Young Adult Smoking Risk Factors: Impulsivity, Regular Alcohol Use, Poor Grades

A new study finds three risk factors for smoking among young adults are being impulsive, using alcohol regularly, and receiving low grades in school.

The study included 1,293 teens, who were followed from ages 12 to 24. By age 22, three-quarters of the teens had tried smoking. The researchers from the University of Montreal found 44 percent started before they entered high school, 43 percent started during high school and 14 percent started some time in the six years after high school.

Impulsivity, regular alcohol use and poor grades were associated with starting to smoke in the six years after high school. The findings appear in the Journal of Adolescent Health.

Study researcher Jennifer O'Loughlin said one possible reason impulsive teens start smoking after high school is that their parents are no longer able to exert control. “We can postulate that parents of impulsive children exercise tighter control when they are living with them at home to protect their children from adopting behaviors that can lead to smoking, and this protection may diminish over time.”

She added that teens who have difficulty in school may be more likely to drop out and find work in places where smoking rates are higher. She noted that drinking may be linked to starting to smoke because it reduces inhibitions and self control.

“Our study indicates that it is also important to address prevention among young adults, especially because advertising campaigns of tobacco companies specifically target this group,” she said. “This is particularly important because if we can prevent smoking onset among young adults, the likelihood that they will never become smokers is high,” she says.

Perceived Danger While Intoxicated Uniquely Contributes to Driving After Drinking
David H. Morris, Hayley R. Treloar, Maria E. Niculete, Denis M. McCarthy

Traffic Injury Prevention, in press, 2013

Background

Previous findings suggest that alcohol alters perceptions of risky behaviors such as
drinking and driving. However, studies testing these perceptions as a predictor of drinking and driving typically measure these perceptions while participants are sober. This study tested whether the perceived danger of driving after drinking assessed while intoxicated was associated with increased willingness to drive and self-reported drinking-and-driving behavior over and above perceptions assessed while sober. Additionally, we tested the effect of acute tolerance on the perceived danger of driving after drinking assessed on the ascending and descending limbs of the breath alcohol concentration (BrAC) curve.

Methods

Eighty-two young adults attended 2 counterbalanced laboratory sessions. In one session, participants consumed a moderate dose of alcohol (men: 0.72 g/kg, women: 0.65 g/kg) and reported their perceived danger of driving and willingness to drive at multiple points across the BrAC curve. On a separate occasion, participants remained sober and appraised the dangerousness of driving at a hypothetical, illegal BrAC.

Results

Perceptions of the dangerousness of driving following alcohol administration were associated with increased willingness to drive and higher rates of self-reported drinking-and-driving behavior over and above perceptions reported when sober. Furthermore, perceived danger was reduced on the descending limb of the BrAC curve, compared with the ascending limb, suggesting the occurrence of acute tolerance.

Conclusions

Results from this study suggest that intoxicated perceptions are uniquely associated with drinking-and-driving decisions and that the perceived danger of drinking and driving is lower on the descending limb of the BrAC curve. Efforts to prevent alcohol-impaired driving have focused on increasing awareness of the danger of driving after drinking. Prevention efforts may be enhanced by educating drivers about how intoxication can alter perceived danger, and interventions may benefit from targeting perceptions of dangerousness while individuals are intoxicated in addition to when they are sober.

Phone use while driving: Results from an observational survey

Traffic Injury Prevention, in press, 2013

Ln Wundersitz

Objectives: The aim of this study was to quantify the level of hand-held phone use when driving in South Australia. The study also sought to investigate any driver, site and vehicle characteristics associated with hand-held phone use to inform countermeasure development and publicity campaigns.

Method: An on-road observational survey of hand-held phone use was undertaken as
part of a larger restraint use survey. The survey was conducted at 61 sites in metropolitan Adelaide and rural regions within South Australia on weekdays and a weekend in 2009.

Results: A total of 64 (0.6%) of the 11,524 drivers observed during the survey were using hand-held phones. Hand-held phone usage rates ranged from 0.8% in metropolitan Adelaide to 0.3% in the rural region of The Riverland. Of all the driver, site and vehicle characteristics examined, the only statistically significant difference in hand-held phone usage was for the number of vehicle occupants. The odds of a driver using a hand-held phone while travelling alone was over four times higher than for a driver travelling with passengers.

Conclusions: The level of hand-held phone use among drivers in South Australia appears to be low relative to other jurisdictions. The level of enforcement activity and severity of penalties do not offer a clear explanation for the higher levels of compliance with phone laws. Given the rate of increase in phone technology, it is important to conduct regular roadside surveys of phone use among drivers to monitor trends in usage over time.

Alcohol involvement and other risky driver behaviors: Effects on crash initiation and crash severity

Traffic Injury Prevention, in press, 2013

Kathleen Shyhalla

Objective: Alcohol involved drivers, or those with blood alcohol concentrations greater than 0.00 have more frequent and more severe crashes than other drivers. Alcohol use, because it delays perception and response and impairs coordination, increases the risk for crashing. However, those using alcohol may take additional driving risks, which may also lead to crashes. This study was done to learn whether risks besides alcohol involvement contributed to crash initiation, and whether crash severity increased with alcohol involvement or with those other risky behaviors.

Methods: Data that represented nearly 1.4 million motor vehicle crashes were accessed from a NHTSA database. Analyses evaluated whether alcohol involved driving was associated with other driving risks, and whether driver alcohol involvement, alone or together with other risks, increased the likelihood of initiating a two-vehicle crash or in the event of a crash, increased crash severity.

Results: Alcohol involved drivers were less likely to use seatbelts, drove faster, and were more likely distracted than others. Those who initiated two vehicle crashes were more likely to be alcohol involved or to have taken other driving risks than others from the same crashes. Crash severity was significantly greater for alcohol involved than for other drivers, but severity increased further if additional risks were taken. Crashes involving only drivers who had not used alcohol were also sometimes severe, and that severity was associated with risky driving behaviors. When crashes involved two
drivers, behaviors of both affected crash severity.

**Conclusions:** Risky driving behaviors, including alcohol involvement, increased the risk for crashing. Crash severity tended to increase with any risky behavior, and to increase further with multiple risky behaviors. Other risky behaviors were associated with both alcohol involvement and with crashes. Therefore, if effects from those other risky behaviors were not accommodated for, those effects would confound apparent associations between alcohol involvement and crashes. Therefore, this study’s use of multivariate models which accommodated for effects from those other behaviors provided a truer picture of alcohol’s association with crashes than simpler models would have.

**Driving during alcohol hangover among Dutch professional truck drivers**

*Traffic Injury Prevention, in press, 2013*

Joris C Verster, Martin A. van der Maarel, Adele McKinney, Berend Olivier & Lydia de Haan

**Objectives:** Alcohol hangover may impair potentially dangerous daily activities such as driving a car or operating heavy machinery. The purpose of the present study was to determine (1) whether driving during alcohol hangover is a problem of concern among professional Dutch truck drivers, and (2) to what extent they think their hangover state affects driving performance.

**Methods:** N = 343 professional truck drivers were interviewed at a Dutch trucker festival. In addition to demographics, data was gathered on normal driving, alcohol consumption and hangover, and driving style during alcohol hangover.

**Results:** More than half of the professional drivers who consume alcohol and report to occasionally have hangovers (56.4%) acknowledge that they have driven while having a hangover during the past year: 26.5% only when driving private, 2.6% only when driving professionally, and 27.4% both private and professionally. 45.3% reported driving while having a hangover sometimes, whereas 7.7% and 1.7% reported doing so often or always, respectively. During alcohol hangover, professional drivers rated their driving style as significantly less relaxed, less safe and less responsible (p <0.001).

**Conclusions:** Driving during hangover is a common phenomenon, and professional drivers acknowledge that their driving is impaired. Therefore, future experimental research should examine the magnitude of impairment while driving during alcohol hangover.

**META-ANALYSIS OF ON THE ROAD EXPERIMENTAL STUDIES OF HYPNOTICS: EFFECTS OF TIME AFTER INTAKE, DOSE, AND HALF-LIFE**

*Traffic Injury Prevention, in press, 2013*
T Roth, Sd Eklov, CI Drake & JC Verster

Background: The use of hypnotics is prevalent in the general population. While these drugs have been shown to be effective, their residual effects may cause significant impairment to the user's driving ability. The objective of this meta-analysis is to determine if there is a residual effect on driving and better evaluate the safety of hypnotics.

Method: Randomized, double-blind, placebo-controlled studies were selected, which employed a commonly used and valid driving measure, to determine the user's driving ability the day after drug administration. The primary outcome measure for the driving task in all included studies was the Standard Deviation of Lateral Position (SDLP). Fixed effects model meta-analyses were performed.

Results: Fourteen studies, published from 1984 to 2013 (295 subjects), were included in this meta-analysis. Overall, significant impairment was found when morning testing (i.e., 10–11 hours after initiating sleep) was compared to afternoon testing (i.e., 16–17 hours after initiating sleep) (p = .0001). Twice the standard dose, also showed significant impairment (p = .0001) relative to the standard dose. The time of the test, morning versus afternoon, also had an impact on individual drugs. Middle of the night administration (MOTN) of zolpidem and zopiclone caused significant impairment the following morning, though no such impairment was seen with zaleplon. Finally, half-life was also assessed (short: <6hrs, intermediate: 6–12hrs, long: >12hrs) and both intermediate and long acting drugs caused significant impairment the morning after bedtime administration, while short acting hypnotics did not.

Conclusions: These analyses indicate that the half-life, dose of the hypnotic, as well as time between treatment and driving, as measured by SDLP, all significantly impact the ability to drive a car after taking hypnotic drugs.

Cell phones and young drivers: a systematic review regarding the association between psychological factors and prevention

Traffic Injury Prevention, in press, 2013

Francesca Cazzulino, Rita V. Burke, Valerie Muller, Helen Arbogast, Jeffrey S. Upperman

Objective: Cell phone use among young drivers has become increasingly common in recent years. Young people are the most likely to accept use of new technology and least likely to understand the risks associated with cell phone use while driving (CPWD) (defined here as talking on the phone only) and texting while driving (TextWD). Due to inexperience, young drivers are the most at risk when using cell phones while driving and therefore, should be the target of the majority of prevention strategies. The intent of this review is to determine factors that influence young drivers to engage in CPWD and TextWD and suggest a basis for prevention campaigns and strategies that can effectively prevent current and future generations from using cell phones while driving.
**Methods:** We conducted a search for original articles on PubMed, the Cochrane Library, and Web of Science. All abstracts were reviewed and for those that met the inclusion criteria, full articles were obtained and assessed.

**Results:** Four hundred and twelve articles were identified in the search and of those, thirty-seven full-text articles were obtained. A total of twenty-nine articles about the frequency of CPWD and the psychological effects influencing young driver's tendency to engage in CPWD were included. There was a high frequency of both CPWD and TextWD despite there also being a high perceived risk of both behaviors. This discrepancy was explained by a high perceived controllability, the effect of social norms, call importance and lack of effective law enforcement. The intervention strategies reviewed were also found to be ineffective over the long term.

**Conclusions:** The systematic review reveals that young drivers are an at-risk group for distracted driving. We propose preventative strategies based both on identifying factors that influence drivers to engage in CPWD and TextWD as well as by reviewing strategies found in the reviewed articles. Further research is necessary to determine the effectiveness of these proposed strategies.

**Alcohol Ignition Interlocks in All New Vehicles: A Broader Perspective**

**Traffic Injury Prevention, in press, 2013**

Igor Radun, Jussi Ohisalo, Sirpa Rajalin, Jenni E. Radun, Mattias Wahde, Timo Lajunen

**Objective:** To discuss the implications of widespread implementation of alcohol ignition interlocks.

**Method:** We base our discussion on data from Finland including crash statistics, and surveys collected from criminal justice professionals and general driving population.

**Results:** Alcohol ignition interlocks are an effective preventive measure against drunk driving when installed in the vehicle of convicted drunk drivers. However, once they are removed from the vehicles, drivers typically return to their habit of drinking and driving. Furthermore, for a number of reasons, the proportion of convicted drunk drivers that install an interlock in their vehicles is quite small. Therefore, many stakeholders believe that the solution to the drunk driving problem will come when interlocks become a standard equipment in all new vehicles. However, drunk driving is a complex socio-psychological problem and technology can rarely offer a solution to such complex problems. Consequently, many aspects of such interventions might be difficult to identify and include in cost-benefit analysis.

**Conclusion:** We express caution about requiring an interlock as standard equipment in all new vehicles.

**Characteristics of Designated Drivers and their Passengers from the 2007**
National Roadside Survey in the United States
Traffic Injury Prevention, in press, 2013
Gwen Bergen, Jie Yao, Ruth A. Shults, Eduardo Romano & John Lacey

Objective

The objectives of this study were to estimate the prevalence of designated driving in the United States, compare these results with those from the 1996 National Roadside Survey, and explore the demographic, drinking, and trip characteristics of both designated drivers and their passengers.

Methods

The data used were from the 2007 National Roadside Survey which randomly stopped drivers, administered breath tests for alcohol, and administered a questionnaire to drivers and front seat passengers.

Results

Almost a third (30%) of nighttime drivers reported being designated drivers, with 84% of them having a blood alcohol concentration of zero. Drivers who were more likely to be designated drivers were those with a blood alcohol concentration that was over zero but still legal, who were under 35 years of age, who were African-American, Hispanic or Asian, and whose driving trip originated at a bar, tavern, or club. Over a third of passengers of designated drivers reported consuming an alcoholic drink the day of the survey compared with a fifth of passengers of non-designated drivers. One-fifth of designated driver passengers who reported drinking consumed five or more drinks that day.

Conclusions

Designated driving is widely used in the United States, with the majority of designated drivers abstaining from drinking alcohol. However as designated driving separates drinking from driving for passengers in a group travelling together, this may encourage passengers to binge drink, which is associated with many adverse health consequences in addition to those arising from alcohol-impaired driving. Designated driving programs and campaigns, although not proven to be effective when used alone, can complement proven effective interventions to help reduce excessive drinking and alcohol-impaired driving.

An Examination of the Validity of the Standardized Field Sobriety Test in Detecting Drug Impairment using Data from the Drug Evaluation and Classification Program
Traffic Injury Prevention, in press, 2013
Objective: The purpose of this study is to assess the validity of the three components of the Standardized Field Sobriety Test (SFST), including the Horizontal Gaze Nystagmus (HGN), One Leg Stand (OLS), and Walk and Turn (WAT) tests, in identifying impairment among suspected drug-impaired drivers using data recorded during Drug Evaluation and Classification (DEC) evaluations.

Methods: Data from 2,142 completed DEC evaluations of central nervous system (CNS) stimulants, CNS depressants, narcotic analgesics, cannabis or no drugs were analyzed using multinomial logistic regression.

Results: All drug categories were significantly associated with impaired performance. On the HGN, users of CNS depressants were significantly more likely to experience lack of smooth pursuit and distinct nystagmus at maximum deviation compared to non-drug users. On the OLS, users of all drug classes were significantly more likely to sway while balancing and use their arms to maintain balance, but significantly less likely to hop, as compared to drug-free cases. Users of CNS depressants, CNS stimulants and narcotic analgesics were significantly more likely to put their raised foot down during the test. On the WAT, users of CNS depressants, CNS stimulants and narcotic analgesics were significantly less likely to keep their balance while listening to test instructions compared to those who had not used drugs. Users of CNS depressants were less likely to touch heel-toe while walking, whereas individuals who had used narcotic analgesics were less likely to take the correct number of steps.

Conclusions: These findings provide support for the use of the SFST as a screening tool for law enforcement to identify impairment in persons who have used CNS stimulants, CNS depressants, cannabis or narcotic analgesics.

Correlates of drug use and driving among undergraduate college students

Traffic Injury Prevention, in press, 2013

Christine Kohn, Hassan Saleheen, Kevin Borrup, Steve Rogers & Garry Lapidus

Objective

Drug use by drivers is a significant and growing highway safety problem. College students are an important population to understand drugged driving. The objective of this study was to examine correlates of drugged driving among undergraduate college students.

Methods

We conducted an anonymous, confidential, 24-question survey at a large, New England public university during the 2010–2011 academic year among undergraduates in courses that met a graduation requirement. Data include demographics, academics,
housing status, lifestyle, personal values, high school/college drug use, and driving following alcohol use, drug use, or both and as a passenger with driver who used alcohol, drugs, or both. Descriptive statistics were calculated. Chi square test compared driver alcohol use, drug use, or both with demographic, academic, and lifestyle variables. Logistic regression analyses was performed with drugged driving as dependent variable. Odds ratios and corresponding 95% confidence intervals were calculated for each of the potential explanatory variables in relation to the outcome.

RESULTS

444 of 675 students completed surveys (66% participation rate). Participants were representative of the student body with a mean age of 19.4 (±1.3 years), 51% male, 75% white, and 10% Hispanic. 78% lived on campus, 93% had a driver's license, and 37% car access. Students disagreed that cannabinoids impair driving (18%), compared to other drugs (17%), stimulants (13%), depressants (11%), hallucinogens (8%) and alcohol (7%). 23% drove after alcohol use and 22% drove after drug use. 41% reported having been a passenger with a driver who had been drinking and 37% with a driver using drugs. Drugged driving was more likely among males vs. females (30% vs. 14%, p<.01), living off campus (34% vs. 19%, p<.01) reporting that parties are important (33% vs. 14%, p<.01), community service not important (28% vs. 18%, p<.05), religion not important (28% vs. 14%, p<.01), personal drug use in high school (75% vs. 14%, p<.01), best friends used drugs in high school (42% vs. 12%, p<.01) and college (50% vs. 8%, p<.01). Those factors most associated with drugged driving included using drugs in high school OR = 9.5 (95%CI 4.6—19.6), and best friends in college used drugs regularly OR = 6.2 (95%CI 3.4—11.6).

CONCLUSION

Self reported drugged driving and riding as a passenger with a drugged driver is common among subgroups of college students. The identification of undergraduate subgroups at risk for drugged driving will guide the design and implementation of traffic safety activities.

Simultaneous alcohol and marijuana use among US high school seniors from 1976 to 2011: Trends, reasons, and situations

Traffic Injury Prevention, in press, 2013

Yvonne M. Terry-McElrath, Patrick M. O’Malley, Lloyd D. Johnston

Background

Simultaneous alcohol and marijuana (SAM) use raises significant concern due to the potential for additive or interactive psychopharmacological effects. However, no nationally representative studies are available that document prevalence, trends, or related factors in US youth SAM use.
Methods

Nationally representative cross-sectional samples of 12th grade students surveyed in the Monitoring the Future project from 1976 to 2011 provided data on SAM use. Analyses were conducted in 2012.

Results

In 2011, 23% of all US high school seniors reported any SAM use. Among seniors reporting any past 12-month marijuana use, 62% reported any SAM use and 13% reported SAM use most or every time they used marijuana. SAM use consistently followed trends for past 30-day alcohol use over time. SAM use showed significant variation by psychosocial and demographic characteristics and was strongly associated with higher substance use levels, but occurred across the substance use spectrum. Certain reasons for alcohol or marijuana use (to increase effects of another drug; I’m hooked) and situations of alcohol or marijuana use (park/beach, car, party) were strongly associated with SAM use.

Conclusions

A sizable proportion of US high school seniors reported SAM use, and it appeared to occur frequently in social use situations that could impact both the public as well as youth drug users. SAM use appears to be a complex behavior that is incidental to general substance use patterns as well as associated with (a) specific simultaneous reasons (or expectancies), and (b) heavy substance use and perceived dependence, especially on alcohol.

Socialization to binge drinking: A population-based, longitudinal study with emphasis on parental influences.

Willy Pedersen, Tilmann von Soest

Traffic Injury Prevention, in press, 2013

Background

Binge drinking is associated with considerable harm. However, too little is known about socialization to this pattern of alcohol consumption.

Aim

To identify longitudinal predictors of young adult binge drinking, with an emphasis on possible parental influences.

Methods
A population-based prospective study, in which respondents \((N = 2558)\) were surveyed from mid-adolescence until their late 20s. The data set was linked to national registers. Data were collected on parental alcohol consumption, parental binge drinking and parental alcohol problems, as well as on other aspects of the family milieu. The respondents’ frequency of alcohol consumption was assessed, as well as a number of binge drinking measures: (i) frequency of intoxication episodes, (ii) frequency of consuming 5+ units, and (iii) “usual” consumption patterns of 5–6+ units, 7–9+ units, and 10+ units.

Results

A surprisingly high proportion of the sample met the criteria for binge drinking. After control for parental, peer and individual characteristics, parental binge drinking predicted respondents’ binge drinking, using all definitions, at age 28 years \((p < .001)\). Parental frequency of alcohol consumption predicted frequency of alcohol consumption in their offspring at age 28 \((p < .001)\).

Conclusion

The findings suggest a socialization pattern of alcohol role modeling from parents to offspring. The findings are also consistent with genetic research showing alcohol use to have moderate heritability. We may witness new binge drinking cultures in Norway, but binge drinking patterns also seem to echo parental influences.

Impact of distracted driving on safety and traffic flow

*Accident Analysis and Prevention, in press*

Despina Stavrinos, Jennifer L. Jones, Annie A. Garner, Russell Griffin, Crystal A. Franklin, David Ball, Sharon C. Welburn, Karlene K. Ball, Virginia P. Sisiopiku, Philip R. Fine

Studies have documented a link between distracted driving and diminished safety; however, an association between distracted driving and traffic congestion has not been investigated in depth. The present study examined the behavior of teens and young adults operating a driving simulator while engaged in various distractions (i.e., cell phone, texting, and undistracted) and driving conditions (i.e., free flow, stable flow, and oversaturation). Seventy five participants 16–25 years of age (split into 2 groups: novice drivers and young adults) drove a STISIM simulator three times, each time with one of three randomly presented distractions. Each drive was designed to represent daytime scenery on a 4 lane divided roadway and included three equal roadway portions representing Levels of Service (LOS) A, C, and E as defined in the 2000 *Highway Capacity Manual*. Participants also completed questionnaires documenting demographics and driving history. Both safety and traffic flow related driving outcomes were considered. A Repeated Measures Multivariate Analysis of Variance was employed to analyze continuous outcome variables and a Generalized Estimate Equation (GEE) Poisson model was used to analyze count variables. Results revealed
that, in general more lane deviations and crashes occurred during texting. Distraction (in most cases, text messaging) had a significantly negative impact on traffic flow, such that participants exhibited greater fluctuation in speed, changed lanes significantly fewer times, and took longer to complete the scenario. In turn, more simulated vehicles passed the participant drivers while they were texting or talking on a cell phone than while undistracted. The results indicate that distracted driving, particularly texting, may lead to reduced safety and traffic flow, thus having a negative impact on traffic operations. No significant differences were detected between age groups, suggesting that all drivers, regardless of age, may drive in a manner that impacts safety and traffic flow negatively when distracted.