THE EFFECTS OF THE DUI 24/7 PROGRAM IN CASS COUNTY, NORTH DAKOTA

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ABSTRACT

This study presents the results of an evaluation of the 24/7 Sobriety Program in Cass County, North Dakota, looking specifically at participants' likelihood of receiving a conviction of Driving Under the Influence (DUI) both during and after exiting the program. Data was collected of participants who have been enrolled in the program from the start of the program in 2010 through 2018 and matched to public criminal records searches of each participant. Several analyses were run to determine whether substance choice (alcohol vs. drugs), gender (male vs. female), and duration in program influence a participant's likelihood to recidivate. Findings for each measure are presented including potential changes that could be made, as well as, limitations of the study.

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

Drunk driving is a serious issue in the United States. When alcohol enters the blood stream, individuals suffer from a variety of impairments that put themselves and others at risk if they were to get behind the wheel. Impaired judgment, loss of coordination, skewed vision, and a slowed reaction time are just a few of the effects that impede individuals from driving once they have consumed alcohol (Fell and Voas, 2014). In the United States approximately one-third of all traffic related fatalities involve alcohol impairment (NHTSA, 2015). However, the problem of driving under the influence of alcohol is even more predominant in North Dakota. Since 2012, alcohol has accounted for about forty to fifty percent of fatal crashes in the state. With a fatality rate this high, it is important for the state of North Dakota to take action on addressing the problem of drinking and driving (NDDOT, 2016).

Historically, North Dakota along with other states have used different methods to deter individuals from driving after a night of drinking including: mandatory fines, punishment for refusing to submit to an official breath test, possibility of imprisonment, license suspension and revocation, and the requirement to undergo an addiction evaluation (NHTSA, 2013).

Under North Dakota state statute 39-08-01, persons under the influence of intoxicating liquor or any other drugs or substances are not to operate a vehicle. Legally, anyone driving or operating a motor vehicle with a blood alcohol concentration (BAC) of 0.08% are considered to be alcohol impaired. However, North Dakota has a zero tolerance for anyone under the age of twenty-one operating a motor vehicle when blood alcohol measures 0.02% and about. A first time DUI offense is considered a Class B Misdemeanor and punishable by a $500.00 fine if BAC is below 0.16% or a $750.00 fine and two days in jail if BAC is 0.16% or higher. The offender is required to undergo an addiction evaluation, and their license privilege is suspended. A second

offense in seven years is also considered a Class B Misdemeanor with the same penalties imposed as a first offense with an increased fine of $1,500.00, ten days imprisonment, and one year on the 24/7 Program. Offenders receiving their third offense in seven years increases to a Class A Misdemeanor punishable with 120 days imprisonment as well as one-year supervised probation, a longer license suspension period, and one year on the 24/7 Program. Finally, a fourth and all subsequent offenses are labeled as a Class C Felony which entails one year and one day imprisonment, a $2,000.00 fine, two years supervised probation, and two years on the 24/7 Program District (ND Office of Attorney General, 2013).

In 2007, the North Dakota 60th Legislative Session authorized the North Dakota Attorney General's Office to start a pilot program modeled after South Dakota's 24/7 Sobriety Program. The 24/7 Sobriety Program includes breath alcohol testing twice a day, electronic alcohol monitoring, and drug testing. The pilot program consisted of fourteen counties, twelve in the South-Central Judicial District and two in the North East Central Judicial District (ND Office of Attorney General, 2013).

By 2009 the North Dakota Legislature passed House Bill 1306 that implemented the 24/7 Sobriety Program statewide (ND Office of Attorney General, 2013). Originally the program was only used as a condition of bond or pre-trial release as imposed by the courts or as a condition of parole, but after the passage of House Bill 1302 all repeat DUI offenders were subjected to the program (ND Office of Attorney General, 2013).

Once an offender has pled guilty to or been found guilty of a qualifying offense, a court may order him or her to participate in the 24/7 Sobriety Program and not consume any alcoholic beverages or controlled substances for the duration of the program. An offender with an alcohol related offense is required to participate through on-site breath testing unless they live in a rural

area then remote electronic alcohol monitoring is used in place. For an offender with a drug related offense, drug patch testing is implemented. Offenders are required to pay a fee for all modes of testing. All tests are recorded in the Sobriety Program Information System (ND Office of Attorney General, 2013).

In the instance of a positive breath test, the offender will be detained at the testing site until the court is notified. The offender will then be taken into custody pending further court proceedings. Failing to appear for testing is a crime and may result in the court issuing a bench warrant to take the offender into custody. Arriving late for a scheduled breath test is also a crime and the offender may be considered in violation of the program if this occurs more than two times in a four-month period. The court may terminate the offender's participation at any time if they have violated the terms and conditions, as well as authorize the offender to re-enter the program once adjustments are made. All completions and terminations are entered into the Sobriety Program Information System. Beginning August 31st, 2013 these provisions went into effect (ND Office of Attorney General, 2013).

The purpose of this study is to determine whether the 24/7 sobriety program is effective in Cass County, North Dakota. To explain this relationship, recidivism rates of offenders who were enrolled in the program, both during participation and after, will be examined to determine whether or not the program has a deterrent effect. It is important to look at both during and after program participation to see if the 24/7 sobriety program has any long lasting effects. As statistics have shown, driving under the influence of alcohol or controlled substances is a problem not only in the country as a whole, but in North Dakota and Cass County as well. To address this issue the proper program needs to be implemented to not only reduce drunk driving, but also meet the needs of offenders in order to change their habits.

LITERATURE REVIEW

Over the years, various DUI programs have been reviewed around the country. The current study takes a look at not only the 24/7 Sobriety Program in North Dakota, but other DUI programs as well, to develop a better understanding of what truly works regarding future DUI arrests and convictions. The literature focuses on evaluations of various drug and alcohol treatment programs for DUI offenders, differing laws that mandate offenders to obtain sobriety, and characteristics of DUI offenders who choose to reoffend. A variety of methods are applied when studying these programs and findings suggest what can be done to prevent future DUI recidivism.

<u>DUI Treatment Programs</u>

In 1983, the Safe Roads Act was implemented in North Carolina to teach convicted DUI offenders about the dangers of drinking and driving. All DUI offenders in the state were court ordered to undergo a chemical dependency evaluation to determine if program placement was necessary. Upon entering the program, participants completed the Substance Abuse Life Circumstances Evaluation (SALCE) and completed an interview with a counselor. The interview asked information regarding demographics, medical and family history, criminal history including driving offenses, work history, and drug and alcohol abuse history. To study this program, Juhnke and Sullivan (1995) identified twenty-eight offenders who were participating in the substance abuse treatment. The participants were given a questionnaire before the program, and the same questionnaire was completed upon graduating the program. The questionnaire identified participants' attitudes and beliefs about drinking and driving, as well as, their drinking and driving behavior using Likert scales. This questionnaire along with data obtained from the program interviews and SALCE evaluations were complied to assess if the program, the

independent variable, had an effect on the offenders willingness to accept responsibility for their DUI offense. The results showed that offenders who participated in the program had significant increases in their willingness to accept responsibility for their drinking and driving behaviors regardless if the individual was a first time or repeat offender. This concludes that DUI programs can change offenders' attitudes towards the crime (Juhnke & Sullivan, 1995).

Hillsborough County Florida adopted a treatment program called TRIAD whose purpose was to decrease DUI recidivism. Moore and colleagues (2008) at the University of South Florida sought to examine the program and how it is implemented. The study focused on treatment factors like compliance, criminal justice factors such as recidivism rates, risk factors associated with DUI offenders like drug and alcohol use, and protective factors connected to these offenders such as motivation to change. The sample consisted of sixty-three participants who all had been convicted of one or more DUI offense and were sentenced by the court to DUI treatment. Upon entering the treatment program, offenders completed a group of self-report questionnaires. These questionnaires included CAGE to determine whether the individual had a drinking problem, the Michigan Alcoholism Screening Test, a readiness to change questionnaire, the general self-efficacy scale, the Rosenberg self-esteem scale, How I Think questionnaire, and a satisfaction measure to estimate satisfaction with the program. Additionally, researchers took into account the number of days each offender was in treatment, urinalysis results, whether they had successfully completed the program, and criminal histories. Findings revealed that the majority of offenders who had a self-reported drinking problem and completed the program had a stronger desire change their drinking and driving behaviors compared to those who did not complete the program. The results indicated that program graduates had an overall recidivism rate of thirteen

percent leading to the discovery that the program is an effective way to reduce DUI recidivism (Moore et al, 2008).

Liang and Long (2013) evaluated the Tulsa County DUI and drug programs in Oklahoma to determine whether gender influences program outcomes. To test this question, court docket information from Tulsa County was collected in all DUI and drug cases resulting in an official outcome from 2003 to 2006, totaling 683 cases. While controlling for race, employment status, marital status, education level, age, and number of children, the study analyzed clients' final outcome of their treatment program. To determine this, the variables used addressed participants' criminal history and official charges, drug and alcohol history, medical and mental health problems, and program progress. Results indicated that a significantly larger amount of females had preexisting medical conditions upon entering the program. As for early program termination, females were no more likely than males to be terminated from the program, however, Black females and females of other races were more likely to be terminated compared with White women. Education level was strongly associated with program termination as well, and criminal histories of women were not as important at predicting program outcome as they were for men (Liang & Long, 2013).

The level of alcoholism an offender is plagued with has also been found to be a significant predictor of DUI recidivism. Williams and colleagues (2000) evaluated the Virginia Safety Action Program (VASAP), which requires offenders to participate in substance abuse treatment, random drug screens, and meetings with case managers, to identify factors that influence DUI recidivism. A total of 377 probationers were included in the sample, and each probationer underwent the Michigan Alcohol Screening Test to predict alcohol use, attitudes towards drunk driving, and past DUI recidivism. Charts provided by the VASAP were also used

to predict recidivism which was defined as a driving while intoxicated conviction after successful completion or revocation from the program. These charts also provided additional variables including gender, ethnicity, occupation, court records, blood alcohol content levels at time of arrest, and criminal histories. The analysis showed that alcoholism affected an individual's ability to complete the program and was a significant predictor of future DUI recidivism (Williams et al, 2000).

Robertson and associates (2013) looked at the court-mandated Mississippi Alcohol Safety Education Program (MASEP) for individuals convicted of driving under the influence. Data complied from driving citation records, MASEP records, and data collected from the participants was then compared to drivers' licenses and social security numbers to develop one DUI recidivism list. Participants' assessments were matched with the official records to form a data set that included individuals' demographics, DUI recidivism, prior DUI arrests, program completion, the version of programming received, and problem severity they experienced. Findings show that individuals who successfully completed the program had significantly lower recidivism rates twelve months following the program compared to others who did not complete the program. The study also recognized characteristics correlated with lower recidivism rates including enrollment in the program, being older, achieving higher levels of education, being female or a minority, and having no prior DUI offenses (Robertson, 2013).

Not only is it important to look at the recidivism rates when evaluating a program, but the experiences of the offenders as well. Beck and colleagues (2015) examined DUI offenders in an alcohol ignition interlock program who had or had not changed their primary drinking location that might require them to drive drunk before the interlock installment compared to drinking at home after the interlock installment. To address these questions, participants in an interlock

ignition program in Arizona were emailed a survey. The survey contained questions regarding drinking behavior both before and after the interlock installation and how it affected their day-to-day lives, as well as, if the program would influence their likelihood of drinking and driving again. Demographic information such as gender, age, race, and income was collected, and additional items addressed prior drinking and driving behavior and questions relating to the interlock program itself. The results showed that offenders who changed where they drank from at the bar to at home consumed less alcohol overall and claimed that even after the interlock was removed they were still reminded to limit the amount of alcohol they drank, which in turn could reduce DUI recidivism (Beck et al, 2015).

Forcing offenders to be sober not just when behind the wheel, but all day every day is proven to be an effective way at reducing DUI recidivism as well. Kilmer and colleagues (2013) examined South Dakota's 24/7 Sobriety Project from a public health perspective to determine if the program had an effect on offenses in which alcohol was involved including DUI arrests and domestic violence arrests. Changes were observed between counties who adopted the 24/7 program compared to counties that did not adopt the program. The public health outcomes tested were DUI arrests, domestic violence arrests, and motor vehicle crashes collected from the Department of Criminal Investigation. Findings indicate that the 24/7 program participation yielded a slight reduction in both DUI arrests and domestic violence arrests, concluding that "swift, certain, and modest sanctions for violations can reduce problem drinking and improve public health outcomes" (Kilmer et al, 2013).

As we have seen, programs have a positive influence on DUI recidivism rates. In a longitudinal study on three Georgia DUI Courts, Fell and colleagues (2011) performed an impact evaluation to determine the courts' effectiveness. A treatment group of 363 offenders who had

completed the DUI program were compared to two separate groups of offenders. The first group contained a sample of DUI offenders who were convicted of a DUI before the DUI court's existence, and lastly the second group included offenders who were eligible to participate in the court, but were sanctioned in a county that did not have the court. After four years of the program, DUI Court graduates experienced significantly lower recidivism rates compared to those who did not receive the treatment at all. Additionally, having some exposure to the DUI Court despite early termination also had an influence on lowering recidivism rates. (Fell et al, 2011).

However, when comparing participation in DUI programs to regular probation, no difference has been found in terms of DUI recidivism. A Texas DUI court was assessed by comparing DUI court program graduates to a matched group of DUI offenders who successfully completed probation prior to the DUI court's existence. Members from both the control and treatment group were matched on factors including the number of prior DUI offenses, whether they had a felony record, age, race, gender, education, citizenship, marital status, presence of dependents, and risk/needs assessment scores. To measure recidivism, DWI arrests, new arrests, and the time between each were tested at both a six-month and twelve-month post-release period. Contrary to other studies, the results indicated that repeat DUI offenders perform no better in the DUI court than offenders who are given ordinary probation suggesting that DUI court is no more effective than probation (Cavanaugh & Franklin, 2012).

In a study of a twelve-week group therapy program for DUI offenders, participants were selected for the program based on the severity of blood alcohol content and the time of arrest, prior DUI history, a high score on the Michigan Alcohol Screening Test, and finally an evaluation by a clinical staff member. Nochajski and Miller (1993) compared individuals who

9

completed the program to those who only participated in the initial evaluation. The data were

collected through a face-to-face interview of the thirty-seven selected participants, as well as,

one telephone interview at the start of the program followed by one at the time of termination.

The interviews consisted of questions pertaining to demographic information, drinking and

driving history, alcohol use, attitudes about DUIs, and alcohol dependency problems. These data

was then compared to official records of DUI arrests. The results revealed a significantly higher

recidivism rate for offenders with a previous criminal history compared to those with no criminal

record. Additionally, individuals with no previous criminal history who had completed the

treatment had a significantly lower recidivism rate than program dropouts. The findings suggest

that criminal history matters when looking at DUI recidivism rates, and it may be important to

use prevention plans and treatment programs after the first conviction (Nochajski & Miller,

1993).

Through examining the DUI programs included in this study, a pattern has developed

indicating that participation in a DUI treatment program lowers DUI recidivism rates. In a

majority of the studies, individuals who participated in a DUI treatment program were less likely

to receive a DUI after completing the program compared to those who had no program exposure.

Additionally, several studies eluded to potential characteristics that lower one's risk of

recidivating. These characteristics include being enrolled in a program, being older in age,

having higher education levels, being female, having no prior DUI history, and having a desire to

change.

DUI Offender Characteristics

As seen in research on DUI treatment programs, offender characteristics have an

influence on recidivism rates. Attitudes towards drinking and driving are just one way to

measure the likelihood of DUI recidivism. Underlying issues relating to substance use can be predictors of DUI convictions as well. Huseth & Kubas (2012) conducted a survey of first-time and repeat DUI offenders in North Dakota. The questions asked the offenders to describe where they were drinking, how much they drank, what they were drinking, if at any time they had considered another form of transportation other than driving themselves, and any other events leading up to the arrest, as well as, the impact the DUI had on their life. The surveys were sent to all DUI evaluation providers in North Dakota and from there, the providers would ask their clients who were court mandated to undergo the evaluation if they would be willing to take the survey. A total of 1,066 surveys were collected from the years 2010 and 2011. Results showed a connection between drunk drivers not having a passenger in the car with them at the time of the arrest, suggesting that DUI offenders may have some underlying condition of alcoholism or low self- control and have the need to escape from others. This concludes that having issues with drinking and self-control can lead to individuals refusing assistance from others and choosing to get behind the wheel instead. Repeat offenders were found to be more likely to have used illicit drugs at the time of their arrest building on the issue of low self-control (Huseth & Kubas, 2012).

In Alaskan native communities, cultural and spiritual coping was found to be the key to managing sobriety. Hazel and Mohatt (2001) conducted interviews to a focus group of seven people to address their experiences with alcohol and their knowledge of Alaska's Native cultures. Surveys were then administered to members of the Native community addressing alcohol use. The results found that through culture and spirituality one can achieve the ultimate goal of sobriety. The reasons men reported for staying sober included: "acknowledging the benefits of sobriety, fearing the consequences of drinking, a conscious desire for sobriety,

11

support from family, formal support programs, keeping active, and religion or spirituality" (Hazel & Mohatt, 2001).

Using the Level of Service Inventory-Revised (LSI-R), a risk assessment tool, and the Adult Substance Use Survey (ASUS), an instrument used to assess patterns of alcohol and drug use, DeMichele and Lowe (2011) evaluated the likelihood of becoming a repeat offender. Comparing first-time DUI offenders to repeat DUI offenders, the data found that repeat DUI offenders were more likely to have previous criminal histories, substance abuse problems, and be less educated overall than first time offenders (DeMichele & Lowe, 2011).

Wiliszowski (1996) and colleagues used interviews to determine why individuals repeatedly drive while under the influence even after a prior DUI conviction. The interviews focused on offenders' personal experiences with the judicial system and their individual histories. One hundred eighty-two interviews were conducted with counselors in three separate locations in the United States: Phoenix, Pittsburgh, and the Eighteenth Judicial District of Colorado. Over the course of the interviews, some themes arose among offenders. Many expressed that they would not stop drinking and driving until they accepted responsibility for their behavior. A profound number of interviewees acknowledged that they had a stressful life causing them to develop a drinking problem which lead to their behavior. Drinking and driving was shown to decrease when offenders perceived that the certainty of police presence was higher. Additionally, contact with and support from family members and friends helped to reinforce "positive lifestyle changes" among offenders, changing their decision to get behind the wheel after a night of drinking (Wiliszowski et al, 1996).

Building on Wiliszowski and others' (1996) findings, Zajac and colleagues (2016) found that positive relationships are important for offenders not only in their personal lives but

throughout the treatment process as well. The HOPE Program, Honest Opportunity Probation with Enforcement, began in Hawaii in 2004 and uses drug testing along with swift and severe sanctions against positive drug tests. The program was most effective and easier to implement when the HOPE team members believed in their clients and that the program itself had a deterrent effect. This program was replicated and used in four different sites across the United States. Zajac and colleagues (2016) looked at these four programs to assess how they are implemented. Qualitative interviews were held with members of the HOPE team at all four sites. The interviews focused around the implementation and operation of the HOPE program and the programs' fidelity to identify any lessons other programs could be taught. The study found that teamwork was key in implementing the program. It was vital for the HOPE facilitator, law enforcement, corrections, probation, and the courts to collaborate and communicate for the program to operate effectively. Ultimately, the implementation process was widely influenced by the credibility of the program coordinator and regular team meetings to address day-to-day issues the program faces and create solutions to these problems for the program to influence change in offenders' behavior (Zajac et al, 2016).

Schell and colleagues (2006) surveyed two hundred eight repeat DUI offenders to predict recidivism based on the offender's personality traits, attitude, and behavior. By using scales to determine social desirability, hostility, impulsivity, sensation seeking behaviors, and alcohol expectancies, the research revealed that individuals who have "positive expectations" that alcohol is going to make them feel better emotionally continue to drink and drive despite additional DUI arrests and convictions (Schell et al, 2006).

As research has noted, several factors may be considered when predicting a DUI offender's likelihood to recidivate. The previous studies examined reiterate on what DUI

program research has found in that prior criminal history is a predictor of DUI recidivism. However, this research has expanded to include characteristics such as low self-control, stress and the inability to accept responsibility for one's actions as additional indicators of receiving multiple DUI convictions. These individuals may benefit from DUI treatment programming, including sobriety programs such as ignition interlocks.

Ignition Interlock Programs

In some states, ignition interlocks are used specifically for offenders convicted of multiple DUI offenses to deter them from driving after alcohol consumption. In Florida ignition interlocks were implemented for persons convicted of driving under the influence, however, once an offender had accrued three violations, they were required to undergo treatment for alcohol use disorder. In evaluating this program, Voas and colleagues (2016) looked at the recidivism rates of these offenders using DUI arrest and conviction data during the four-year period following the removal of the interlock. Six hundred forty repeat DUI offenders who received treatment while the interlocks were installed were matched with 806 offenders who were not required to attend treatment during the time the interlock was installed. Results showed that individuals in the treatment group had a lower recidivism rate, by roughly one-third, than those who did not receive any treatment (Voas et al, 2016).

McCartt and colleagues (2013) looked at the effects of Washington state's alcohol ignition interlock law. In July 1987 courts were given the ability to issue an interlock order for any DUI offender for the period of six months. However, concerns arose that the courts may have too much discretion regarding issuing the interlock orders, so the administration moved to the Department of Licensing in July 2003. Beginning in June of the following year, the interlock program was applied to first time DUI offenders for the period of one year. This study sought to

14

determine how the law changes affected the recidivism rates of first-time offenders. All drivers'

license records were collected in Washington on July 22, 2010. All DUI convictions from 1999

onward were used, and from those all first-time offenders were found. Recidivism, convictions,

and interlock orders were tracked for each offender. Overall, the changes in Washington's

interlock law reduced the recidivism rate of first time offenders by twelve percent. Offenders

who installed the interlocks were significantly less likely to recidivate (McCartt et al, 2013).

Paving the way in experimental research when studying DUI recidivism, Beck and

associates (1999) randomly assigned offenders who were eligible for license reinstatement to

either an ignition interlock program or the control group. Ignition interlocks are sometimes

installed in DUI offenders' vehicles to deter them from getting behind the wheel after consuming

alcohol. Essentially, the device is a breathalyzer that requires the driver to provide a breath

sample before starting the vehicle. If the breath supplied is over the allowable blood alcohol

concentration level, the car will not start. All cases were followed through the Motor Vehicle

Administration to determine if the offender committed another alcohol related traffic violation

during the time the interlock was installed, or two years after the study when the license was

reinstated and the interlock removed. The study found that within the one-year period after the

interlock was installed, a driver's risk of committing another DUI offense was reduced

approximately sixty-four percent. However, there was no evidence that the effects of having the

interlock in the first year extended over the entire two years indicating that some offenders might

need the interlock for longer than a one-year period (Beck et al, 1999).

Rauch and colleagues (2011) replicated this study years later with drivers who had two or

more alcohol-related traffic violations throughout their life. A total of 1,927 offenders were then

randomly assigned to either the ignition interlock restriction program or the control group for a

two-year period. The treatment group had interlocks installed in their vehicle, while the control group was required to take part in the Drinking Driver Monitor Program which required them to report to a probation monitor who administered breathalyzer tests and confirm they were attending treatment. Results showed that compared to the control group, offenders participating in the interlock program were approximately one-third less likely to receive another alcohol-related traffic offense, not only during the period of the interlock installment, but also during the two-year postintervention time frame as well (Rauch et al, 2011).

As research on ignition interlock programs suggests, DUI recidivism rates are lower for participants than non- participants. The main component of ignition interlock programs is for the participant to be sober while behind the wheel. The current study looks into a program that focuses on participants behind sober twenty-four hours a day, seven days a week rather than only while driving.

RESEARCH QUESTIONS

As previous research has shown, participation in a DUI program can positively influence a person's likelihood of reoffending. In this study, the 24/7 Sobriety Program in Cass County, North Dakota will be assessed. The following research questions will be addressed:

1. Do differences in recidivism rates exist between alcohol related DUI offenders and drug related DUI offenders in the Cass County 24/7 Sobriety Program both while enrolled in the program and after exiting the program?

2. Do differences in recidivism rates exist between male and female participants in the Cass County 24/7 Sobriety Program both while enrolled in the program and after exiting the program?

3. Does length of participation in the Cass County 24/7 Sobriety Program determine an offender's likelihood to recidivate?

RESEARCH METHODS

The Cass County Sheriff's Office provided historical records of individuals enrolled in

the 24/7 Sobriety Program. The records included eight years of participant records from 2010

through 2018. The records included the first and last name of each participant, as well as, the

date they started the program and the date of completion. A total of 4,236 participant records

were received. Through the process of systematic random sampling in which every eight name

was selected, 529 records were selected. Due to duplicate entries, seven records were removed,

and a total of 522 records were used for the purpose of this study. Every eighth name was

selected for the purposes of time efficiency, and to acquire enough power to statistically analyze

the population.

The 522 selected records were then reviewed by the Corporal Chad Violet, head of Cass

County's Community Supervision Unit, who manages the county's 24/7 Sobriety Program.

Corporal Violet identified which individuals received alcohol monitoring and which received the

drug patch. Of the 522 records, 303 were found to be alcohol monitoring participants and 219

were found to be drug patch participants.

Next, the names of the selected participants were individually entered into a global

subject search on Tyler Technologies New World Corrections system. This information provided

the sex and date of birth of each participant. Once the dates of birth were determined, each name

and date of birth was entered into both the North Dakota Courts Records Inquiry and the

Minnesota Trial Court Public Access Remote View online websites. The number of total

misdemeanor and felony convictions and number of DUI convictions were recorded for each

participant. Additionally, the number of DUI convictions after completion of the 24/7 program

was documented. The age of each participant was calculated and duration of program participation was determined.

Independent Variables

The present study uses the following primary independent variables: age, gender, drug choice, duration in the program, number of program enrollments, total felony and misdemeanor convictions, and total DUI convictions. These variables were used, as prior research has noted their importance.

Age is often correlated with recidivism rates, as an offender gets older, their likelihood to recidivate decreases (Robertson, 2013). Previous research has indicated females are less likely to recidivate than males (Liang & long, 2013; Robertson, 2013). Huseth & Kubas (2012) found that repeat DUI offenders are more likely to use illicit drugs, thus drug choice, either alcohol or drug related DUI, was used in this study. Length of program participation is also important in factoring in the appropriate amount of intervention needed to decrease recidivism rates (Beck et al., 1999). Additionally, the number of times an individual is enrolled in the same treatment program can influence recidivism (Robertson, 2013). Individuals with prior criminal histories are more likely to recidivate (Nochasjki & Miller, 1993), particularly those with a history of prior DUIs have higher recidivism rates as well (Robertson, 2013). Table one further describes these variables.

Table 1

Description of Independent Variables

Variable	Description
Age at time of participation	Enrollee's age at the time of entering the program measured in years
Gender	Binary indicator of whether enrollee is male (1) or female (2)
Drug choice	Binary indicator of whether enrollee was participating in program for an alcohol related offense (1) or a drug related offense (2)
Duration in program	Number of days individual was enrolled in the program
Number of enrollments	Number of times individual was enrolled in the program
Total misdemeanor/felony convictions	Total number of misdemeanor convictions and felony convictions
Total DUI convictions	Total number of DUI convictions

Dependent Variables

Recidivism, the outcome variable in this study, is measured two different ways. The first way it is measured is whether the enrollee received a DUI conviction within seven years of exiting the program. Seven years was used as the state of North Dakota penalizes individuals more harshly for receiving two or more subsequent DUIs within a seven year time frame. The second way recidivism is measured includes both a DUI conviction during program enrollment and within seven years after exiting the program. Both periods of time are important to look at as they determine if participating in the program has a deterrent effect on receiving a new DUI conviction, and if the effects are long lasting even after exiting the program.

The data was then entered into the Statistical Package for Social Sciences (SPSS). Chi-square analysis, t-tests, and logistic regression was used to answer the research questions.

RESULTS

Table two displays the frequency counts and percentages for the relevant variables in the analysis. During the time frame for this study, there were 303 (58%) participants enrolled who listed alcohol as their drug of choice and 219 (42%) enrollees who were in the 24/7 program on drug charges. A little more than three quarters of the enrollees were male (76.8%) and less than one quarter of the enrollees were female (23.2%). The average age of enrollees during the time of study was 33.8 with a minimum age of 18.2 and a maximum age of 81.5.

Table two shows that enrollees in the 24/7 program were enrolled an average of 1.4 times with a high of seven enrollments for one participant. The bulk of these enrollees were enrolled once in the 24/7 program (68.6%) while another 21.8 percent were enrolled twice. An examination of the criminal records of these participants reveals that they recorded a mean number of total criminal charges of 9.7 with a high of 82 charges for one participant. The average number of DUI's for these enrollees was 1.9 with a high of 19 DUI's for one participant. The average amount of time spent in the 24/7 program for these participants was around 4 months with a low of a couple of days and a high of 3.1 years.

Table 2

Characteristics of Sample

Variable	n	%	
Gender			
Male	403	76.9	
Female	121	23.1	
Substance Choice			
Alcohol	305	58.2	
Drugs	219	41.8	

	Mean	Std. Deviation	Range
Age	33.89	10.78	63.33
Number of Enrollments	1.45	.80	6
Prior Charges	9.73	8.19	82
Prior DUIs	1.93	2.01	19
Duration in Program	.39	.44	3.13

Table three displays the frequency counts and percentages for the dependent variables in the analysis. After completion of the program, there were 472 (90.4%) participants who were not convicted of a DUI within a seven-year time frame, while 50 (9.6%) were convicted of a DUI within that time frame. When post program DUI convictions were combined with DUI convictions while participating in the program, there were 462 (88.5%) participants who were not convicted of a DUI while enrolled in the program and within seven-years following the program, while 60 (11.5%) of participants were convicted with a DUI in that period of time.

Table 3

Distribution of Dependent Variable

Variable	n	%
Post Program DUI		
Not convicted of a DUI	472	90.4
Convicted of a DUI	50	9.6
During/After Program DUI		
Not convicted of a DUI	462	88.5
Convicted of a DUI	60	11.5

Table four examines whether there are existing differences between enrollees who were charged with a DUI offense versus a drug related offense. Table three shows that alcohol enrollees were on average slightly older than drug related enrollees (35.5 vs. 31.7). This difference was statistically significant at the alpha .05 level. Also, alcohol participants were enrolled significantly longer in the program than drug related enrollees by about three months. Finally, there were differences between the two groups in terms of total DUI's with alcohol enrollees reporting 2.8 DUI convictions versus .7 for the drug related group. This difference was also significant at the alpha .05 level.

Table 4

Characteristics of Drug vs. Alcohol Related DUI Offenders

	N		Mean		Std. Deviation		T-value Significance	
	Alcohol	Drugs	Alcohol	Drugs	Alcohol	Drugs		
Age*	301	217	35.5	31.7	11.6	9.0	4.03	0.00
Duration of Program*	303	219	0.5	0.2	0.5	0.2	9.3	0.00
Number of Enrollments	303	219	1.4	1.5	0.8	0.8	-.44	0.66
Total Charges*	303	219	9.3	10.4	8.6	7.6	-1.56	0.12
Prior DUIs*	303	219	2.8	0.7	2.1	1.1	13.46	0.00

*p < .05

Table five shows any differences between males and females regarding relevant analytical variables. Table four demonstrates that male enrollees had on average slightly more prior misdemeanor and felony convictions than female enrollees (10.5 vs. 7.2). This difference was statistically significant at the alpha .05 level. Also, male enrollees reported 2.1 DUI convictions versus 1.5 for the female group. This difference was also significant at the alpha .05 level.

Table 5

Characteristics of Male vs. Female DUI Offenders

	N		Mean		Std. Deviation		T-value	Significance
	Male	Female	Male	Female	Male	Female		
Age	398	120	34.1	33.3	11.0	10.0	0.74	0.46
Duration of Program	401	121	0.4	0.3	0.4	0.8	1.30	0.19
Number of Enrollments	401	121	1.5	1.5	0.8	0.8	0.09	.927
Total Charges*	401	121	10.5	7.2	8.7	5.6	3.96	0.00
Prior DUIs*	401	121	2.1	1.5	2.1	1.5	2.70	0.01

*$p < .05$

Table six examines whether there is an association between the two 24/7 groups and gender. Sixty percent of enrollees in the alcohol group were male compared to only 40 percent male in the drug related group. While this difference was not statistically significant at the alpha .05 level ($p = .053$) it was deemed close enough to control for each variable in the multivariate analysis. The fact that gender was slightly skewed for each group suggests that our estimates could end up being biased without controls in the analysis.

Table 6

Association between Substance Type & Gender of DUI Offenders

Drug Choice	Gender	
	Male	Female
Alcohol	60.3%	50.4%
	(242)	(61)
Drugs	39.7%	49.6%
	(159)	(60)

Likelihood Ratio 3.74, df 1, p .053

Table seven examines the first principal research question regarding whether group membership (alcohol versus drugs) is associated with the odds of recording a DUI following

their exit from the 24/7 program. In model one gender and age were entered into the equation first. Neither gender nor age was associated with a post DUI. In model two, number of 24/7 enrollments, duration of program, total charges, and prior DUI's were entered. In this model, age is now a significant correlate of a post DUI (b = -.046). The negative sign indicates that younger enrollees were more likely to record a post DUI than older enrollees. Other significant correlates in model two include number of enrollments (b = .80), duration in the program (b = -1.03), and prior DUI's (b = .61). The higher the number of enrollments, the greater the odds or recording a post DUI. Duration in the program is negative, suggesting that enrollees who spent less time participating in the program are more likely to acquire a post DUI. And, total DUI's are associated with higher odds of a post DUI. In the third model, substance choice (alcohol or drugs) was added. In this model, age is a significant correlate of a post DUI (b = -.047), meaning younger enrollees were more likely to record a post DUI than older enrollees. Number of enrollments (b = .804), duration of program (b= -.971), and prior DUI's (b= .677) were all significant correlates of model three. The higher number of enrollments, the greater the odds or recording a post DUI. Duration in the program is negative which suggests that enrollees who spend less time participating in the program are more likely to acquire a post DUI. Additionally, total DUI's are associated with higher odds of a post DUI. Substance choice (alcohol vs. drugs) was not a significant predictor of post DUI conviction (b= .486).

Table 7

Predicting DUI Recidivism Post 24/7 Enrollment by Drug Choice

	Model 1			Model 2			Model 3		
	B	SE	Exp(B)	B	SE	Exp(B)	B	SE	Exp(B)
Gender	-.35	.38	.71	-.12	.43	.88	-.13	.43	.88
Age	.00	.01	1.00	-.05*	.02	.96	-.05*	.02	.95
Number of Enrollments				.80*	.17	2.23	.80*	.17	2.24
Duration of Program				-1.03*	.44	.36	-.97*	.44	.38
Total Charges				-.04	.03	.96	-.05	.03	.96
Prior DUIs				.61*	.11	1.85	.68*	.13	1.97
Drug Choice							.49	.45	1.63
Constant	-2.291	.50	.10	-2.83	.68	.06	-3.08	.72	.05
-2 Log Likelihood		327.637			249.667			248.510	
Nagelkerke R Square		.004			.301			.305	

*p < .05

Table eight expands on the first principle question regarding group membership (alcohol vs. drug) by examining the odds of receiving a DUI both during program enrollment and after exiting the program. In model one, gender and age were entered into the equation. Neither gender nor age were associated with receiving a DUI during or after enrollment. In the second model, number of enrollments, duration of program, total charges, and prior DUIs were added. Age became a significant correlate in this model (b= -.06). This states younger enrollees were more likely to record a DUI during or after program enrollment than older enrollees. Number of program enrollments was also significant (b= .68), as well as prior DUIs (b= .60), meaning that enrollees who have a higher number of enrollments in the program have a greater likelihood of receiving a DUI during or after enrollment, those with prior DUIs have a greater likelihood as well. In the third model, gender was added to the equation. Age (b= -.06), number of enrollments (b= .69), and prior DUIs (b= .69) all remained significant predictors for an individual's

likelihood of receiving a DUI both while enrolled in the program, and exiting the program. Substance choice had no significant effect on this.

Table 8

Predicting DUI Recidivism During and After 24/7 Enrollment by Drug Choice

	Model 1			Model 2			Model 3		
	B	SE	Exp(B)	B	SE	Exp(B)	B	SE	Exp(B)
Gender	-.10	.33	.90	.17	.37	1.19	.16	.37	1.18
Age	-.01	.01	.99	-.06*	.02	.94	-.06*	.02	.94
Number of Enrollments				.68*	.16	1.98	.69*	.16	1.99
Duration of Program				-.46	.35	.63	-.38	.36	.69
Total Charges				-.03	.03	.97	-.04	.03	.96
Prior DUIs				.60*	.10	1.82	.69*	.12	1.99
Drug Choice							.65	.41	1.91
Constant	-1.725	.47	.18	-2.18	.61	.11	-2.50	.66	.08
-2 Log Likelihood		370.928			294.738			292.257	
Nagelkerke R Square		.002			.269			.277	

*p < .05

Tables nine and ten examine the second principal research question regarding whether gender (male versus female) was associated with the odds of recording a DUI following their exit from the 24/7 program. Males and females were run separately in order to assess whether each was differently affected by the variables in the study. Table nine examines whether being female was associated with the odds of recording a DUI following their exit from the 24/7 program. In model one, age and substance choice were first entered into the equation. Neither age nor substance choice were associated with post DUI conviction. In model two, number of 24/7 enrollments, duration of program, total charges, and prior DUI's were entered. In this model, prior DUIs were a significant correlate of a post DUI (b = 1.39). This indicates that females with higher numbers of prior DUI offenses were more likely to be convicted of a DUI after exiting the program. Other significant correlates in model two include age (b = -.12), total

charges (b = .59), and number of enrollments (b = .87). This indicates that the younger the

enrollee, the more likely they were to have a post DUI. Additionally, the higher number of

enrollments, the greater the likelihood of acquiring a post DUI.

Table 9

Predicting DUI Recidivism Post 24/7 Enrollment for Females

	Model 1			Model 2		
	B	SE	Exp(B)	B	SE	Exp(B)
Age	-.02	.04	.98	-.12*	.07	.89
Drug Choice	-1.40	.83	.25	1.10	1.34	3.0
Number of Enrollments				.87*	.49	2.37
Duration of Program				-1.66	1.15	.19
Total Charges				.59	.07	1.06
Prior DUIs				1.39*	.47	4.0
Constant	-1.40	1.25	.25	-3.81	2.01	.022
-2 Log Likelihood		60.471			41.214	
Nagelkerke R Square		.069			.172	

*p < .05

Table ten examines whether being male was associated with the odds of recording a DUI

following their exit from the 24/7 program. In model one, age and substance choice were first

entered into the equation. Neither age nor substance choice were associated with post DUI

conviction. In model two, number of 24/7 enrollments, duration of program, total charges, and

prior DUI's were entered. In this model, prior DUIs were a significant correlate of a post DUI (b

= .62). This indicates that males with higher numbers of prior DUI offenses were more likely to

be convicted of a DUI after exiting the program. Other significant correlates in model two

include duration in the program (b= -1.01). Here the less time enrolled in the program, the

higher the odds of a post DUI. Also significant was the number of enrollments (b = 2.50),

indicating that the more times the individual was enrolled in the program, the higher their

likelihood of receiving a post DUI.

Table 10

Predicting DUI Recidivism Post 24/7 Enrollment for Males

	Model 1			Model 2		
	B	SE	Exp(B)	B	SE	Exp(B)
Age	.00	.02	1.00	-.04	.02	.96
Drug Choice	-.36	.36	.99	.62	.49	1.9
Number of Enrollments				.92*	.20	2.50
Duration of Program				-1.01*	.51	.36
Total Charges				-.06	.03	.94
Prior DUIs				.62*	.13	1.86
Constant	-2.16	.57	.12	-3.29	.81	.04
-2 Log Likelihood		262.595			198.443	
Nagelkerke R Square		.006			.313	

*p < .05

Tables eleven and twelve expand on the second principle question regarding gender (male vs. female) by examining the odds of receiving a DUI both during program enrollment and after exiting the program. Table eleven examines whether being female is associated with the odds of receiving a DUI both during program enrollment and after exiting the program. In model one, age and substance choice were first entered into the equation. Neither age nor substance choice were associated with post DUI conviction. In model two, number of 24/7 enrollments, duration of program, total charges, and prior DUI's were entered. In this model, age (b= -.13) was a significant correlate of receiving a DUI either during or after program enrollment. This means younger participants were more likely to receive a DUI while enrolled in the program or after exiting the program. Model two also included significant correlates for duration of program participation (b= - .57) and prior DUI's (b = 1.03).

Table 11

Predicting DUI Recidivism During and After 24/7 Enrollment for Females

	Model 1			Model 2		
	B	SE	Exp(B)	B	SE	Exp(B)
Age	-.05	.03	.95	-.13*	.05	.88
Drug Choice	-2.0	.80	.14	-.18	1.07	.83
Number of Enrollments				.48	.45	1.61
Duration of Program				-.57*	.89	.57
Total Charges				.04	.06	1.04
Prior DUIs				1.03	.34	2.80
Constant	.02	1.13	1.02	-1.21	1.50	.30
-2 Log Likelihood		72.620			56.569	
Nagelkerke R Square		.156			.389	

*p < .05

Table twelve looks at whether being male was associated with the odds of receiving a DUI both during program enrollment and after exiting the program. In model one, age and substance choice were first entered into the equation. Neither age nor substance choice were associated with post DUI conviction. In model two, number of 24/7 enrollments, duration of program, total charges, and prior DUI's were entered. In this model, prior DUIs were a significant correlate of a post DUI (b = .63). This indicates that males with a higher number of prior DUI offenses were more likely to be convicted of a DUI after exiting the program. Other significant correlates in model two include age (b= -.05) and number of total charges (b= -0.57). This indicates that the younger the enrollee, the more likely they were to have a DUI. Additionally, the higher number charges the greater the likelihood of acquiring a DUI either during or after program enrollment.

Table 12

Predicting DUI Recidivism During and After 24/7 Enrollment for Males

	Model 1			Model 2		
	B	SE	Exp(B)	B	SE	Exp(B)
Age	-.01	.01	1.0	-.05	.02	.95
Drug Choice	-.18	.33	.84	.97	.46	2.64
Number of Enrollments				.85	.19	2.34
Duration of Program				-.44*	.42	.64
Total Charges				-.057*	.029	.95
Prior DUIs				.63*	.13	1.87
Constant	-1.79	.55	.17	-3.03	.76	.05
-2 Log Likelihood		288.683			224.675	
Nagelkerke R Square		.002			.289	

*p < .05

Next, a Cox Regression analysis was performed for each gender (male vs. female) and drug choice (alcohol vs. drugs) to control for time at risk. For the purposes of data reduction and ease of interpretation for the reader, the analytical models examining gender and drug choice will not be shown. As table thirteen outlines, the number of program enrollments is a significant correlate of a post DUI. This indicates that as the number of enrollments increase, the likelihood of receiving a DUI increases as well.

Table 13

Predicting DUI Recidivism While Controlling for Time in Program

	B	SE	Exp(B)
Gender	-.46	.44	.63
Drug Choice	.05	.38	1.06
Age	.01	.01	1.01
Number of Enrollments	.54*	.12	1.72
Total Charges	-.01	.02	.99
Total DUIs	13.43	34.27	678172.13
Time in Program	-.00	.00	1.0
-2 Log Likelihood		309.234	

*p < .05

Finally, to illustrate Table 13, survival curves were formulated for both gender and drug choice. Figure I and Figure II both indicate that as cases move across time, there are no great differences in likelihood of being convicted of another DUI.
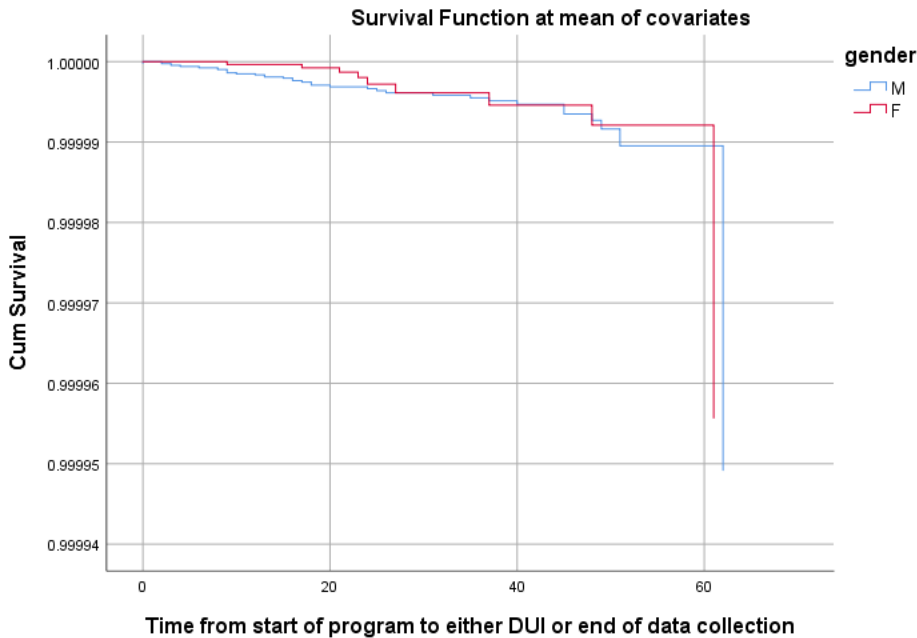

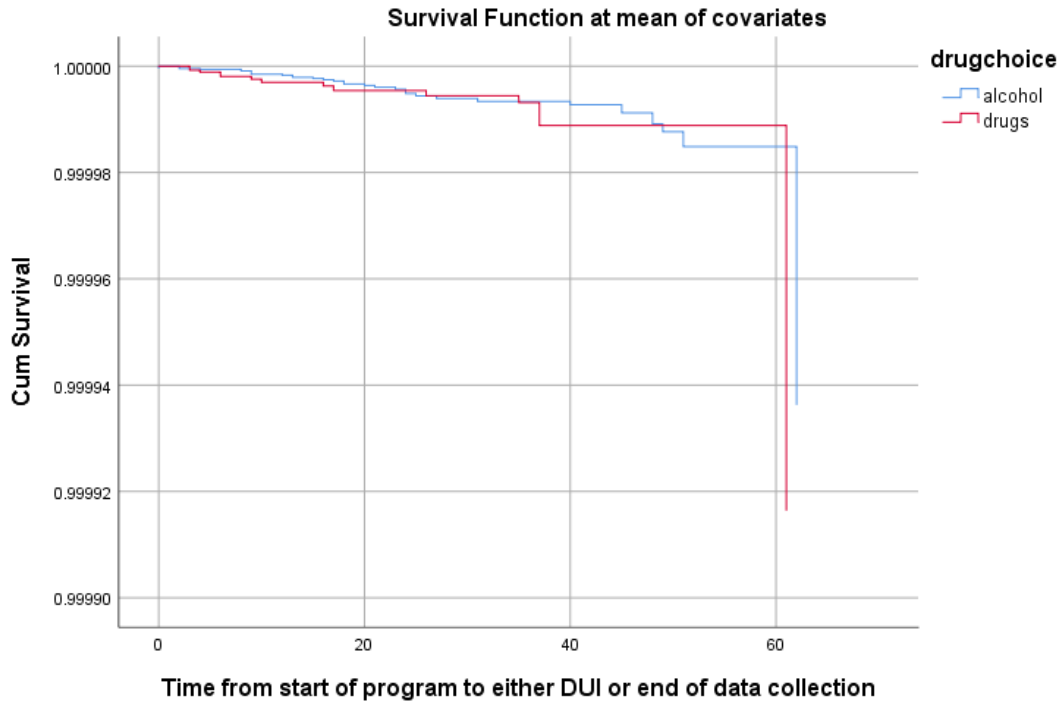*Figure 1.* Predicting DUI Recidivism by Gender Over Time

Figure 2. Predicting DUI Recidivism by Drug Choice Over Time

DISCUSSION AND CONCLUSIONS

The intent of this report was to investigate recidivism rates of DUI offenders enrolled in the Cass County 24/7 Sobriety Program beginning in 2010 and up through 2018. Specifically, the differences between male and female recidivism rates was examined, whether drug choice (alcohol or drugs) had an effect on recidivism rates, and lastly the relationship between the length of program participation and recidivism rates was compared.

In investigating research question one, the differences in recidivism rates between alcohol-related DUI offenders and drug-related DUI offenders, no significant difference was found between the two groups. This means that individuals on the alcohol monitor were just as likely as individuals on the drug patch to be reconvicted of a DUI. The results were the same both while enrolled in the program and after exiting the program. Similarly, in examining research question two, the differences in recidivism rates among male and female offenders, no significant difference was found. The likelihood of receiving another DUI conviction either while in the program or after exiting the program was the same for males and females.

The most profound findings from the current report pertains to research question three, the length of participation in the program. Although the average time spent in the program was roughly 4 months, there were a number of individuals enrolled for just a matter of days. In each logistic regression analysis, length of program participation was negative meaning the longer an individual was enrolled in a program the less likely they were to receive a DUI conviction while enrolled in the program or after exiting the program.

This information could be extremely useful to court officials sentencing offenders to a term of participation in the 24/7 Sobriety Program. As this study suggests, a longer amount of time spent in the program leads to lower recidivism rates. Policymakers might also keep this in

mind when adjusting the provisions of the program to eventually make program length uniform for everyone. However, difficulties with this may arise when people are placed on the program as a condition of probation, as length of participation is under the discretion of the supervising probation officer.

As other research has noted, prior criminal history is a significant predictor of DUI recidivism (Nochajski & Miller, 1993; Robertson, 2013). Likewise, this was true in the present study. As the current 24/7 Sobriety Program is only used for repeat DUI offenders, lawmakers may want to take into consideration that individuals with a prior criminal history may benefit from the program upon receiving their first DUI conviction. Likewise, individuals with prior DUI convictions are more likely to receive additional DUIs. This study suggests that those repeat offenders should be participating in the program for an adequate amount of time to ensure program effectiveness.

Although this study found that length of program participation is key to lower recidivism rates, some limitations do exist. The data received from the Cass County Sheriff's Office did not include if the individual graduated successfully or unsuccessfully from the program or the number of times the enrollee violated the conditions of the program. Additionally, data was not available on whether enrollees were participating in chemical health treatment besides the sobriety program which could have had an impact on the results as well.

Court records were only available through online access sites for both North Dakota and Minnesota. These records are limited to what has been entered into their individual systems and may not include entire histories of certain enrollees who were over the age of eighteen prior to the websites' launching. This potentially could have thrown off the reported prior criminal histories and prior DUI convictions of older individuals enrolled in the program.

This study focused on Cass County, the most populous county in North Dakota. Although it did not look at the state as a whole, the findings could be useful in predicting recidivism in other parts of the state, as length of program participation mattered regardless of age, gender, or substance choice. For the 24/7 Sobriety Program across the entire state of North Dakota to successfully reduced DUI recidivism among their offenders, they may want to consider adjusting the time their enrollees are participating in the program. Further research is necessary to determine the treatment threshold in DUI programs.

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