

Library Watch on driving

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Alcohol continues to affect sleepiness related driving impairment, when breath alcohol levels have fallen to near-zero.

Barrett PR; Horne JA; Reyner LA. *Human Psychopharmacology: Clinical and Experimental* 19(6): 421-423, 2004. (6 refs.)

Epidemiological findings point to very low blood alcohol levels heightening the risk of sleep-related fatal road crashes. This was further assessed using a full sized interactive car simulator. Twenty, sleep restricted, healthy young men underwent a 2 h simulated afternoon monotonous drive, having previously consumed nil alcohol or 3 units >90 min previously, and having near-zero breath alcohol (BrACs) at the start of the drive. In a repeated measures, double-blind, balanced design, driving performance, subjective sleepiness and EEG were monitored throughout. Compared with nil alcohol, the alcohol condition initially increased sleepiness-related driving impairment. However, this was not mirrored by subjective sleepiness or EEG. An unexpected reversal (i.e. improvement) in driving impairment occurred with the alcohol group, in the second hour of the drive. This was supported by a trend for improved subjective alertness. Alcohol continued to interact with sleepiness-related driving impairment after BrACs had reached zero. However, a lack of subjective perception of increased sleepiness, at this time, further points to the dangerous combination of even modest alcohol intake and sleepiness, and confirms the road crash findings. BrACs are a poor guide to driver impairment. Copyright 2004, John Wiley and Sons.

Heavy alcohol use and youth suicide: Evidence from tougher drunk driving laws.

Carpenter C. *Journal of Policy Analysis and Management* 23(4): 831-842, 2004. (29 refs.)

This paper uses the widespread variation across states in the timing of adoption of tougher drunk driving laws that set very low legal blood alcohol limits for drivers under age 21 - zero tolerance (ZT) laws - to provide new evidence on the causal effect of alcohol use on youth suicide. ZT laws reduced heavy episodic drinking by underage men, with no effect for slightly older males. I estimate the reduced form effect of ZT policy adoption on suicide deaths among 15-17-, 18-

20-, 21-24-, and 25-29-year-old males and females for the period 1981-1998. The models control for macroeconomic conditions, demographic changes, other alcohol control policies, state and year fixed effects, and smooth state trends. Results indicate statistically significant reductions in suicide among young males aged 15-17 and 18-20 associated with adoption of ZT laws on the order of 7 to 10 percent. I find no effects for slightly older males who were unaffected by the tougher drunk driving laws, and no consistent effects for females. These results provide new and compelling evidence that heavy alcohol use causes young male suicide. Copyright 2004, Association for Public Policy Analysis and Management.

Long term medical costs of motor vehicle casualties in Alberta (1999): A population-based, incidence approach.

Jacobs P; Lier D; Schopflocher D. *Accident Analysis and Prevention* 36(6): 1099-1103, 2004. (20 refs.)

The purpose of this paper is to estimate the long term medical costs attributable to motor vehicle accidents (MVAs) for all persons in Alberta, Canada in 1999, primarily using observational data. Injury claims with personal identifiers for 1999 were reported by the automobile insurance companies. These records were linked to the provincial health registry which covers the entire population. The registry is linked to databases which identify all inpatient and outpatient (including emergency room) visits, physician services, and other health records. Utilization and costs were derived for all casualties who were admitted to hospital or seen in an emergency room, and for a large sample of other (low severity) cases; a sample of matched controls was derived and their costs were also estimated. Actual costs were obtained for 3 years, and longer term costs were projected for subsequent years. Total costs attributable to MVAs were estimated at over \$117 million for 1999. Average net costs per casualty, reported by severity group, were: \$22.9 thousand for hospital cases; \$3.6 thousand for emergency room - only cases; and \$157 for other cases. Long term costs were 65% of first year costs for hospitalized cases and 250% for emergency room cases. Overall, aggregate costs for all non-hospital

cases exceeded those for hospitalized cases. Copyright 2004, Elsevier Science Ltd.

The criminalization of impaired driving in Canada: Assessing the deterrent impact of Canada's first per se law.

Asbridge M; Mann RE; Flam-Zalcman R; Stoduto G. *Journal of Studies on Alcohol* 65(4): 450-459, 2004. (55 refs.)

Objective: The goal of this article is to assess the effectiveness of Canada's first per se law criminalizing driving with a blood alcohol concentration of over 0.08%, the Breathalyser Law introduced in 1969, in reducing drinking-driver-related fatalities. We also examine the long-term deterrent effect of this law on driver fatality rates. In the analyses we include such potentially confounding influences on drinking-driver fatality rates as the founding of Mothers Against Drunk Driving (MADD), Canada; the introduction of Ontario's mandatory seatbelt law; per capita alcohol consumption; the unemployment rate; vehicles registered per capita; and precipitation rates. Method: Interrupted time series analysis with auto-regressive integrated moving average modeling was applied to the annual number of motor vehicle driver fatalities in Ontario for the period 1962-1996 to examine drinking- and nondrinking-driver fatalities. Results: A significant intervention effect was found for the Breathalyser Law in Ontario, which was associated with an estimated reduction of 18% in the number of fatally injured drinking drivers. No corresponding effect was observed for nondrinking-driver fatalities. Per capita alcohol consumption was positively associated with drinking-driver fatalities; Ontario's mandatory seatbelt law was linked to nondrinking-driver fatalities; and the formation of MADD, Canada, was strongly associated with drinking- and nondrinking-driver fatalities. Conclusions: These data provide evidence that Canada's per se law had a specific deterrent effect that resulted in a reduction in drinking-driver fatalities. A long-term deterrent effect was also observed, which is in contrast to the early policy literature on impaired driving. Copyright 2004, Alcohol Research Documentation Center.

A review of drug use and driving: Epidemiology, impairment, risk factors and risk perceptions. (review).

Kelly E; Darke S; Ross J. *Drug and Alcohol Review* 23(3): 319-344, 2004. (211 refs.)

The existing literature on the prevalence of drug driving, the effects of drugs on driving performance, risk factors and risk perceptions associated with drug

driving was reviewed. The 12-month prevalence of drug driving among the general population is approximately 4%. Drugs are detected commonly among those involved in motor vehicle accidents, with studies reporting up to 25% of accident-involved drivers positive for drugs. Cannabis is generally the most common drug detected in accident-involved drivers, followed by benzodiazepines, cocaine, amphetamines and opioids. Polydrug use is common among accident-involved drivers. Studies of impairment indicate an undeniable association between alcohol and driving impairment. There is also evidence that cannabis and benzodiazepines increase accident risk. The most equivocal evidence surrounds opioids and stimulants. It is apparent that drugs in combination with alcohol, and multiple drugs, present an even greater risk. Demographically, young males are over-represented among drug drivers. Although there is an association between alcohol use problems and drink driving, it is unclear whether such an association exists between drug use problems and drug driving. Evidence surrounding psychosocial factors and driving behaviour is also equivocal at this stage. While most drivers perceive drug driving to be dangerous and unacceptable, there is less concern about impaired driving among drug drivers and drink drivers than from those who have not engaged in impaired driving. Risk perceptions differ according to drug type, with certain drugs (e.g. cannabis) seen as producing less impairment than others (e.g. alcohol). It is concluded that drug driving is a significant problem, both in terms of a general public health issue and as a specific concern for drug users. Copyright 2004, Australian Medical and Professional Society on Alcohol and Other Drugs.

How can repeat drunk drivers be influenced to change? Analysis of the association between drunk driving and DUI recidivists' attitudes and beliefs.

Greenberg MD; Morral AR; Jain AK. *Journal of Studies on Alcohol* 65(4): 460-463, 2004. (15 refs.)

Objective: Public policy interventions designed to deter or prevent drunk driving depend in part, on modifying beliefs concerning the riskiness, social acceptability and immorality of driving under the influence of alcohol. The current study examines the association of these beliefs with the incidence of alcohol-impaired driving. Method: Interviews were conducted with 273 people with multiple driving under the influence (DUI) offenses. Data included self-reported frequency of driving after drinking in the past year, as well as measures of moral and prescriptive beliefs concerning alcohol-impaired driving (internal behavioral controls), perceived risks of criminal

punishment and accidents associated with alcohol-impaired driving (external behavioral controls) and perceived peer group attitudes toward alcohol-impaired driving (social controls). Results: Logit regression modeling showed significant, unique protective associations with behavioral control items in each category. Conclusions: Behavioral controls may protect against alcohol-impaired driving behavior even in a high-risk sample of repeat DUI offenders. Policy interventions designed to curtail drunk driving might seek to enhance these sorts of behavioral controls among DUI offenders. Copyright 2004, Alcohol Research Documentation Center.

Psychiatric disorders of convicted DWI offenders: A comparison among Hispanics, American Indians and non-Hispanic whites.

De Baca JC; Lapham SC; Skipper BJ; Hunt WC. *Journal of Studies on Alcohol* 65(4): 419-427, 2004. (56 refs.)

Objective: Alcohol-impaired offenders have high prevalence rates of psychiatric disorders; however, differences in prevalence rates among ethnic minorities have not been investigated. This study compares lifetime prevalence estimates of DSM-III-R psychiatric disorders (alcohol and drug abuse and dependence, nicotine dependence, major depressive disorder [MDD], dysthymia, generalized anxiety disorder, posttraumatic stress disorder and antisocial personality disorder [ASPD]) among Hispanics, American Indians and non-Hispanic whites convicted of driving while alcohol-impaired. Method: Offenders (758 women, 631 men) previously referred to a screening program in Bernalillo County, NM, were interviewed for this study using a structured diagnostic interview. Results: Adjusting for age, education, income and marital status, Hispanic women had significantly higher rates of alcohol abuse (odds ratio [OR] = 2.2) and lower rates of alcohol dependence (OR = 0.3), drug abuse (OR = 0.4) and nicotine dependence (OR = 0.3) than non-Hispanic white women. American-Indian women showed significantly lower rates of alcohol dependence (OR = 0.5), nicotine dependence (OR = 0.2) and MDD (OR = 0.3) than non-Hispanic white women. Hispanic men had significantly lower rates of alcohol dependence (OR = 0.6), drug dependence (OR = 0.5), nicotine dependence (OR = 0.2), MDD (OR = 0.5) and ASPD (OR = 0.4) than non-Hispanic white men. American-Indian men also reported significantly lower rates of drug dependence (OR = 0.5), nicotine dependence (OR = 0.2) and ASPD (OR = 0.3) than non-Hispanic white men. Conclusions: After statistically adjusting for demographic differences, minority groups were in

general less affected by substance abuse problems and had similar or lower rates of other psychiatric disorders when compared with non-Hispanic whites. Copyright 2004, Alcohol Research Documentation Center.

Accuracy of alcohol diagnosis among DWI offenders referred for screening.

Lapham SC; C'de Baca J; McMillan G; Hunt WC. *Drug and Alcohol Dependence* 76(2): 135-141, 2004. (36 refs.)

Background: Most US courts use screening programs to evaluate substance-abuse problems of convicted driving while impaired (DWI) offenders. Typically self-report information determines need for treatment. However, little is known about the accuracy of self-reports of alcohol-use problems in this population. Methods: DSM-III-R alcohol abuse and dependence diagnoses from an initial, court-ordered screening evaluation of 583 female and 495 male convicted DWI offenders were compared with diagnoses and other self-reported information from a voluntary, noncoerced interview 5 years after the screening referral. Results: At initial screening, 16.8% of offenders were diagnosed with alcohol abuse and 20.1% with alcohol dependence. At the 5-year interview, 19.9 and 60.1% received a retrospective diagnosis of alcohol abuse or dependence at the age at which they were screened. Significantly fewer of those with a retrospective alcohol diagnosis reported that their alcohol use self-reports at screening were "very accurate" compared to those with no retrospective diagnosis. Conclusions: Although many DWI offenders undergoing screening have diagnosable alcohol-related problems, underreporting is common, leading to inaccurate diagnosis and, therefore, a missed treatment opportunity. The research community and policymakers should review and reform the current screening system for alcohol-impaired drivers to better address this serious public health problem. Copyright 2004, Elsevier Science Ireland.

Effects of lowering the legal BAC to 0.08 on single-vehicle-nighttime fatal traffic crashes in 19 jurisdictions.

Bernat DH; Dunsmuir WTM; Wagenaar AC. *Accident Analysis and Prevention* 36(6): 1089-1097, 2004. (33 refs.)

Background: In the past few decades, numerous policies, including those that lower legal blood alcohol concentration limits, have been enacted to reduce alcohol-impaired driving. In the US, 41 states and the District of Columbia have enacted 0.08 per se laws, which specify that if a driver's BAC is at or above 0.08, a violation has occurred even if the driver does

not show signs of intoxication. Objective: We examined effects of lowering the blood alcohol concentration limit to 0.08 per se on fatal traffic crashes in 18 states and the District of Columbia, and whether effects of the law varied by state or by baseline rates of fatal traffic crashes. Method: Data on fatal traffic crashes were obtained from the Fatality Analysis Reporting System, including all states that enacted 0.08 per se prior to 2001 in the contiguous United States. Effects of the 0.08 law were examined in each state separately, and the overall effect across states was examined using a mixed-model Poisson regression on single-vehicle-nighttime fatal traffic crashes. Results: State-specific analyses showed that fatal traffic crashes significantly decreased in three of the 19 states following the introduction of the 0.08 law, prior to adjusting for potential confounders. The mixed-model regression showed a statistically significant 5.2% reduction in single-vehicle-nighttime fatal traffic crashes associated with the 0.08 law across all states, after adjusting for administrative license revocation, the number of Friday and Saturday nights in a month, and trends in all other types of fatal traffic crashes. Findings indicate that the effect of the 0.08 law does not vary significantly by state or baseline rate of fatal traffic crashes in a state, and no significant statistical interaction exists between 0.08 and administrative license revocation policy effects. Copyright 2004, Elsevier Science Ltd.

Long-term follow-up effects of a school-based drug abuse prevention program on adolescent risky driving.

Griffin KW; Botvin GJ; Nichols TR. *Prevention Science* 5(3): 207-212, 2004. (18 refs.)

This study examined long-term follow-up data from a large-scale randomized trial to determine the extent to which participation in a school-based drug abuse prevention program during junior high school led to less risky driving among high school students. Self-report data collected from students in the 7th, 10th, and 12th grades were matched by name to students' department of motor vehicles (DMV) records at the end of high school. The DMV data included the total number of violations on students' driving records as well as the number of "points" that indicate the frequency and severity of the violations. A series of logistic regression analyses revealed that males were more likely to have violations and points on their

driving records than females, and regular alcohol users were more likely to have violations and points than those who did not use alcohol regularly. Controlling for gender and alcohol use, students who received the drug prevention program during junior high school were less likely to have violations and points on their driving records relative to control group participants that did not receive the prevention program. Findings indicated that antidrinking attitudes mediated the effect of the intervention on driving violations, but not points. These results support the hypothesis that the behavioral effects of competence-enhancement prevention programs can extend to risk behaviors beyond the initial focus of intervention, such as risky driving. Copyright 2004, Kluwer Academic.

Road aggression among drinking drivers: Alcohol and non-alcohol effects on aggressive driving and road rage.

Yu J; Evans PC; Perfetti L. *Journal of Criminal Justice* 32(5): 421-430, 2004. (33 refs.)

This study specified aggressive driving (AD) and road rage (RR) and examined a number of alcohol and non-alcohol effects on and the reciprocity between the two behaviors in a drinking driving population. The sample contained 431 clients (79 percent men) who volunteered to complete a self-report survey from fifty alcoholism and substance abuse treatment facilities across New York State. All subjects were undergoing alcoholism treatment because of a drinking driving-related reason. Structural equation modeling with the LISREL program was employed to estimate the reciprocal effects between AD and RR. The results demonstrated that AD and RR were two separate behaviors that simultaneously influenced each other. Additionally, AD and RR, as problem behaviors, tended to be affected mostly by other problem behaviors, such as alcohol problems, impaired driving, and feelings of depression, rather than general situations or behaviors, such as the frequency of alcohol use, driving after drinking, and the experience of stressful life events. The findings convey a message to the criminal justice field as well as alcoholism and substance abuse treatment professionals that addressing the problem of road aggression requires special attention to persons with alcohol problems and especially those with multiple drinking driving offenses. Copyright 2004, Elsevier Science..