



Drunk versus drugged: How different are the drivers?☆

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ABSTRACT

Background: Driving under the influence (DUI) of drugs is increasing in the U.S., but little is known about the differences based on their patterns of use and abuse of alcohol and other drugs.

Methods: This paper uses a large dataset to study patients admitted to Texas substance abuse treatment programs with one or more past-year DUI arrests. *t*-Tests are used for comparisons between normally distributed continuous data and chi square for categorical data.

Results: First-time DUI offenders not only differ from those reporting more than one past-year DUI, but they differ among themselves in terms of demographics, treatment participation, substance use problems, and mental health disorders. Those with primary problems with methamphetamine, crack cocaine, powder cocaine, other opiates, sedatives, and heroin reported more days of problems and more daily use than those with problems with alcohol, while offenders with primary problems with cannabis were less impaired.

Conclusions: The most impaired clients were less likely to be referred to treatment from the justice system, and the differences in drug and alcohol offenders show the need to tailor approaches with education and treatment programs. More attention should be given to the needs of drivers impaired through use of prescription drugs such as the opiates and sedatives, as well as female drivers, and the role of acculturation should be recognized in programs for Hispanic drivers. In addition, specific programs should be targeted to young cannabis abusers and underage offenders. All first-time DUI arrestees should be assessed for their levels of impairment.

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1. Introduction

Recent literature has documented the increases in driving under the influence of drugs or alcohol (DUI). The 2007 U.S. National Roadside Survey found that 2.2% of weekend night-time drivers had a blood alcohol content (BAC) levels equal to or greater than the legal U.S. limit of 0.08 g/dL, while 16.3% of drivers who gave oral fluid and/or blood tested positive for a medication or an illegal or over-the-counter drug. Some 31.8% of the drivers who were at or over the legal BAC limit were positive for a drug, which was more than two times higher than for drivers with zero BACs (14.6%) (Lacey et al., 2009).

The extent of driving under the influence of drugs is underestimated because law enforcement agencies do not routinely test impaired drivers for drugs if their alcohol level is above the legal BAC limit (Compton et al., 2009). Research has focused on the effects of different drugs on driving ability (Morland, 2000; Lundberg et al.,

1979; Consensus Development Panel, 1985); the presence of drugs in impaired drivers (Asbjørg and Moorland, 2008; Marzuk et al., 1990; Soderstrom et al., 1988; Brookoff et al., 1994; Logan, 2004); and the risks of injury or death for these drivers (Walsh et al., 2005; Schwilke et al., 2006; Centers for Disease Control, 2006; Biecheler et al., 2008; Jones et al., 2009). Given the need to measure the levels of impairment for a number of drugs, including prescription drugs, the 2011 report to the National Highway Traffic Safety Agency (NHTSA) from the Drugged Driving Expert Panel proposed a standard protocol for assessing the impairing potential of drugs (Kay and Logan, 2011).

There are fewer studies of the sociodemographic and behavioral characteristics of individuals driving under the influence of drugs. Soderstrom et al. (2001) found a complex relationship between a diagnosis of a psychoactive substance use disorder, risk-taking disposition, and being convicted of driving dangerously. Bingham et al. (2008) tested the psychosocial predictors of substance-involved driving and driving behavior and found interventions could enhance effectiveness if they target individual psychosocial and behavioral characteristics. Hingson et al. (2008) found that ever having experienced drug dependence was the stronger predictor of driving under the influence of drugs and motor vehicle crash among persons who consumed alcohol and drugs, and C'de Baca

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et al. (2009) found great risk of being in a crash with a central nervous system depressant and great risk of a traffic conviction with a stimulant use disorder.

New patterns of substance abuse, such as the increasing problems with the abuse of prescription drugs or the use of new chemicals, such as Mephedrone (4-MMC or “bath salts”), indicate a need to learn more about drivers who use different drugs so that targeted approaches can be developed to lessen driving under the influence of these various drugs. To further this research, this paper analyzes data on patients who entered treatment in Texas with a past-year arrest for driving under the influence. Because first-time DUI arrestees in Texas are handled differently in the justice system, we focused on this population. First-time convicted drivers typically attend DUI education programs, which were first developed by the federal Alcohol Safety Action Program in the 1970s to address alcohol, not drugs. Repeat offenders are generally required by the courts to attend treatment or more intensive intervention programs.

This paper aims to identify:

- The differences in individuals entering treatment with one vs. multiple past-year DUI arrests.
- The differences among first-time DUI offenders in treatment based on their having a primary problem with alcohol, as compared to cannabis, methamphetamine, crack cocaine, powder cocaine, sedatives, other opiates, or heroin.

2. Material and methods

2.1. Data sources

This is an analysis of 46,689 unduplicated admission records of individuals entering treatment programs funded by the Texas Department of State Health Services (DSHS) between 2005 and 2009. Some 4978 reported more than one past-year DUI arrest and 41,711 of the individuals reported only one DUI arrest in the past-year. The questionnaire did not ask about arrests prior to the last 12 months, so only the first admission during the 2005–2009 period was reported.

The dataset was extracted from DSHS' Behavioral Health Integrated Provider System (BHIPS), that reports to the federally mandated Treatment Episode Data System (TEDS). The treatment programs reporting to BHIPS provide services across the state and eligibility is based on clinical and financial need.

Data collected at admission reflect the primary and secondary substance abuse diagnoses of the individuals entering treatment (even though their DUI arrest may have been based on their BAC and they were not tested at arrest for the presence of a drug). The most common drug categories are reported; data on 1% who had problems with a variety of other drugs were excluded. The data included the number of days in that month that the patient experienced any of the six domains of the Addiction Severity Index (ASI): health, family, employment, social, psychological, or illness due to alcohol or drug use (McLellan et al., 1980). To facilitate comparison, the six domains were combined to produce the mean number of days in the past 30 that the patient reported having at least one problem. Programs who had staff trained to use the Diagnostic and Statistical Manual IV (DSM) (American Psychiatric Association, 2000) reported the mental health diagnoses of their patients; those who did not receive a diagnosis were excluded from analysis of the mental health variables.

DSHS provided a copy of the dataset to the author. No identifying information was received on any patient and this research was approved by the Institutional Review Board of the University of Texas at Austin.

Table 1

Characteristics of clients with one vs. more than one past-year DUI arrest at admission to Texas DSHS-funded treatment programs: 2005–2009.

	One DUI arrest	2+ DUI arrested	p
<i>n</i>	41,711	4978	
Demographics			
Average Age (Years)	34.4	38.2	*
% Male	71.5	71.6	
% Black	8.1	5.8	*
% White	52.5	61.9	*
% Hispanic	37.8	30.2	*
Months employed past-year	6.2	5.5	*
Treatment participation			
% First treatment admission	32.7	28.6	*
Lag from first use to admission (Years)	17.3	20.8	*
% Completed treatment	69.3	68.5	
Substance use problems			
Mean days ASI problems in last 30	7.2	9.2	*
% Used daily in last 6 months	33.7	43.3	*
% with secondary sub. problem	47.1	47.1	
Mental health disorders			
% Depression	8.7	13.0	*
% Bipolar	4.4	6.6	*
% Anxiety	1.8	2.4	
% Schizophrenia	1.0	1.8	

* $p < .0001$.

2.2. Statistical methods

Descriptive statistics are presented. Student's *t*-test was used for continuous variables and chi-square test for categorical variables. Due to the size of the dataset, significance was set at $p < .0001$. All missing data were excluded from analyses. Analysis was performed in SAS (SAS/STAT software, Version 9.2, SAS Institute Inc., Cary, NC).

3. Results

In Table 1, the characteristics of DUI offenders with one past-year DUI at admission to treatment are compared with those who had more than one past-year DUI arrest. Those with only one arrest were significantly less impaired in terms of mean number of days with ASI problems, daily use, and mental health diagnoses. The multiple arrestees were older, were less likely to be first admissions, had used longer, and 74% had a primary problem with alcohol, as compared to 66% of first offenders.

Table 2 compares the characteristics of offenders with one past-year arrest based on their primary substance problem at admission to treatment. The “sedative” category includes tranquilizers, barbiturates, and benzodiazepines, while the “other opiate” category includes drugs such as hydrocodone, oxycodone, and illicit methadone.

The variations in the characteristics of DUI arrestees based on their primary substance problem at admission are notable. Those drivers diagnosed with a primary problem with cannabis were the youngest, and those with problems with alcohol and crack cocaine were the oldest. Alcohol and cannabis DUI arrestees were the most likely to be male, and over half of these with problems with sedatives or with other opiates were female. In terms of race/ethnicity, Whites were the most likely to have problems with other opiates, methamphetamine, and sedatives, and Hispanics were most likely to have problems with powder cocaine and cannabis.

Most of the impaired drivers had been in treatment before, with only about a quarter of heroin and crack cocaine users being first admissions to treatment. Those with problems with heroin or other opiates reported more days of problems on the ASI scale and they were significantly more likely to use daily. The patients with problems with alcohol were the most likely to complete treatment and heroin and cannabis users were the least likely.

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