

SESSION 5

THE VERMONT DRINKING-DRIVER RESEARCH PROGRAM

OVERVIEW OF THE DRINKING-DRIVER RESEARCH PROGRAM OF THE VERMONT ALCOHOL RESEARCH CENTER

M. W. Perrine, Vermont Alcohol Research Center

The Vermont Alcohol Research Center was founded in 1988 for the purpose of scientific investigation into the interrelations of alcohol, injury risk, and human behavior. Alcohol is the common element in all ongoing and planned research projects; its effects are examined from both public health and public safety perspectives. Each project involves one or more of the following **approaches**: epidemiologic, phenomenologic, and/or experimental. Accordingly, each project also involves one or more of the following **types of study**: field, survey, and laboratory research. Project sites are located in Maryland, Ohio, California, and Vermont. Our drinking-driver research program currently comprises three large-scale projects. Each is described briefly and selected results are presented.

1. **Psychobiological Studies of Alcohol-Tolerant Drivers**: Designed to study characteristics of alcohol tolerance from both psychosocial and biomedical perspectives. It focuses on differences in alcohol sensitivity and tolerance measured in the laboratory, their prevalence among drinking drivers, and their relevance for public health and public safety.

2. **Alcohol Tolerance and Adaptation Among Drinking Drivers**: Designed primarily to determine: (1) whether a significant proportion of drinking drivers do not manifest typical signs of intoxication, even at BACs well above the legal limit; insofar as there are such drivers, (2) how many, and (3) how their demographic, social, and psychological profiles differ from those of the driving population at large.

3. **Probabilities of Drunken Driving Among DUIs and the Public**: Designed to investigate likelihood of alcohol-impaired driving among selected segments: (1) general driving population, (2) nocturnal driving population, (3) convicted DUI offenders in treatment programs, and (4) bar patrons. Extensive interview data and official driver record data were collected from 4,000 respondents in four states. This project is now focused on: (1) obtaining same types of information from female and older drinking drivers, and (2) developing

measurement instruments and statistical models for predicting future involvement in alcohol-related crashes and DUI.

These three projects are funded by research grants (P01 AA07203, R01 AA07876, and R01 AA06926, respectively) from the National Institute on Alcohol Abuse and Alcoholism to M.W. Perrine, Principal Investigator.

COMPARISON OF RISK CHARACTERISTICS OF FIRST AND MULTIPLE DUI OFFENDERS

B.J. Anderson, M.W. Perrine, and
M.E. Fortini, Vermont Alcohol Research Center

Prior research has reported marked differences between convicted DUI offenders and the general driving population. Substantial heterogeneity has also been documented within the population of convicted DUI offenders, and the characteristics of first and multiple offenders are frequently thought to differ. Nevertheless, surprisingly few studies have directly compared first and multiple offenders, and the available evidence is neither conclusive nor completely consistent.

In this study, we compared the risk characteristics of convicted first and multiple DUI offenders. Subjects ($n = 1,361$), recruited from California DUI offender programs, completed the comprehensive Health Attitudes and Practices Survey. Based on prior research, a total of 24 predictor variables were selected to represent distinct domains. Predictor variables included demographic characteristics, self-reported quantity and frequency of alcohol consumption, measures of alcohol-problem severity, driving-related attitudes, and selected personality characteristics.

Logistic regression analysis was used to examine the efficacy of the selected predictors. The final model included 13 statistically significant predictors of offender status. Classification analysis indicated that the model correctly predicted group membership for nearly 68% of the subjects. Compared to random classification based on equal probability, the selected model reduced classification error by about 35%.

As expected, the analysis indicated significantly higher alcohol-problem severity among multiple offenders. Self-reported usual drinking quantity was a stronger predictor of offender status than measures of drinking frequency. Offender status was significantly

and lower total-family income were more likely to be multiple offenders. Multivariate analysis also indicated that multiple offenders had significantly higher levels of depression, general assaultiveness, and problem denial. Bivariate analysis indicated that multiple offenders scored higher on measures of driving for tension reduction and resentment; these associations, however, were not statistically significant when controlling for demographic characteristics and drinking-problem severity. Contrary to a priori expectations, multiple offenders exhibited significantly lower levels of sensation seeking.

Overall, our results were generally consistent with past research, indicating that first and multiple DUI offenders vary across several potentially important dimensions. Not surprisingly, multiple offenders manifest elevated alcohol-problem severity which likely contributes to increased driving risk. Our findings also suggest that many multiple offenders have driving-related attitudes and personality characteristics that could contribute to crash risk. Unfortunately, our results are based on cross-sectional data and the temporal sequence that underlies the observed relationships cannot be unambiguously established. Longitudinal research is needed to determine if variables that distinguish first and multiple offenders are useful predictors of subsequent DUI arrests and crash involvement.

This research was funded as part of a grant (R01 AA06926-07) from the National Institute on Alcohol Abuse and Alcoholism to M.W. Perrine, Principal Investigator.

A COMPARISON OF MALE AND FEMALE DRINKING DRIVERS

A.R. Meyers, B.J. Anderson, M.W. Perrine, and M.E. Fortini, Vermont Alcohol Research Center

Recent studies, using official records, suggest that young female drivers may represent a subpopulation at increasing risk of alcohol-related crash involvement. But female drinking drivers have not been studied extensively, and comparatively little is known about their potential risk characteristics, or the ways in which they may differ from male drinking drivers.

In this study, we compared convicted male ($n = 1,113$) and female ($n = 242$) DUI offenders. Subjects were recruited from California DUI offender programs and asked to complete the comprehensive Health Attitudes and Practices Survey. Subjects were compared on a total of 23 variables, including demographic characteristics, self-reported quantity and frequency of alcohol consumption, measures of alcohol-problem severity, driving-related attitudes, and selected

personality characteristics.

Not surprisingly, discriminant analysis indicated that males were significantly (multivariate $p \leq .05$) more likely to be multiple offenders than females. Additionally, males had significantly higher personal incomes, and reported both more frequent and higher quantity alcohol consumption than their female counterparts. The analysis also revealed gender differences in driving-related attitudes and selected personality characteristics. After controlling for offender status, demographic characteristics, and drinking-related behaviors, males scored significantly higher on measures of competitive driving, sensation seeking, resentment, depression, and assaultiveness. Males also exhibited a greater tendency to deny negative behaviors and personality traits. Females scored significantly higher than males on a measure of poor emotional adjustment. Standardized discriminant function coefficients indicated that personal income, assaultiveness, and emotional adjustment were the most effective discriminating variables. Compared to random assignment based on an equal probability model, the discriminant substantially improved classification results; approximately 72% of females, and 73% of males, were correctly classified.

In summary, this analysis revealed several statistically significant differences between male and female DUI offenders. Such differences may be clinically relevant and suggest a possible need for separate treatment and intervention strategies for female and male DUI offenders. Males, for example, were more likely to have attitudes and personality traits (e.g. assaultiveness, sensation seeking, driving for competitive speed) that may exacerbate driving risk. Males with such characteristics may benefit from programs that help them channel their energies into more socially acceptable outlets. Female offenders, on the other hand, tended to display poorer emotional adjustment and could potentially benefit from programs that enhance emotional stability and self-image. Clearly, much more research is needed to investigate the potential interaction effects of gender with treatment outcomes.

FACTORS RELATED TO JUDICIAL ASSIGNMENT OF DUI OFFENDERS TO TREATMENT

Robert B. Voas, A. Scott Tippetts, and M.W. Perrine, Vermont Alcohol Research Center

Research in the United States over the last three decades has made it clear that at least one-third of the drivers responsible for alcohol-related crashes and of the drivers arrested for drunken driving are likely to be "problem drinkers"; that is, individuals whose drinking is producing negative life consequences and who can