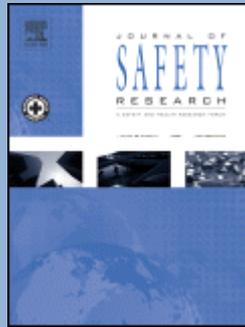


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Angela H. Eichelberger, Eric R. Teoh, Anne T. McCartt. *Vehicle choices for teenage drivers : a national survey of U.S. parents. Pages 1-5.*

Introduction: Previous research has shown that many newly licensed teenagers in the United States are driving vehicles with inferior crash protection. The objective of this study was to update and extend previous research on U.S. parents' choices of vehicles for their teenagers. **Method:** Telephone surveys were conducted with parents in May 2014 using a random sample of U.S. households likely to include teenagers. Participation was restricted to parents or guardians of teenagers who lived in the household and held either an intermediate or full driver's license. Parents were interviewed about the vehicle their teenager drives, the reason they chose the vehicle for their teenager, and the cost of purchased vehicles. **Results:** Teenagers most often were driving 2000–06 model year vehicles (41%), with 30% driving a more recent model year and 19% driving an older model year. Teenagers most often were driving midsize or large cars (27%), followed by SUVs (22%), mini or small cars (20%), and pickups (14%). Far fewer were driving minivans (6%) or sports cars (1%). Forty-three percent of the vehicles driven by teenagers were purchased when the teenager started driving or later. A large majority (83%) were used vehicles. The median cost of the vehicles purchased was \$5300, and the mean purchase price was \$9751. **Conclusions:** Although parents report that the majority of teenagers are driving midsize or larger vehicles, many of these vehicles likely do not have key safety features, such as electronic stability control, which would be especially beneficial for teenage drivers. Many teenagers were driving older model year vehicles or vehicle types or sizes that are not ideal for novice drivers. **Practical applications:** Parents, and their teenage drivers, may benefit from consumer information about optimal vehicle choices for teenagers.

- **Keywords:** Young drivers; Novice drivers; Teenage drivers; Vehicle crashworthiness

Frank Goetzke, Samia Islam. *Determinants of seat belt use : a regression analysis with FARS data corrected for self-selection. Pages 7-12.*

Introduction: We develop a methodology to use FARS data as an alternative to NOPUS in estimating seat belt usage. The advantages of using FARS over NOPUS are that (i) FARS is broader because it contains more variables relevant for policy analysis, (ii) FARS allows for easy multivariate regression analysis, and finally, (iii) FARS data is more cost-effective. **Methodology:** We apply a binary logit model in our analysis to determine the likelihood of seat belt usage given various occupant, vehicle, and built environment characteristics. Using FARS data, we derive coefficient estimates for categories such as vehicle occupants' age and night time seat belt use that observational surveys like

NOPUS cannot easily provide. **Results:** Our results indicate that policies should focus on passengers (as opposed to drivers), male and young vehicle occupants, and that law enforcement should focus on pick-up trucks, rural roads, and nights. We find evidence that primary seat belt laws are effective. **Conclusions:** Although this is primarily a methodological paper, we present and discuss our results in the context of public policy so that our findings are relevant for road safety practitioners, researchers, and policymakers.

- **Keywords:** Seatbelt use; FARS; Peltzman effect; Safety behavior

Dorothy Begg, Rebecca Brookland. Participation in driver education/training courses during graduated driver licensing, and the effect of a time-discount on subsequent traffic offenses : findings from the New Zealand Drivers Study. Pages 13-20.

Introduction: The New Zealand GDL includes a time-discount at the restricted license stage, for attendance at an approved driver education course. This is despite international evidence showing that earlier licensure associated with a time-discount can increase risk for newly licensed drivers. **Objective:** To examine participation in driver education courses and especially those that qualify for a time-discount; compare the profiles of course participants with non-participants; examine reasons for participation; and examine the association between a time-discount and traffic offenses once fully licensed. **Method:** This study was based on the New Zealand Drivers Study (NZDS), a prospective cohort study of newly licensed drivers. Data on driver education courses were obtained at the full license interview (n = 1763), driver license and traffic offense data from the NZ Driver Licence Registry, and other data at the NZDS interviews. **Results:** 94% had heard of and 49% (n = 868) participated in a defensive driving course (DDC). No other course had more than 1% participation. Compared with the others, the DDC group were young, non-Māori, and from an area of relatively low deprivation. Through GDL, the DDC group were relatively more compliant with the conditions, and less likely to crash or receive a traffic offense notice. The groups did not differ on personality, alcohol and drug use. The reason most (85%) attended a DDC was to get their full license sooner; 86% (n = 748) received a time-discount. The time-discount group were 40% more likely to receive a traffic offense notice on their full license; this reduced to 10% after controlling for other factors. **Conclusion and practical implications:** The results of this study, when viewed in conjunction with other NZ crash evidence, indicate that a time-discount should not be given for completing a DDC or Street Talk course.

- **Keywords:** Young drivers; Time-discount; Graduated driver licensing

C. Raymond Bingham, Jennifer S. Zakrajsek, Farideh Almani, Jean T. Shope, Tina B. Sayer. *Do as I say, not as I do : istracted driving behavior of teens and their parents.* Pages 21-29.

Introduction: Driver distraction is an important contributor to crash risk. Teenage driver distraction can be influenced by the attitudes and behaviors of parents. This study examined teens' and their parents' engagement in distracting behavior while driving. **Method:** Survey data were collected from a national sample of 403 parent-teen dyads using random-digit dialing telephone interviews. **Results:** Results demonstrated few parent or teen sex differences in distracting behavior engagement while driving, or in their perceptions of each others' behavior. Parents and teens' frequencies of distracting behavior engagement were positively correlated. Parents' and teens' perceptions of each others' distracting behavior engagement while driving exceeded their own selfreports. Finally, the likelihood that teens reported engaging in distracting behavior while driving was more strongly associated with their perceptions of their parents' distracting behavior than by parents' self reports of their own behavior. **Conclusions:** These results suggest that parents' examples of driving behavior are an important influence on teen driving

behavior, but potentially more important are teens' perceptions of their parents' behaviors.

- **Keywords:** Parents; Teen drivers; Driver distraction; Behavior modeling

Anders Hanberger, Ulf Lundström, Gunilla Mårald. *Intentions and knowledge shaping local safety policy : a comparison of two Swedish cities. Pages 31-39.*

Introduction: This article explores how intentions and knowledge shape two Swedish cities' local safety policy (LSP). **Method:** The applied framework is derived from the integration of governance and implementation research and the theory of knowledge and its use. **Results:** The study shows that LSPs are shaped by a mix of intentions and different kinds of knowledge, and intentions and knowledge interplay and intertwine in many ways. Key-persons construct LSPs when they work out solutions to urgent safety problems and take departure in the local context, its pre-conditions, and their experience-based and professional knowledge. The state governs LSP softly through management by objectives in the background, but more often key-actor intentions and commitments, local safety problems, and events initiated and influenced LSPs. **Conclusions:** The article contributes to a better understanding of conditions for LSPs in multi-level governance. **Practical applications:** The article can be used to improve governance, identify implementation problems and knowledge needs that will improve LSPs and the overall safety situation in the community. The study has implications for how LSPs should be evaluated; many different evaluation criteria can be appropriate, such as relevance, legitimacy, achievement of key actors' objectives, sustainability of policy solutions, and creation of a local safety culture.

- **Keywords:** Multi-level governance; Intentions; Knowledge use; Local safety policy

Soyun Kim, Michael S. Wogalter. Effects of emphasis terminology in warning instructions on compliance intent and understandability. Pages 41-51.

Introduction: The aim of this study was to examine whether differing terminology in warning directives can influence compliance intentions and understandability. Despite its important role for warning effectiveness, warning instructions has not received much attention in warning research. Emphasis terms that can be used in warning directives were investigated. **Method:** Three experiments were conducted. In Experiment 1, participants rated a set of 12 warning directive statements consisted of one basic warning directive, which served as the control and the other 11 one- or two-word emphasis phrases that added to a basic directive. In Experiment 2, participants rated 37 emphasizeers on compliance intent. In Experiment 3, participants rated the same emphasizeers on understandability. **Results:** The first 2 experiments showed substantial differences in compliance intentions depending on the emphasizeer used. For example, some terms and phrases (e.g., "urgent") produced high compliance intent whereas others showed lower compliance intent (e.g., "recommended"). In Experiment 3, some terms were rated as understandable (e.g., "important"), whereas others were rated as somewhat understandable (e.g., "compulsory"). **Conclusion:** The addition of emphasis terms to the warning directives influenced people's compliance intent and understandability. In addition, significant correlations were found among compliance intent, understandability, and measures of variability. **Practical application:** The findings from this research could aid warning designers in selecting understandable wording that gives rise to different levels of compliance intentions.

- **Keywords:** Warnings; Vocabulary; Perceived hazard; Terminology; Compliance intent

Helen R. Marucci-Wellman, Theodore K. Courtney, Helen L. Corns, Gary S. Sorock, Barbara S. Webster, Radoslaw Wasiak, Y. Ian Noy, Simon Matz, Tom B. Leamon. *The direct cost burden of 13 years of disabling workplace injuries in the U.S. (1998–2010) : findings from the Liberty Mutual Workplace Safety Index. Pages 53-62.*

Introduction: Although occupational injuries are among the leading causes of death and disability around the world, the burden due to occupational injuries has historically been under-recognized, obscuring the need to address a major public health problem. **Methods:** We established the Liberty Mutual Workplace Safety Index (LMWSI) to provide a reliable annual metric of the leading causes of the most serious workplace injuries in the United States based on direct workers compensation (WC) costs. **Results:** More than \$600 billion in direct WC costs were spent on the most disabling compensable non-fatal injuries and illnesses in the United States from 1998 to 2010. The burden in 2010 remained similar to the burden in 1998 in real terms. The categories of overexertion (\$13.6B, 2010) and fall on same level (\$8.6B, 2010) were consistently ranked 1st and 2nd. **Practical application:** The LMWSI was created to establish the relative burdens of events leading to work-related injury so they could be better recognized and prioritized. Such a ranking might be used to develop research goals and interventions to reduce the burden of workplace injury in the United States.

- **Keywords:** Work-related injury; Burden; Prevention; Overexertion; Falls

Babette Bronkhorst. *Behaving safely under pressure : the effects of job demands, resources, and safety climate on employee physical and psychosocial safety behavior. Pages 63-72.*

Introduction: Previous research has shown that employees who experience high job demands are more inclined to show unsafe behaviors in the workplace. In this paper, we examine why some employees behave safely when faced with these demands while others do not. We add to the literature by incorporating both physical and psychosocial safety climate in the job demands and resources (JD-R) model and extending it to include physical and psychosocial variants of safety behavior. **Method:** Using a sample of 6230 health care employees nested within 52 organizations, we examined the relationship between job demands and (a) resources, (b) safety climate, and (c) safety behavior. We conducted multilevel analyses to test our hypotheses. **Results:** Job demands (i.e., work pressure), job resources (i.e., job autonomy, supervisor support, and co-worker support) and safety climate (both physical and psychosocial safety climate) are directly associated with, respectively, lower and higher physical and psychosocial safety behavior. We also found some evidence that safety climate buffers the negative impact of job demands (i.e., work–family conflict and job insecurity) on safety behavior and strengthens the positive impact of job resources (i.e., co-worker support) on safety behavior. **Conclusions:** Regardless of whether the focus is physical or psychological safety, our results show that strengthening the safety climate within an organization can increase employees' safety behavior. **Practical implication:** An organization's safety climate is an optimal target of intervention to prevent and ameliorate negative physical and psychological health and safety outcomes, especially in times of uncertainty and change.

- **Keywords:** Physical safety climate; Psychosocial safety climate; Physical safety behavior, psychosocial safety behavior; JD-R model; Multilevel analysis

Linda M. Goldenhar, Pete Stafford. *If you've seen one construction worksite stretch and flex program ... you've seen one construction worksite stretch and flex program.* Pages 73-79.

Background: Work-related Musculoskeletal Disorders (WMSD) account for approximately one-third of all injuries in the U.S. construction industry. Many companies have implemented stretch and flex (s/f) programs to reduce WMSD despite a lack of evidence showing effectiveness. **Methods:** We conducted a mixed-methods study to understand (a) why employers continue devoting resources to s/f programs; (b) how programs vary; and (c) any actual or perceived benefits. **Results:** Nineteen safety and health professionals were interviewed and 133 more (13.3% response rate) completed an on-line survey. Fifty-six percent had implemented an s/f program with the primary goal of reducing WMSDs; though most did not review data to determine goal achievement. Program structure varied in terms of duration, frequency, and type of stretches. There was strong agreement about mandating attendance but not participation, due primarily to liability issues. Cost was a factor when deciding to implement a program but not for sustaining one. The majority had not implemented other ergonomic prevention activities, but many had started conducting daily safety huddles for task and safety planning. Those reporting a reduction in WMSDs agreed that it was not due to the s/f program alone and that other benefits included increased worker camaraderie, communication, and collaboration. **Conclusion:** Although there is little to no scientific evidence showing that they work as intended, construction companies continue to implement s/f programs with the goal of reducing WMSDs. Bringing work crews together for s/f activities has prompted employers to also begin conducting daily safety huddles. Although employers may not be able to link reduced WMSDs to an s/f program, the ancillary benefits may warrant the time and resources. **Practical applications:** S/f programs should be only one component of a more comprehensive ergonomics prevention program. Conducting daily safety huddles at the same time also may enhance worker communication, camaraderie, collaboration and improve safety outcomes.

- **Keywords:** Work-related musculoskeletal disorders; Construction safety and health; Workplace stretching programs; Daily safety huddles; Mixed-methods research

Paraskevi Michalaki, Mohammed A. Quddus, David Pitfield, Andrew Huetson. *Exploring the factors affecting motorway accident severity in England using the generalised ordered logistic regression model.* Pages 89-97:

Problem: The severity of motorway accidents that occurred on the hard shoulder (HS) is higher than for the main carriageway (MC). This paper compares and contrasts the most important factors affecting the severity of HS and MC accidents on motorways in England. **Method:** Using police reported accident data, the accidents that occurred on motorways in England are grouped into two categories (i.e., HS and MC) according to the location. A generalized ordered logistic regression model is then applied to identify the factors affecting the severity of HS and MC accidents on motorways. The factors examined include accident and vehicle characteristics, traffic and environment conditions, as well as other behavioral factors. **Results:** Results suggest that the factors positively affecting the severity include: number of vehicles involved in the accident, peak-hour traffic time, and low visibility. Differences between HS and MC accidents are identified, with the most important being the involvement of heavy goods vehicles (HGVs) and driver fatigue, which are found to be more crucial in increasing the severity of HS accidents. **Practical applications:** Measures to increase awareness of HGV drivers regarding the risk of fatigue when driving on motorways, and especially the nearside lane, should be taken by the stakeholders.

- **Keywords:** Accident severity; Motorway; Hard-shoulder; Generalized ordered logit model; Fatigue

Anders Jonsson, Anders Bergqvist, Ragnar Andersson. *Assessing the number of fire fatalities in a defined population. Pages 99-103.*

- **Keywords:** Fatal fires; Fire deaths; Fire-related mortality; Fire injury surveillance; Record linkage

Wei Hao, Camille Kamga, Janice Daniel. *The effect of age and gender on motor vehicle driver injury severity at highway-rail grade crossings in the United States. Pages 105-113.*

Introduction: Based on the Federal Railway Administration (FRA) database, there were 25,945 highway-rail crossing accidents in the United States between 2002 and 2011. With an extensive database of highway-rail grade crossing accidents in the United States from 2002 to 2011, estimation results showed that there were substantial differences across age/gender groups for driver's injury severity. **Method:** The study applied an ordered probit model to explore the determinants of driver injury severity for motor vehicle drivers at highway-rail grade crossings. **Results:** The analysis found that there are important behavioral and physical differences between male and female drivers given a highway-rail grade crossing accident happened. **Practical applications:** Older drivers have higher fatality probabilities when driving in open space under passive control especially during bad weather condition. Younger male drivers are found to be more likely to have severe injuries at rush hour with high vehicle speed passing unpaved highway-rail grade crossings under passive control. Synthesizing these results led to the conclusion that the primary problem with young is risk-taking and lack of vehicle handling skills. The strength of older drivers lies in their aversion to risk, but physical degradation issues which result in longer reaction/perception times and degradation in vision and hearing often counterbalance this attribute.

- **Keywords:** Injury severity; Age and gender; Highway-rail grade crossing accidents; Ordered probit model

Gavin D. Brown, Shaen Corbet, Caroline McMullan, Ruchira Sharma. *Do industrial incidents in the chemical sector create equity market contagion? Pages 115-119.*

Introduction: This paper examines a number of US chemical industry incidents and their effect on equity prices of the incident company. Furthermore, this paper then examines the contagion effect of this incident on direct competitors. **Method:** Event study methodology is used to assess the impact of chemical incidents on both incident and competitor companies. **Results:** This paper finds that the incident company experiences deeper negative abnormal returns as the number of injuries and fatalities as a result of the incident increases. The equity value of the competitor companies suffer substantial losses stemming from contagion effects when disasters that occur cause ten or more injuries and fatalities, but benefit from the incident through increasing equity value when the level of injury and fatality is minor. **Conclusions:** Presence of contagion suggests collective action may reduce value destruction brought about by safety incidents that result in significant injury or loss of life. **Practical Applications:** This research can be used as a resource to promote and justify the cost of safety mechanisms within the chemical industry, as incidents have been shown to negatively affect the equity value of the not just the incident company, but also their direct competitors.

- **Keywords:** Chemical incidents; Stock markets; Contagion effects; Risk management; Event study

Luca Persia, Roberto Gigli, Davide Shingo Usami. *Smeed's law and expected road fatality reduction : an assessment of the Italian case.* Pages 121-133.

- **Keywords:** Road safety; Trend; Smeed's law

Etienne Blais, Laurent Carnis. *Improving the safety effect of speed camera programs through innovations : evidence from the French experience.* Pages 135-145.

- **Keywords:** Speed cameras; Punishment avoidance; Traffic casualties; Interrupted time series; France

Bethany A. West, Geeta Bhat, Judy Stevens, Gwen Bergen. *Assistive device use and mobility-related factors among adults aged ≥ 65 years.* Pages 147-150.

Introduction: Examining how assistive device (cane, walker) use relates to other mobility factors can provide insight into older adults' future mobility needs. **Methods:** Data come from the Second Injury Control and Risk Survey, Phase 2 (ICARIS2-P2), conducted from March 2007 to May 2008. Prevalence estimates were calculated for older adults (aged ≥ 65) and multivariable logistic regression was used to explore associations between assistive device use and mobility-related characteristics. **Result:** Compared with non-users, assistive device users were more likely to report a recent fall (AOR 12.0; 95% CI 4.9–29.3), limit walking outside due to concerns about falling (AOR 7.1; 95% CI 2.6–19.1), be unable to walk outside for 10 min without resting (AOR 3.3; 95% CI 1.1–9.3), and be no longer driving (AOR 6.7; 95% CI 2.0–22.3). **Conclusion:** Assistive device users have limited mobility and an increased risk for fall injury compared with non-users. **Practical Application:** Effective fall prevention interventions, and innovative transportation options, are needed to protect the mobility of this high-risk group.

- **Keywords:** Driving; Falls; Walker; Cane; Independence

Federica Caffaro, Eugenio Cavallo. *Comprehension of safety pictograms affixed to agricultural machinery : a survey of users.* Pages 151-158.

Introduction: Pictograms affixed to agricultural machinery are important tools to reduce the occurrence of accidents and injuries when correctly noticed, comprehended, and followed. This study investigated the knowledge of safety pictograms used in agricultural machinery in a sample of farmers and farm workers and examined the factors influencing their comprehension. **Method:** A questionnaire with 12 safety pictograms used for agricultural machinery was administered to 281 owners or users of agricultural machinery. For each of the pictograms, the participants had to select the most appropriate verbal description from among four choices. **Results:** The pictograms examined yielded poor comprehension scores, including warnings related to the most frequent accidents involving agricultural machinery. Familiarity with the pictograms and years of experience with agricultural machinery significantly increased users' comprehension of the meaning of the pictograms. **Conclusions:** Specific training programs should be designed to draw attention to safety pictograms and to instill their meaning.

- **Keywords:** Accident prevention; Agriculture; Pictogram; Safety sign; Warning

Nicole A. Matas, Ted Nettelbeck, Nicholas R. Burns. *Dropout during a driving simulator study : a survival analysis*. Pages 159-169.

Introduction: Simulator sickness is the occurrence of motion-sickness like symptoms that can occur during use of simulators and virtual reality technologies. This study investigated individual factors that contributed to simulator sickness and dropout while using a desktop driving simulator. **Method:** Eighty-eight older adult drivers (mean age 72.82 ± 5.42 years) attempted a practice drive and two test drives. Participants also completed a battery of cognitive and visual assessments, provided information on their health and driving habits, and reported their experience of simulator sickness symptoms throughout the study. **Results:** Fifty-two participants dropped out before completing the driving tasks. A time-dependent Cox Proportional Hazards model showed that female gender (HR = 2.02), prior motion sickness history (HR = 2.22), and Mini-SSQ score (HR = 1.55) were associated with dropout. There were no differences between dropouts and completers on any of the cognitive abilities tests. **Conclusions:** Older adults are a high-risk group for simulator sickness. Within this group, female gender and prior motion sickness history are related to simulator dropout. Higher reported experience of symptoms of simulator sickness increased rates of dropout. **Practical applications:** The results highlight the importance of screening and monitoring of participants in driving simulation studies. Older adults, females, and those with a prior history of motion sickness may be especially at risk.

- **Keywords:** Driving simulation; Older adults; Simulator sickness; Survival analysis; Motion sickness

Zhuanglin Ma, Wenjing Zhao, Steven I-Jy Chien, Chunjiao Dong. *Exploring factors contributing to crash injury severity on rural two-lane highways*. Pages 171-176.

Objective: Crash injury results from complex interaction among factors related to at-fault driver's behavior, vehicle characteristics, and road conditions. Identifying the significance of these factors which affect crash injury severity is critical for improving traffic safety. A method was developed to explore the relationship based on crash data collected on rural two-lane highways in China. **Methods:** There were 673 crash records collected on rural two-lane highways in China. A partial proportional odds model was developed to examine factors influencing crash injury severity owing to its high ability to accommodate the ordered response nature of injury severity. An elasticity analysis was conducted to quantify the marginal effects of each contributing factor. **Results:** The results show that nine explanatory variables, including at-fault driver's age, at-fault driver having a license or not, alcohol usage, speeding, pedestrian involved, type of area, weather condition, pavement type, and collision type, significantly affect injury severity. In addition to alcohol usage and pedestrian involved, others violate the proportional odds assumption. At-fault driver's age of 25–39 years, alcohol usage, speeding, pedestrian involved, pavement type of asphalt, and collision type of angle are found to be increased crash injury severity. **Practical Applications:** The developed logit model has demonstrated itself efficient in identifying the effect of contributing factors on the crash injury severity.

- **Keywords:** Crash injury severity; Rural two-lane highway; Partial proportional odds model; Elasticity analysis; Traffic safety

Julie M. Gerhart, Holly Spriggs, Tonja W. Hampton, Rose Mary B. Hoy, Allison Y. Strohlic, Susan Proulx, Debra B. Goetchius. *Applying human factors to develop an improved package design for (Rx) medication drug labels in a pharmacy setting. Pages 177-184.*

As many as 98,000 people die every year from preventable medical errors. Among pharmacists, the most common error reported is the selection of the wrong drug. Merck met with the U.S. Food and Drug Administration (FDA) to discuss the optimization of the U.S. label for solid oral dosage forms of Merck medications. These discussions led to the development of revised label designs for six products that were then evaluated using failure modes and effects analysis and an expert review by human factors specialists. There were no errors among 425 filled prescriptions in the validation test of the final label. Key changes to the original labels include the use of a non-branded logo, high-contrast color bands for dosage strength, and an enhanced three-dimensional tablet image. The redesigned labels were approved by the US FDA in June 2011. **Practical applications:** The redesigned label should improve the accurate selection of medications from pharmacy shelves.

- **Keywords:** Medication; Label; Human factors usability test; Medication error

A.E. af Wåhlberg, P. Barraclough, J. Freeman. *The Driver Behaviour Questionnaire as accident predictor : a methodological re-meta-analysis. Pages 185-212.*

Introduction: The Manchester Driver Behaviour Questionnaire (DBQ) is the most commonly used self-report tool in traffic safety research and applied settings. It has been claimed that the violation factor of this instrument predicts accident involvement, which was supported by a previous meta-analysis. However, that analysis did not test for methodological effects, or include unpublished results. **Method:** The present study re-analysed studies on prediction of accident involvement from DBQ factors, including lapses, and many unpublished effects. Tests of various types of dissemination bias and common method variance were undertaken. **Results:** Outlier analysis showed that some effects were probably not reliable data, but excluding them did not change the results. For correlations between violations and crashes, tendencies for published effects to be larger than unpublished ones and for effects to decrease over time were observed, but were not significant. Also, using the mean of accidents as proxy for effect indicated that studies where effects for violations are not reported have smaller effect sizes. These differences indicate dissemination bias. Studies using self-reported accidents as dependent variables had much larger effects than those using recorded accident data. Also, zero-order correlations were larger than partial correlations controlled for exposure. Similarly, violations/accidents effects were strong only when there was also a strong correlation between accidents and exposure. Overall, the true effect is probably very close to zero ($r < .07$) for violations versus traffic accident involvement, depending upon which tendencies are controlled for. **Conclusions:** Methodological factors and dissemination bias have inflated the published effect sizes of the DBQ. Strong evidence of various artefactual effects is apparent. **Practical applications:** A greater level of care should be taken if the DBQ continues to be used in traffic safety research. Also, validation of self-reports should be more comprehensive in the future, taking into account the possibility of common method variance.

- **Keywords:** Driver Behavior Questionnaire; Common method variance; Self-report; Exposure; Dissemination bias

Eduardo Romano, Michael Scherer, James Fell, Eileen Taylor. *A comprehensive examination of U.S. laws enacted to reduce alcohol-related crashes among underage drivers. Pages 213-221.*

Introduction: To effectively address concerns associated with alcohol-related traffic laws, communities must apply comprehensive and well-coordinated interventions that account for as many factors as possible. The goal of the current research article is to examine and evaluate the simultaneous contribution of 20 underage drinking laws and 3 general driving safety laws, while accounting for demographic, economic, and environmental variables. **Methods:** Annual fatal crash data (1982 to 2010), policies, and demographic, economic, and environmental information were collected and applied to each of the 51 jurisdictions (50 states and the District of Columbia). A structural equation model was fit to estimate the relative contribution of the variables of interest to alcohol-related crashes. **Results:** As expected, economic factors (e.g., unemployment rate, cost of alcohol) and alcohol outlet density were found highly relevant to the amount of alcohol teens consume and therefore to teens' impaired driving. Policies such as those regulating the age of bartenders, sellers, or servers; social host civil liability laws; dram shop laws; internal possession of alcohol laws; and fake identification laws do not appear to have the same impact on teens' alcohol-related crash ratios as other types of policies such as those regulating alcohol consumption or alcohol outlet density. **Conclusions:** This effort illustrates the need for comprehensive models of teens' impaired driving. After simultaneously accounting for as many factors as possible, we found that in general (for most communities) further reductions in alcohol-related crashes among teens might be more rapidly achieved from efforts focused on reducing teens' drinking rather than on reducing teens' driving. Future efforts should be made to develop models that represent specific communities. **Practical applications:** Based on this and community-specific models, simulation programs can be developed to help communities understand and visualize the impact of various policy alternatives.

- **Keywords:** Young drivers; Alcohol; Policies; Communities; Fatal crashes