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Predicting Mental Health Court Program Outcomes Based On Individual Characteristics In Participant Profiles

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PREDICTING MENTAL HEALTH COURT PROGRAM OUTCOMES BASED ON
INDIVIDUAL CHARACTERISTICS IN PARTICIPANT PROFILES

by

Melissa Monique De La Luz
Bachelor of Science, University of Arizona, 2017

A Thesis

Submitted to the Graduate Faculty

of the

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in partial fulfillment of the requirements

for the degree of

Master of Science

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This thesis, submitted by Melissa M De La Luz in partial fulfillment of the requirements for the Degree of Master of Science from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.
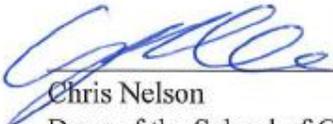
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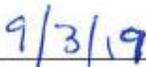
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Dr. Joseph Miller, Co-Chair

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Dr. Alan King, Committee Member

This thesis is being submitted by the appointed advisory committee as having met all of the requirements of the School of Graduate Studies at the University of North Dakota and is hereby approved.

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Dean of the School of Graduate Studies

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Department   Forensic Psychology

Degree   Master of Science

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                                               September 3, 2019

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ABSTRACT

Mentally ill offenders are overrepresented in the criminal justice system and experience increased risks of cyclic incarceration and recidivism following release. Mental health court programs were introduced to offer court ordered treatment regimens and a team of legal and behavioral health professionals as an alternative to incarceration. The goal of mental health court research is to improve graduation rates and decrease post-program recidivism by identifying participant characteristics that significantly contribute to successful program completion. This study proposed an examination of the association between characteristics of mental health court program participants and their influence on the likelihood of graduation, termination, and post-program recidivism within two years. De-identified data was collected from seventy-five participants currently enrolled in a mental health court program in Arizona. Age and pre-program criminal history significantly predicted whether a participant would graduate or fail their mental health court program. Pre-program criminal history and warnings of sanctions significantly predicted whether a participant would engage in post-program recidivism. Implications of the results of the present study are discussed.

CHAPTER I

INTRODUCTION

Traditional criminal court proceedings begin with an arrest. The first hearing in a criminal case is an initial appearance, where the judge informs the suspect of the charges and determines if probable cause exists that the suspect committed the crime. In most criminal cases, a preliminary hearing and a grand jury hearing follow, which can result in an indictment of the suspect (Bureau of International Information Programs, 2004). In 2012, the United States had the highest incarceration rate in the world with 707 inmates per 100,000 people and currently has over 2 million inmates (U.S. Bureau of Justice Statistics, 2014; Lamb & Weinberger, 2014).

Many inmates in U.S. prisons and jails have psychological disorders. In fact, jails and prisons have become the largest provider of mental health services in the U.S. (Moore & Hiday, 2006). Inmates with psychological disorders experience higher rates of re-arrest and recidivism within a shorter timespan than offenders without mental illness (Anestis & Carbonell, 2014; Comartin et al., 2015). For instance, comorbid substance use disorders are shown to predispose mentally ill offenders to criminal behavior (Bonfine et al., 2016). Although mentally ill offenders rarely commit violent crimes (Junginger et al., 2006), many continuously cycle through the criminal justice system (Ray et al., 2015).

Mentally ill offenders frequently experience criminalization because of their lack of access to mental health treatment, housing, and other resources. *Criminalization* refers to the cyclic process of mentally ill offenders who are repeatedly arrested and prosecuted for minor offenses (Moore & Hiday, 2006). Police officers often lack sufficient knowledge of mental illnesses or how to cope with a mentally ill individual due to lack of training. As a result, mentally ill offenders are often incarcerated rather than treated for their mental illnesses (Teplin, 1990). The cycle of criminalization results in a high percentage of persons with mental illness

being imprisoned. In fact, they have comprised between 6% and 22% of all inmates in U.S. prisons in the last 25 years (Moore et al., 2006).

Many mentally ill offenders suffer frequent relapses, rely on emergency rooms for psychiatric care, or become homeless or incarcerated (Hartford et Al, 2005; Mulvale et al, 2007). Lack of access to proper treatment may predispose mentally ill individuals to increased rates of incarceration and shorter timeframes between release and re-arrest (Anestis et al., 2014). Criminological researchers describe the process of mentally ill offenders failing to receive treatment post-release and re-entering the prison system as *transinstitutionalization* (Prins, 2011). Correctional facilities become overburdened with a mass influx of offenders in need of treatment, ultimately predisposing deinstitutionalized mentally ill offenders to failed attempts at social reintegration after receiving bare minimum care while incarcerated (Palermo, 2014).

Mental Health Courts

Court diversion programs were created to reduce potentially harmful jail sentences and overrepresentation of mentally ill offenders in prison (Redlich et al., 2012). A specific type of court diversion, called mental health courts, offer mentally ill offenders an alternative to incarceration by incorporating mandatory mental health treatment with traditional court hearings (Redlich et al., 2006). Mental health courts have grown in popularity, growing from only four mental health courts in 1997 to over 400 mental health courts in the U.S. today (Goodale et al., 2013). The goal of mental health courts is to provide mentally ill offenders with treatment and to improve their quality of life rather than punish them (Ray et al., 2015). Judges and lawyers cooperate with psychiatrists, psychologists, case workers and social workers to meet the needs of participants (Schneider, 2010). To be considered for admission to a mental health court in Arizona, an offender's mental status must be questioned during the adjudication process, which results in a psychological evaluation (Arizona Supreme Court, 2014). An attorney will then file a

motion to refer the offender to a mental health court program. Finally, a committee of the State Board reviews all pertinent information and decides whether an offender meets the eligibility criteria for mental health courts. Participants enrolled in mental health courts must adhere to all terms of their admission to successfully complete the program.

Strengths of Mental Health Courts

Research on mental health courts indicates that participants who successfully complete their programs go longer without new criminal charges being filed against them, have lower re-arrest rates for violent crimes, and lower recidivism rates compared to mentally ill offenders who do not participate in mental health courts (McNiel & Binder, 2007; McNiel et al., 2015; Ray et al, 2015; Moore et al., 2006). Mental health court teams utilize a combination of case management and individualized outpatient treatment to create successful regimens that promote recovery (Lamb et al., 2004). As a result, receiving effective treatment (i.e., mental health counseling and medication) decreases the likelihood of mental health court participants being terminated from their programs and the risk of future violence, and increases graduation rates (Bonfine et al., 2016; McNiel et al., 2015). For example, participants with a co-occurring substance use disorder showed about an 80% reduction in substance use within 12 months after completing a mental health court program (Cowell et al., 2004). Mental health court program graduation also predicts fewer psychiatric hospitalization days within a year following completion no matter what psychological disorder the participant has (Frailing, 2010). Further, mental health courts are a cost-effective alternative to traditional incarceration of mentally ill offenders. Incarceration is about twice as expensive as mental health court programs (Cowell et al., 2004; Slinger & Roesch, 2010).

The notable reduction in recidivism and substance use in mental health court program graduates compared to mentally ill offenders in prison stems from differences in goals between

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the traditional court system and mental health courts. Traditional courts primarily emphasize punishing the offender, and prisons only provide limited mental health services to inmates. Moreover, the prison environment is frequently detrimental to the mental health of offenders with psychological disorders. In contrast, mental health courts emphasize rehabilitation, treatment, and cooperation while still holding participants accountable for their actions (Sarteschi et al., 2011). As a result, mental health court program participants are less likely to recidivate and repeatedly cycle through the criminal justice system (Ray et al., 2015; Anestis et al., 2014; Moore et al., 2006; Burns et al., 2013). Mental health court completion is also associated with other positive outcomes such as, improvements in participant mental health status, decreased rates of violent behavior and homelessness, and fewer psychiatric hospitalizations (Broner et al., 2005; Cosden et al, 2003; Lamb et al., 1996; Verhaaff & Scott, 2015).

Predictors of Successful Completion

There are several reasons why it is important for mental health court programs to be able to identify participants who will likely graduate and not recidivate. Mental health courts are expensive, have limited openings, and their existence depends on government funding and public support. Mental health courts must demonstrate their value to continue receiving monetary and community support and to encourage the creation of more mental health courts. Additionally, studies like the present one may help more mental health courts identify changes they need to make in their treatment regimens and procedures to improve the rate of successful completion of their programs, reduce recidivism rates and hospitalizations, and better meet the needs of participants.

Established Predictors: Participant Characteristics

Age

Participant age is a significant predictor of community drug and mental health treatment outcomes. Older adults are more likely to complete treatment and experience positive outcomes (Mateyoke-Scrivner et al., 2004) whereas younger adults are more likely to drop out of treatment programs (Edlund et al., 2002). Dropping out of treatment is also associated with low-income participants who lack insurance (Shim et al., 2017). Younger participants in drug treatment programs are more likely than older participants to have fewer financial resources. Additionally, younger participants are at greater risk of dropping out of treatment than older participants due to disengagement and delays in treatment (Stewart, 2012). Older participants tend to rate community treatment regimens as effective (Lippens & Mackenzie, 2011), and have longer histories of drug use, which may increase motivation to complete treatment programs (Melnick et al., 1997). In contrast, younger participants are more likely than older participants in treatment to be engaging in drug use and criminal behavior (Rempel & Destefano, 2002).

Gender

Studies generate mixed results when testing associations between gender and mental health court program outcomes. Female offenders are more likely to be referred and admitted to mental health courts than male offenders (Steadman & Naples, 2005). However, despite conflicting evidence, gender generally has not been found to influence mental health court graduation rates (Boothroyd et al., 2003). For example, recent research by Kothari et al. (2014) shows successful program completion and equal recidivism rates in both men and women. Although previous research does not identify gender as a significant predictor of admission or graduation (Verhaaff & Scott, 2015), it is included as a variable in the present study.

Race

Previous research confirms racial disparity within the criminal justice system, with minorities being overrepresented (Rodriguez, 2008). Despite these findings, a consistent relationship between race and program completion has not been identified in mental health court participants (Redlich et al., 2010). However, recent studies have revealed racial differences in mental health court completion. Ray & Dollar (2013) indicates white females are less likely to be terminated from mental health courts than any other racial group. Another study shows Black and Hispanic offenders have lower rates of treatment completion (Guerrero et al., 2013). Further, positive results have been found regarding racial differences in recidivism following program completion. Behnken et al. (2017) found a greater reduction in recidivism following mental health court completion in Nonwhite participants than White participants, specifically Hispanic participants and the combined racial group (Black, Iranian, Asian, Biracial, etc.). These recent findings suggest that race has become a factor in graduation and recidivism rates in mental health courts and can possibly be used to assist legal professionals in adjusting programs to fit the needs of Nonwhite participants.

Psychological Disorders

Mentally ill offenders are extended admission offers partly based on type and severity of diagnoses. Mental health courts offer combined outpatient treatment and court hearings. Therefore, it may be less likely for an offender with a disorder that requires constant inpatient care (such as psychotic disorders) to be offered admission to a mental health court program. Depression, anxiety, bipolar disorder, PTSD, ADHD, schizophrenia, and co-occurring substance use are especially common among participants (Weitzel et al., 2007; Comartin et al., 2015). Research shows the severity of psychological disorders influences the likelihood of successful completion of the program as well as recidivism rates. For instance, participants diagnosed with

severe disorders such as schizophrenia and bipolar disorder have low recidivism rates post-graduation (Goodale et al., 2013; Comartin et al., 2015).

Co-occurring Substance Use

Substance use disorders are frequently comorbid with certain psychological disorders. For instance, offenders diagnosed with schizophrenia and depression are more likely to meet criteria for alcohol and drug use disorders than non-mentally ill offenders (Abram & Teplin, 1991). Co-occurring substance use disorders are a strong predictor of criminal behavior (Brown et al., 1989) and increases an offender's likelihood of arrest (Brown et al., 1989) and negative termination from treatment (Hiday et al., 2014). Further, offenders with comorbid substance use disorders are 91% less likely to graduate from drug court (Burns et al., 2013). Nonetheless, research suggests these offenders can benefit from mental health court programs due to their holistic approach, which treats both mental disorders and substance use (Hiday et al., 2014).

Pre-program Criminal History

The criminal history of mental health court participants has been consistently found to predict recidivism following program completion (Moore & Hiday, 2006; Bonta, Law & Hanson, 1998; Ulmer, 2001). One study indicates each pre-program criminal charge increases the likelihood of recidivism within two years after completion by 17% (Snedker, Beach, & Corcoran, 2017). Prior jail days were also found to be associated with increased recidivism rates, but not with program completion (Burns, Hiday, & Ray, 2013). When it comes to program completion, there are mixed results. Many studies find pre-program criminal history does not influence program completion. Other research indicates the number of prior charges, illegal drug use and felonies are associated with decreased rates of successful program completion (Hiday, Ray, & Wales, 2014).

Potential Predictor Not Used in Prior Studies

Warnings of Sanctions

Successful program completion relies heavily on participant compliance. Lack of behavioral changes and cooperation with mental health court program requirements show strong associations with negative termination (Hiday et al., 2014). To address noncompliant participants, mental health court programs administer various forms of sanctions following failure to adhere to court-ordered conditions, including additional court hearings, reprimands, "scolding" (verbal reprimand from the judge), stricter treatment conditions, and changes in housing (Griffin et al., 2002). The use of sanctions is associated with increased rates of retention and successful completion of treatment (Maxwell, 2000). However, when the sanction is jail time, emerging evidence suggests that participants are more likely to recidivate upon completion of the program (Callahan et al., 2013). Mandated sanctions have been consistently identified as a significant predictor of treatment outcomes, but *threats* of sanctions have not yet been included as a predictor in treatment program completion research (Hepburn & Harvey, 2007).

Present Study

The goal of the present study is to identify participant characteristics that accurately predict program outcomes. Although research has demonstrated many benefits mental health courts provide to its participants and society, further study of predictors of successful program completion and reduced recidivism is necessary.

The present study sought to identify characteristics that predict mental health court program graduation or termination and post-program recidivism rates within two years. The present study includes predictors that have previously been shown to be related to mental health court graduation and to recidivism as well as a new predictor (warnings of sanctions).

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CHAPTER II

METHOD

Participants

Archival data was collected from 102 adult mental health court participants enrolled in a mental health court program in Arizona. To be included in the analysis, participants were required to have graduated or have been terminated from the program. Twenty-seven participants were currently enrolled, so their data was not included. The final sample included 75 adult participants (51 males, 24 females; $M = 40.15$, $SD = 11.94$; 47% White, 14% Native American, 7% Black, 7% Unknown). Cohen & Cohen (1983) recommended 187 participants with at least 5 predictors to have a power of 0.80 and a medium effect of 0.30. Because the sample was less than recommended by Cohen & Cohen (1983), a post-hoc power analysis was conducted to examine the observed power associated with the analysis.

Procedure

Electronic archival data was collected via Excel and de-identified by the agency prior to the analysis. The present study utilized IBM Statistical Package for the Social Sciences (SPSS) to conduct two binary logistic regression analyses. The first analysis determined if there were any relationships between participant characteristics and mental health court program graduation. The second analysis investigated which characteristics predicted recidivism in participants who have successfully completed the program.

Each binary logistic regression was conducted hierarchically, in which the first block consisted of the predictors that have been previously investigated by mental health court research (gender, age, race, psychiatric diagnosis, and co-occurring substance use) and the second block consisted of a new variable not used in prior mental health court research (warnings of sanctions).

Measures

Criteria Variables

Graduation means the participants had successfully completed all the requirements the mental health court required of him or her (e.g., negative drug tests, participated in therapy, appeared at court hearings, etc.).

Termination means a participant has been removed from the mental health court because of significant violations of its requirements.

Recidivism means new criminal charges were filed against a participant in mental health court within two years after the participant graduates from mental health court.

Predictors included age, gender, race, psychological diagnosis, pre-program criminal history and warnings of sanctions. Pre-program criminal history means the index offense (i.e., the crime for which the participant was sent to mental health court) was a felony or misdemeanor or that it was a violent or non-violent crime. Warnings of sanctions means a participant in mental health court has been warned that another violation of the requirements the mental health court imposed on him or her can result in the participant being sent to jail for a period of time.

A post-hoc power analysis using G*Power 3.1 revealed that, with $\alpha = 0.05$, the present study yielded significant results with sufficient power (0.86).

Hypotheses

The following research hypotheses were tested:

1. Male participants will have higher rates of negative termination and post-program recidivism than female participants.

2. Older participants will have higher rates of graduation and lower rates of post-program recidivism than younger participants.

3. White participants will have higher rates of graduation and lower rates of post-program recidivism than Non-white participants.

4. Participants diagnosed with depression, schizophrenia, bipolar disorder and/or co-occurring substance use disorders will have higher rates of negative termination and post-program recidivism than those with other diagnoses.

5. Participants with a pre-program history of felonies or violent crimes will have higher rates of negative termination and post-program recidivism than those with a history of misdemeanors/nonviolent crimes.

6. Participants with a history of warnings of sanctions during the program will have higher rates of negative termination and post-program recidivism than those without a history of warnings of sanctions.

Graduation from the Program

The model correctly classified 19 participants as terminated from the program and 35 participants as graduated from the program, producing an overall correct classification rate of

72%. However, the model was not significant ($p = 0.126$), indicating the predictors as a group did not significantly improve the prediction of which participants would graduate from mental health court compared to the baseline model (See Table 1; For predictors, see Table 2, Step 2. Psychological diagnosis severity and category and violent vs nonviolent pre-program criminal history offenses were examined in a separate analysis to reduce the possibility of violating the multicollinearity assumption; See Table 3).

H1: Male participants were hypothesized to be significantly more likely to graduate from their mental health court program. Gender did not significantly contribute to a participant's program status ($p = 0.67$).

H2: Older participants were hypothesized to be significantly more likely to graduate from their mental health court program. Age was a significant predictor ($p = 0.03$) and showed older participants were 1.052 times more likely to graduate from the program than younger participants, supporting this hypothesis.

H3: White participants were hypothesized to be significantly more likely to graduate from the program than Nonwhite participants. Race did not significantly predict program graduation ($p = 0.08$).

H4: As shown in previous studies, psychiatric diagnosis was hypothesized to significantly contribute to a participant's program status. Psychiatric diagnosis was coded in different ways: *psychotic disorders* ($p = 0.81$) indicated whether a participant had a psychotic disorder or not, *severity* ($p = 0.64$) indicated the seriousness of the disorder a participant had, and *category* ($p = 0.11$) indicated which category a disorder fell into (mood, developmental, etc.). Psychiatric diagnosis did not significantly predict a participant's program status.

H5: Participants with a pre-program history of felonies and violent crimes were hypothesized to be less likely to graduate from the program than participants with histories of

misdemeanors and nonviolent crimes. Both misdemeanors ($p = 0.06$) and felonies ($p = 0.05$) were marginally significant. Participants were between $0.805 – 0.872$ times less likely to graduate from the program. Participants with a history of violent crimes ($p = 0.05$) were about 0.565 times less likely to graduate from the program.

H6: Participants with a history of warnings of sanctions during the program were hypothesized to be less likely to graduate from the program. Warnings of Sanctions did not significantly predict a participant's program status ($p = 0.11$).

Recidivism

The model correctly classified 36 participants who did not recidivate and 19 participants who did recidivate, producing an overall correct classification rate of 73%. The final block was significant ($p = 0.02$); however, the overall model was not significant ($p = 0.08$), indicating the variables in the analysis did not significantly improve the prediction of which participants would recidivate following the program compared to the baseline model (See Table 4; For predictors, see Table 5, Step 2. Psychological diagnosis severity and category and violent vs nonviolent pre-program criminal history offenses were examined in a separate analysis to reduce the possibility of violating the multicollinearity assumption; See Table 6).

H1: Gender did not significantly predict recidivism ($p = 0.55$).

H2: It was hypothesized that older participants were less likely to engage in post-program recidivism than younger participants. Age did not significantly predict recidivism ($p = 0.90$).

H3: White participants were hypothesized to be less likely to recidivate. Race did not significantly predict recidivism ($p = 0.67$).

H4: Psychiatric diagnosis was hypothesized to contribute to a participant's likelihood of post-program recidivism. If a participant was diagnosed with a psychotic disorder ($p = 0.84$), it

did not significantly predict recidivism, nor did the severity ($p = 0.31$) or category ($p = 0.95$). Co-occurring substance use disorders did not predict recidivism ($p = 0.21$).

H5: Participants with a history of felonies and violent crimes were hypothesized to be more likely to recidivate. Pre-program criminal history generally did not predict recidivism ($p = 0.08$). However, having a misdemeanor ($p = 0.02$), felony ($p = 0.03$), or both ($p = 0.02$) and history of violent crimes ($p = 0.05$) significantly predicted recidivism. Participants with felonies were 13.927 times more likely to recidivate than those with misdemeanors (7.796 increased likelihood of post-program recidivism). Participants with a history of both felonies and misdemeanors were 15.241 times more likely to recidivate after the program.

H6: Participants who received one or more warnings of sanctions during the program were hypothesized to be more likely to engage in post-program recidivism than participants with no history of sanctions. Warnings of Sanctions significantly predicted recidivism ($p = 0.02$) and indicated participants were 1.960 times more likely to recidivate with every additional warning of a sanction.

Parsimony

To achieve parsimony, variables that significantly contributed to graduation or termination and recidivism were examined in separate regression analyses (Field, 2013).

Graduation from the Program

Age, race, and pre-program criminal history significantly predicted whether a mental health court participant would graduate from the program. The model correctly classified 14 participants as terminated from the program and 34 participants as graduated from the program, producing an overall correct classification rate of 64%. The model was significant ($p = 0.02$), indicating the predictors as a group significantly improved the prediction of which participants

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would graduate from mental health court compared to the baseline model (See Table 7; see Table 8 for predictors).

H2: Age did not significantly predict graduation ($p = 0.08$).

H3: Race was marginally significant ($p = 0.06$). Moreover, the graduation rates for Native American participants differed significantly from the graduation rate for White participants ($p = 0.006$). Native American participants were 0.873 times less likely to graduate from their mental health court program.

H5: Pre-program criminal history significantly predicted graduation ($p = 0.04$). Participants with a history of misdemeanors were 1.897 times more likely to graduate from their program than participants with a history of felonies.

Recidivism

Pre-program criminal history and warnings of sanctions predicted whether a mental health court participant would recidivate. The model correctly classified 38 participants without post-program charges and 13 participants with post-program charges, producing an overall correct classification rate of 68%. The model was significant ($p = 0.008$), indicating the predictors as a group significantly improved the prediction of which participants would engage in post-program recidivism compared to the baseline model (See Table 9; see Table 10 for predictors).

H5: Pre-program criminal history did not generally predict recidivism ($p = 0.11$). However, participants with a history of both felonies and misdemeanors were significantly more likely to recidivate ($p = 0.04$).

H6: Warnings of Sanctions significantly predicted recidivism ($p = 0.02$). With each additional warning, participants were 1.928 times more likely to recidivate than participants with fewer or no warnings of sanctions.

CHAPTER IV

DISCUSSION

The present study has implications for future research and possible implications for mental health court programs. Age, race, pre-program criminal history, and warnings of sanctions predicted whether a participant would graduate from the mental health court program and whether they would recidivate.

Older participants were more likely to graduate from the mental health court program than younger participants. Previous research suggests many reasons why older participants experience higher graduation rates than younger participants, such as differences in cognitive development, drug use, and onsets of various mental disorders (i.e., some mental disorder become overt at younger ages). Therefore, mental health courts may need to provide longer and more intense treatment for younger participants.

Although race in general did not significantly predict graduation, Native American participants were nearly twice as likely to be terminated from mental health court and about 13 times more likely to recidivate. The present study suggests that mental health courts may not be meeting the needs of Native American participants and that changes are recommended to better address them, including after they graduate from mental health court. For instance, the mental health court that supplied the data for the present study is located in a region where there are several nearby reservations. Therefore, it may be advantageous to consult with and include Native American caregivers from those reservations in the mental health court team. In addition, the Native American caregivers may also be able to provide assistance to Native American participants who have graduated from mental health court to reduce their rate of recidivism.

Participants with pre-program criminal histories of felonies and violent crimes were more likely to be terminated from mental health court and to recidivate. Moreover, with each

additional warning of a sanction, participants were nearly twice as likely to recidivate than participants with few or no warnings of sanctions. Warnings of sanctions (threats of jail days) was the novel variable that was included in the present study due to its significant contribution to recidivism prediction in drug court research. The findings from the present study suggest changes to adherence guidelines, such as limiting jail-based sanctions as a form of punishment. Previous research suggests participants with more pre-program jail days are more likely to recidivate (Burns, Hiday, & Ray, 2013). The present study did not examine the effect of pre-program jail days on participants, but it did find participants with more *threats* of jail days during the program were more likely to recidivate after the program. Therefore, it may be beneficial to administer other forms of sanctions when participants violate mental health court mandates.

Limitations and Implications

The present study found significant predictors that contributed to both mental health court program outcomes and recidivism with sufficient power, but not without limitations. A major limitation is that the sample from this study came from one mental health court, which is not a representative sample of other mental health courts. Demographic and cultural differences, varying court practices and regulations may have affected the results from the present study.

Another limitation of this study is its sample size. The lack of significant predictors previously supported by research may be associated with analyzing a relatively small sample. As previously mentioned, the ideal sample size would have included data from at least 187 participants. The present study obtained useable data from 75 participants, less than half the recommended sample.

Nonetheless, the present study identified factors that may influence graduation from mental health courts and recidivism. As previously stated, age was related to successful graduation from the mental health court, with younger participants having a significantly lower

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graduation rate than older participants. This result suggests that mental health courts may need to provide additional treatment for younger participants or even perhaps establish a different mental health court for juveniles. Further study is necessary to investigate the use of warnings of sanctions in mental health court programs, as the present study was one of the first to utilize it as a predictor in this setting. It is also highly encouraged to examine interactions for more well-rounded results. Mental health courts benefit mentally ill offenders, but further research is still needed so they can better meet the needs of its participants, increase graduation rates and reduce recidivism rates for mentally ill offenders.

Table 1

Classification Table for Graduation from the Program

_____

Observed	Predicted		Percentage Correct
	Terminated	Graduated	
Terminated	19	13	59.4
Graduated	8	35	81.4
Overall Percentage			72.0

a. The cut value is 0.500

Table 2

Summary of Regression Model for Variables Predicting Graduation from the Program

_____

		B	S.E.	Sig.	Exp(B)	95% CI for Exp(B)	
						Lower	Upper
Step 1	Gender	-0.218	0.556	0.695	0.804	0.270	2.391
	Age	0.042	0.023	0.062	1.043	0.998	1.091
	Race			0.085			
	Race (1)	-0.095	0.876	0.914	0.910	0.163	5.068
	Race (2)	-2.056	0.802	0.010**	0.128	0.027	0.616
	Race (3)	-0.219	0.895	0.807	0.804	0.139	4.641
	Psychotic	0.173	0.398	0.664	1.189	0.545	2.594
	Co-occurring Substance	-0.262	0.467	0.575	0.770	0.308	1.923
	Pre-program			0.229			

Criminal History

	B	SE	Sig	Exp(B)	Lower	Upper
Pre-program Criminal History (1)	0.197	0.802	0.806	1.218	0.253	5.872
Pre-program Criminal History (2)	1.071	1.131	0.344	2.918	0.318	26.783
Pre-program Criminal History (3)	1.755	1.023	0.086	5.782	0.778	42.945
Constant	-1.364	1.162	0.241	0.256		

_____

	B	SE	Sig	Exp(B)	Lower	Upper
Step 2 Gender	-0.248	0.566	0.670	0.780	0.257	2.368
Age	0.051	0.024	0.030*	1.052	1.004	1.103
Race			0.080			
Race (1)	0.168	0.913	0.850	1.183	0.198	7.073
Race (2)	-2.161	0.830	0.010**	0.115	0.023	0.586
Race (3)	-0.559	0.938	0.550	0.572	0.091	3.598
Psychotic	0.098	0.410	0.810	1.103	0.494	2.461
Co-occurring Substance	-0.208	0.473	0.660	0.812	0.321	2.051
Pre-program Criminal History			0.187			
Pre-program Criminal History (1)	0.421	0.838	0.060	1.523	0.295	7.870
Pre-program Criminal History (2)	1.358	1.177	0.050*	3.890	0.387	39.071
Pre-program Criminal History (3)	2.053	1.074	0.056	7.794	0.950	63.961
Warnings of Sanctions	-0.417	0.264	0.110	0.659	0.393	1.105
Constant	-1.501	1.185	0.205	0.223		

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Table 3

Summary of Regression Model for Variables Predicting Graduation from the Program Contd.

	B	S.E.	Sig.	Exp(B)	95% CI for Exp(B)	
					Lower	Upper
Gender	-0.228	0.563	0.685	0.796	0.264	2.401
Age	0.048	0.024	0.046*	1.049	1.001	1.099
Race			0.068			
Race (1)	0.076	0.883	0.931	1.079	0.191	6.086
Race (2)	-1.992	0.757	0.008**	0.136	0.031	0.601
Race (3)	-0.457	0.913	0.617	0.633	0.106	3.793
Co-occurring Substance	-0.029	0.434	0.947	0.972	0.415	2.274
Category	0.022	0.201	0.110	1.000	0.915	1.022
Severity	-0.202	0.424	0.640	0.817	0.356	1.877
Violent	-0.832	0.430	0.050*	0.435	0.187	1.011
Warnings of Sanctions	-0.257	0.262	0.326	0.773	0.463	1.292
Constant	0.298	1.067	0.780	1.347		

Table 4

Classification Table for Recidivism

Observed	Predicted		Percentage Correct
	No	*Yes*	
No	36	7	83.7
Yes	13	19	59.4
Overall Percentage			73.3

a. The cut value is 0.500

Table 5

Summary of Regression Model for Variables Predicting Recidivism

						95% CI for Exp(B)	
		B	*S.E.*	*Sig.*	*Exp(B)*	*Lower*	*Upper*
Step 1	Gender	-0.337	0.558	0.546	0.714	0.239	2.132
	Age	0.006	0.023	0.790	1.006	0.961	1.053
	Race			0.529			
	Race (1)	0.253	0.882	0.774	1.288	0.229	7.252
	Race (2)	0.823	0.726	0.257	2.278	0.549	9.450
	Race (3)	-0.700	0.958	0.465	0.496	0.076	3.247
	Co-occurring Substance	0.658	0.491	0.180	1.932	0.738	5.056
	Pre-program Criminal History			0.120			
	Pre-program Criminal History (1)	2.077	1.063	0.051*	7.984	0.994	64.143
	Pre-program	1.862	0.883	0.035*	6.438	1.141	36.333

	B	S.E.	Sig.	Exp(B)		
Criminal History (2)						
Pre-program Criminal History (3)	2.520	1.151	0.029*	12.427	1.301	118.700
Psychotic	-2.723	0.400	0.631	0.825	0.376	1.808
Constant	-2.723	1.279	0.033	0.066		

	B	S.E.	Sig.	Exp(B)		
Step 2 Gender	-0.317	0.584	0.550	0.729	0.232	2.290
Age	-0.003	0.02	0.900	0.997	0.949	1.046
Race			0.670			
Race (1)	-0.300	0.994	0.763	0.741	0.106	5.197
Race (2)	0.804	0.744	0.280	2.234	0.520	9.595
Race (3)	-0.247	0.998	0.804	0.781	0.110	5.525
Co-occurring Substance	0.634	0.502	0.210	1.885	0.705	5.041
Pre-program Criminal History			0.080			
Pre-program Criminal History (1)	2.634	1.141	0.020*	13.927	1.489	130.232
Pre-program Criminal History (2)	2.054	0.931	0.030*	7.796	1.256	48.382
Pre-program Criminal History (3)	2.724	1.193	0.020*	15.241	1.471	157.914
Psychotic	-0.086	0.413	0.840	0.917	0.408	2.063
Warnings of Sanctions	0.673	0.296	0.020*	1.960	1.097	3.500
Constant	-3.208	1.368	0.019	0.040		

Note. $R^2 = 0.06$ (Hosmer & Lemeshow) 0.15 (Cox & Snell) 0.20 (Nagelkerke). Model $\chi^2 = 13.7$ for Step 1; $R^2 = 0.45$ (Hosmer & Lemeshow) 0.21 (Cox & Snell) 0.29 (Nagelkerke). Model $\chi^2 = 6.8$ for Step 2. $*p < 0.05$; $**p < 0.01$

Table 6

Summary of Regression Model for Variables Predicting Recidivism Contd.

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					95% CI for Exp(B)	
	B	*S.E.*	*Sig.*	*Exp(B)*	*Lower*	*Upper*
Gender	-0.533	0.583	0.360	0.587	0.187	1.839
Age	0.000	0.024	0.996	1.000	0.954	1.048
Race			0.412			
Race (1)	-0.160	0.961	0.868	0.853	0.130	5.606
Race (2)	1.083	0.712	0.128	2.954	0.732	11.921
Race (3)	-0.477	1.013	0.638	0.621	0.085	4.522
Co-occurring Substance	0.536	0.444	0.228	1.708	0.715	4.080
Category	0.012	0.201	0.950	1.000	0.951	1.012
Severity	-0.461	0.450	0.310	0.631	0.261	1.523
Violent	0.812	0.413	0.050*	2.253	1.003	5.062
Warnings of Sanctions	0.493	0.275	0.074	1.637	0.954	2.807
Constant	-1.734	1.139	0.128	0.177		

Note. R^2 = .69 (Hosmer & Lemeshow) .18 (Cox & Snell) .24 (Nagelkerke). Model χ^2 = 4.8
*$p < 0.05$; **$p < 0.01$

Table 7

Classification Table for Graduation from the Program

Observed	Predicted		Percentage Correct
	Terminated	Graduated	
Terminated	14	18	43.8
Graduated	9	34	79.1
Overall Percentage			64.0

a. The cut value is 0.500

Table 8

Summary of Regression Model for Variables Predicting Graduation from the Program

					95% CI for Exp(B)	
	B	S.E.	Sig.	Exp(B)	Lower	Upper
Age	0.039	0.022	0.080	1.040	0.996	1.086
Race			0.060			
Race (1)	-0.148	0.870	0.865	0.862	0.157	4.747
Race (2)	-2.065	0.758	0.006**	0.127	0.029	0.560
Race (3)	-0.480	0.851	0.572	0.619	0.117	3.277
Pre-program Criminal History	0.640	0.311	0.040*	1.897	1.030	3.492
Constant	-2.302	1.259	0.067	0.100		

Note. R^2 = 0.12 (Hosmer & Lemeshow) 0.16 (Cox & Snell) 0.21 (Nagelkerke). Model χ^2 = 11.3
*$p < 0.05$; **$p < 0.01$

Table 9

Classification Table for Recidivism

Observed	Predicted		Percentage Correct
	No	Yes	
No	38	5	88.4
Yes	19	13	40.6
Overall Percentage			68.0

a. The cut value is 0.500

Table 10

Summary of Regression Model for Variables Predicting Recidivism

					95% CI for Exp(B)	
	B	S.E.	Sig.	Exp(B)	Lower	Upper
Pre-program Criminal History			0.110			
Pre-program Criminal History (1)	-0.435	0.732	0.552	0.647	0.154	2.716
Pre-program Criminal History (2)	0.247	0.997	0.804	1.280	0.181	9.039
Pre-program Criminal History (3)	-2.193	1.045	0.040*	0.112	0.014	0.865
Warnings of Sanctions	0.656	0.271	0.020*	1.928	1.134	3.278
Constant	-0.254	0.654	0.698	0.776		

Note. $R^2 = 0.69$ (Hosmer & Lemeshow) 0.17 (Cox & Snell) 0.23 (Nagelkerke). Model $\chi^2 = 3.1$
*$p < 0.05$; **$p < 0.01$

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