DRUG- AND ALCOHOL-INVOLVED DRIVING: FINDINGS FROM A TELEPHONE SURVEY IN NEW YORK STATE, 1986

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Summary. As part of a periodic survey of substance abuse among NY State residents 18 and older, 6368 respondents were interviewed by telephone on driving after use of drugs (D) alone, alcohol (A) alone and both (AD) combined. The prevalence of D-, A- and AD-involved driving at least once a month was 12.1%, 5.0%, and 3.8%, respectively. Findings on reported difficulty driving safely at least a few times and on substance involvement in accidents, in the past year (among D-, A- and AD-involved drivers), suggest that compared to alcohol, drugged driving is a smaller but significant traffic safety problem in its own right.

Background

Over the past 10 years, there has been a dramatic increase in public concern and research on drug-involved driving. However, whether drugged driving is a traffic issue is not settled, in part, because of major gaps in the drugs-driving literature (Simpson, 1986). While many studies have established that various drugs can impair psychomotor performance related to driving (NHTSA, 1980), the traffic safety implications of these findings are unclear. At present, there are very limited data on individuals who actually drive after using drugs, whether alone or with alcohol, and the frequency and severity of adverse consequences of drugged driving. In short, a significant gap in the literature involves the size and nature of the population at risk for adverse drugged driving incidents.

This study was done in part to address the need for population estimates on driving after drug use. Questions on frequency of driving after drug use, difficulty driving safely when driving under the influence of drugs, and drug (and alcohol) involvement in accidents, were asked in a periodic statewide survey of New York State residents on drug and alcohol use and abuse. Sixty-three hundred sixty-eight respondents aged 18 and over were interviewed by telephone in Spring, 1986 by Louis Harris and Associates, Inc.

Method

In Spring, 1986, the New York State Division of Substance Abuse Services (DSAS) and the Division of Alcoholism and Alcohol Abuse (DAAA) sponsored the statewide survey of substance abuse. Residents for the survey were selected by region of the state and how urbanized their area of residence was.

A cross section of 4,010 interviews was conducted representing the major part of the state's household population. Interviews were conducted by telephone and a version of random digit dialing was used to sample households randomly within telephone exchanges.

Several subpopulations were given special attention because they are often missed in surveys or because of policy concerns of the sponsors, including
Hispanic residents (N = 563), 18 to 24 year olds (N = 501), college students (N = 483) and "transients" (N = 412) living in low priced hotels or shelters. Also, a sample of 399 New York City residents living in households without telephones were interviewed in person. The total of 6,368 residents was selected to represent the state's population of adults. The various parts of the sample were balanced in proportion to their numbers in the state's population by use of weights from census data.

Respondents were asked about how often they drove while feeling the effects of drugs alone (illegal drugs and prescribed drugs used nonmedically, only), while feeling the effects of alcohol alone, and while feeling the effects of drugs and alcohol together, in the past year. The question wording "...while feeling the effects of..." was used to direct respondents' attention to when they were being noticeably affected by what they consumed earlier.

For those substance-involved driving occasions, they were asked on how many of them they had significant difficulty driving safely, using categories "all the time" to "never". Then respondents were asked if they had any accidents in the past year, and if they did, whether they were feeling the effects of drugs alone, alcohol alone or both, when the accident(s) occurred. The questions on driving were but a small section of a larger questionnaire aimed at various aspects of drug use and abuse, alcohol use and abuse, substance abuse and mental health problems and treatment experience, and respondent characteristics.

Results

Of the estimated 74.5% of the state's population 18 and older who drove in the year before the survey, 9,434,000, an estimated 1,339,700 used a drug(s), 7,721,000 used alcohol, and 1,249,000 used alcohol and used a drug(s). Among drivers who had used a drug, 12.1% (161,740) drove while feeling the effects of drugs alone at least once a month; 5.0% (389,690) of relevant drivers drove while feeling the effects of alcohol alone at least once a month. The prevalence for drugs and alcohol combined was 3.8% (47,603). Numbers in parentheses are projected numbers of relevant drivers statewide.

To get at a more serious level of substance-involved driving from the standpoint of vulnerability or risk of an adverse driving incident, relevant respondents were then asked about how often they had significant difficulty driving safely on those occasions they drove while feeling the effects of drugs, alcohol or both.

As shown in Table 2, rates of reported difficulty driving safely for the category "at least a few times" were 9.9% (33,490) for drugs alone, 21.7% (238,120) for alcohol alone and 44.6% (60,740) for drugs and alcohol combined. Further, 8.4% (15,490) reported significant difficulty most or all of the time when driving under the influence of drugs and alcohol, over twice the rate for alcohol alone, 3.9% (65,390), and over three times the rate for drugs alone, 2.7% (9,410).

Finally, among respondents who reported an accident(s) in the past year and who had driven after using drugs, or alcohol or both, seven percent reported the effects of drugs alone (3,640), 8.5% (13,140), the effects of alcohol alone,
and a substantial 22.8% (7,160), the effects of both combined. The estimated number of New York State residents who had an accident in the '85-'86 period was 752,000. Thus, reported substance-involvement among accident-drivers was about 2-3%, for non-fatal accidents.

Discussion

To the author's knowledge, these results are the only ones currently available about substance-involved driving for an entire (driving) population aged 18 and older. One way to approach the findings is to compare drug- with alcohol-involved driving knowing there is a well-documented relationship between blood alcohol concentration and level of impaired driving (Terhune, 1986), but little data for drugs and impaired driving. Severe space limitations in the survey questionnaire precluded getting any drug dosage information or information about accident severity. The tack taken here is to consider the drugged driving data and ask whether, if these were alcohol-involved, we would be concerned about the increment in the size of the problem from the standpoint of traffic safety.

First, the prevalence of driving while feeling the effects of drugs at least monthly was larger than the rate for alcohol, also true for the frequency categories "at least once a week" and "at least once in the past year." The largest difference in prevalence was in the at-least-weekly category; this category also had the smallest difference in projected numbers of residents who drove while feeling the effects of drugs versus alcohol (viz., 90,970 for drugs compared to 181,620 for alcohol). For the category "less than monthly but at least once", by contrast, there were more than seven times as many alcohol- as drug-involved drivers. That there are more alcohol- than drug-involved drivers generally is consistent with the fact that the number of drivers who used alcohol at all was nearly six times as large as the number who used drugs, as defined here.

The traffic safety implications are clearer for alcohol than for drugs: nearly 400,000 people statewide drove while feeling the effects of alcohol at least once a month, and 180,000 of these, at least once a week, quite disturbing considering the established deleterious effects of even small doses. Not knowing the impairment liability of the drug dosages taken by drug-involved drivers precludes a clear cut conclusion about traffic safety. However, given the approach outlined earlier the frequency data suggest that if the impairment liability of the drug dosages was comparable to alcohol, to determine that the pool at risk was 40% larger (at least once a month) or 50% larger (at least once a week) than a demonstrably at-risk (alcohol) population, would represent a decidedly more serious traffic safety problem even without the projected numbers for drug-alcohol involved drivers.

More relevant to drugged driving as a traffic safety problem are the findings on safe driving difficulty. They showed that about 10% of drug-involved drivers reported significant difficulty at least a few times, about half the prevalence of alcohol-involved drivers (who were ten times more numerous). Especially noteworthy was the high rate of reported difficulty driving safely by drug-alcohol involved drivers, nearly 45%, who were about 2.5 times more numerous than their drug-involved counterparts. Thus, driving while feeling the effects of drugs (doses and conditions of consumption unspecified) has some potential for impairing ability to drive safely, while alcohol's
potential appears greater. Consistent with the generally additive effects of drug-alcohol interactions, rate of difficulty driving safely for drug-alcohol involved drivers is more than twice the rate for alcohol alone, over four times the rate for drugs alone.

Finally, consider substance-involvement among accident drivers. Prevalence of reported drugs-only and alcohol-only involvement was similar, ("involvement" only refers only to "feeling the effects of" not causal involvement). Rate of reported drug-alcohol involvement was nearly three times as large as the rate for each substance category separately.

These findings appear inconsistent with Terhune's (1982) who found alcohol involvement was greater than either drug or combined drug-alcohol involvement, in nonfatal accidents. In the present study, by contrast, drug-alcohol involvement was roughly three times as common as drug-only and alcohol-only involvement.

The reasons for the apparent discrepancy are not clear though there are many differences between the two studies. These include the method for determining substance involvement--blood toxicologies on specimens from accident drivers (Terhune) compared to retrospective self-reports given in a telephone interview; accident severity, subject characteristics, and possible secular changes in substance abuse and involvement in driving.

The present study has provided new data on drug-involved driving and its status as a traffic safety issue. In New York State, there is a substantial pool of individuals who drive fairly regularly (at least once a month) while feeling the effects of drugs alone. If the impairment liability of the drugs and dosages used were comparable to alcohol, the added number of drivers to those already at risk from alcohol would make for a decidedly more serious traffic safety problem. The findings on difficulty driving safely are more ambiguous: occasional, significant difficulty driving safely was twice as prevalent for alcohol-compared to drug-involved drivers. Practically speaking, the numbers of drivers whose ability to drive safely is reduced by alcohol is substantially greater than their drug-influenced counterparts, suggesting a traffic safety problem for drugs alone that is real but of more limited scope.

Rates of drug-only and alcohol-only involvement among accident drivers, by contrast, were quite similar. Without drug dosage and accident severity information, however, it would be inappropriate to draw traffic safety implications beyond suggesting that if drug impairment liability was comparable to alcohol, the added numbers of drug-involved accident drivers (a 28% increase) would constitute a worsening of the traffic safety problem.

Some special comment is in order for the findings on drug-alcohol involved driving. Safe driving difficulty associated with drug-alcohol involved driving and drug-alcohol involvement among accident drivers was substantially larger than for either substance category alone and in projected numbers of drivers, by nearly two and three times compared to estimates for drugs alone. Clearly, these data suggest that drug-alcohol involved driving represents a more serious traffic safety problem than drug-involved driving, which by itself exacerbates the traffic safety problems posed by alcohol alone, as suggested above.
A number of questions are suggested by the present findings including the need to more fully specify drugs, dosages used by drug and drug-alcohol involved drivers, severity of accidents, psychosocial characteristics of substance-involved and non-involved drivers. In addition, more research should be done to elucidate the role of pharmacological and nonpharmacological factors in impaired driving and accidents, and to evaluate the reliability and validity of substance use and accident data obtained with survey methodologies.

Acknowledgements

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Bibliography


Table 1

<table>
<thead>
<tr>
<th>Frequency</th>
<th>DUID</th>
<th>DUIA</th>
<th>DUID</th>
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<tbody>
<tr>
<td>At least a. Weekly</td>
<td>90,970</td>
<td>181,620</td>
<td>18,660</td>
</tr>
<tr>
<td>At least b. Monthly</td>
<td>161,740</td>
<td>389,690</td>
<td>47,603</td>
</tr>
<tr>
<td>Less than monthly c. but at least ONCE</td>
<td>170,900</td>
<td>1,305,700</td>
<td>135,688</td>
</tr>
<tr>
<td>At least ONCE d. in past year (b.+.c.)</td>
<td>352,640</td>
<td>1,686,340</td>
<td>183,291</td>
</tr>
<tr>
<td>Estimated Pop. e. Eligible For Question</td>
<td>1,339,670</td>
<td>7,721,567</td>
<td>1,249,430</td>
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</table>

*Refers to individuals who drove and who used a substance category (i.e., drugs, alcohol or both), and were asked questions about driving under the influence (of that category of substances).

1"Past Year" at the time this survey was done would be Spring, '85 - Spring, '86.
Table 2

Significant Difficulty Driving Safely When Driving Under the Influence of Drugs (DUID), Under the Influence of Alcohol (DUIA), and Under the Influence of Both (DUIB), In the Past Year

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Difficulty Driving Safely-DUID</th>
<th>Difficulty Driving Safely-DUIA</th>
<th>Difficulty Driving Safely-DUIB</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N*</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>a. All or Most of the Time</td>
<td>9,410</td>
<td>2.7</td>
<td>65,930</td>
</tr>
<tr>
<td>b. Sometimes</td>
<td>2,720</td>
<td>0.8</td>
<td>63,120</td>
</tr>
<tr>
<td>c. A Few Times</td>
<td>21,360</td>
<td>6.4</td>
<td>238,120</td>
</tr>
<tr>
<td>d. At Least A Few Times</td>
<td>33,490</td>
<td>9.9</td>
<td>367,710</td>
</tr>
<tr>
<td>e. Never</td>
<td>284,380</td>
<td>85.5</td>
<td>1,298,470</td>
</tr>
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</table>

* Projected number of New York Residents Statewide

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