

CHARACTERISTICS OF PERSONS WHO REPORTED DRIVING UNDER THE INFLUENCE OF ALCOHOL OR OTHER DRUGS

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In 1988, the Surgeon General's Workshop on Drunk Driving was held. Among the recommendations was the following (Perrine et al., 1989): *Determine more accurately the characteristics of drunk drivers to facilitate early identification and counseling, to encourage more accurately targeted sanctions for convicted DUI offenders, to encourage more customized counseling and treatment programs for DUI offenders, and thereby, it is hoped to obtain increased success rates in terms of alcohol treatment compliance and completion, as well as lower recidivism.*

Theoretically, the more known about this group of drivers, the more can be done to prevent injuries and fatalities associated with driving (Thompson et al., 1993; and Anda et al., 1987). Recently, significant progress has been made in the reduction of driving-related fatalities and alcohol-related driving deaths. Research is continuing, especially focusing on the problem of the alcohol impaired driver.

A factor receiving increasing attention is that of drugged driving; where drugs have been used either in conjunction with alcohol or by themselves. To date screening instruments with DUI offenders have focused on detecting the problem-drinker. While this focus has been helpful for identifying and treating the problem-drinker, research has indicated that people drive under the influence of drugs other than alcohol with some regularity (Ferrara et al., 1994; Root, 1990; Budd et al, 1989; Marzuk et al, 1990).

This paper focuses on persons who reported in a national survey that they drove under the influence of alcohol or other drugs and attempts to distinguish between those who reported use of alcohol only vs. the use of alcohol and any illicit drug. The analysis is based on data from the 1991-93 National Household Surveys on Drug Abuse (NHSDA) with a sample of nearly 88 thousand respondents. A description of the NHSDA design is given elsewhere (SAMHSA, 1994).

Analysis Approach

Respondents were asked, "During the past 12

months, have you driven any kind of vehicle while you were under the influence of alcohol or illegal drugs?" While it is known from the survey that certain respondents used drugs and drove under the influence, it is not known specifically that they drove under the influence after having used drugs. Relationships between driving under the influence and socio-demographic characteristics and drinking behavior were studied with bivariate analysis and multiple logistic modeling.

The SESUDAAN and SUDAAN computer programs were used to adjust for correlations between subgroup estimates that are created by the multistage cluster sampling used for the NHSDA.

RESULTS

Between 1991 and 1993, an estimated annual average number of 18 million people or 10% of the U.S. population aged 16 and older reported they drove under the influence of alcohol or other drugs (DUI's). Those most likely to have done so were males between the ages of 21 and 34, representing one-third of all DUIs. Another 25% of DUIs were males age 35 or older. Of those who reported driving under the influence, 9% said they were arrested and booked for that offense. Among the DUI population, males aged 35 and over had the highest rate of arrest, while women had the lowest.

Comparison with Other Sources

The 1990 National Health Interview Survey (NHIS) asked respondents if they "drove 1 or more times in the past year when they had too much to drink?" Seven percent of adults reported this behavior (Piani and Schoenborn, 1993). In 1991, the NHIS included questions about driving after using drugs among 18-44 year olds (Keer et al., 1994). 46% of marijuana users reported driving a vehicle within 3 hours after using marijuana sometime during the past year, and 44% of cocaine users reported driving within 1 hour of their cocaine use. The 1991-93 NHSDA estimates that 44% of past year marijuana users and 60% of past year cocaine users age 18-44 said they drove under the influence of alcohol or other drugs. Some past year cocaine users may have driven under the influence of drugs other than cocaine such as marijuana, accounting for the difference

between the two surveys.

In 1991, the FBI reported there were 1,372,000 arrests for DUI in the U.S., excluding Iowa. While the number of arrests was not obtained in the NHSDA, the NHSDA estimate of persons arrested at least once during 1991 for DUI was 1,844,000. The FBI estimate is conservative since arrests are classified by a single offense using a hierarchical rule (Maguire et al., 1993).

Prevalence of Driving Under the Influence

The age groups with the highest rates of DUI for males are 21-34 year olds and for females 16-20 year olds (table 1). Rates were also high for those age 16 to 34 who were white and never married. Further, in this age group, half of those who drank alcohol daily or almost daily said they drove under the influence. Among those age 16 to 34, more than 60% of heavy drinkers (defined as having had 5 or more drinks on 5 or more days in the past month) reported having driven under the influence. Similarly, more than half of those aged 16 to 34 who reported having been drunk on alcohol at least 1-2 times a week in the past year reported driving under the influence.

Logistic regressions were run separately on persons aged 16 to 34 and 35 and older. The results showed that for those age 16-34 statistically significant associations were found between driving under the influence and having been a heavy drinker. Other significant correlates were having used an illicit drug in the past year, having ever been booked and arrested for a crime, and having 2 or more indicators of alcohol abuse. The model for 16 to 34 year olds also found that more frequent drinkers, those who never married, and whites were more likely to be DUIs.

For those age 35 and older, the logistic regression showed that driving under the influence was most highly correlated with marital status and race with the unmarried and whites being more likely to be DUIs. The model also found that persons employed full-time and heavy drinkers were more likely to drive under the influence.

DRUG-USING VS NON-DRUG USING DUI POPULATIONS

This part of the analysis was restricted to those people who reported driving under the influence of alcohol and other drugs in the past year. This population was divided into two groups: those who used an illicit drug (DRUG USING group) and those who used only alcohol (NO DRUG group). DUIs who used only illicit drugs and no alcohol were so few that they were not analyzed separately. Among DUIs, 45% reported using an illicit drug during the

past year. It is not known whether they drove under the influence of illicit drugs.

The DUI's in the DRUG USING group were younger than those in the NO DRUG group (45% of the DRUG USING group were age 16 to 25 compared with 25% of the NO DRUG group) (table 2). DUIs in the DRUG USING group were nearly twice as likely as those in the NO DRUG group to have never been married (55% and 33%, respectively). Both DUI groups were predominately white and male.

Members of the DRUG USING group age 18 or older were more likely to have less than a high school degree and less likely to be college graduates than those in the NO DRUG group. Members of the DRUG USING group were twice as likely as those in the NO DRUG group to be unemployed and less likely to be employed full-time. However, the majority of the DRUG USING group was employed full-time (60% and 72%, respectively).

DUIs in the DRUG USING group were more likely to drink alcohol at least 1 to 2 days a week, had a higher percentage of heavy drinkers, were more likely to get drunk on alcohol at least 1 to 2 days a week, and were more likely to be classified as dependent on alcohol (using an algorithm that approximates the DSM III-R criteria) (table 3).

The survey included questions concerning behaviors associated with heavy alcohol consumption (table 3). DUIs in the DRUG USING group were more than twice as likely as DUIs in the NO DRUG group to say they: stayed home from school or work due to a hangover, stayed drunk for more than 1 day at a time, that their hands shook a lot after drinking the day before, often took a drink first thing when they got up in the morning, and that they lost a job or nearly lost one because of drinking.

Involvement with the Law

DUIs in the DRUG USING group were more likely than DUIs in the NO DRUG group to have this ever been arrested for breaking the law (41% and 26% respectively). However, both DUI groups were of about equally likely to report having been booked and arrested for driving under the influence and having been in a motor vehicle accident.

DRUG USE IN THE DRUG USING GROUP

The following analysis was restricted to those who reported driving under the influence and using an illicit drug. Nearly 70% of the DUI drug users reported using illicit drugs in combination with alcohol in the past year. "Used in combination" is defined as using drugs on your own, that is,

nonmedically, at the same time or within a couple of hours of drinking beer, wine, or liquor.

The drug used most commonly in combination with alcohol was marijuana (by 68% of those aged 16-20; 61% of those aged 21-34; 53% aged 35 and older). Rates of use of cocaine and alcohol in combination were 10%, 19%, and 19% respectively, in those 3 age groups (table 4). DUIs in the 16 to 20 year old category were the most likely to have used hallucinogens (16%) and inhalants (5%) with alcohol.

The overall drug use patterns of DUIs who used illicit drugs were also examined, whether or not they were used in combination with alcohol. For DUIs in the DRUG USING group, a large majority in every age group used marijuana. More than one third of those aged 21 and older used cocaine (37%). As with the drugs used in combination with alcohol, those age 16 to 20 were the most likely to have used hallucinogens (31%) and inhalants (21%).

CONCLUSIONS

The NHSDA shows that nearly half of drivers who reported driving under the influence of alcohol or other drugs in the past year used a drug at some time during that period and that two-thirds of these illicit drug users used drugs combination with alcohol. The DUIs who used illicit drugs were younger, less well educated, less likely to be employed full-time, and more likely to be never married than DUIs who used only alcohol. In addition, the DUIs who used illicit drugs were more likely to be heavy drinkers and to be drunk at least 1 or 2 days a week. They were also more likely to have 2 or more indications of alcohol abuse and to have ever been arrested and booked for a crime.

This research suggests that drug use, problem drinking, and criminal behavior are all part of the same problem behavior structure. While drinking, drugging, and driving in tandem cannot be shown from our survey results, the high rates of using alcohol in combination with other drugs would indicate the possibility that these people may be driving under the influence of more than one drug, thereby increasing their driving impairment. Finally, the propensity of the drug-using/drinking driver to heavy alcohol consumption supports the notion that this is a subgroup that warrants specialized interventions.

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Table 1: Percentage reporting they drove a vehicle under the influence of alcohol or drugs in the past year by age, demographic variables and frequency of alcohol use: 1991-93

	<u>Age 16-20</u>		<u>Age 21-34</u>		<u>Age 35 and Older</u>		<u>Total</u>	
	(%)	(SE)	(%)	(SE)	(%)	(SE)	(%)	(SE)
Total	18.1	(0.8)	18.1	(0.4)	5.6	(0.3)	10.1	(0.2)
Sex								
Male	20.9	(1.0)	24.9	(0.6)	8.7	(0.5)	14.2	(0.4)
Female	14.9	(0.9)	11.4	(0.4)	2.5	(0.2)	6.0	(0.2)
Race/Ethnicity								
White, not Hispanic	21.1	(1.0)	20.2	(0.4)	5.5	(0.3)	10.0	(0.3)
Black, not Hispanic	7.8	(1.0)	7.9	(0.5)	4.0	(0.4)	5.0	(0.3)
Hispanic	11.7	(1.1)	11.4	(0.6)	4.0	(0.4)	6.9	(0.3)
Marital Status								
Married	9.1	(2.0)	12.5	(0.4)	5.0	(0.3)	7.0	(0.3)
Widowed	*		*		1.8	(0.6)	1.9	(0.6)
Divorced/Sep	*		23.5	(1.1)	10.4	(0.9)	14.1	(0.8)
Never married	18.6	(0.8)	25.5	(0.7)	9.4	(1.2)	19.9	(0.5)
Education (18+ only)								
< High School	15.7	(1.3)	15.3	(0.8)	4.0	(0.5)	7.3	(0.5)
High School Grad	20.1	(1.4)	18.5	(0.6)	5.3	(0.5)	10.3	(0.4)
Some College	24.9	(1.9)	19.7	(0.7)	6.9	(0.7)	12.9	(0.5)
College Grad	*		17.4	(0.7)	6.2	(0.6)	9.9	(0.5)
Employment Status								
Full-time	23.2	(1.6)	19.3	(0.5)	8.0	(0.4)	12.5	(0.3)
Part-time	22.3	(1.8)	19.0	(1.0)	3.1	(0.6)	11.3	(0.7)
Unemployed	20.4	(2.2)	23.1	(1.4)	9.6	(1.6)	16.4	(1.0)
Other	16.1	(1.4)	9.6	(0.7)	2.0	(0.3)	4.1	(0.3)
Frequency of Alcohol Use								
Daily/Almost daily	52.4	(4.0)	49.0	(1.5)	15.4	(1.4)	24.8	(1.3)
1-2 Days Week	50.5	(2.3)	37.9	(1.1)	15.5	(1.3)	26.8	(1.0)
Several Times/Month	41.4	(2.9)	31.1	(1.5)	10.6	(1.4)	21.8	(1.0)
1-2 Times Month	24.2	(1.9)	17.0	(0.9)	6.4	(0.8)	12.2	(0.6)
Less than monthly	10.0	(0.9)	5.4	(0.3)	2.7	(0.4)	4.2	(0.3)
# Days Drank 5+ Drinks/Past Month								
None	17.3	(1.3)	13.1	(0.6)	4.9	(0.4)	8.0	(0.3)
1-4	40.4	(2.4)	41.3	(1.1)	28.8	(2.1)	36.4	(1.1)
5 or more	61.1	(3.0)	60.6	(1.5)	34.2	(2.8)	49.2	(1.6)
# Times Drunk on Alcohol/Past Yr								
Daily	62.5	(5.9)	52.7	(3.5)	20.7	(5.3)	37.2	(3.7)
1-2 Days Week	65.0	(3.9)	61.1	(2.4)	51.3	(5.0)	58.5	(2.2)
Several Times Month	52.9	(5.2)	59.2	(3.1)	36.0	(5.9)	50.9	(2.5)
1-2 times Month	46.6	(3.1)	52.3	(1.7)	35.8	(4.1)	45.8	(1.9)
< Than Monthly	26.2	(1.7)	29.6	(0.8)	23.6	(1.6)	26.8	(0.8)

* Low precision; no estimate reported.

Table 2: Demographic characteristics of DUIs using drugs, DUIs using alcohol only, and non DUIs: 1991-93

	DUI DRUG USING		DUI NO DRUG		No DUI	
	(%)	(SE)	(%)	(SE)	(%)	(SE)
Age						
16-20	20.2	(0.9)	9.2	(0.8)	7.1	(0.2)
21-25	24.8	(1.1)	15.8	(0.9)	8.1	(0.2)
26-34	33.3	(1.2)	32.2	(1.2)	19.5	(0.3)
35-49	20.8	(1.4)	32.6	(1.6)	30.7	(0.5)
50+	<u>0.9</u>	(0.4)	<u>10.2</u>	(1.4)	<u>34.5</u>	(0.6)
	100.0		100.0		100.0	
Race/Ethnicity						
White, not Hispanic	85.1	(0.8)	87.0	(0.8)	79.4	(0.5)
Black, not Hispanic	7.2	(0.6)	5.3	(0.5)	10.1	(0.4)
Hispanic	5.9	(0.5)	6.6	(0.5)	7.1	(0.3)
Other	<u>1.8</u>	(0.4)	<u>1.1</u>	(0.3)	<u>3.4</u>	(0.2)
	100.0		100.0		100.0	
Sex						
Male	68.8	(1.2)	71.3	(1.1)	48.1	(0.5)
Female	<u>31.2</u>	(1.2)	<u>28.7</u>	(1.1)	<u>51.9</u>	(0.5)
	100.0		100.0		100.0	
Education (18+ only)						
Less than high school	16.8	(1.2)	11.4	(1.1)	19.2	(0.5)
High school degree	34.8	(1.3)	34.3	(1.5)	34.3	(0.6)
Some college	31.5	(1.3)	27.3	(1.4)	22.7	(0.5)
College Graduate	<u>16.8</u>	(1.2)	<u>27.0</u>	(1.6)	<u>23.7</u>	(0.6)
	100.0		100.0		100.0	
Employment Status (18+ only)						
Full-time	60.7	(1.5)	72.4	(1.4)	54.3	(0.6)
Part-time	14.7	(1.1)	10.7	(0.8)	11.2	(0.4)
Unemployed	12.9	(1.1)	6.0	(0.6)	5.3	(0.2)
Other	<u>11.7</u>	(1.0)	<u>10.9</u>	(1.2)	<u>29.3</u>	(0.5)
	100.0		100.0		100.0	
Marital Status						
Married	30.5	(1.4)	51.1	(1.6)	64.5	(0.5)
Widowed	0.4	(0.2)	1.7	(0.6)	6.3	(0.3)
Separated/Divorced	14.2	(1.0)	14.0	(1.1)	9.8	(0.3)
Never Married	<u>55.0</u>	(1.5)	<u>33.2</u>	(1.4)	<u>19.4</u>	(0.3)
	100.0		100.0		100.0	
Family Income						
\$ 0- 8,999	13.6	(0.3)	7.9	(0.8)	9.6	(0.3)
\$ 9-19,999	21.2	(0.4)	14.3	(1.2)	20.1	(0.5)
\$20-39,999	32.0	(1.2)	35.0	(1.8)	33.6	(0.5)
\$40-74,999	25.3	(1.3)	32.4	(1.9)	28.4	(0.5)
\$75,000 and over	<u>6.7</u>	(0.7)	<u>10.4</u>	(1.4)	<u>8.3</u>	(0.3)
	100.0		100.0		100.0	

Table 3: Drinking patterns and problems among DUIs using drugs, DUIs using alcohol only, and non DUIs: 1991-93

	<u>DUI</u> <u>DRUG USING</u> (%) (SE)	<u>DUI</u> <u>NO DRUG</u> (%) (SE)	<u>No DUI</u> (%) (SE)
Drank 5+ drinks on 5 or more days in past month	38.0 (1.6)	21.8 (1.3)	6.5 (0.3)
In Past Year:			
Drunk on alcohol at least 1-2 days/week	22.3 (1.2)	9.4 (0.8)	2.7 (0.2)
Drunk alcohol: Daily/almost daily	27.8 (1.3)	21.5 (1.4)	12.5 (0.6)
1-2 days week	35.7 (1.3)	31.4 (1.4)	15.4 (0.5)
Got treatment for drinking	5.7 (0.6)	3.2 (0.5)	0.6 (0.1)
Dependent on alcohol or any drug	13.7 (0.9)	5.1 (0.6)	2.1 (0.1)
Stayed out of work or school due to hangover	20.1 (1.1)	7.2 (0.6)	1.2 (0.1)
Lost/nearly lost job due to drinking	4.2 (0.7)	1.3 (0.4)	0.2 (0.0)
Told by spouse/date to cut down on drinking	26.1 (1.1)	19.5 (1.4)	4.7 (0.2)
Afraid might be/become alcoholic	24.1 (1.2)	14.4 (0.9)	4.0 (0.2)
Stayed drunk for more than 1 day at a time	15.9 (1.1)	5.5 (0.6)	0.7 (0.1)
Had a drink first thing in the morning	6.3 (0.8)	2.8 (0.5)	0.4 (0.0)
Hands shook after drinking day before	12.6 (1.0)	6.6 (0.8)	0.7 (0.1)

Table 4: Rates of past year illicit drug use among DUIs who used an illicit drug in the past year by age: 1991-93

	<u>Age 16-20</u> (%) (SE)	<u>Age 21-34</u> (%) (SE)	<u>Age 35 +</u> (%) (SE)	<u>Total</u> (%) (SE)
Used in Combination With Alcohol				
Any Illicit Drug	72.5 (2.0)	70.5 (1.4)	60.9 (3.9)	68.8 (1.3)
Sedatives	4.3 (0.8)	3.0 (0.5)	3.0 (1.6)	3.3 (0.5)
Tranquilizers	5.3 (0.9)	5.6 (0.8)	7.1 (2.2)	5.9 (0.8)
Stimulants	10.2 (1.4)	8.8 (1.0)	4.3 (1.7)	8.1 (0.7)
Analgesics	8.7 (1.5)	8.8 (1.0)	6.9 (2.3)	8.4 (0.8)
Marijuana	68.0 (2.2)	60.9 (1.6)	53.0 (4.3)	60.6 (1.5)
Inhalants	5.0 (1.1)	2.2 (0.5)	2.1 (1.2)	2.8 (0.4)
Cocaine	9.7 (1.3)	18.7 (1.2)	19.3 (3.6)	17.0 (1.1)
Hallucinogens	16.0 (1.5)	7.4 (0.9)	2.1 (1.0)	8.0 (0.6)
Heroin	1.2 (0.5)	0.5 (0.1)	1.4 (0.7)	0.8 (0.2)
Used in the Past Year				
Sedatives	8.7 (1.2)	7.0 (0.7)	10.5 (2.6)	8.1 (0.8)
Tranquilizers	10.6 (1.4)	13.5 (1.0)	18.5 (3.3)	14.0 (1.0)
Stimulants	18.5 (2.0)	15.4 (1.1)	13.2 (2.9)	15.6 (1.0)
Analgesics	18.0 (1.8)	20.6 (1.4)	21.1 (3.7)	20.2 (1.2)
Marijuana	90.9 (1.6)	85.8 (1.2)	84.2 (3.0)	86.4 (1.1)
Inhalants	20.0 (1.8)	9.3 (0.9)	4.3 (1.5)	10.5 (0.7)
Cocaine	20.7 (1.8)	36.3 (1.5)	34.7 (4.0)	32.8 (1.3)
Hallucinogens	31.4 (2.2)	15.8 (1.1)	7.3 (2.5)	17.2 (1.0)
Heroin	2.4 (0.8)	1.3 (0.3)	2.2 (0.9)	1.7 (0.3)