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Texas Economist Calls 'Zero Tolerance' Laws Ineffective

May 5, 2009

Mandating drunk-driving charges against young drivers with any detectable amount of alcohol in their bodies has had no effect on the number of alcohol-related crashes or fatalities in the states where they have been implemented, according to a new study from a Sam Houston State University economics expert.

WBTX-TV reported April 24 that economics professor Darren Grant drew his conclusions from an analysis of 30,000 fatalities in nighttime crashes involving drivers under age 21, comparing data from states with zero-tolerance laws to those without such laws.

"If you look at the total number of accidents or the types of drinkers involved in these accidents, they just aren't affected," said Grant. "Other factors matter, but not these laws."

Grant said the flaw in the law is that it doesn't make the penalty for drunk driving harsher per se: "It is just harder to satisfy the law. Drivers now have to give up drinking all together. It's more exacting in that sense."

"Because you must sacrifice more to comply with the law, we should expect two responses: some people will comply and drink less, but others will just give up trying to satisfy the law and drink more, Grant said. "So we should not assume a zero-tolerance law will inevitably reduce drunk driving."

In fact, Grant found no change in the number of heavy drinkers or nondrinkers in the states with zero-tolerance laws. "Instead, among drivers involved in traffic accidents, there is the same fraction of heavy drinkers, the same fraction of mild drinkers, the same fraction of nondrinkers," he said. "It's just not changing."

The study, "Dead on Arrival: Zero Tolerance Laws Don't Work," will be published in the journal *Economic Inquiry*.

The effect of cannabis compared with alcohol on driving. Motivation and the stages of change among individuals with severe mental illness and substance abuse disorders.

DiClemente CC; Nidecker M; Bellack AS', Journal Of Substance Abuse Treatment [J Subst Abuse Treat] 2008 Jan; Vol. 34 (1), pp. 25-35.

A complicating factor affecting the treatment of individuals with coexisting substance use problems and serious mental illness is their motivation for change and how these interacting, chronic conditions affect the entire process of intentional behavior change. This selective review explores conceptual and assessment issues related to readiness to modify substance use and readiness to initiate behaviors helpful for managing mental illness in the search for a better understanding of patient motivation for change. The recent but limited research on motivation and stages of change among dually diagnosed patients indicates that these individuals appear to access and use an intentional behavior change process. However, it is not completely clear how this process works and what precise adaptations are needed to assess and to access motivation to change to encourage sustained behavior change in this population. Nevertheless, motivation and readiness to change are important dimensions that need to be addressed in treatment and research with dually diagnosed populations.

The effect of cannabis compared with alcohol on driving.

Sewell RA; Poling J; Sofuoglu M, The American Journal On Addictions / American Academy Of Psychiatrists In Alcoholism And Addictions [Am J Addict] 2009 May-Jun; Vol. 18 (3), pp. 185-93.

The prevalence of both alcohol and cannabis use and the high morbidity associated with motor vehicle crashes has led to a plethora of research on the link between the two. Drunk drivers are involved in 25% of motor vehicle fatalities, and many accidents involve drivers who test positive for cannabis. Cannabis and alcohol acutely impair several driving-related skills in a dose-related fashion, but the effects of cannabis vary more between individuals than they do with alcohol because of tolerance, differences in smoking technique, and different absorptions of Delta(9)-tetrahydrocannabinol (THC), the active ingredient in marijuana. Detrimental effects of cannabis use vary in a dose-related fashion, and are more pronounced with highly automatic driving functions than with more complex tasks that require conscious control, whereas alcohol produces an opposite pattern of impairment. Because of both this and an increased awareness that they are impaired, marijuana smokers tend to compensate effectively while driving by utilizing a variety of behavioral strategies.

Combining marijuana with alcohol eliminates the ability to use such strategies effectively, however, and results in impairment even at doses which would be insignificant were they of either drug alone. Epidemiological studies have been inconclusive regarding whether cannabis use causes an increased risk of accidents; in contrast, unanimity exists that alcohol use increases crash risk. Furthermore, the risk

from driving under the influence of both alcohol and cannabis is greater than the risk of driving under the influence of either alone. Future research should focus on resolving contradictions posed by previous studies, and patients who smoke cannabis should be counseled to wait several hours before driving, and avoid combining the two drugs.

Analytical techniques for drug detection in oral fluid,

Lillsunde P, Therapeutic Drug Monitoring [Ther Drug Monit] 2008; Vol. 30 (2), pp. 181-7.

Analytical techniques for detection of drugs in oral fluid (OF) are reviewed with emphasis on applications used in European Union (EU) roadside testing projects. Oral fluid is readily accessible and collectible. It has become an interesting material because no medical personnel are needed for sampling. This matrix is especially applicable for preliminary drug testing in driving under the influence controls and for monitoring illicit drug use in drug treatment. Oral fluid is also an increasingly used specimen in epidemiologic studies and in workplace drug testing. Drugs are present at lower levels in OF than in urine. The window of detection of drugs in OF reflects the corresponding window in blood, suggesting OF as a specimen of choice for roadside testing. Saliva/blood ratios vary from drug to drug, from person to person, and even intraindividually making therapeutic drug monitoring in OF challenging. Several sensitive methods for drug testing in OF have been developed during the last years.

Current developments in drug testing in oral fluid,

Pil K; Verstraete A Therapeutic Drug Monitoring [Ther Drug Monit] 2008; Vol. 30 (2), pp. 196-202.

In the last few years, significant developments have occurred on the key issues involved in oral fluid drug testing. New pharmacokinetic studies have been conducted, optimal cutoffs have been proposed, and new studies have examined the correlation between oral fluid drug concentrations and impairment. Recent studies (eg, the discovery of the presence of THC-COOH in oral fluid) can contribute to solve the issue of false-positive results caused by passive exposure to marijuana. Reliable point-of-care drug testing is still problematic, especially for cannabinoids and benzodiazepines. To date, there is no device that allows both reliable and practical point-of-care testing. The importance of liquid chromatography- tandem mass spectrometry in confirmation analysis has increased over the last several years. It can be expected that this trend will continue because the low sample volumes make simultaneous detection of different drug classes with limited sample preparation necessary. Literature on proficiency testing to ensure reliability and comparability of results is limited. Oral fluid has become an important sample type in driving under the influence research, and the first legal random drug testing program in oral fluid since 2004 has been organized in Victoria. It can be expected that the role of oral fluid as an alternative matrix will keep increasing in the future.

The effects of drink-driving checkpoints on crashes--a meta-analysis.

Erke A; Goldenbeld C; Vaa T, Accident; Analysis And Prevention [Accid Anal Prev] 2009; Vol. 41 (5), pp. 914-23.

A meta-analysis has been conducted on the effects on crashes of DUI-checkpoints (DUI, driving under the influence). The results indicate that crashes involving alcohol are reduced by 17% at a minimum and that all crashes, independent of alcohol involvement, are reduced by about 10-15%. In a moderator analysis the effects of a number of factors that may affect the effectiveness of DUI-checkpoints were investigated by means of subgroup analyses and meta-regression. Those moderator variables that were found to be most relevant, are the time period studied, country, and study design. DUI-checkpoints were found to be most effective during the first half year. Australian checkpoints were found to be more effective than checkpoints in other countries. Smaller crash reductions were found in studies that have applied a control group than in other studies. Testing all drivers who are stopped at a checkpoint may improve the effectiveness of DUI-checkpoints. The results do not indicate that DUI-checkpoints have greater effects on more severe crashes or that the use of paid publicity improves the effectiveness. Most likely there are further factors that affect the effectiveness of DUI-checkpoints that could not be investigated in the present analysis.

The impact of remedial intervention on 3-year recidivism among first-time DUI offenders in Mississippi.

Robertson AA; Gardner S; Xu X; Costello H, Accident; Analysis And Prevention [Accid Anal Prev] 2009 Vol. 41 (5), pp. 1080-6.

This study examines the impact of the Mississippi Alcohol Safety Education Program (MASEP), a court-mandated intervention program, on 3-year recidivism rates among first-time DUI offenders (i.e. those convicted of a first offense for driving under the influence of alcohol or another drug). It also examines whether a new version of the curriculum that incorporates activities to enhance motivation for change further ameliorates recidivism. Cox proportional hazard regression models are used to compare recidivism rates among DUI offenders who completed MASEP with those who did not complete or who failed to enroll in the program. Recidivism rates were also compared for MASEP participants across time periods during which curriculum revisions were introduced. The hazard of recidivism was lower for individuals who completed the program than for individuals who did not complete or did not enroll in the program. Recidivism rates were further reduced following the introduction of curriculum revisions. Attendance of court-mandated remedial intervention programs lower subsequent DUI arrests and program content is associated with lower rates.

Combined dextromethorphan and chlorpheniramine intoxication in impaired drivers.

Logan BK, Journal Of Forensic Sciences [J Forensic Sci] 2009 Vol. 54 (5), pp. 1176-80.

Dextromethorphan is a nonprescription antitussive which has been gaining in popularity as an abused drug, because of the hallucinogenic, dissociative, and intoxicating effects it produces at high doses. This report describes a series of eight drivers arrested for driving under the influence of the combined effects of dextromethorphan and chlorpheniramine, and a further four drivers under the influence of dextromethorphan alone. In the combined dextromethorphan/chlorpheniramine cases, blood dextromethorphan concentrations ranged from 150 to 1220 ng/mL (n = 8; mean 676 ng/mL, median 670 ng/mL), and chlorpheniramine concentrations ranged from 70 to 270 ng/mL (n = 8; mean 200 ng/mL, median 180 ng/mL). The four cases without chlorpheniramine present had blood dextromethorphan concentrations between 190 and 1000 ng/mL (mean 570 ng/mL, median 545 ng/mL). Some drivers had therapeutic concentrations of other drugs present. Drivers generally displayed symptoms of central nervous system (CNS) depressant intoxication, and there was gross evidence of impairment in their driving, including weaving, leaving the lane of travel, failing to obey traffic signals, and involvement in collisions. Drug Recognition Expert opinions confirmed that the subjects were under the influence of a drug in the CNS-depressant category.

Alcohol and high-risk behavior among young first-time offenders.

Sise CB; Sack DI; Sise MJ; Riccoboni ST; Osler TM; Swanson SM; Martinez MD, *The Journal Of Trauma [J Trauma]* 2009 Vol. 67 (3), pp. 498-502.

BACKGROUND: Underage drinking carries a high risk of injury. An important approach for reducing underage drinking is limiting youth access to alcohol. Underage drinkers obtain alcohol from multiple sources and patterns of access may vary by region. We examined patterns of access to alcohol and alcohol use among youth in a local court-ordered diversion program for first-time adolescent alcohol offenders as a basis for designing and evaluating community prevention efforts. **METHODS:** Youth in the program completed a survey of demographic data, type of offense, source, setting, and quantity of alcohol consumed at time of offense, and 1-year alcohol-related high-risk behaviors. Significance was attributed to $p < \text{or} = 0.05$.

RESULTS: Completed surveys were obtained from 1,158 (84.8%) of 1,366 eligible participants during the 23-month study period. There were 71% males and 29% females with a mean age of 17.2 years (range, 12-24 years). Respondents were Caucasian (64.5%), Hispanic/Latino (19.9%), Asian (3.5%), African American (2.5%), and others (9.6%). Offenses included minor in possession (55.8%), driving under the influence (21.2%), and drunk in public (20.4%). Consumption at time of offense was one or less drinks in 36.3%, two to five drinks in 31.7%, and 32.0% reported six or more drinks. Social sources of alcohol (got it from someone else) were reported by 72.9% and commercial sources (bought it or took it from a store) were reported in 11.9%. The two most common places of consumption were someone else's home (30.7%) and the beach (14.6%). Multiple 1-year high-risk behaviors were reported and 41.0% drove after drinking or rode with someone else who had been drinking. Binge drinking (5 or more

drinks for males; 4 or more drinks for females) was reported by 43.1% of males and 36.7% of females. All high-risk behaviors were more common in binge drinkers ($p < 0.001$). Drinking and driving or riding with a drinking driver was reported in 54.2% of those who binged. Females who binged reported a higher rate than males in 8 of 10 high-risk behaviors.

CONCLUSIONS: This study revealed the predominance of social sources of alcohol among young first-time alcohol offenders. Drinking and driving or riding with a drinking driver was reported at an alarmingly high rate. Other alcohol-related high-risk behaviors were also common. Efforts to prevent alcohol-related trauma should target social access to alcohol, the resulting high-risk behaviors, and include a special focus on young females.

Relationship between oral fluid and blood concentrations of drugs of abuse in drivers suspected of driving under the influence of drugs.

Wille SM; Raes E; Lillsunde P; Gunnar T; Laloup M; Samyn N; Christophersen AS; Moeller MR; Hammer KP; Verstraete AG, Therapeutic Drug Monitoring [Ther Drug Monit] 2009; Vol. 31 (4), pp. 511-9.

In recent years, the interest in the use of oral fluid as a biological matrix has increased significantly, particularly for detecting driving under the influence of drugs (DUID). In this study, the relationship between the oral fluid and the blood concentrations of drugs of abuse in drivers suspected of DUID is discussed. Blood and oral fluid samples were collected from drivers suspected of DUID or stopped during random controls by the police in Belgium, Germany, Finland, and Norway for the ROSITA-2 project. The blood samples were analyzed by gas chromatography-mass spectrometry (GC-MS) or liquid chromatography-mass spectrometry (LC-MS), sometimes preceded by immunoassay screening of blood or urine samples. The oral fluid samples were analyzed by GC-MS or LC-MS(/MS). Scatter plots and trend lines of the blood and oral fluid concentrations and the median, mean, range, and SD of the oral fluid to blood (OF:B) ratios were calculated for amphetamines, benzodiazepines, cocaine, opiates, and Delta(9)-2 tetrahydrocannabinol. The ratios found in this study were comparable with those that were published previously, but the range was wider. The OF:B ratios of basic drugs such as amphetamines, cocaine, and opiates were >1 [amphetamine: median (range) 13 (0.5-182), methylenedioxyamphetamine: 4 (1-15), methylenedioxymethamphetamine: 6 (0.9-88), methamphetamine: 5 (2-23), cocaine: 22 (4-119), benzoylecgonine: 1 (0.2-11), morphine: 2 (0.8-6), and codeine: 10 (0.8-39)]. The ratios for benzodiazepines were very low, as could be expected as they are highly protein bound and weakly acidic, leading to low oral fluid concentrations [diazepam: 0.02 (0.01-0.15), nordiazepam: 0.04 (0.01-0.23), oxazepam: 0.05 (0.03-0.14), and temazepam: 0.1 (0.06-0.54)]. For tetrahydrocannabinol, an OF:B ratio of 15 was found (range 0.01-569). In this study, the time of last administration, the dose, and the route of administration were unknown. Nevertheless, the data reflect the variability of the OF:B ratios in drivers thought to be under the influence of drugs. The wide range of the ratios,

however, does not allow reliable calculation of the blood concentrations from oral fluid concentrations.

A comparison of drivers with high versus low perceived risk of being caught and arrested for driving under the influence of alcohol.

Beck KH; Fell JC; Yan AF, Traffic Injury Prevention [Traffic Inj Prev] 2009; Vol. 10 (4), pp. 312-9.

OBJECTIVES: To examine the beliefs, behaviors, and knowledge of drivers concerning drunk driving and to compare those with greater or lesser perceptions of risk of being caught driving while impaired. **METHODS:** A random-digit-dial telephone survey was conducted of 850 licensed drivers throughout Maryland who reported their driving behaviors, crash history, beliefs about various alcohol countermeasures, and their knowledge of state alcohol laws.

RESULTS: Most drivers (72%) did not feel that it was very likely that they would be stopped by the police if they drove after having too much to drink (low-risk perceivers). High-risk perceivers (28%) felt that it was very likely that they would be stopped and most (70%) felt that it was very likely that they would be arrested and convicted. Less than half (45%) of the low-risk perceivers felt that they would be arrested and convicted if they drove impaired. High-risk perceivers were significantly more likely to be non-white, less likely to drive 10 mph above the speed limit, but were more likely have five or more tickets in their lifetime and believed that sobriety checkpoints are effective. They were also more aware of laws regarding mandatory use of ignition interlocks for repeat driving under the influence (DUI) offenders and the zero tolerance law for under-21-year-old drivers.

CONCLUSION: There is a need to elevate the perceived risk of being caught when driving while alcohol impaired. Despite several years of prevention programs, a substantial portion of Maryland drivers do not feel it very likely that they would be stopped by the police if they were to drive after drinking too much. Drivers who perceive these risks are more accepting of enforcement and treatment countermeasures and are more likely to report safer driving behaviors.

Effects of Beverage Alcohol Price and Tax Levels on Drinking

This resource summarizes the results of 112 studies that examined the effect of raising alcohol taxes on beverage consumption. The meta-analysis found that raising the cost of alcohol effectively reduces drinking across broad populations of drinkers.

<http://www.rwjf.org/pr/product.jsp?id=37409>

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