time period (January 1, 2020 through December 31, 2024), 3) have the ability to extract data for the five-year study time period, and 4) have access to official recidivism data for program participants.

Data for this project were gathered from administrative records maintained by the treatment court programs and official recidivism records (e.g., statewide criminal history databases). The research team worked with program staff to fill in identified missing data in order to retain as many participants in the analysis as possible. Table 1 below provides a summary of the ten treatment court programs, the number of participants representing each, jurisdiction type, treatment court program type, and the number of program phases.

TABLE 1: STUDY SITES

Site	Jurisdiction	Court Type	# of phases	# active	# still enrolled	# excluded	Total #
Program 1	rural	ADC	5	82	23	5	54
Program 2	rural	ADC	5	98	21	2	75
Program 3	suburban	ADC/hybrid	3	313	93	6	214
Program 4	urban	ADC/hybrid	4 → 5	117	17	7	93
Program 5	suburban	ADC/hybrid	3	138	51	1	86
Program 6	urban	ADC/hybrid	4 → 5	142	29	7	105
Program 7	rural	DUI/DWI	5	133	27	7	99
Program 8	rural	COD	4	96	20	3	73
Program 9	rural	FTC	5	90	8	7	76
Program 10	suburban	FTC	3 → 5	59	4	1	54
Total				**1,268**	**293**	**46**	**929**

DESCRIPTIVE STATISTICS OF STUDY PARTICIPANTS

A total of 929 individuals participated in the ten treatment court programs included in this study. The demographic, programmatic, and outcome characteristics of the sample are presented in Table 2. The mean age of these individuals was 36.0 years (median 34.0), and range was 16-73 years. Just over one-half (58.1%) were male and 41.9% were female. Almost three-quarters (71.7%) were White, 18.8% were Black/African American, 4.4% were Hispanic/Latino(a), 2.8% were multiracial, and 2.4% identified as other.[4] Just over two-thirds (68.5%) were single – never married, 11.1% were married, and 20.5% were divorced, separated, widowed. The mean number of children was 1.8 (median 2.0), and the range was 0-9.

At the time of program entry, over one-half (53.6%) of participants were unemployed, 23.7% were employed full-time, 15.0% were employed part-time or student, and 7.8% were disabled, retired, or not in the labor force. In terms of educational attainment, 44.5% had earned a high school diploma/GED, 29.4% had less than a high school diploma/GED, 16.8% had earned a two-year/trade school degree, 5.3% had a 4-year degree or higher, and 4.1% had some college/trade school. At the time of program exit, less than one-half (45.1%) were employed full-time, slightly more than one-third (34.3%) were unemployed, 12.1% were employed part-time or student, and 8.4% were disabled, retired, or not in the labor force. In terms of educational attainment, 48.2% had earned a high school diploma/GED, 22.8% had less than a high school diploma/GED, 19.4% had earned a two-year/trade school degree, 5.5% had a 4-year degree or higher, and 4.1% had some college/trade school.

In terms of the mode by which participants entered these treatment court programs, three-quarters were sentenced to participate in the program, 14.1% entered voluntarily, and 10.1% were on a diversion track. In terms of the substances of use reported by participants, methamphetamine/stimulants (44.3%), alcohol (19.9%), heroin/opioids (15.8%), marijuana (11.2%), cocaine/crack cocaine (5.7%), and other[5] (5.0%).

[4] This category includes Native American, Arabic, Asian, multiracial, and other

[5] This category includes barbiturates, benzodiazepines, club drugs, hallucinogens, PCP, sedatives/hypnotics, poly drug use, other, and steroids

TABLE 2: DEMOGRAPHIC CHARACTERISTICS

Demographic Characteristics	Mean	Median	%	n
Age @ program entry	36.0	34.0		
# of dependents	1.8	2.0		
Sex				
Male			58.1	540
Female			41.9	389
Race				
White			71.7	666
Black/African American			18.8	175
Hispanic/Latino(a)			4.4	41
Other[2]			5.1	47
Marital Status				
Single			68.5	636
Married			11.1	103
Divorced/separated/widowed			20.5	190
Employment Status @ Entry				
Unemployed			53.6	498
Part-time/student/disabled/retired/not in labor force			22.8	211
Full-time			23.7	220
Employment Status @ Exit				
Unemployed			34.3	314
Part-time/student/disabled/retired/not in labor force			20.5	188
Full-time			45.1	413
Educational Attainment @ Entry				
Less than high school			29.4	273
HS/GED			44.5	413
Some college/trade school			4.1	38
2-yr degree/trade school degree			16.8	156
4-yr degree or higher			5.3	49
Educational Attainment @ Exit				
Less than high school			22.8	212
HS/GED			48.2	448
Some college/trade school			4.1	38
2-yr degree/trade school degree			19.4	180
4-yr degree or higher			5.5	51
Substance of use				
Alcohol			19.9	185
Cocaine/crack cocaine			5.7	53
Heroin/opioids			15.8	147
Marijuana			11.2	104
Methamphetamine/amp/stimulants			43.3	403
Other[1]			4.0	37
Mode of program entry				
Diversion			10.1	94
Sentenced			75.8	704
Voluntary			14.1	131

[1] = barbiturates, benzodiazepines, club drugs, hallucinogens, PCP, sedatives/hypnotics, steroids, poly drug

[2] = Native American, Arabic, Asian, multiracial, other

In terms of programmatic variables (Table 3), participants spent (on average) 418.7 days enrolled (median 417 days) and submitted (on average), 147.5 drug/alcohol screens (median = 124). Participants were tested for drugs/alcohol 2.5 times per week (on average) while enrolled (median = 2.5). Roughly one-quarter (25.5%) of these tests were positive/missed/dilute (median = 7.4).

More than one-half (56.0%) of participants received one or more service adjustments while enrolled in the program and 44.0% did not receive any service adjustments. Furthermore, study participants received a total of 1,804 service adjustments while enrolled. Of these, 45.7% were focused on treatment and recovery support services, 31.5% were focused on learning activities, and 22.8% were supervision-focused.

In terms of sanctions, more than three-quarters (77.4%) of participants received one or more sanctions while enrolled in the program and 22.6% did not receive any sanctions. A total of 3,749 sanctions were received by participants. Of these, 47.4% were classified as "high-level," 40.4% were "moderate-level," and 12.3% were "low-level." Almost one-half (43.5%) of participants received one or more jail sanctions while enrolled. On average, participants received 1.1 jail sanctions and spent 4.3 days (on average) in jail as a result of these sanctions. The average length of time between program entry and the first jail sanction was 160.5 days (median = 102.5 days) and 14.1% of participants were sanctioned to jail within the first 60 days of program entry. In addition, taking all behavior response types into account, the majority (81.7%) of participants received one or more sanctions or service adjustments while enrolled.

In terms of outcomes, slightly less than one-half (46.3%) of treatment court participants graduated and 53.7% were unsuccessfully discharged. Among participants that had been separated from the program for at least two years (n=587), 29.8% recidivated in the two years following program discharge and 70.2% had remained crime-free.

TABLE 3: PROGRAMMATIC & OUTCOME CHARACTERISTICS

Program Variables	Mean	Median	%	n
Total drug/alcohol tests	147.5	124.0		
Average drug/alcohol tests per week	2.5	2.5		
Total UAs positive/missed/dilute	14.6	8.0		
% UAs positive/missed/dilute	25.8	7.4		
Received 1+ sanctions or service adjustments while enrolled				
No			18.3	170
Yes			81.7	759
Received 1+ service adjustments while enrolled				
No			44.0	409
Yes			56.0	520
Total # of service adjustments				1,804
Supervision			22.8	412
Treatment & Recovery Support			45.7	825
Learning			31.5	567
Received 1+ sanctions while enrolled				
No			22.6	210
Yes			77.4	719
Total # of sanctions				3,749
Low			12.3	460
Moderate			40.4	1,511
High			47.4	1,776
Ever sanctioned to jail				
No			56.5	525
Yes			43.5	404
Total # jail sanctions	1.1	0		
Total # of days served in jail	4.3	0		
# days to first jail sanction	160.5	102.5		
Jail in the first 60 days of program enrollment				
No			85.9	798
Yes			14.1	131
Total # of days in program	418.7	417.0		929
Program disposition				929
Graduate			46.3	430
Unsuccessful			53.7	499
Two-year post-program recidivism				587
No			70.2	412
Yes			29.8	175

DATA ANALYSIS

Data from the aforementioned ten adult treatment court (ATC) programs were examined to answer four specific research questions. The statistical analyses used to answer these research questions varied and are discussed below.

1. How often are service adjustments and sanctions being used within adult treatment court programs?
2. How prevalent is the use of jail sanctions by adult treatment court programs?
3. What factors influence treatment court program graduation? Do jail sanctions influence the likelihood of treatment court program graduation??
4. What factors influence post-program recidivism? Do jail sanctions influence the likelihood of post-program recidivism?

The first two research questions involved a descriptive analysis of data regarding specific types of service adjustments and sanctions participants received during each phase of the program. These data were organized by program phase and then categorized utilizing the outline found in the *Reference Guide for Incentives, Sanctions, and Service Adjustments* (All Rise, 2024). Service adjustments were classified as supervision-focused, treatment and recovery support-focused, and learning-focused. Sanctions were categorized as low, moderate, and high-level.

To answer the third and fourth research questions, bivariate analyses (Chi-square and t-tests) were conducted to determine what variables were significantly related to each of the outcomes of interest at the most basic level. Based on the results of the bivariate analyses, logistic regression models were created to examine the degree to which variables significantly predicted both program graduation and two-year post-program recidivism (outcomes of interest) controlling for other factors. Additionally, Cox regression was conducted to examine which variables predicted the time to the first two-year post-program recidivism event. Finally, factor analyses were conducted to examine the degree to which various types of service adjustments and sanctions are related to one another, and if we can better understand the influence of various types of behavior responses on program graduation and post-program recidivism.

For all analyses, statistical significance was determined using a conventional p-value of .05 (5%), which indicates that the observed results are not due to random chance. Analyses were conducted using IBM *Statistical Package for Social Sciences* (SPSS) Version 29.

FINDINGS

This section is organized into three sub-sections focusing on the four research questions. Within each sub-section, the results generated from the aforementioned analyses are summarized in both narrative and table/figure form.

USE OF SERVICE ADJUSTMENTS & SANCTIONS

The range of sanctions and service adjustments employed by adult treatment courts and the frequency with which these behavioral responses are used to address participant behaviors varies across programs. As discussed in the *Adult Treatment Court Best Practice Standard* on Incentives, Sanctions, and Service Adjustments, "sanctions are delivered to enhance adherence to program goals and conditions that participants can achieve and sustain for a reasonable time, whereas service adjustments are delivered to help participants achieve goals that are too difficult for them to accomplish currently" (All Rise, 2025, p. 86).

Table 4 provides an overview of the specific service adjustments utilized by the ten treatment court programs examined in this study. These data are organized by type (i.e., supervision, treatment and recovery support, and learning assignments) and across the various program phases. It should be noted that the ten programs included in the study had differing numbers of program phases and some revised their phase structure (e.g., went from three to five phases) during the study time period. As a result, examining data across phases should be interpreted with this in mind. Of the 929 treatment court participants, 929 were enrolled in the first phase, 597 were enrolled in the second phase, 508 were enrolled in phase three, 328 were enrolled in phase four, and 197 were enrolled in phase five.

The top six most frequently utilized service adjustments during the study time period included homework/essay assignment (31.2%), attend recovery support group meetings (20.3%), meet with providers to determine the frequency/modality of appropriate treatment services (13.7%), meet with probation officer/case manager (12.3%), other – which includes attending a doctor's appointment, meeting with a nutritionist to address a health concern, etcetera (6.5%), and having time in phase extended (6.4%).

In terms of service adjustment classification, almost one-half (45.7%) of service adjustments were categorized as focusing on "treatment and recovery support" and included attending recovery support group meetings of the participants' choosing (20.3%), meeting with treatment providers to determine the frequency/modality of appropriate treatment services (13.7%), "other" which included attending a doctor's appointment, meeting with a nutritionist to address a

health concern, etcetera (6.5%), referring to recovery housing providers (3.2%), and working with peer recovery support specialists (1.9%).

Slightly less than one-third (31.5%) of service adjustments were categorized as "learning assignments." The specific service adjustments within this category included completing a homework/essay assignment on a specific topic related to recovery (31.2%) and 0.3% involved attending a class (e.g., employment readiness, education, etc.). Less than one-fourth (22.8%) of service adjustments were categorized as focused on "supervision," and included meeting with probation officer or case manager (12.3%), having time in phase extended (6.4%), increased drug/alcohol testing (2.5%), increased attendance at the court review sessions with the treatment court judge (1.6%), and enforcement of a no-contact order (0.1%).

Over one-half (54.0%) of the service adjustments ordered during the study time period occurred while participants were in the first program phase and roughly one-quarter (24.8%) were ordered while participants were in the second program phase. Therefore, 78.8% of service adjustments were ordered during the first two phases of program enrollment across these ten programs and 21.2% were ordered while participants were in phases three through five.

TABLE 4: SERVICE ADJUSTMENTS BY PHASE & TYPE

Service Adjustments (by type)	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	% of Total Svc. Adjs.	Total #
# of participants	*929*	*587*	*508*	*328*	*191*		
Supervision	**20.3%**	**23.7%**	**29.4%**	**24.2%**	**37.0%**	**22.8%**	**412**
Court Review Hearing – Increase Attendance	0.7%	0.9%	5.7%	2.3%	3.7%	1.6%	28
Home Visits	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0
Drug/Alcohol Testing	2.3%	1.6%	3.1%	6.3%	7.4%	2.5%	46
Case Mgr./Prob. Ofcr. Mtg.	13.5%	14.3%	7.0%	7.0%	3.7%	12.3%	222
Phase Extension	3.8%	6.7%	13.6%	8.6%	22.2%	6.4%	115
No Contact Ord. - Enforce	0.0%	0.2%	0.0%	0.0%	0.0%	0.1%	1
Previous Phase Reqs.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0
Treatment & Recovery Support	**45.4%**	**52.9%**	**35.5%**	**43.0%**	**33.3%**	**45.7%**	**825**
Treatment – freq./modality	13.7%	15.2%	8.3%	18.8%	11.1%	13.7%	248
Peer Rec. Support	1.7%	1.1%	3.9%	2.3%	3.7%	1.9%	35
Recovery Housing	3.1%	3.6%	1.3%	7.0%	0.0%	3.2%	58
Harm Red. Strategies	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0
Daily Reporting to Tx Prgm.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0
Support Group Meetings	21.2%	25.7%	15.8%	4.7%	7.4%	20.3%	366
Other	5.6%	7.4%	6.1%	10.2%	11.1%	6.5%	118
Learning Assignments	**34.3%**	**23.4%**	**35.1%**	**32.8%**	**29.6%**	**31.5%**	**569**
Homework/Essay Assign.	34.3%	22.8%	34.2%	32.8%	29.6%	31.2%	564
Life Skills Assignment	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0
Journaling Exercise	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0
Supervised Social Gatherings	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0
Attend Classes – educ, employ	0.0%	0.7%	0.9%	0.0%	0.0%	0.3%	5
% of total svc. adjustments by phase	**54.0%**	**24.8%**	**12.6%**	**7.1%**	**1.5%**		
Total # svc adjs. by phase	**975**	**448**	**228**	**128**	**27**		**1,806**

Table 5 provides an overview of the specific sanctions utilized by the ten treatment court programs examined in this study. These data are organized by type (i.e., low-, moderate, and high-level) and across the various program phases. Again, as noted above, the ten programs included in the study had differing numbers of program phases and some revised their phase structure (e.g., went from three to five phases) during the study time period. As a result, examining data across phases should be interpreted with this in mind. Of the 929 treatment court participants,

929 were enrolled in the first phase, 597 were enrolled in the second phase, 508 were enrolled in phase three, 328 were enrolled in phase four, and 197 were enrolled in phase five.

The top six most frequently utilized sanctions utilized across the ten treatment court programs during the study time period included community service work (30.8%), jail (27.9%), stay in other facility (15.4%), warning (12.3%), tether/electronic monitoring (5.3%), and deferred jail sanction (3.2%).

In terms of sanction classification, almost one-half (47.4%) of sanctions utilized were classified as "high-level) and included jail (27.9%), stay in other facility (15.4%), formal court hearing (2.9%), team roundtable/meeting (1.1%). Roughly two-fifths (40.4%) of sanctions utilized during the study time period were classified as "moderate-level" and included community service work (30.8%), tether/electronic monitoring (5.3%), deferred jail (3.2%), curfew (0.9%), and attend a court hearing and complete an assignment (0.1%). The remaining 12.3% of sanctions utilized during the study time period were classified as "low-level" and consisted of a judicial warning.

Over one-half (57.5%) of the sanctions ordered during the study time period occurred while participants were in the first program phase and roughly one-quarter (24.6%) were ordered while participants were in the second program phase. Therefore, 82.1% of sanctions were ordered during the first two phases of program enrollment across these ten programs and 17.9% were ordered while participants were in phases three through five.

In terms of jail sanctions specifically, as noted above, jail was the second most-often utilized sanction (27.9% of all sanctions) behind community service work. During the study time period, slightly less than one-half (43.5%) of participants received one or more jail sanctions and a total of 1,046 jail sanctions were ordered for a total of 3,942 days. Thus, the average number of jail days participants served per sanction was 3.8 and the average number of jail days served per sanction decreased from 4.3 days in phase to 2.6 days in phase five. The average number of days per jail sanction is in accordance with the *Adult Treatment Court Best Practice Standards* which asserts that jail sanctions should not be for more than 3 to 6 days in length (All Rise, 2025, p. 89). Additionally, the percentage of treatment court participants receiving jail sanctions decreased across program phases (30.7% in phase one to 3.1% in phase five).

TABLE 5: SANCTIONS BY PHASE & SEVERITY LEVEL

Sanction Type & Magnitude (level)	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	% of Total Sancts.	Total # of Sancts.
# of participants	*929*	*597*	*508*	*328*	*191*		
Low-Level	***12.4%***	***11.1%***	***12.1%***	***15.4%***	***20.0%***	**12.3%**	***460***
Warning	12.4%	11.1%	12.1%	15.4%	20.0%	12.3%	**460**
Moderate-level	***41.3%***	***42.7%***	***38.0%***	***26.6%***	***26.7%***	**40.4%**	**1,513**
Courtroom Obs./Assign.	0.0%	0.2%	0.0%	0.0%	0.0%	0.1%	**2**
Stay for full ct. rev. sess.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0**
Comm. Service Work	32.0%	33.3%	29.4%	10.6%	24.4%	30.8%	**1156**
Curfew	0.9%	1.0%	0.7%	1.6%	0.0%	0.9%	**34**
Travel Restriction	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**1**
Tether/Elec. Monitoring	5.6%	5.2%	4.1%	6.4%	2.2%	5.3%	**200**
Deferred Jail Detention	2.8%	3.0%	3.9%	8.0%	0.0%	3.2%	**120**
High-Level	***46.3%***	***46.3%***	***49.9%***	***58.0%***	***53.3%***	**47.4%**	***1,776***
Formal Court Hearing	2.2%	3.1%	3.4%	9.0%	2.2%	2.9%	**109**
Team Roundtable/Mtg	1.1%	0.4%	2.1%	2.1%	6.7%	1.1%	**43**
Day Reporting	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0**
Home Detention	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0**
Stay in Other Facility	16.2%	12.8%	16.4%	14.9%	24.4%	15.4%	**578**
Jail Detention	26.8%	29.9%	28.0%	31.9%	20.0%	27.9%	**1,046**
# of days in jail	*2,463*	*854*	*403*	*199*	*23*		***3,942***
avg. # days in jail per sanction	*4.3*	*3.1*	*3.3*	*3.3*	*2.6*		***3.8***
# of participants receiving jail sanction	*285*	*142*	*70*	*35*	*6*		***404***
% of participants receiving jail sanction	*30.7%*	*23.8%*	*13.8%*	*10.7%*	*3.1%*		43.5%
% of total sanctions by phase	*57.5%*	*24.6%*	*11.7%*	*5.0%*	*1.2%*		
Total # sanctions by phase	**2,154**	**923**	**439**	**188**	**45**		***3,749***

Tables 4 and 5 present data regarding the frequency with which the ten treatment court programs utilized various types of service adjustments and sanctions during the study time period as a

whole and by program phases. Also of interest is the distribution of behavioral responses by program phase, which is presented in Figure 1.

In phase one, 6.3% of behavior responses were supervision-focused service adjustments, 14.2% were treatment and recovery support-focused service adjustments, and 10.7% were learning-focused service adjustments. Additionally, 8.5% of all behavior responses were low-level sanctions, 28.4% were moderate-level sanctions, and 31.9% were high-level sanctions. Therefore, during phase one, slightly less than one-third (31.2%) of behavior responses were service adjustments and more than two-thirds (68.8%) were sanctions.

In phase two, 7.7% of behavior responses were supervision-focused service adjustments, 17.3% were treatment and recovery support-focused service adjustments, and 7.7% were learning-focused service adjustments. Additionally, 7.4% of behavior responses were low-level sanctions, 28.7% were moderate-level sanctions, and 31.1% were high-level sanctions. Therefore, slightly less than one-third (32.7%) of behavior responses in phase two were service adjustments and more than two-thirds (67.3%) were sanctions.

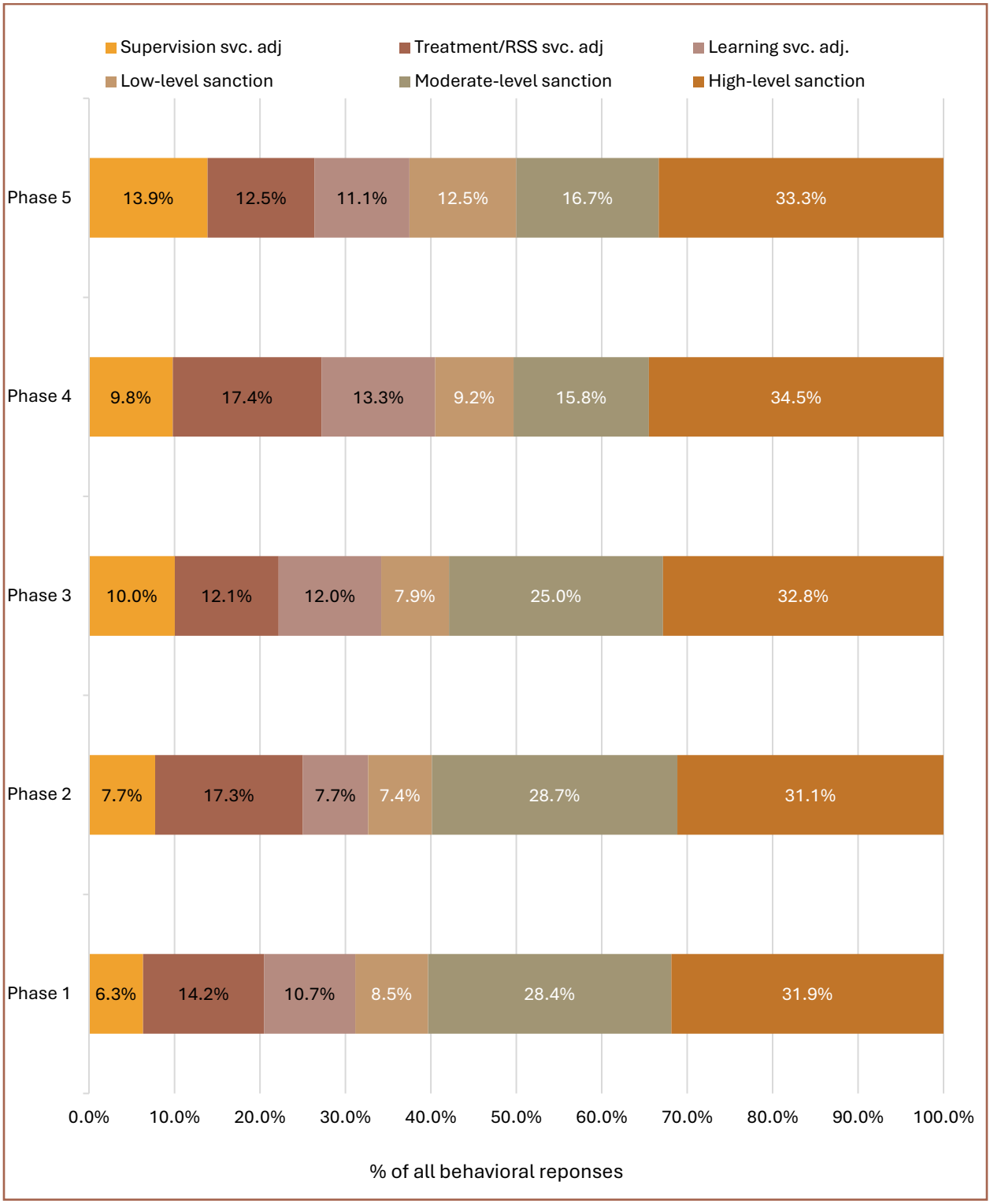
In phase three, 10.0% of behavior responses were supervision-focused service adjustments, 12.1% were treatment and recovery support-focused service adjustments, and 10.0% were learning-focused service adjustments. Additionally, 7.9% of behavior responses were low-level sanctions, 25.0% were moderate-level sanctions, and 32.8% were high-level sanctions. Therefore, slightly more than one-third (34.2%) of behavior responses in phase three were service adjustments and less than two-thirds (65.8%) were sanctions.

In phase four, 9.8% of behavior responses were supervision-focused service adjustments, 17.4% were treatment and recovery support-focused service adjustments, and 13.3% were learning-focused service adjustments. Additionally, 9.2% of behavior responses were low-level sanctions, 15.8% were moderate-level sanctions, and 34.5% were high-level sanctions. Therefore, 40.5% of behavior responses in phase four were service adjustments and 59.5% were sanctions.

In phase five, 13.9% of behavior responses were supervision-focused service adjustments, 12.5% were treatment and recovery support-focused service adjustments, and 11.1% were learning-focused service adjustments. Additionally, 12.5% of behavior responses were low-level sanctions, 16.7% were moderate-level sanctions, and 33.3% were high-level sanctions. Therefore, 37.5% of behavior responses in phase five were service adjustments and 62.5% were sanctions.

In summary, more than two-thirds (67.5%) of behavior responses were sanctions and less slightly less than one-third (32.5%) were service adjustments (not presented in Figure 1). Furthermore, across all program phases, sanctions were ordered more than service adjustments.

FIGURE 1: BEHAVIOR RESPONSES BY TYPE & PHASE



INFLUENCE OF SANCTIONS & SERVICE ADJUSTMENTS ON OUTCOMES

Understanding how frequently the ten treatment court programs utilized service adjustments and sanctions is necessary and interesting. However, the current study also sought to examine the influence of service adjustments and sanctions on specific outcomes of interest central to the treatment court model.

PROGRAM DISPOSITION

In this section, results of the bivariate analyses examining the relationship between individual predictor variables and program disposition are presented. This is followed by multivariate analyses examining the influence of multiple predictor variables on program disposition.

BIVARIATE RESULTS

The purpose of this analysis is to determine whether there is a relationship between each demographic and programmatic variable and adult treatment court program disposition (graduation/unsuccessful discharge). Chi-square and t-tests were performed, and a small p-value (less than .05) indicates that the observed difference between the two variables may not be due to chance. Results are presented in Tables 6 and 7. Sixteen variables were found to be significantly related to the outcome of program disposition. As displayed in Table 6, six demographic variables (sex, age at program entry, race, education status at program entry, employment status at program entry, and substance of use) were significant at the 0.05 level. A higher percentage of graduates were male, White, married or divorced/separated or widowed, and older (average 37.0 vs. 35.2 years).

In terms of employment status and education level at program entry, a higher percentage of graduates were employed full-time and had higher levels of educational attainment at program entry. In terms of substances of use, a higher percentage of graduates reported using alcohol and "other," whereas a higher percentage of unsuccessful participants reported using cocaine/crack cocaine and heroin/opioids.

As displayed in Table 7, ten programmatic variables were related to program disposition at the 0.05 level (i.e., total number of days spent in the program, average number of drug/alcohol tests per week, percentage of drug/alcohol tests that were positive/missed/dilute, total number of "high-level" sanctions, total number of high-level sanctions (excluding jail sanctions), sanctioned to jail while enrolled, total number of jail sanctions, the total number of days served in jail due to

sanctions, and the total number of misdemeanors and felonies committed while enrolled). Not surprisingly, graduates spent a longer time (on average) enrolled in the programs (593.8 days vs. 267.8 days). Graduates had a higher average number of drug/alcohol tests per week (2.58 vs 2.28) and a lower percentage of drug/alcohol tests that were positive/missed/dilute over the term of enrollment (4.26% vs. 44.37%).

In terms of sanctions, graduates received a lower average number of high-level sanctions[6] (1.60 vs 2.18) and a lower average number of high-level sanctions excluding jail[7] (0.7 vs. 0.9). More specifically, in terms of jail sanctions, a smaller percentage of graduates (39.6%) received one or more while enrolled which is contrasted with 60.4% of unsuccessful discharges receiving the same. Graduates received a lower number of jail sanctions (on average) as compared to their unsuccessful counterparts (0.90 vs. 1.32 respectively). Graduates also spent fewer days in jail due to sanctions as compared to those unsuccessfully discharged (average of 2.86 vs. 5.97). In terms of the number of days to the first jail sanction, participants unsuccessfully discharged received their first jail sanction, on average, 130.56 days following program entry. However, graduates received their first jail sanction, on average, 206.21 days following program entry. Furthermore, among graduates, 9.1% were sanctioned to jail during the first 60 days of program enrollment, however 18.4% of unsuccessfully discharged participants were sanctioned to jail during the first 60 days of program enrollment. In terms of offenses committed while enrolled in the treatment court program, on average, graduates committed fewer total offenses (0.08 vs. 0.34), as well as fewer misdemeanors (0.05 vs. 0.17) and fewer felonies (0.03 vs. 0.17).

[6] Within this study, “high-level sanctions” included formal court hearings, team roundtable/meeting, stay in other facility, and jail.

[7] The variable “high-level sanctions (excluding jail)” includes formal court hearings, team roundtable/meeting, and stay in other facility.

TABLE 6: BIVARIATE WITH DEMOGRAPHIC CHARACTERISTICS & PROGRAM DISPOSITION

Demographic Characteristics	Graduate (n=430)	Unsuccessful Discharge (n=499)	p-value
	(%/mean)	(%/mean)	
Age @ program entry	37.01	35.19	**.003**
# of dependents	1.84	1.79	.329
Sex			**.003**
Male	50.4	49.6	
Female	59.4	40.6	
Race			**.003**
White	50.0	50.0	
Black/African American	34.9	65.1	
Hispanic/Latino(a)	48.8	61.2	
Other[2]	33.3	66.7	
Multiracial	34.6	65.4	
Marital Status			.064
Single	43.7	56.3	
Married	50.5	49.5	
Divorced/separated/widowed	52.6	47.4	
Employment Status @ Entry			**<.001**
Unemployed	35.3	64.7	
Part-time/student	47.5	52.5	
Full-time	70.9	29.1	
Disabled/retired/not in labor force	44.4	55.6	
Educational Attainment @ Entry			**<.001**
Less than high school	34.1	65.9	
HS/GED	49.2	50.8	
Some college/trade school	60.5	39.5	
2-yr degree/trade school degree	53.2	46.8	
4-yr degree or higher	57.1	42.9	
Substance of use			**<.001**
Alcohol	63.2	36.8	
Cocaine/crack cocaine	34.0	66.0	
Heroin/opioids	35.4	64.6	
Marijuana	46.2	53.8	
Methamphetamine/amp/stims	43.7	56.3	
Other[1]	63.6	36.4	
Poly drug use	46.2	53.8	
Mode of program entry			.854
Diversion	47.9	52.1	
Sentenced	46.4	53.6	
Voluntary	44.3	55.7	

TABLE 7: BIVARIATE WITH PROGRAMMATIC CHARACTERISTICS & PROGRAM DISPOSITION

Programmatic Characteristics	Graduate (n=430)	Unsuccessful Discharge (n=499)	p-value
	(%/mean)	(%/mean)	
Average # of drug/alcohol drug tests per week	2.58	2.28	**<.001**
% drug/alcohol tests positive/missed/dilute	4.26	44.37	**<.001**
Total # of service adjustments	1.89	1.99	.378
Supervision	0.45	0.44	.378
Treatment & Recovery Support	0.79	0.97	.080
Learning	0.64	0.59	.211
Total # of sanctions	3.85	4.20	.139
Low-level	0.51	0.49	.355
Moderate-level	1.74	1.54	.119
High-level	1.60	2.18	**<.001**
High-level (excluding jail)	0.70	0.86	**.027**
Ever sanctioned to jail			**<.001**
No	51.4	48.6	
Yes	39.6	60.4	
Total # jail sanctions	0.90	1.32	**<.001**
Total # of days served in jail	2.86	5.97	**<.001**
Sanctioned to jail within first 60 days			**<.001**
No	90.9	81.6	
Yes	9.1	18.4	
Total # of while-enrolled offenses	0.08	0.34	**<.001**
Misdemeanors	0.05	0.17	**<.001**
Felonies	0.03	0.17	**<.001**
Total days in program	593.8	267.8	**<.001**

LOGISTIC REGRESSION RESULTS

The bivariate analyses discussed above informed the development of the logistic regression models used to predict program graduation. Variation in the discharge variables was modeled on demographic variables only (model 1), as well as the collective influence of both demographic and programmatic indicators (model 2). As displayed in Table 8, model one examines the impact of demographic characteristics on treatment court program graduation. Analyses revealed that four of six demographic variables significantly predicted graduation, which included race, substance of use, as well as employment status and educational attainment at program entry. These findings demonstrate the impact of the predictor variables on program disposition (outcome of interest) holding all other variables constant.

The odds of graduation among participants identifying as "other" were 41.3% lower than White participants. The odds of graduation among participants reporting the use of heroin/opioids/poly drug/other were 48.6% lower than peers reporting alcohol use. The odds of graduation among participants beginning the program either unemployed or employed part-time/student/disabled/ retired/not in labor force were 72.4% and 54.9% lower (respectively) than their full-time employed peers. Finally, the odds of graduation among participants beginning the program without a high school diploma/GED were 44.9% lower than peers with some college/trade school or higher.

Table 8, model two, examines the collective influence of demographic characteristics and program variables on treatment court program graduation. As can be seen in model 2[8], three demographic variables were significant predictors of graduation. These findings demonstrate the impact of the predictor variables on program disposition (outcome of interest) holding all other variables constant. First, the odds of graduation among participants reporting the use of heroin/opioids/poly drug/other were 53.4% lower than peers reporting alcohol. The odds of graduation among participants beginning the program either unemployed or employed part-time/student/disabled/retired/not in labor force were 68.5% and 59.5% (respectively) lower than their full-time employed peers. Finally, the odds of graduation among participants beginning the program without a high school diploma/GED were 50.0% lower than peers with some college/trade school or higher.

Additionally, six programmatic variables were significant predictors of graduation - the average number of drug/alcohol tests per week, the number of high-level sanctions (excluding jail),

[8] A test of the full models against a constant only model was statistically significant, indicating that the predictors as a set do reliably distinguish between graduates and unsuccessful discharges ($\chi 2 = 579.780$, $p < .001$ with df = 16). Nagelkerke's R^2 of .620 indicated a strong relationship between prediction and grouping. Prediction success overall was 85.4% (85.6% for graduates and 85.2% for unsuccessful discharges). The overall model fit was good (non-significant Hosmer-Lemeshow p=.109).

whether a jail sanction was received within the first 60 days of program enrollment, the number of misdemeanors and felonies committed while enrolled in the program (separate variables), and the total number of days spent in the program.

First, for every 1 unit increase in the average number of drug/alcohol tests per week, the odds of graduation increased by 57.5%. Second, the odds of graduation were reduced by 54.8% for each additional high-level sanction (excluding jail) received by participants. Third, the odds of graduation among participants sanctioned to jail during the first 60 days of program enrollment were 60.4% lower than participants not sanctioned to jail during this time period. Fourth, each additional misdemeanor offense committed while enrolled in the program resulted in the odds of graduating being reduced by 67.0%. Similarly, each additional felony offense committed while enrolled resulted in the odds of graduation being reduced by 61.7%. Fifth, each additional day spent enrolled in the program increased the odds of graduating by 0.7%.

TABLE 8: LOGISTIC REGRESSION PREDICTING PROGRAM DISPOSITION

		Model 1			Model 2		
Predictor Variables	**Ref. Cat.**	**SE**	**Sig**	**Exp B**	**SE**	**Sig**	**Exp B**
Age at entry		0.008	0.816	0.998	0.010	0.592	0.995
Sex: female	Male	0.147	0.179	0.82	0.203	0.570	1.122
RACE: other[a]	White	**0.161**	**<.001**	**0.587**	0.223	0.086	0.682
Drug of use: meth/stims/cocaine	Alcohol	0.204	0.100	0.716	0.276	0.096	0.632
Drug of use: heroin/opioids/poly drug/other		**0.240**	**0.006**	**0.514**	**0.332**	**0.021**	**0.466**
Drug of Use: marijuana		0.276	0.389	0.788	0.359	0.268	0.672
Education at entry: less HS/GED	Some College+	**0.197**	**0.003**	**0.551**	**0.274**	**0.001**	**.500**
Education at entry: HS/GED		0.174	0.715	0.938	0.236	0.997	1.001
Employment status at entry: unemployed	Full-time	**0.189**	**<.001**	**0.276**	**0.254**	**<.001**	**0.315**
Employment at entry: part-time, etcetera[b]		**0.213**	**<.001**	**0.451**	**0.282**	**.001**	**0.405**
Average # drug/alcohol tests per wk.					**0.121**	**<.001**	**1.575**
High-level sanctions (excluding jail)					**0.090**	**<.001**	**0.452**
Jail in first 60 days					**0.287**	**0.001**	**0.396**
Misdemeanors while-enrolled					**0.331**	**<.001**	**0.330**
Felonies while-enrolled					**0.394**	**0.015**	**0.383**
Total # days in the program					**0.001**	**<.001**	**1.007**
Constant		0.400	<.001	4.679	0.664	0.004	0.151

[a] other includes Black/African American, multiracial, Native American, Other

[b] part-time, etc. includes part-time, student, disabled, retired, not in the labor force

TWO-YEAR POST-PROGRAM RECIDIVISM

Reducing recidivism is one goal of every treatment court program. For the purposes of these analyses, recidivism is defined as any conviction for a felony or misdemeanor offense following separation from the program. Traffic and ordinance offenses were excluded, with one exception. If a DWI/DUI offense was coded as a traffic or ordinance offense, it was calculated as a recidivism event and included in the analyses. Bivariate, logistic regression, Cox regression, and factor analyses were conducted.

In an effort to standardize participants' time at risk for recidivism, the post-program follow-up period included the two years following the date of separation from the program. Of the 929 participants enrolled in the ten treatment court programs included in the study, 587 had been out of the program for at least two years and were included in the analysis.

BIVARIATE RESULTS

The purpose of this analysis is to determine whether there is a relationship between each demographic and programmatic variable and recidivism in the two years following separation from the adult treatment court program. Chi-square and t-tests were performed, and a small p-value (less than .05) indicates that the observed difference between the two variables may not be due to chance. Results are presented in Tables 9 and 10. Ten variables were found to be significantly related to the outcome of two-year post-program recidivism. As displayed in Table 9, five demographic variables (age at program entry, # of dependents, marital status, employment status at program exit, and substance of use) were significantly related at the 0.05 level. A higher percentage of graduates were married or divorced/separated or widowed, older (average 36.3 vs. 34.5 years), and had fewer children (average of 1.8 versus 2.1). In terms of employment status at program exit, a higher percentage of graduates were employed full-time. In terms of substances of use, a higher percentage of graduates reported using alcohol and "other," whereas a higher percentage of unsuccessful participants reported using cocaine/crack cocaine and heroin/opioids.

As displayed in Table 10, five programmatic variables were related to two-year post-program recidivism at the 0.05 level (i.e., program disposition, total number of days spent in the program, percentage of drug/alcohol tests that were positive/missed/dilute, the total number of misdemeanors and felonies committed while enrolled). Not surprisingly, 81.4% of graduates did not recidivate as compared to 56.4% of participants unsuccessfully discharged. Additionally, participants who did not recidivate spent, on average, 479.7 days (15.8 months) in the program, whereas participants who recidivated only spent, on average, 296.1 days (9.7 months) enrolled.

Participants with no recidivism had a lower percentage of drug/alcohol tests that were positive/missed/dilute over the term of enrollment as compared to their peers who recidivated (18.2% vs. 35.1%).

In terms of service adjustments, individuals who did not recidivate received, on average, a higher number of treatment and recovery support-focused service adjustments as compared to their peers who recidivated. Finally, in terms of offenses committed while enrolled in the treatment court program, on average, individuals remaining crime-free committed fewer total offenses (0.14 vs. 0.34) as compared to those who recidivated.

TABLE 9: BIVARIATE WITH DEMOGRAPHIC CHARACTERISTICS & TWO-YEAR POST-PROGRAM RECIDIVISM

	No Recidivism (n=412)	Recidivism (n=175)	p-value
Demographic Characteristics	(%/mean)	(%/mean)	
Age @ program entry	36.3	34.5	**.022**
# of dependents	1.80	2.10	**.030**
Sex			.666
Male	70.9	29.1	
Female	69.2	30.8	
Race			.330
White	70.7	29.3	
Black/African American	72.1	27.9	
Hispanic/Latino(a)	69.2	30.8	
Other[2]	69.2	30.8	
Multiracial	47.1	52.9	
Marital Status			**.027**
Single	67.2	32.8	
Married	70.4	29.6	
Divorced/separated/widowed	80.0	20.0	
Employment Status @ Exit			**<.001**
Unemployed	52.6	47.4	
Part-time/student	69.5	30.5	
Full-time	82.2	17.8	
Disabled/retired/not in labor force	80.4	19.6	
Educational Attainment @ Exit			.105
Less than high school	62.0	38.0	
HS/GED	69.9	30.1	
Some college/trade school	75.0	25.0	
2-yr degree/trade school degree	76.3	23.7	
4-yr degree or higher	78.4	21.6	
Substance of use			**.004**
Alcohol	81.3	18.8	
Cocaine/crack cocaine	74.2	25.8	
Heroin/opioids	74.2	25.8	
Marijuana	76.4	25.8	
Methamphetamine/amp/stims	63.1	36.9	
Poly drug/other[1]	56.5	43.5	
Mode of program entry			.618
Diversion	67.2	32.8	
Sentenced	71.3	28.7	
Voluntary	67.0	33.0	

TABLE 10: BIVARIATE WITH PROGRAMMATIC CHARACTERISTICS & TWO-YEAR POST-PROGRAM RECIDIVISM

	No Recidivism (n=412)	Recidivism (n=175)	p-value
Programmatic Characteristics	(%/mean)	(%/mean)	
Average # UAs per week	2.45	2.37	.148
% UAs positive/missed/dilute	18.2	35.1	**<.001**
Total # of service adjustments	1.95	1.55	.068
Supervision	0.46	0.46	.496
Treatment & Recovery Support	0.86	0.54	**.034**
Learning	0.63	0.55	.210
Total # of sanctions	4.05	3.72	.233
Low-level	0.46	0.41	.290
Moderate-level	1.58	1.31	.131
High-level	2.02	1.99	.459
High-level (excluding jail)	0.85	0.91	.295
Ever sanctioned to jail			.142
No	72.6	27.4	
Yes	67.1	32.9	
Total # jail sanctions	1.16	1.08	.307
Total # of days served in jail	4.38	5.07	.190
# days to first jail sanction	173.39	145.42	.095
Sanctioned to jail within first 60 days			.885
No	70.3	29.7	
Yes	69.5	30.5	
Total while-enrolled offenses	0.14	0.34	**<.001**
Misdemeanors	0.08	0.11	.172
Felonies	0.05	0.23	**<.001**
Program Disposition			**<.001**
Unsuccessful	56.4	43.6	
Graduate	86.1	13.9	
Time in Program	479.7	296.1	**<.001**

LOGISTIC REGRESSION RESULTS

The bivariate and factor analyses discussed above informed the development of the logistic regression models used to predict two-year post-program recidivism. Variation in the discharge variables was modeled on demographic variables only, as well as the collective influence of both demographic and programmatic indicators (see Table 11). Model one examines the impact of demographic characteristics on two-year post-program recidivism and analyses revealed that one of six demographic variables (i.e., employment status at program exit) significantly predict two-year post-program recidivism. These findings reveal the impact of the predictor variables on two-year post-program recidivism (outcome of interest) holding all other variables constant. In terms of employment status at the time of program exit, the odds of post-program recidivism among participants beginning the program unemployed or part-time/student/disabled/retired were 3.933 and 1.708 times (respectively) greater than their full-time employed peers.

Model two examines the collective influence of demographic characteristics and program variables on two-year post-program recidivism. As can be seen in Model 2[9] (Table 11), one demographic variable and four programmatic variables were significant predictors of two-year post-program recidivism (outcome of interest) holding all other variables constant. The odds of recidivating in the two years following program discharge among participants reporting the use of methamphetamine, stimulants, cocaine, and crack cocaine were 1.831 times higher than alcohol users.

Additionally, three programmatic variables were significant predictors of two-year post-program recidivism – the number of treatment and recovery support service adjustments received while in the program, the number of felonies committed while enrolled in the program, and program disposition. First, each additional treatment and recovery support service adjustment participants received while enrolled in the program, the odds of recidivating in the two years following program discharge post-program recidivism were reduced by 15.6%. Second, the odds of two-year post-program recidivism increased by 2.306 for each additional felony offense committed while enrolled. Third, the odds of two-year post-recidivism were 65.6% lower among graduates as compared to those unsuccessfully discharged.

[9] A test of the full model against a constant only model was statistically significant, indicating that the predictors as a set do reliably distinguish between graduates and unsuccessful discharges ($\chi 2 = 111.277, p < .001$ with df = 17). Nagelkerke's R^2 of .248 indicated a moderate relationship between prediction and grouping. Prediction success overall was 73.7% (90.0% for graduates and 24.5% for unsuccessful discharges). The overall model fit was good (non-significant Hosmer-Lemeshow p=.393).

TABLE 11: LOGISTIC REGRESSION PREDICTING TWO-YEAR POST-PROGRAM RECIDIVISM

		Model 1			Model 2		
Predictor Variables	**Ref. Cat.**	**SE**	**Sig**	**Exp B**	**SE**	**Sig**	**Exp B**
Age at entry		0.011	0.281	0.988	0.012	0.303	0.988
# of dependents		0.058	0.102	1.099	0.064	0.122	1.104
Sex: female	Male	0.207	0.238	0.784	0.221	0.347	0.813
RACE: other[a]	White	0.220	0.982	1.005	0.231	0.864	1.040
Marital status: single	Married	0.307	0.827	1.069	0.323	0.977	1.009
Marital status: divorced/separated/widowed		0.367	0.133	0.576	0.382	0.179	0.598
Drug of use: meth/stims/cocaine	Alcohol	0.294	0.058	1.746	**0.308**	**0.049**	**1.831**
Drug of use: other[b]		0.350	0.71	1.139	0.368	0.495	1.285
Drug of Use: marijuana		0.404	0.791	0.898	0.421	0.999	1.001
Employment status at exit: unemployed	Full-time	**0.228**	**<.001**	**3.933**	0.291	0.155	1.512
Employment status at exit: part-time, etc.[b]		**0.268**	**0.046**	**1.708**	0.291	0.686	1.125
% UAs positive, missed, dilute					0.382	0.825	1.088
Tx/recovery support service adjustments					**0.080**	**0.034**	**0.844**
Misdemeanors while-enrolled					0.322	0.324	0.728
Felonies while-enrolled					**0.276**	**0.002**	**2.306**
Total # days in the program					0.000	0.154	0.999
Program completion	Yes				**0.292**	**<.001**	**0.344**
Constant		0.605	0.02	0.246	0.690	0.675	0.749

[a] Black/African American, multiracial, Native American, other
[b] heroin/opioids/poly drug/other
[c] part-time, student, disabled, retired, not in the labor force

COX PROPORTIONAL HAZARDS REGRESSION RESULTS

An additional outcome of interest was the time to the first post-program recidivism event in the two years following separation from the program. A Cox proportional hazards regression was performed to investigate the influence of multiple predictor variables on the number of days to the first recidivism event in the two years following participants' separation from the program. For participants with a recidivism event, the number of days between program discharge and the recidivism event offense date were recorded. Participants without a post-program recidivism event were right-censored and given a value of 730 days. The number of days from treatment court program exit to the first recidivism event was the time variable. The status variable was having recidivated during the two-year follow-up period (1) and no recidivism in the follow-up period (0). Tests of the proportional hazards (PH) assumption revealed no violations, supporting the validity of the model. The model's fit was evaluated using the -2 Log Likelihood value of 2008.025, which indicated a strong model fit, as confirmed by the significant omnibus test of model coefficients, $X^2(3) = 25.718$, $p = <.001$.

The Cox regression model included both demographic variables (i.e., age at program entry, number of dependents, sex, race, marital status, substance of use, and employment status at program exit) and programmatic variables (i.e., percentage of positive/missed/dilute drug/alcohol tests, number of treatment and recovery support service adjustments, number of misdemeanors and felonies committed while enrolled in the program, number of days in the treatment court program, and program disposition). These were the same variables used in the logistic regression analysis predicting two-year post-program recidivism.

Of the variables included in the model, three were found to be significant predictors of time to the first post-program recidivism event. The hazard ratios represent the ratio of the hazard rates for two groups (categorical predictors) and for one-unit change in continuous predictors. First, the hazard ratios for the covariates indicated that the number of treatment and recovery support service adjustments was a significant predictor of survival ($B = -0.135$, $HR = 0.874$, $p = .039$, 95% CI [0.768, 0.993]). For each additional treatment/recovery support service adjustment participants received, their hazard of recidivating within the two years following program separation was reduced by 12.6%. A lower hazard of recidivating means a higher chance of a longer survival time (remaining crime-free). Second, the number of felonies committed while enrolled in the program ($B = 0.409$, $HR = 1.505$, $p = .006$, 95% CI [1.125, 2.013]) was a significant predictor of survival time in the model. For each additional felony committed while enrolled in the program, participants' hazard of recidivating increased by 50.5%. A higher hazard of recidivating means a shorter time of remaining crime-free. Third, program graduation was a significant predictor of survival in the model ($B = 0.988$, $HR = 0.372$, $p < .001$, 95% CI [0.232, .598]). For participants who graduated from the program, the hazard of recidivism was 62.8% lower than for

participants who were unsuccessfully discharged. A lower hazard of recidivating means a higher chance of a longer survival time (remaining crime-free).

TABLE 12: COX PROPORTIONAL HAZARDS MODEL OF TIME TO FIRST POST-PROGRAM RECIDIVISM

Predictor Variables	Ref. Cat.	*B*	Sig.	Hazard Ratio	95% C.I. Lower	95% C.I. Upper
Age at entry		-0.005	0.565	0.995	0.977	1.013
# of dependents		0.021	0.494	1.021	0.961	1.085
Sex: female	Male	-0.142	0.391	0.867	0.627	1.201
RACE: other[a]	White	-0.053	0.764	0.949	0.673	1.337
Marital status: single	Married	-0.028	0.910	0.972	0.595	1.589
Marital status: divorced/separated/widowed		-0.495	0.105	0.610	0.335	1.109
Drug of use: meth/stims/cocaine	Alcohol	0.507	0.050	1.660	1.000	2.753
Drug of use: other[b]		0.149	0.625	1.160	0.639	2.107
Drug of Use: marijuana		-0.044	0.899	0.957	0.485	1.888
Employment status at exit: unemployed	Full-time	0.354	0.130	1.425	0.901	2.256
Employment status at exit: part-time, etc.[b]		0.096	0.692	1.101	0.685	1.768
% UAs positive, missed, dilute		-0.087	0.737	0.916	0.55	1.526
Tx/recovery support service adjustments		**-0.135**	**0.039**	**0.874**	**0.768**	**0.993**
Misdemeanors while-enrolled		-0.242	0.310	0.785	0.492	1.253
Felonies while-enrolled		**0.409**	**0.006**	**1.505**	**1.125**	**2.013**
Total # days in the program		-0.001	0.121	0.999	0.999	1.000
Program completion	Yes	**0.988**	**<.001**	**0.372**	**0.232**	**0.598**

[a] Black/African American, multiracial, Native American, other
[b] heroin/opioids/poly drug/other
[c] part-time, student, disabled, retired, not in the labor force

FACTOR ANALYSIS WITH SANCTIONS & SERVICE ADJUSTMENTS

As discussed above, bivariate analyses were conducted to identify which variables are related at the most basic level to the outcomes of interest (i.e., successful program completion and two-year post-program recidivism). Next, logistic regression analyses were run to identify which variables significantly predict program completion and two-year post-program recidivism, controlling for important and related variables (i.e., variables significant at the bivariate level). Third, Cox proportional hazards regression was conducted to examine significant predictors of the time to post-program recidivism. The results of these analyses revealed that the impact of sanctions and service adjustments on treatment court program graduation and two-year post-program recidivism is both complex and nuanced.

In an attempt to better understand this complexity, a series of exploratory factor analyses were run to see how (statistically) these factors are related to one another, and if we can better understand the influence of behavior response type (e.g., sanction and service adjustment), magnitude (low, moderate, high level sanctions, and supervision-, treatment/recovery support-, and learning-focused service adjustments), as well as the number, duration, and timing of jail sanctions on the outcomes of interest.

Prior to running the factor analysis, an exploratory correlation matrix was created to examine correlations between all variable of interest. Significant correlations exist between all but three combinations of sanction and service adjustment variables (see Table 13). Receiving a jail sanction in the first 60 days was not correlated with the number of supervision service adjustments, the number of learning service adjustments, nor the number of low-level sanctions.

Factor analysis was performed to better understand how the various types and levels of sanctions and service adjustments (behavior responses) group together. This statistical technique models the observed variables as being caused by underlying, latent factors, focusing on the shared variance. Analyses revealed the nine variables converged on two factors (listed in Table 13). Factor scores of 0.6 or higher are classified as strong, 0.4-0.59 as satisfactory, and less than 0.39 are considered weak and not measuring a similar construct. It should be noted that the outcome variable is not included.

TABLE 13: CORRELATIONS AMONG SANCTIONS & SERVICE ADJUSTMENTS

	Super-vision svc. adj.	TX & RSS svc. adj.	Learn-ing svc. adj	Low-level sancts.	Mod. level sancts.	High-level sancts.	Total jail sancts.	Jail in first 60 days	Total # of jail days
Supervision service adjustments	1	0.25	0.331	0.204	0.376	0.394	0.318	0.051 *NS	0.268
TX & RSS service adjustments		1	0.339	0.2	0.432	0.388	0.398	0.158	0.293
Learning service adjustments			1	0.234	0.392	0.352	0.256	0.05 *NS	0.19
Low-level sanctions				1	0.173	0.166	0.081	-0.003 *NS	0.055
Moderate level sanctions					1	0.625	0.617	0.205	0.51
High-level sanctions						1	0.877	0.364	0.737
Total jail sanctions							1	0.44	0.836
Jail in first 60 days								1	0.418
Total # of jail days									1

NS=non-significant; all other correlations were statistically significant

Exploratory analyses revealed that there are two underlying constructs represented by behavioral responses worth exploring. These two factors met the Kaiser criterion (eigenvalues greater than 1) and together these two factors explain 59.7% of the total variance in the nine variables. The rotated factor loading matrix shows the correlation (loading) of each variable with each of the factors. Varimax rotation was used to simplify the results by pushing the loadings closer to +/- 1 for the most relevant factor and closer to 0 for others. Loadings above .5 are considered strong indicators.

Table 14 presents the results for the two underlying constructs generated. Factor 1 accounts for 44.2% of the explained variance and variables with higher scores focus on more punitive (negative) types of sanctions. More specifically, moderate-level sanctions, high-level sanctions, total number of jail sanctions, receiving a jail sanction in the first 60 days of program enrollment, and the total number of jail days served due to a sanction all loaded on this factor.

Factor 2 accounts for 15.5% of the explained variance and variables with the higher scores can be categorized as non-punitive and focusing on addressing specific behaviors. More specifically, service adjustments focused on supervision, treatment/recovery support, and learning, as well as low-level sanctions loaded on this factor. The inclusion of low-level sanctions within this factor is notable and suggests that low-level sanctions are operating more in line with the three types of service adjustments than the moderate and high-level sanctions. This makes sense given that "low-level" sanctions represents a judicial warning. Receiving a warning is not punitive in the same way as are moderate- and high-level sanctions. How these results will be utilized in future research is discussed in the conclusion section of this report.

TABLE 14: FACTOR LOADINGS FOR SANCTIONS & SERVICE ADJUSTMENTS

	Factor 1 – Punitive Behavior Responses	Factor 2 – Non-punitive Behavior Responses
Supervision service adjustments	0.199	**0.627**
Treatment & recovery support service adjustments	0.311	**0.561**
Learning service adjustments	0.103	**0.723**
Low-level sanctions	-0.12	**0.624**
Moderate-level sanctions	**0.567**	0.543
High-level sanctions	**0.818**	0.395
Total jail sanctions	**0.909**	0.262
Jail in first 60 days	**0.662**	-0.168
Total # of jail days	**0.874**	0.153

DISCUSSION

The objective of this study was to examine the relationships between service adjustments, sanctions, treatment court program disposition, and two-year post-program recidivism. In this section, answers to each research question are provided as well as a discussion of how these study findings compare to existing literature.

Research Question 1: How often are service adjustments and sanctions being used within adult treatment court programs?

The descriptive analysis revealed variations in the use of both service adjustments and sanctions by the ten treatment court programs examined in this study. Looking first at service adjustments, almost one-half were classified as treatment and recovery support-focused, slightly less than one-third were learning-focused, and less than one-quarter were supervision-focused. More than one-half of study participants received one or more service adjustments while enrolled.

When examining the utilization of service adjustments across program phases, treatment and recovery support services were the most frequently used type of service adjustment in phases one through four. However, a slight change was observed in phase five, where supervision-focused service adjustments were the most frequently used. Notwithstanding this slight change, it is promising that treatment and recovery support-focused service adjustments were so frequently used given the target population's high level of needs.

Turning to an examination of sanctions, almost one-half were classified as high-level, more than 40.4% were moderate-level, and 12.3% were low-level. The most often utilized sanction was community service (moderate-level) followed by jail (high-level). Across all five phases, high-level sanctions remained the most frequently used sanction type, followed by moderate-level, and low-level. More than three-quarters of study participants received one or more sanctions while enrolled.

When comparing total service adjustments and sanctions administered in response to participant behavior, the majority of behavioral responses were sanctions, and this trend was consistent across all program phases. More than three-quarters of study participants received at least one sanction or service adjustment while enrolled.

In summary, these findings suggest that the study programs were not effectively matching the type of infraction with the appropriate behavioral response. Furthermore, the use of service adjustments and sanctions was the same regardless of program phase. These findings

underscore the need for treatment court teams to engage in on-going education, training, and technical assistance related to the appropriate use of service adjustments and sanctions.

Research Question 2: How prevalent is the use of jail sanctions by adult treatment court programs?

According to the *Adult Treatment Court Best Practice Standards* (All Rise, 2025), jail sanctions (no more than 3 to 6 days in length) should be used sparingly, only after lesser magnitude (level) sanctions have not been effective in modifying participant behavior related to proximal goals, or when public safety is at risk. While this study does not examine the specific behaviors associated with the imposition of jail sanctions, it does illuminate the frequency with which the ten programs utilized jail in response to participant noncompliance. Among study participants, almost one-half (43.5%) received one or more jail sanctions while enrolled in the program.

Jail was the second most frequently used sanction (behind only community service) and represented almost one-third of all sanctions utilized in the ten study programs. Furthermore, in terms of the timing of the first jail sanction, 14.1% received a jail sanction within the first 60 days of program enrollment.

Overall, jail sanctions do not appear to have been used sparingly and were often delivered in earlier phases of program enrollment. This early imposition of a jail sanction may be detrimental to participants' recovery path and program success given the probability that psychosocial stability has not yet been achieved this early in the program. These findings emphasize the need for all treatment court team members to understand how and when to use jail sanctions as a behavioral modification tool. *Adult Treatment Court Best Practice Standards* (All Rise, 2025, p. 81) "…different responses are required for meeting or not meeting proximal, distal, or managed goals, and delivering the wrong response is likely to worsen outcomes and waste resources."

Research Question 3: What factors influence treatment court program graduation? Do jail sanctions influence the likelihood of treatment court graduation?

To understand the independent influence of demographic measures on program completion, the demographic only model revealed four significant predictors of program disposition. Participants identified as "other" race were significantly less likely to graduate from treatment court program as compared to their White peers. This is similar to the findings of Ho et al. (2018) and DeVall & Lanier (2012) who also found race to be a significant predictor of program completion.

Participants' with less than a high school diploma/GED were significantly less likely to graduate as compared to peers with some college or higher. This is similar to the findings of Brown et al.,

(2011) and Shannon, et al., (2016). Employment status at program entry was a significant predictor of graduation with participants employed full-time significantly more likely to graduate than participants unemployed or employed part-time, a student, disabled, retired, or not in the labor force. This is similar to the findings of Brown (2011) and Roll et al., (2005). In terms of substance of use, participants reporting the use of heroin, opioids, poly drug, and other were less likely to graduate as compared to participants reporting alcohol use. This is similar to the findings of Brown (2010).

To examine the influence of both demographic and programmatic variables on program graduation, measures related to drug/alcohol tests, sanctions, while-enrolled offenses, and time in program were added to the model. With the inclusion of these measures, the only demographic variable to no longer be significant was race. Educational attainment, employment status, and reporting the use of heroin, opioids, poly drug, and other remained unchanged.

Interestingly, all programmatic variables were found to significantly influence program disposition. First, increases in the average number of drug/alcohol tests per week increased the likelihood of program completion. According to the *Adult Treatment Court Best Practice Standards* (All Rise, 2025, p. 95) "The success of any treatment court will depend, in part, on the reliable monitoring of substance use." Moreover, the standard asserts that drug testing should occur at least twice per week until early remission from a substance use disorder is achieved. This study finding underscores the importance of ensuring participants are regularly monitored for drug/alcohol use throughout their term of enrollment given the positive impact on program success.

Similar to the findings of Gonzales & Cho (2025), as the number of days enrolled in the program increased, the odds of graduation increased. This finding is not surprising given that graduates spend a significantly longer amount of time in the program which allows for greater exposure to clinical treatment and recovery support services. In fact, the current study found that graduates spend, on average, 15.8 months in the program, whereas participants unsuccessfully discharged were enrolled for 9.7 months on average.

This study found that committing misdemeanor or felony offense while enrolled in the program significantly decreased the likelihood of program graduation. This is not a surprising finding. While not specifically examined for this study, one possible explanation is that programs likely responded with a high-level sanction (given the aforementioned practice of frequently using high-level sanctions) and may lead to an unsuccessful discharge.

Receiving a greater number of high-level sanctions (excluding jail) resulted in significantly lower odds of graduation. This is similar to the findings of Shannon et al. (2016) where specific types of

high-level sanctions were examined (e.g., jail). However, the current study is unique in its examination of the influence of various levels (e.g., low, moderate, and high) of sanctions on program graduation. As discussed in the section on research question 1, the programs included in this study often utilized high-level sanctions in response to participant behavior. The current finding demonstrates the negative impact this practice has on program completion.

Receiving a jail sanction in the first sixty days of program enrollment significantly decreased the likelihood of program graduation. This finding demonstrates the detrimental impact of utilizing jail sanctions in early program phases and "before participants are psychosocially stability and in early remission from their substance use or mental health disorder" (All Rise, 2025, p. 89). Much of the previous research (Shannon et al., 2022; McRee & Drapela, 2012) on the timing of the first jail sanction tends to focus on the effect of receiving a jail sanction within the first thirty days on program disposition. Consistently, receiving a jail sanction within this time period results in significantly lower odds of graduation. The current study's finding extends the time to first jail sanction to sixty days and finds an equally negative effect on program completion.

In summary, both demographic and programmatic factors were found to impact treatment court graduation. Employment continues to play a significant role in increasing the likelihood of program graduation. Thus, it would behoove treatment court programs to ensure participants have access to recovery support services in the areas of employment (i.e., resume building, interviewing, job readiness, etcetera). Programs should also work to ensure their drug/alcohol testing protocol is in alignment with best practice standards (twice per week) as this had a positive impact on program graduation. Additionally, programs should work to retain participants in the program as the longer participants are enrolled (and receiving program services), the greater the likelihood of program completion. Relatedly, the use of high-level sanctions and jail sanctions in the early days of program enrollment should be minimized to increase program retention and success.

Research Question 4: What factors influence post-program recidivism? Do jail sanctions influence the likelihood of post-program recidivism?

Reducing recidivism is one of the primary goals of all treatment court programs. Research has consistently found that treatment court participants recidivate at a lower rate than individuals processed through the traditional court system (Trood et al., 2021). The current study examined factors related to post-program recidivism were examined among participants who had been separated from the treatment court program for at least two years. The demographic only model revealed one significant predictor of recidivism. Employment status at program exit was a significant predictor of recidivism with participants employed full-time significantly less likely to

recidivate than participants unemployed or employed part-time, a student, disabled, retired, or not in the labor force. In fact, participants with full-time employment at the time of program exit were 3.9 times less likely to recidivate as compared to participants unemployed at program exit. This is similar to the findings of Wilson et al., (2018).

Model two examined the influence of both demographic and programmatic variables on post-program recidivism and included measures related to drug/alcohol tests, while-enrolled offenses, treatment and recovery support service adjustments, time in program, and program disposition. With the inclusion of these measures, the only demographic variable to be significant was reporting the use of heroin, opioids, poly drug, and employment status at program exit became non-significant. Interestingly, three programmatic variables were found to significantly influence recidivism in the two-year post-program period.

This study found that committing a felony offense while enrolled in the program significantly increased the odds of post-program recidivism. This finding suggests that participants engaging in criminal behavior while enrolled in the program are likely to continue to do so in the post-program period. Thus, programs would be well-served to offer evidence-based interventions that specifically address criminogenic thinking (e.g., Moral Reconation Therapy) for this high-risk/high-need population. According to the *Adult Treatment Court Best Practice Standards* (All Rise, 2025, p. 78-79) "interventions should be offered that address thinking errors and introduce, model, and reinforce new behaviors…participants learn new behaviors through small, manageable steps, and they have opportunities to practice, role-play, and discuss these behaviors."

Similar to the findings of Gallagher (2014) and Gibbs et al. (2019), graduation from the treatment court program significantly decreased the odds of post-program recidivism. This finding is not surprising given that graduates spend a significantly longer time in the program which allows for greater exposure to clinical treatment and recovery support services. In fact, the current study found that graduates spend an average of 15.8 months in the program, whereas participants unsuccessfully discharged are enrolled for an average of 9.7 months. Considered together, these findings underscore the importance of retaining participants in the program.

A notable finding from this study is that an increase in the number of treatment and recovery support service adjustments received during program enrollment significantly decreased the odds of post-program recidivism. This suggests that increasing one's involvement in activities focused on treatment and recovery support assisted in establishing participants' recovery foundation which can then serve as a protective factor in the post-program period. Thus, the greater utilization of treatment and recovery support service adjustments can have a long-lasting impact on post-program success. Many of the treatment and recovery support service adjustments included in this analysis address various aspects of recovery capital. According to

the *Adult Treatment Court Best Practice Standards* (All Rise, 2025, p. 52) “The concept of recovery capital refers to tangible and intangible assets that participants amass during the recovery process and can draw upon to sustain their long-term adaptive functioning and pursue productive life goals…Helping participants to develop greater recovery capital has been shown to produce significantly longer intervals of abstinence from substances, [and] less crime.”

IMPLICATIONS

The results of this study have several important implications for the treatment court practitioner and research/evaluation communities. For the treatment court practitioner community, the results reveal that the sanctions and service adjustments utilized by treatment court programs have real consequences for participants in terms of both program completion and post-program recidivism. It is important to remember that the treatment court model was developed in response to the traditional criminal justice system that was viewed as overly punitive, non-responsive to the factors contributing to involvement in the criminal justice system, and ineffective in changing behavior (and thus reducing the likelihood of recidivism). The issuance of sanctions and service adjustments within a treatment court environment is both an art and a science. While not the focus of the current study, prior research has demonstrated that the method by which sanctions are delivered is vital to the impact they have on participants views of the treatment court program (Belenko, 2019), which is the "art" of sanctioning

In terms of the "science" of sanctioning, the current study and some prior research has focused on examining how the both the magnitude and timing of sanctions impact outcomes of interest. This study found that participants sanctioned to jail in the first 60 days of program enrollment were 60.4% less likely to graduate as compared to participants not sanctioned to jail that early in the program. These results support the notion that utilizing too harsh sanctions, especially early in the term of program enrollment, will negatively impact participants' success. As noted in the *Adult Treatment Court Best Practice Standards* "participants [should] not receive high-magnitude sanctions like home detention or jail detention unless verbal warnings and several low- and moderate-magnitude sanctions have been unsuccessful in deterring repeated infractions of proximal goals" (All Rise, 2025, p. 88). Thus, treatment court teams should examine their sanctioning practices to ensure that they are employing low- and moderate-level sanctions before high-level sanctions. Furthermore, jail sanctions should be used only in situations where there is a serious and imminent public safety threat or in response to repeated infractions of behaviors the participant has demonstrated can be sustained for a reasonable amount of time (All Rise, 2025, p. 89).

Service adjustments should be administered to assist participants in achieving goals too difficult to achieve at present (distal goals). Service adjustments are designed to provide participants with structure and support as they gain the knowledge, skills, and behaviors needed to meet longer-term recovery goals. To this end, it is imperative that treatment court teams 1) clearly articulate the difference between sanctions and service adjustments and 2) make connections between the problematic behavior and the service adjustment being ordered to address that specific behavior (art of issuing service adjustments). Results from the current study demonstrate that

service adjustments and specifically the treatment and recovery support-focused service adjustment significantly reduce the likelihood of post-program recidivism. Therefore, utilizing service adjustments to address infractions is in alignment with the treatment court model and the science of issuing service adjustments.

In order to ensure sanctions and service adjustments are being utilized appropriately and fairly, accurate and complete data must be collected. Data collection regarding all behavior responses (sanctions and service adjustments) utilized by treatment court programs should be tracked for all participants throughout their term of enrollment. This issue is relevant for both the treatment court practitioner and research/evaluation communities. It should also be noted that in a single response to participant behavior, one or more sanctions and/or service adjustments may be appropriate. Therefore, it's critical that each treatment court program devises a systematic process for collecting data at the incident level for all participants. What follows is a list of the specific service adjustment and sanction types discussed earlier in this report. If a treatment court program employs the use of additional service adjustments and/or sanctions not expressly listed below, these additional behavior responses should be categorized appropriately for inclusion in subsequent analyses. The specific information to be gathered by treatment court teams for each service adjustment and sanction is outlined below.

- Date of each event where a sanction and/or service adjustment was ordered
- Specific behavior(s) that led to a sanction and/or service adjustment being ordered
- Type of service adjustment ordered (select all that apply):
    - supervision-focused
        - increase court review hearing attendance
        - home visit
        - increase drug/alcohol testing
        - meeting with probation officer/case manager
        - time in phase extended
        - enforce no contact order
        - abide by previous phase requirements for a specified period of time
    - treatment/recovery support-focused
        - meeting with treatment provider to determine if any adjustments to treatment are appropriate
        - meet with peer recover support specialist
        - referral to recovery/sober housing
        - risk reduction strategy(ies)
        - daily reporting to treatment program
        - attend support group meetings
        - other (specify, but should be treatment and recovery-focused) – for example, attend a doctor's appointment

    - learning-focused
        - homework/essay assignment on a specific topic
        - life skills assignment (e.g., time management)
        - journaling exercise
        - supervised social gathering
        - attend classes (e.g., employment, education, etc.)

- Type of sanction ordered (check all that apply):
    - Low-level
        - Warning
        - No incentive
    - Moderate-level
        - Courtroom observation/assignment
        - Stay for full court session
        - Community service work
        - Curfew
        - Travel restriction
        - Tether/electronic monitoring
        - Deferred jail
            - Record the # of hours/days jail deferred ____
    - High-level
        - Formal court hearing
        - Team roundtable/meeting
        - Day reporting
        - Home detention
        - Stay in other facility (excluding jail)
        - Jail sanction
            - Date jail sanction is to begin (if different from the date ordered) (mm/dd/yyyy)
            - # of hours/days to be served ____

The collection of these data will provide treatment court teams with the ability to monitor over time how they are responding to participant behaviors and the degree to which current practices align with the *Adult Treatment Court Best Practice Standard* (All Rise, 2025) regarding sanctions, incentives, and service adjustments. Specific questions that could be answered with these data include (not an exhaustive list):

- What are the most common sanctions and service adjustments utilized to address participant behaviors?

- What sanctions and service adjustments are being utilized in response to address specific participant behaviors? For example, how is the program responding to missed case management meetings across program phases?
- Are there differences in the types of sanctions and service adjustments being utilized by the team across program phases?
- How is the team responding to participants in early phases of the program versus later phases?
- Are sanctions and service adjustments utilized differentially across sub-groups of participants?
- How frequently is jail being utilized as a sanction across phases of the program? How long are these jail sanctions?

Furthermore, these data will allow researchers and evaluators alike to examine the influence of all types of behavior responses (i.e., service adjustments and sanctions) on outcomes of interest (e.g., program retention, graduation, and post-program recidivism).

CONCLUSION

The findings of the current study contribute to the existing body of literature on treatment courts and the role of sanctions on outcomes of interest. Unique to this study was an examination of the type (sanctions and service adjustments), magnitude (i.e., low-, moderate-, and high-level), and focus area (i.e., supervision-, treatment and recovery support-, and learning-focused) of behavior responses utilized by treatment court programs. Important takeaways regarding the imposition of sanctions and service adjustments are two-fold. First, the timing of the first jail sanction revealed that the first 60 days is critical to program success and that program success is critical to long-term success (remaining crime-free). Second, receiving a higher number of treatment and recovery support-focused service adjustments served as a protective factor following separation from the program and reduced the odds of recidivism. Therefore, it is essential that treatment court programs align their policies and practices with the *Adult Treatment Court Best Practice Standards* (All Rise, 2025).

There are several study limitations that should be considered when interpreting the findings. First, the COVID-19 pandemic began in March 2020 and officially ended in May 2023. During this time treatment court programs had to make significant modifications to program operations in order to comply with mandatory stay-at-home orders, restrictions on in-person gatherings, courthouse closures, etc. In addition, the work of clinical treatment and community-based recovery support service providers were also impacted. Therefore, we encourage readers to keep this in mind when interpreting the findings of this report. Second, the research team worked with program coordinators from the ten study sites to fill in missing data where possible. While great strides were made in this area, data regarding treatment (modality and dosage) was incomplete for two programs and could not be obtained prior to analyses. Thus, data regarding participants' treatment was not included in the analyses. Third, this study analyzed data from ten adult treatment court programs. While the sample size was large, the findings cannot be generalized to all treatment court programs. Fourth, while the collection of data regarding sanctions and service adjustments appeared to be consistently tracked by program staff during the study time frame, it is unknown if any sanctions and service adjustments were missing from participant records. Fifth, while separately analyzing the impact of sanctions and service adjustments on the outcomes of interest is a strength of the current study, it is unknown how participants interpreted receiving these various behavior responses. For example, some participants may have construed receiving a service adjustment as a sanction.

Given the complexity of sanctioning and other behavioral responses, and their influence on the outcomes of interest, several avenues for future research are possible and needed. First, the results of the factor analyses will be used to further explore and identify the impact of sanction

type (number and timing) and service adjustment type on graduation and post-program recidivism. The utilization of these factors could illuminate the combined effect of these measures. While not examined in this study, researchers should look at the impact that demographic and other variables have on receiving a sanction and/or therapeutic response, as well as the type of behavior leading to specific sanctions and therapeutic responses. It is possible that the application of behavioral responses could be influenced by these factors as well. Lastly, examining how these relationships vary by program type will also address identified gaps in the literature. The results of these analyses could then inform how treatment court programs respond to participant behaviors with the goal of increasing the likelihood of success both during the program (i.e., increased likelihood of graduation) and following separation from the program (i.e., lower post-program recidivism).

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