Journal of Social Sciences

Research Article

Testing a Specific Deterrence Model on Drunk Driving Recidivism

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Article history
Received: 13-03-2025
Revised: 14-03-2025
Accepted: 07-04-2025

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Abstract: Driving under the influence of alcohol is a unique and significant public health issue. Wisconsin is of particular concern due to the high levels of binge drinking and incidences of drinking and driving. Legal sanctions for reducing drinking and driving have been influenced by the tenets of deterrence theory, yet the effectiveness of these approaches remains inconsistent. The current study contributed to criminological theory and practice by testing a specific deterrence model on a sample of individuals who were incarcerated in a local correctional facility to determine the influence of both deterrent and individual factors on the likelihood of drunk driving recidivism. Results of the study, as well as policy implications and future research are discussed throughout the paper.

Keywords: Drunk Driving, Recidivism, Deterrence Theory, Specific Deterrence

Introduction

Driving under the influence of alcohol is a unique and significant public health issue in the United States. In 2018, approximately one million arrests were made nationwide for drinking and driving (Federal Bureau of Investigation, 2019), and drunk drivers have been found to have four times greater odds of getting into a crash compared to sober drivers (National Highway Traffic Safety Administration, 2015). In fact, it is estimated that 29% of all fatal motor vehicle crashes involve a drunk driver, representing about 10,511 people in 2018 who were fatally killed (Foundation for Advancing Alcohol Responsibility, 2019). Drunk diving is a concern nationwide, but Wisconsin faces particular challenges with this issue. Wisconsin has some of the highest levels of binge drinking in the nation (Cushman, 2019), and in turn, is one of the top states for driving under the influence and alcohol-related fatalities. To illustrate the magnitude of this issue, in 2019 there were 5,957 drunk drivers involved in motor vehicle crashes, 22,683 Operating While Intoxicated (OWI) Bayer, 2017 citations issued, 22,785 OWI arrests made, and almost 21,000 OWI convictions (Wisconsin Department of Transportation, 2020). Some speculate these staggering statistics are in part because Wisconsin is the only state in the nation where most first-time OWI offenses are not considered a criminal violation. Instead, a first-time OWI typically results in a fine and/or license suspension, as well as an alcohol/drug use assessment (Cushman, 2019; Freiburger & Sheeran, 2018).

Of particular importance in both Wisconsin and across the nation is the control of repeat drunk drivers: Individuals who reoffend following a drunk-driving-related conviction. It is estimated that roughly one-third of all drivers who are arrested or convicted of a DUI each year are repeat offenders and significantly overrepresented in fatal crashes (Oh *et al.*, 2020). Prior studies on DUI recidivism have reported recidivism rates between 20 and 38% (Cavaiola *et al*., 2007; Cornish and Marlow, 2003; Schell *et al*., 2006). In the criminal justice system, policies designed to deter DUI offenders from repeating the offense, such as legal sanctions, draw upon various criminological theories, including deterrence theory. The use of fines, license suspension/revocation, incarceration, and other types of punishment are thought to prevent individuals from engaging in drinking and driving behavior in the future, yet the literature has been inconsistent in the deterrent effect of these approaches. The current study contributes to both criminological theory and practice by exploring the elements of deterrence theory to better understand repeat drinking and driving behavior. Many policies have been developed based on deterrent ideals, but whether these approaches are the most appropriate remains a question. The present research has implications for theory, policy, and responses to drunk drivers, as well as potentially predicting future offending. Policies and practices to address drunk driving can be improved by identifying the deterrence and individual factors that contribute to repeat offenses, allowing for empirically supported responses to these offenders.

Literature Review

Deterrence Theory and Drunk Driving Recidivism

Deterrence theory is based on the premise that people make choices by weighing the potential benefits against the potential costs (Vingilis, 1990). Deterrence theory assumes that offenders: (1) are rational, (2) have free will, (3) are hedonistic, (4) can control their behaviors, (5) can be deterred by fear and punishment, and (6) are educated on laws and sanctions (Stringer, 2021b; Vingilis, 1990; Zimring and Hawkins, 1973). Individuals engage in a cost-benefit analysis before acting, taking into account the probability of being caught, the likelihood of punishment if apprehended, and the harshness of that punishment (Stringer, 2021b). According to deterrence theory, the perception that punishment for a particular behavior will be certain, swift, and severe will decrease the likelihood of that behavior occurring (Nochajski and Stasiewicz, 2006; Vingilis, 1990). However, scholars have raised the question whether deterrence theory is effective for DUI offenders since they are no longer rational beings once they are under the influence of alcohol, compelling the need for continued research.

Previous research on DUI behavior and relapse has explored the application of both general and specific deterrence strategies. The concept of general deterrence examines the effects of punishment threats on the general public, specifically how these threats discourage people from engaging in illegal behavior (Zimring and Hawkins, 1973). Examples of general deterrence strategies include publicizing DUI arrests and convictions, zero tolerance laws, legal limits for drinking and driving, and checkpoints or roadblocks (Nagin and Pogarsky, 2001; Nochajski and Stasiewicz, 2006). Specific deterrence aims to prevent a particular individual from reoffending by using punishment as a consequence of their criminal behavior, including incarceration, license suspension or revocation, fines, and education or treatment (McArthur and Kraus, 1999; Nochajski and Stasiewicz, 2006; Wagennaar and Maldonado-Molina, 2007; Zimring, 1988; Zimring and Hawkins, 1973). Thus, specific deterrence is most effective to the offender when the punishment occurs in close proximity to the arrest (swiftness), is applied consistently (certainty), and is just severe enough to outweigh the benefits of initially engaging (severity).

Research examining the effectiveness of swift, certain, and harsh punishments for DUI offenders have produced mixed findings throughout the literature (Bouffard *et al*., 2017; Lee and Teske, 2015a; Piquero and Paternoster, 1998; Ross *et al*., 1990; Stringer, 2021a-b; Yu, 1994; 2000). A study examining drunk driving deterrence using data from the National Survey of Drinking and Driving Attitudes and Behaviors found that prior experiences with punishment were positively associated with the certainty of punishment (Stringer, 2021a-b). Studies have further determined that the certainty of costs, particularly legal costs, were related to lower intentions to drive drunk and that past DUI sanctions were correlated with an increased likelihood of drunk driving (Bouffard *et al*., 2017). Similar results were found in another study where the deterrent effect of mandatory license suspension was influential in the reduction of recidivism for DWI offenders (Lee and Teske (2015b) also determined that severity of punishment was influential in providing a deterrent effect. Other evaluations, like that of Ahlin *et al.* (2011), have concluded that offenders with a prior DWI arrest were at a significantly higher risk of recidivating, regardless of the severity of sanction (administrative, judicial, diversion) received.

While several studies have determined some effectiveness of deterrence, other studies have questioned the deterrent effect of these approaches. For example, Lee and Teske (2015a-b) also determined that the certainty of punishment (measured by the ratio of prior convictions to prior arrests) did not significantly affect survival time for felony DWI probationers. This study also found that the swiftness of punishment had a negative and opposite effect on the length of survival time (Lee & Teske, 2015a-b). Yu (1994) found that the swiftness of punishment was not significant in a study of DUI convictions for offenders. Overall, there was little relationship between past DUI punishment and perceived certainty or severity of costs, indicating a potential resetting effect. A further study by Rahman and Weatherburn (2021), revealed that severity, as measured by imprisonment, did not reduce the risk of DUI recidivism. Further, Freeman *et al*. (2020) administered a questionnaire on perceptions of legal and non-legal drinking and driving sanctions and determined that non-legal sanctions (e.g., fear of physical or social harm) were stronger deterrents than legal sanctions. Instead, demographic characteristics such as race/ethnicity, gender, and criminal history were better predictors. The inconsistent evidence provided thus far in the literature brings into question the potential deterrent effect on this type of population who are impaired at the time of decision-making and calls in the need for additional research.

Strategies to Reduce Drunk Driving Recidivism

Several strategies have been employed to reduce the likelihood that a DUI offender will engage in future drinking and driving behavior, of which some may be more effective than others. Previous studies have generally indicated that imposing mandatory fines effectively lowers the likelihood of recidivism, especially for repeat offenders, due to the financial consequences they face (Yu, 1994), and one study found that mandatory fines were associated with an average reduction in fatal crashes by 8% (Maier, 2014). Some research has also been conducted on the impact of license suspension but determined that it had statistically no effect on drunk driving recidivism (De

Figueiredo, 2011; Yu, 1994). Despite having their licenses suspended or revoked, many individuals continue to drive, stating that they strive to drive more cautiously, avoid impaired driving, and evade law enforcement detection (Ross & Gonzalez, 1988).

Incarceration is a more traditional sanction for DUI offenders; however, it may be less effective than other approaches. Several studies have indicated that jail time was ineffective in reducing recidivism for drinking and driving offenders (Jiang & Yu, 2000; Lee & Teske, 2015a; Nagin, 1998; National Institute of Justice, 2016; Voas & Fisher, 2001; Yu, 2000). Yet, a meta-analysis of 18 states found that mandatory jail sentences were associated with a 6% decline in a single-vehicle nighttime fatal crash (Wagenaar, *et al*., 2007). A further study by Rahman and Weatherburn (2021) revealed a slight reduction (5%) in DUI recidivism two years following incarceration, but after five years there was no effect. The impact between jail time and DUI behavior indicates relatively weaker associations between initial and 15-year DUI recidivism for those who had more jail time (Lapham & Todd, 2012). Additional research on specific deterrence has found that the length of incarceration may impact recidivism. A study by Weinrath and Gartrell (2001) determined that shorter sentences (e.g., less than six months) had less of an impact on the reduction of recidivism for repeat DUI offenders than those who received sentences greater than six months. Yet, several studies have shown mixed results, where there was no significant association between the length of incarceration and the probability of DUI recidivism (Mann *et al*., 1991; Yu, 2000). Of the strategies to reduce drunk driving, two of the most successful approaches are drunk driving education/treatment (Freiburger & Sheeran, 2018; Lee and Teske, 2015b; Miller *et al.*, 2015; Moore, *et al.*, 2008; Taxman & Piquero, 1998) and ignition interlocks (Fell & Scolese, 2021; Kierkus, *et al*., 2023; McCartt *et al*., 2018; Moulton *et al*., 2010). Taxman and Piquero (1998) determined in their study that rehabilitation services, rather than punishment approaches, were more likely to reduce the likelihood of recidivism. Further, Freiburger and Sheeran (2018) found that the SSTOP program, which combined deterrence and rehabilitative methods, significantly reduced the likelihood of recidivism for repeat OWI offenders. Robertson *et al*. (2016) also found the Mississippi Alcohol Safety Education Program (MASEP) to be successful in reducing recidivism within three-years, which combined techniques of education, DUI avoidance strategies, individual and group discussions, license suspension, and substance abuse treatment. For ignition interlocks, studies have shown this strategy was associated with a reduction of 35% to 90% for repeat offenders while the device was installed (Voas and Marques, 2003; Vezina, 2002). An evaluation of Maryland's use of the device concluded that, within the first year, it reduced a driver's risk of committing a violation by 64% (Beck *et al*., 1999). The effectiveness of ignition interlocks suggests that the devices are more effective at preventing drunk driving than other traditional criminal justice sanctions (Beck *et al*., 1999; Cohen & Larkin, 1998; Morse & Elliott, 1992; Weinrath, 1997), yet the preventive impact of the device often dissipates quickly after it is removed (Willis *et al*., 2004).

Current Study

The present study sought to better understand drunk driving recidivism and contributes to both criminological theory and practice. Prior literature thus far has provided an unreliable picture on the relationship between specific deterrent ideals (i.e., certainty, swiftness, and severity of punishment) and drunk driving offending, yet policymakers continue to focus more on the severity of punishment despite these inconsistencies. The current study tested a model of specific deterrence by examining a sample of justice-involved individuals who were initially incarcerated for an Operating While Intoxicated (OWI) conviction in a local house of corrections in Milwaukee County, WI to determine the likelihood of drinking and driving recidivism within 12-months following release.

Methodology

Study Site

Milwaukee County, with approximately 939,489 residents, is the most populous county in the state of Wisconsin (U.S. Census Bureau, 2020, April 1). Majority of the county is non-Hispanic White (63.3%), followed by non-Hispanic Black (27.1%), and then Hispanic/Latino (16.6%); with a relatively even split between males (48.7%) and females (51.3%) (U.S. Census Bureau, 2020, April 1). Milwaukee is notably one of the most segregated cities in the country (Frey, 2018), with concerningly high rates of incarceration among Black men (Levine, 2019).

The Wisconsin Department of Corrections is statutorily responsible for the regulation and oversight of local detention facilities, which encompass the Milwaukee County Jail and the Milwaukee County House of Corrections (HOC) (Clark, 2010; Dietz, 2018; Henken, 2011). This study centers on the HOC, a 2,000-bed secure detention facility primarily used for individuals serving sentences of up to one year (Henken, 2011). In 2017, the HOC reported about 1,250 inmates were housed in the HOC (Behm and Diedrich, 2017).

Data Sources

The data for this study was obtained from several sources. First, initial data for all individuals released between 2013-2014 from the HOC in Milwaukee County were provided by the Office of African American Affairs (OAAA) and Comcentia. OAAA houses several

government agencies and non-profits within the City of Milwaukee and promotes equal opportunities for African American residents (Office of African American Affairs, n.d.). With the assistance of Comcentia (an IT company that provides support to OAAA in obtaining and managing data), demographic and legal data was provided for all individuals released from the HOC between 2013-2014. Second, recidivism data were obtained from both the ProPhoenix Corrections Management System (CJIS) and the Wisconsin Circuit Court Access (WCCA). Jail booking and release information was provided by the CJIS software, and WCCA provided the recidivism data for all persons released from the HOC. Data from each of the sources were compiled into one database, using a unique identifier (first name, last name, date of birth) to accurately merge the cases together. Once the cases were merged, the data was reviewed for accuracy. The original dataset yielded 6,482 cases, including all individuals incarcerated in the HOC for any type of offense between 2013-2014. The current study was interested in examining individuals who were initially incarcerated for an Operating While Intoxicated (OWI) charge, so cases in which individuals were sentenced for another offense were removed. The final dataset contained complete information for 677 individuals with OWI-related cases.

Dependent Variables

The current study utilized a trichotomous-dependent variable, distinguishing between those who had no subsequent charges (= 0), those who had at least one new "operating while revoked" charge (= 1), and those who had at least one new OWI charge (= 2). An "operating while revoked" charge represents a technical violation that occurs after an individual had their license revoked due to an OWI-related offense. Since this type of recidivism charge is related to a previous OWI conviction, the present study determined it was important to include in the analysis. An "operating while revoked" charge represents a traffic violation, while a subsequent OWI constitutes a criminal offense, so each category was analyzed separately to account for the difference in offense severity.

All criminal charges in the state of Wisconsin circuit courts were included in the dependent measure, despite the outcome. Charges that were dismissed but read in and those that were dismissed by the prosecutor were included. "No new charges" was treated as the reference category; and was chosen to compare against the two groups that recidivated. A follow-up period of 12 months was used to measure recidivism for this analysis. The follow-up period for measuring recidivism began upon an individual's release from the HOC, with the first documented instance of reoffending determined by the offense date in the recidivism data (WCCA).

Independent Variables

Deterrence theory suggests that individuals are less likely to commit a crime if they believe they will be caught and punished severely, and that the punishment will be delivered quickly after the offense (Nochajski *et al.*, 2094; 1993). As such, the current study examined indicators of certainty, swiftness, and severity to determine their influence on recidivism. *Certainty* was measured using a ratio of the number of prior incarcerations to the number of prior charges. A lower incarceration-to-charge ratio is hypothesized to increase recidivism rates. This is based on the idea that individuals with less frequent incarceration may feel the consequences of their problematic behavior are less serious, resulting in a lower certainty of punishment (represented by the lower ratio score). While the application of the certainty ratio has varied across prior research (e.g., convictions: Arrests, arrests: Crimes committed), its core principle remains consistent: It serves as a measure of the likelihood of punishment (Carmichael & Piquero, 2006; Lee and Teske, 2015a; Richards and Tittle, 1982). Swiftness was operationalized like that of Lee and Teske (2015b); Yu (1994) and represented the number of days from the offense date to the date of disposition. As suggested by deterrence theory, the swifter the original case (i.e., fewer days between the original offense date and the date of disposition) the greater the association between "crime and punishment" and the less likely one will be to recidivate. Finally, *severity* was examined using several indicators that have been offered in the literature (Lee and Teske, 2015a-b; Yu, 1994). Time served was measured as a continuous variable for the total number of days an individual was incarcerated in the HOC. Fines received were also included and were measured with the total dollar amount of the fine. Deterrence theory would suggest that greater severity (i.e., increased time served and higher fines) would lead to lower odds of recidivism. Individuals may also face requirements such as completing an alcohol assessment, installing an ignition interlock device, or having their driver's license suspended or revoked. For each of these three penalty measures, a dichotomous variable was analyzed for those who were not ordered to these punishments (= 0) or those who were ordered to complete these (= 1).

Prior research has also considered the predictive power of several individual factors that have been shown to influence recidivism, including age (Baker *et al*., 2002; Gould and Gould, 1992; Snow, 1988), gender (Miller *et al.*, 2015; Chang *et al*., 1996; McMillen *et al.*, 1992; Nochajski *et al.*, 2094; Nochajski, 1999; Reynolds *et al*., 1991; Yu, 2000), race/ethnicity (C'de Baca *et al*., 2002; DeMichele *et al.*, 2016; Knoth, 2018), risk score (Cavaiola *et al*., 2007; 2003; Nochajski *et al.*, 2093), and prior criminal record (Ahlin *et al*., 2011; DeMichele *et al*., 2016). In the current analysis, age was measured continuously in years to represent the age at the time of

release from the HOC. Gender was coded dichotomously as female = 0 and male = 1. Dummy variables were created to measure race/ethnicity; non-Hispanic White was used as the reference category to compare against both non-Hispanic Black and Hispanic/Latino. Risk score was examined using the Level of Service Inventory-Revised: Short Version (LSI-R:SV). The LSI-R:SV is a streamlined assessment using eight key questions derived from the full LSI-R, allowing for efficient evaluation with a score ranging from 0 to 8 (Andrew and Bonta, 1998; Mellow *et al.*, 2008; Solomon *et al*., 2008. According to research, the LSI-R:SV has been found to be predictive of the same outcomes as the LSI-R (Andrews and Bonta, 1998). The current study analyzed an individual's risk score as a continuous variable to represent their total score received on the LSI-R:SV (scores of 0-2 indicate minimum-risk, scores of 3-5 indicate medium-risk, scores of 6-8 indicate high-risk). Finally, prior criminal record was measured continuously as the total number of prior criminal charges for an individual.

Analytic Plan

The analysis is presented in a series of stages. First, descriptive statistics were examined for the sample of initial OWI offenders and are delineated by those who did not receive a new charge, those who received a subsequent "operating while revoked" charge, and those who received a new OWI charge. To investigate potential differences among the three groups with regard to the deterrent and individual factors, Chi-square tests (3x2 tables) and one-way analysis of variance (ANOVA) were utilized. In cases where the cell sizes were below five, a Fischer's exact test was used. Finally, a multinomial logistic regression analysis was employed to determine whether any of the independent variables were associated with the likelihood of recidivism, comparing (1) no new charges to "operating while revoked" recidivism and (2) no new charges to OWI recidivism.

Results

Table 1 presents the results of the trichotomous-dependent variable, distinguishing between those who had no new charges (n = 465), those who had at least one new "operating while revoked" charge (n = 148), and those who had at least one new OWI charge (n = 64). Overall, most of the sample (68.6%) did not recidivate within 12-months following release from the HOC. Almost 22% of the sample received a new "operating while revoked" charge and 9.5% received a new OWI charge within 12-months.

Table 1: Descriptive Statistics for the Likelihood of Recidivism

Variable	No New Charge (N = 465) (68.6%)	New Operate While Revoke (N = 148) (21.9%)	New OWI Charge (N = 64) (9.5%)	Total (N = 677)	Sign. Test
	N(mean) %(SD)	N(mean) %(SD)	N(mean) %(SD)	N(mean) %(SD)	
Age	40.8 (11.9)	36.9 (10.7)	38.5 (11.3)	39.7 (11.7)	F = 6.5**
Gender					
Male	395 (84.9%)	131 (88.5%)	59 (92.2%)	585 (86.4%)	χ^2 = 3.2
Female	70 (15.1%)	17 (11.5%)	4 (7.8%)	92 (13.6%)	
Race/Ethnicity					
Non-Hispanic White	189 (40.6%)	49 (33.1%)	16 (25.0%)	254 (37.5%)	χ^2 = 7.4*
Non-Hispanic Black	191 (41.1%)	76 (33.1%)	37 (57.8%)	304 (44.9%)	χ^2 = 9.6**
Hispanic/Latino	85 (18.3%)	23 (15.5%)	11 (17.2%)	119 (17.6%)	χ^2 = 0.6
LSI-R:SV (0-8)	2.8 (1.4)	3.3 (1.5)	3.1 (1.4)	2.9 (1.4)	F = 7.6***
Prior Charges	0.77 (1.6)	2.2 (3.1)	1.7 (2.4)	1.2 (2.2)	F = 28.9***
Certainty ratio	0.16 (0.3)	0.23 (0.3)	0.20 (0.3)	0.18 (0.3)	F = 2.4
Swiftness (days)	292.0 (440.9)	207.0 (183.1)	241.1 (194.4)	268.4 (380.7)	F = 3.0
Severity					
Time Served (days)	87.2 (80.7)	78.4 (66.1)	90.1 (90.7)	85.5 (78.7)	F = 0.8
Fine (dollars)	905.0 (725.9)	827.2 (789.7)	805.1 (720.4)	878.6 (749.3)	F = 0.9
Alcohol Assessment					
Not ordered	39 (8.4%)	18 (12.2%)	4 (6.3%)	61 (9.0%)	χ^2 = 2.6
Ordered	414 (89.0%)	128 (86.5%)	60 (93.8%)	602 (88.9%)	
Ignition Interlock					
Not ordered	76 (16.3%)	30 (20.3%)	12 (18.8%)	118 (17.4%)	χ^2 = 1.1
Ordered	377 (81.1%)	116 (78.4%)	52 (81.3%)	545 (80.5%)	
License susp/rev.					
Not ordered	45 (9.7%)	20 (13.5%)	7 (10.9%)	72 (10.6%)	χ^2 = 1.6
Ordered	408 (87.7%)	126 (85.1%)	57 (89.1%)	591 (87.3%)	

Note: Some cells do not add up to 100% due to missing data
***p<.001, **p<.01, *p<.0

Table 2: Multinomial Logistic Regression Results for the Likelihood of Recidivism

	New Operate While Revoke (N = 148)			New OWI Charge (N = 64)		
Variable	*B*	*SE*	Odds	*B*	*SE*	Odds
Age	-034***	011	966	-017	013	983
Gender	221	320	1.801	879	548	1.415
Race/Ethnicity						
Non-Hispanic Black	410	245	1.664	908**	347	1.403
Hispanic/Latino	103	314	1.902	456	442	1.634
LSI-R:SV	240*	081	1.270	183	109	1.201
Prior Charges	254***	055	1.291	187**	070	1.210
Certainty ratio	-237	341	789	-255	471	775
Swiftness	-001*	001	999	001	001	1.000
Severity						
Time Served	001	002	1.000	001	002	1.000
Fine	-001	001	998	-001	001	998
Alcohol Assessment	-641	805	901	-188	033	210
Ignition Interlock	-259	428	301	-326	534	391
License susp/rev.	964	914	1.345	760	131	1.468

Note: Reference category = No new criminal charge (N = 465)
****p*<.001, **p< .01, *p<.05

Examining the descriptive statistics, individuals who received a subsequent "operating while revoked" charge were slightly younger (36.9 years; $F = 6.5$, p = .002) than their counterparts and had the highest risk score (3.3; $F = 7.6$, p = .001) and prior criminal record (2.2; $F = 28.9$, p = .001). Majority of the sample, overall, was male (86.4%); and a higher proportion of non-Hispanic White individuals received no new charges (40.6%; $\chi^2 = 7.4$, p = .024), while a higher proportion of non-Hispanic Black individuals received a new OWI charge (57.8%; $\chi^2 = 9.6$, p = .008). For the measures of deterrence, the sample, on average, received a certainty ratio of 0.18, indicating relatively low certainty (i.e., the ratio of receiving an incarceration term for every prior charge received). There was an average of 268.4 days (8.8 months) between the offense date to the date of disposition, indicating a lack of swiftness for the current sample according to deterrence theory. For severity, the individuals in the sample spent an average of 85.5 days incarcerated in the HOC and were ordered to pay an average of $879 dollars in fines. For the penalty outcomes, most of the sample were ordered to complete an alcohol assessment (88.9%), have ignition interlock installed (80.5%), and having a license either suspended or revoked (87.3%); with individuals who recidivated with an "operating while revoked" charge less frequently ordered to these, although the differences were not significant.

Table 2 presents the results of the multinomial logistic regression analysis, using no new charges as the reference category. In the first model, non-recidivists were compared to those who received a subsequent "operating while revoked" charge. Results determined that age, risk score, prior criminal record, and swiftness were significantly influential in the likelihood of recidivism within 12-months following release from the HOC. Specifically, individuals who were older (b = -.034, p = .001, OR=.966), had a lower LSI-R:SV (b = .240, p = .011, OR=1.27), and had fewer prior charges (b = .254, p = .001, OR=1.29) were significantly less likely to receive a subsequent "operating while revoked" charge within 12-months. Also in this model, swiftness was the only deterrence measure to significantly influence the likelihood of recidivism, but in a direction that contradicts the tenets of deterrence theory. Individuals were at *increased* odds of recidivating with an "operating while revoked" charge if they had *greater* swiftness on their initial case (i.e., shorter timeframe between the offense and disposition date) (b = -.001, p = .027, OR=.999). The second model compared non-recidivists and OWI recidivists. In this model, non-Hispanic Black individuals had 1.4 increased odds of receiving a new OWI charge within 12-months compared to non-Hispanic White individuals (b = .908, p = .009, OR=1.40). Further, individuals with a more extensive prior criminal record were significantly more likely to receive a new OWI charge following release from the HOC (b = .187, p = .007, OR=1.21). None of the deterrence factors achieved significance in the second model.

Discussion

The current study examined the likelihood of drinking and driving recidivism for a sample of individuals released from a local correctional center in Milwaukee County, WI. Results of the analysis determined that majority of the sample (68.6%) did not recidivate with a drinking and driving-related offense, providing support for deterrence theory. According to Beccaria's theory, the specific deterrent aspects of certainty, swiftness, and severity were influential in desisting individuals from being charged with a subsequent OWI or "operating while revoked" offense. These findings are supported by several prior scholars who also determined that deterrent factors were

influential in the reduction of recidivism (Ahlin *et al*., 2011; Bouffard, *et al*., 2017; Lee and Teske, 2015a; Stringer, 2021a-b).

While most of the sample did not recidivate, there were 21.9% who received a new "operating while revoked" charge and 9.5% who received a subsequent OWI charge. For these individuals, the tenets of deterrence theory did not effectively prevent them from engaging in future drinking and driving-related offenses. Individuals who received an "operating while revoked" charge within 12-months following release from the HOC were more likely to be younger, have a higher risk score, an increased prior criminal record, and had greater swiftness between the offense and disposition date (indicating the opposite effect than what deterrence theory proposes). Neither measure for certainty and severity were significant in the model, and the average number of days between the offense date and the disposition date was roughly 6.8 months, in which deterrence theory would not consider effectively "swift". It appears with this portion of the sample that individual-level factors were more influential in the likelihood of operating a vehicle after being revoked by the courts. Our findings align with those of Rahman and Weatherburn (2021), whose study similarly demonstrated that individual factors were more significant predictors of recidivism than the threat of legal sanctions. Prior research has also found that many individuals continue to drive following a license suspension/revocation (McCartt *et al.*, 2002; Ross and Gonzalez, 1988; Yu, 1994). While the current study cannot directly measure the reasons why an individual chose to engage in this case of recidivism, other studies have determined that individuals are more likely to drive after a revocation if they are employed, live further away from work, or live in a household without another licensed driver (Ross and Gonzalez, 1998). It could be beneficial to explore the impact of providing additional information/resources (e.g., bus passes, public transportation resources) for individuals who have a court-ordered license suspension/revocation. Offering additional options for transportation could potentially reduce the likelihood of receiving a subsequent "operating while revoked" charge.

The findings of this study also indicated that non-Hispanic Black individuals (versus non-Hispanic White) and those with a history of increased criminal records were found to have a greater probability of subsequent OWI charges following their release from the HOC. In this model, none of the deterrent measures were effective in refraining the individuals from committing another OWI offense; instead, individual factors were more influential. Scholars have also suggested that social and personal sanctions should be considered in association with the legal sanctions of being charged with an OWI. It has been argued that these cannot be disentangled because one's shame/guilt and social sanctions are associated with the detection of illegal activity (Piquero and Paternoster, 1998; Richards and Tittle, 1982). Non-Hispanic White individuals may have experienced more significant personal and social sanctions, which could have contributed to their lower rates of drinking and driving recidivism compared to non-Hispanic Black individuals. The consequences of wider disparities in policing and supervision could be another factor to consider, especially in Milwaukee where disproportionate incarceration rates for Black individuals have been a significant concern (Levine, 2019). Bowers (2008) suggests that police practices which target Black neighborhoods may increase the likelihood that Black offenders will be rearrested. These same police practices may also mean that Black individuals are more likely to have a criminal history than White individuals, which may lead to an increase in the amount of contact and monitoring (Bowers, 2008), ultimately increasing the likelihood of detecting illegal activity and subsequently being charged. Though the current data does not afford the opportunity to test if this underlying mechanism is present, it could suggest that disparities are present in earlier contact points of the criminal justice system, which then continue through the stages of charging.

Limitations and Future Research

While the findings of this study are informative in the effectiveness of swift, certain, and harsh punishments for OWI offenders, some limitations should be noted. First, this evaluation was limited to one urban county between 2013-2014. While several of the results were comparable to those of previous studies, differences also existed, and research should continue to examine the deterrent effect in other jurisdictions. Second, the current study examined factors of specific deterrence that focused on the individual offender. While this is an important part of deterrence theory, it only encompasses part of the overall perspective. Future studies should strive to analyze both specific *and* general deterrence factors to better understand how efforts geared towards the general population can also impact drinking and driving behavior. Further, while individual-level variables can provide significant insights into OWI behavior, attention should also be given to the way that broader social forces (e.g., personal and social sanctions) influence offenders' decisions to offend. Conducting survey research or qualitative data could be helpful in better understanding the decision-making processes of individuals and what leads some to desist from crime. A final limitation of the current study is that only official court records were analyzed and earlier points of criminal justice contact (arrests), or even instances where a criminal offense went undetected by law enforcement, were not considered. Individuals may engage in criminal activity several times before being arrested even once. Further, due to data limitations, only cases of recidivism that occurred

in Wisconsin were able to be captured. Future research should strive to examine a combination of official data, self-reports, and possibly qualitative analyses to gain a more complete understanding of criminal behavior.

Conclusion

The current study examined a sample of OWI offenders released from a local jail in Milwaukee County, WI and found support for deterrence theory. Overall, the majority of the sample did not recidivate with an OWI-related offense, indicating that measures of certainty, swiftness, and severity were effectively preventing individuals from engaging in future drinking and driving offenses. Yet, there were still individuals who recidivated, bringing attention to policymakers for how to reduce the likelihood of recidivism for this subsample. In these cases, individual factors were significantly more influential than deterrent measures. Policymakers should consider additional resources (e.g., bus passes, alternative transportation, etc.) for individuals who have their license either suspended or revoked to potentially reduce the likelihood of receiving an "operating while revoked" charge. Further, personal and social sanctions should be considered in addition to legal sanctions, as scholars suggest these are also influential in the likelihood of drinking and driving recidivism. The current study was able to provide a starting point for policymakers by examining the influence of both deterrent and individual factors in the likelihood of recidivating with a drinking and driving offense following release from jail, yet it remains important to continue researching this topic since driving under the influence of alcohol represents a significant public health issue not only in Wisconsin but across the nation.

Acknowledgment

Thank you to the publisher for their support in the publication of this research article. We are grateful for the resources and platform provided by the publisher, which have enabled us to share our findings with a wider audience. We appreciate the efforts of the editorial team in reviewing and editing our work, and we are thankful for the opportunity to contribute to the field of research through this publication.

Funding Information

This research received no external funding.

Authors Contributions

All authors contributed equally to the manuscript. All authors have read and agreed to the published version of the manuscript.

Institutional Review Board Statement

Institutional Review Board (IRB) approval was granted for the current study.

Conflicts of Interest

The authors declare no conflict of interest.

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