HHS Public Access

Author manuscript

J Safety Res. Author manuscript; available in PMC 2018 December 01.

Published in final edited form as:

J Safety Res. 2017 December ; 63: 99–103. doi:10.1016/j.jsr.2017.08.002.

Attitudes toward mandatory ignition interlocks for all offenders convicted of driving while intoxicated☆

Jonathan Downs[a,b,*], **Ruth Shults**[a], and **Bethany West**[a]

[a]National Center for Injury Prevention and Control, Centers for Disease Prevention and Control, 4770 Buford Highway, N.E., MS F62, Atlanta, GA 30341, United States

[b]Oak Ridge Institute for Science and Education, 1299 Bethel Valley Rd., Oak Ridge, TN 3783, United States

Abstract

Introduction—Ignition interlocks are effective in reducing alcohol-impaired driving recidivism for all offenders, including first-time offenders. Despite their effectiveness, interlock use among persons convicted of driving while intoxicated from alcohol (DWI) remains low. This cross-sectional survey of U.S. adults assessed public support for requiring ignition interlocks for all convicted DWI offenders including first-time offenders. The goal was to update results from a similar 2010 survey in light of new state requirements and increased interlock installations.

Methods—Questions were included in the Porter Novelli FallStyles survey, which was fielded from September 28 to October 16, 2015. Participants were the 3,536 individuals who provided an opinion toward requiring ignition interlocks for all offenders. For analyses, opinion toward requiring interlocks for all offenders was dichotomized into ‘agree’ and ‘neutral/disagree.’ To handle missing data, 10 imputed datasets were created and pooled using fully conditional specification (FCS).

Results—Fifty-nine percent of adults supported requiring interlocks for all DWI offenders. Multivariate analysis revealed that persons who did not report alcohol-impaired driving (AID) were 60% more likely to support requiring interlocks than those who reported AID. Having heard of interlocks also increased support. Support was generally consistent across demographic subgroups.

Conclusions—Interlocks for all offenders have majority support nationwide in the current survey, consistent with previous reports. Support is lowest among those who have reported alcohol-impaired driving in the past 30 days. These results suggest that communities with higher levels of alcohol-impaired driving may be more resistant to requiring ignition interlocks for all convicted DWI offenders. Future studies should examine this association further.

☆Disclaimer: The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

*Corresponding author at: National Center for Injury Prevention and Control, Centers for Disease Prevention and Control, 4770 Buford Highway, N.E., MS F62, Atlanta, GA 30341, United States. jon.downs@doh.wa.gov (J. Downs).

The Journal of Safety Research has partnered with the Office of the Associate Director for Science, Division of Unintentional Injury Prevention, National Center for Injury Prevention and Control at the CDC in Atlanta, Georgia, USA, to briefly report on some of the latest findings in the research community. This report is the 49th in a series of “From the CDC” articles on injury prevention.

Practical applications—These results indicate that the majority of adults recognize DWI as a problem and support requiring interlocks for all offenders.

1. Introduction

Alcohol-impaired driving (AID) is a common factor in motor-vehicle crashes. In 2015, 29% of motor-vehicle crash deaths (n = 10,265) involved a driver with a blood alcohol concentration (BAC) 0.08% or higher, the illegal threshold for adult drivers in the United States (National Highway Traffic Safety Administration, 2016). Broader implementation of proven interventions to prevent crashes involving alcohol, including ignition interlock programs, could save many lives (Elder et al., 2011; Goodwin et al., 2015).

Persons convicted of driving while intoxicated from alcohol (DWI) are at high risk for reoffending, even if it is their first offense (Rauch et al., 2010). An ignition interlock device (interlock) requires the driver to submit a passing breath sample (typically 0.02–0.04% BAC) in order to start and continue to operate a vehicle (Casanova-Powell, Hedlund, Leaf, & Tison, 2015). A systematic review conducted for the Community Preventive Services Task Force found that interlocks reduced recidivism by a median of 67% while installed on the vehicles of offenders (Elder et al., 2011). In 2011, the task force recommended that interlocks be required for all DWI offenders, even if it is their first offense (Task Force on Community Preventive Services, 2011). Since June 2017, 28 states have laws requiring interlocks for all convicted DWI offenders (Mothers Against Drunk Driving, 2017).

Public support can be an important factor in how states develop and implement DWI prevention programs (Fieldler, Brittle, & Stafford, 2012). Surveys that have assessed support for ignition interlocks without specifying a universal requirement for all offenders reported high levels of support among U.S. adults (Debinski, Clegg Smith, & Gielen, 2014; McCartt, Wells, & Teoh, 2010; Munnich & Loveland, 2011). Likewise, surveys that have assessed support for requiring all offenders to install ignition interlocks including first offenders have reported strong support (AAA Foundation for Traffic Safety, 2016; Debinski et al., 2014; Shults & Bergen, 2012; Smith et al., 2014). For example, a 2015 national AAA survey found that 80% of respondents would support requiring interlocks for all convicted DWI offenders (AAA Foundation for Traffic Safety, 2016). Less is known, however, about the demographic factors related to supporting interlock requirements for all offenders. In 2010, questions assessing support for interlocks were included on the HealthStyles survey conducted by Porter Novelli (Shults & Bergen, 2012). The survey found that 69% of adults supported interlocks for all DWI offenders, and that those who did not report alcohol-impaired driving were 80% more likely to support interlocks. Support was generally consistent across demographic subgroups. In 2010, 13 states had laws requiring or strongly incentivizing the use of interlocks for all offenders (Mothers Against Drunk Driving, 2017). Since then, an additional 15 states and Washington, D.C. have passed such laws (Mothers Against Drunk Driving, 2017). The total number of installed interlocks increased from 210,691 in 2010 to 318,714 in 2014, with approximately 23 interlocks installed for every 100 DWI arrests in 2014 (Roth, 2014). In light of new state requirements and increased interlock installations, we assessed support for all-offender interlock requirements among U.S. adults by

geographic region, community size, and individual characteristics. The questions used were the same as those used in the 2010 HealthStyles survey (Shults & Bergen, 2012).

2. Methods

2.1. Data source

Data come from the 2015 FallStyles survey conducted in the United States by Porter Novelli from September 28 to October 16, 2015. The survey was administered to a sample of respondents who completed a larger, initial survey called SpringStyles 2015. SpringStyles 2015 participants were drawn from a random sample of panelists from GfK's KnowledgePanel. Methods for the KnowledgePanel have been described elsewhere (GfK, 2013). Briefly, the GfK KnowledgePanel is a randomly selected, national panel drawn from an address-based sample. GfK KnowledgePanel maintains around 55,000 members who are replenished continuously throughout the year.

Of the 11,028 panelists selected for the SpringStyles 2015 survey, 6,836 adults completed the survey and were eligible for the current survey. Of those who completed the SpringStyles 2015 survey, 4,665 were randomly selected to receive the FallStyles survey, and 3,550 completed at least half of the survey (Porter Novelli Public Services, 2015). Respondents who did not provide an opinion on requiring interlocks for all offenders were excluded from these analyses (n = 14). Since 2011, the FallStyles survey has been administered online instead of by mail (Porter Novelli Public Services, 2015). Respondents who completed the survey received an incentive worth around $5 (U.S.). Data were weighted to approximate 2014 U.S. Current Population Survey estimates for gender, age, region, household income, race/ethnicity, education, household size, metropolitan statistical area (MSA) status, and internet access. As the Centers for Disease Control and Prevention received a de-identified dataset, this study was exempt from IRB review.

2.2. Measures

2.2.1. Data collected—Demographic information included sex, age, race/ethnicity, current employment status, education, marital status, household income, community size, and census region. For attitudes toward alcohol-impaired driving, respondents were first asked to rate their support for the statement: "Alcohol-impaired or drunk driving is a big problem in the community." Response options included 'strongly disagree;' 'moderately disagree;' neither agree or disagree;' moderately agree;' and 'strongly agree.' Next, respondents were asked, "Some states require people who have been convicted for drunk driving to install special alcohol test devices called ignition interlocks in their cars. If the interlock registers alcohol when the driver blows into a small tube, the car will not start. Have you heard of these ignition interlocks being required for the cars of convicted drunk drivers?" Respondents could answer 'Yes' or 'No.' Then, respondents were asked to rate their support for the statement: "Interlocks should be required for all convicted drunk drivers, even if it is the driver's first conviction for drunk driving" with options of: 'strongly disagree;' 'moderately disagree;' 'neither agree or disagree;' moderately agree;' and 'strongly agree.' Finally, to assess alcohol-impaired driving (AID), respondents who

reported consuming any alcohol in the past 30 days were asked, “During the past 30 days, have you driven when you’ve had perhaps too much to drink?”

2.2.2. Missing data—Of 3,536 individuals who responded to the interlock support question, 157 had missing values for other response items, including AID (n = 125), a belief that AID was a big community problem (n = 16), and knowledge of interlocks (n = 22). After assessing the relationship of demographic characteristics to missingness of data, fully conditional specification (FCS) multiple imputation was performed using all 9 demographic variables, belief that AID is a big problem in the community, knowledge of interlocks, AID, and interlock support for each variable with missing values. We pooled 10 imputed data sets to generate a single set of estimates (Liu & De, 2015; Van Buuren, Brand, Groothuis-Oudshoorn, & Rubin, 2006). After descriptive and multivariate analyses, results from imputed data and the data before the multiple imputation modeling (complete case analysis) were compared for similarity (Lee & Carlin, 2010; Liu & De, 2015).

2.3. Modeling

For interlock support and perception that AID is a big problem in the community, response options were dichotomized as either “agree” or “neutral/disagree” for bivariate and multivariate analyses. Prevalence estimates and 95% confidence intervals (CIs) for AID being a big problem in the community, knowledge of interlocks, and interlock support were calculated by all demographic variables. For interlock support, bivariate and multivariate models were fit with demographic variables and knowledge of interlocks. The multivariate model included all variables with one or more significant levels in bivariate models. Log-linear regression was used to assess the association of demographic characteristics with all-offender interlock support. Statistical analyses were performed using SAS 9.3 (Cary, NC).

3. Results

Overall, 56% of participants agreed AID was a big problem in the community, 78% reported knowledge of interlocks, and 59% of respondents supported requiring interlocks for all convicted DWI offenders (Table 1). Twenty percent of respondents were neutral about requiring interlocks for all offenders, and 21% opposed the approach. Among the 3% of respondents who reported AID, 35% supported the requirement, 28% were neutral, and 37% opposed it. Among respondents who did not report AID, 60% supported the requirement, 20% were neutral, and 21% opposed it. Attitudes about AID were related to interlock support: support was statistically significantly higher among those who had heard of interlocks compared with those who had not (62% vs. 48%) and those who agreed AID was a big problem in the community compared with those who did not (73% vs. 42%).

Results of the multivariate modeling indicated that interlock support varied slightly by sex, income, and knowledge of interlocks (Table 2). Interlock support was 60% more likely among those not reporting AID than those who did, after accounting for sex, age, race/ethnicity, income, and interlock knowledge. In complete case analysis, interlock support was 50% more likely among those not reporting AID (data not shown).

4. Discussion

4.1. Summary of findings

A majority of surveyed adults support all-offender interlock requirements (59%). Additionally, support was generally consistent across most geographic and sociodemographic divisions. Interlock support was lowest (35%) among persons who reported alcohol-impaired driving in the past 30 days. Those who did not report AID were 60% more likely to support all-offender interlocks compared to those who did. These findings are generally consistent with 2010 HealthStyles survey results and other studies which have found that AID and high alcohol consumption are associated with lower support for interlocks or other AID countermeasures (Debinski et al., 2014; McCartt et al., 2010; Shults & Bergen, 2012). This suggests that communities with a higher prevalence of AID may be less likely to support all-offender interlock requirements.

Differences in population selection and survey administration limit the ability to directly compare the current study results to those from the 2010 HealthStyles survey (Shults & Bergen, 2012). For example, the current survey was administered online instead of by mail, and the unweighted distribution of 2015 respondents was younger and less likely to be married than in the 2010 study.

Support for interlocks in our current study (59%) is lower than in a 2015 AAA survey, which found 80% of respondents supported interlocks either strongly or somewhat (AAA Foundation for Traffic Safety, 2016). The AAA study assessed support using a four-point scale without a neutral response option, whereas the current study used a five-point scale with a neutral option (AAA Foundation for Traffic Safety, 2016). Without the neutral response option, respondents may instead give a socially desirable answer (Garland, 1991). Our current study found that 21% of respondents were opposed to all-offender interlocks, either strongly or moderately. This is similar to the 19% of respondents who “strongly opposed” or “somewhat opposed” interlocks for all offenders in the 2015 AAA report (AAA Foundation for Traffic Safety, 2016).

We found that higher support for requiring interlocks for all convicted offenders was stronger among respondents who had heard of interlocks (62%) than those who had not (48%). A separate evaluation found that a brief educational intervention focused on the effectiveness of interlocks increased mean support for interlocks (Smith et al., 2014). These findings suggest that providing accurate information about the demonstrated effectiveness of interlocks may help reduce barriers to support.

4.2. Limitations

The FallStyles survey did not use probability sampling in selecting respondents, so data may not be representative of the U.S. adult population. Participants may give socially desirable answers to sensitive questions. Self-reported AID is subjective and cannot be equated to a specific BAC. However, previous studies of impaired driving have found that >60% of respondents who reported AID also reported binge drinking (Jewett, Shults, Banerjee, & Bergen, 2015; Shults & Bergen, 2012), suggesting that some persons who self-report AID may drive while legally intoxicated.

4.3. Conclusions and applications

As of February 2017, 28 states and Washington, D.C. required or heavily incentivized interlocks for all offenders—more than twice as many as the 13 states with such requirements at the time of the 2010 HealthStyles survey (Mothers Against Drunk Driving, 2017). Three of these new state requirements went into effect after the current survey was conducted, and one went into effect four weeks before the survey began. During 2010–2014, the number of installed interlocks steadily increased from 210,691 to 318,714 (Roth, 2014). The current study results indicate that the majority of adults recognize AID as a problem and support requiring interlocks for all convicted DWI offenders. Those who believe that AID is a big problem in the community were more likely to support all-offender interlock requirements. Those who report AID are less likely to support interlocks than those who do not.

Acknowledgments

Role of funding source

This work was supported in part by an appointment to the Internship/Research Participation Program at the National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, administered by the Oak Ridge Institute for Science and Education through an interagency agreement between the U.S. Department of Energy and the Centers for Disease Control and Prevention.

Biographies

Jonathan Downs, MPH, is a research fellow at the National Center for Injury Prevention and Control, Centers for Disease Control and Prevention that is sponsored by the Oak Ridge Institute for Science and Education (ORISE). In this role he has researched impaired driving, child passenger safety, rural/urban disparities in motor vehicle crashes, and older adult falls. Jonathan Downs participated in this as part of a position funded through interagency agreement #12FED1203601.

Ruth Shults, MPH PhD, is a senior epidemiologist at the Injury Center of the Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia. During her 20-year tenure on the Transportation Safety Team at the Injury Center, she has led CDC's research in the areas of teen drivers, alcohol-impaired driving, and occupant protection.

Bethany West, MPH, serves as an epidemiologist on the Transportation Safety Team of the CDC's Injury Center. Bethany's work is in the area of motor vehicle safety focusing on child passenger safety and minority groups.

References

AAA Foundation for Traffic Safety. 2015 traffic safety culture index. Washington, DC: 2016.

Casanova-Powell, T., Hedlund, J., Leaf, W., Tison, J. Evaluation of state ignition interlock programs: Interlock use analyses from 28 states, 2006–2011. Washington, DC: National Highway Traffic Safety Administration; 2015. (DOT HS 812 145)

Debinski B, Clegg Smith K, Gielen A. Public opinion on motor vehicle-related injury prevention policies: A systematic review of a decade of research. Traffic Injury Prevention. 2014; 15(3):243–251. [PubMed: 24372496]

Elder RW, Voas R, Beirness D, Shults RA, Sleet DA, Nichols JL, Compton R. Effectiveness of ignition interlocks for preventing alcohol-impaired driving and alcohol-related crashes: A community guide systematic review. American Journal of Preventive Medicine. 2011; 40(3):362–376. [PubMed: 21335270]

Fieldler, K., Brittle, C., Stafford, S. Case studies of ignition interlock programs. Washington, DC: National Highway Traffic Safety Administration; 2012. (DOT HS 811 594)

Garland R. The mid-point on a rating scale: Is it desirable? Australasian Journal of Market Research. 1991; 2(1):66–70.

GfK. KnowledgePanel design summary. Palo Alto, CA: GfK; 2013.

Goodwin, A., Thomas, L., Kirley, B., Hall, W., O'Brien, N., Hill, K. Countermeasures that work: A highway safety countermeasure guide for state highway safety offices. 8. Washington, DC: National Highway Traffic Safety Administration; 2015. (DOT HS 812 202)

Jewett A, Shults RA, Banerjee T, Bergen G. Alcohol-impaired driving among adults — United States, 2012. MMWR. Morbidity and Mortality Weekly Report. 2015; 64(30):814–817. [PubMed: 26247434]

Lee KJ, Carlin JB. Multiple imputation for missing data: Fully conditional specification versus multivariate normal imputation. American Journal of Epidemiology. 2010; 171(5):624–632. [PubMed: 20106935]

Liu Y, De A. Multiple imputation by fully conditional specification for dealing with missing data in a large epidemiologic study. International Journal of Statistics in Medical Research. 2015; 4(3):287–295. [PubMed: 27429686]

McCartt AT, Wells JK, Teoh ER. Attitudes toward in-vehicle advanced alcohol detection technology. Traffic Injury Prevention. 2010; 11(2):156–164. [PubMed: 20373235]

Mothers Against Drunk Driving. Status of state ignition interlock laws. Irving, TX: Mothers Against Drunk Driving; 2017. http://www.madd.org/drunk-driving/ignition-interlocks/status-of-state-ignition.html [Accessed date: 2 October 2016]

Munnich L, Loveland J. Do Americans oppose controversial evidence-based road safety policies? Transportation Research Record: Journal of the Transportation Research Board. 2011; 2213:9–12.

National Highway Traffic Safety Administration. State alcohol-impaired-driving estimates: 2015 data. Washington, DC: National Highway Traffic Safety Administration; 2016. (DOT HS 812 357)

Porter Novelli Public Services. Styles 2015 methodology. Washington, DC: Deanne Weber; 2015.

Rauch WJ, Zador PL, Ahlin EM, Howard JM, Frissell KC, Duncan GD. Risk of alcohol-impaired driving recidivism among first offenders and multiple offenders. American Journal of Public Health. 2010; 100(5):919–924. [PubMed: 19846687]

Roth, R. 2014 survey of currently-installed interlocks in the U.S. Santa Fe, NM: Roth Interlock; 2014.

Shults RA, Bergen G. Attitudes towards requiring ignition interlocks for all driving while intoxicated offenders: Findings from the 2010 HealthStyles survey. Injury Prevention. 2012; 19(1):68–71. [PubMed: 22773020]

Smith KC, Debinski B, Pollack K, Vernick J, Bowman S, Samuels A, Gielen A. Research-informed evidence and support for road safety legislation: Findings from a national survey. Accident Analysis & Prevention. 2014; 73:109–115. [PubMed: 25215926]

Task Force on Community Preventive Services. Recommendations on the effectiveness of ignition interlocks for preventing alcohol-impaired driving and alcohol-related crashes. American Journal of Preventive Medicine. 2011; 40(3):337.

Van Buuren S, Brand JPL, Groothuis-Oudshoorn CGM, Rubin DB. Fully conditional specification in multivariate imputation. Journal of Statistical Computation and Simulation. 2006; 76(12):1049–1064.

Table 1

Perception of alcohol-impaired driving as a problem in their community and support for requiring interlocks for all convicted driving while intoxicated offenders, including first-time offenders by demographic characteristic, FallStyles 2015 (n = 3,536).

Characteristic	Agrees alcohol-impaired driving is a big problem in their community,% (95% CI[a])	Has heard of interlocks being required for the cars of convicted drunk drivers, % (95% CI[a])	Agrees interlocks should be required for all convicted drunk drivers,% (95% CI[a])
Sex			
Female	58 (56 to 60)	77 (76 to 79)	63 (61 to 65)
Male	53 (51 to 55)	80 (78 to 81)	55 (53 to 57)
Age (years)			
18 to 24	49 (44 to 53)	67 (63 to 72)	54 (49 to 58)
25 to 34	53 (49 to 57)	75 (72 to 78)	56 (53 to 60)
35 to 44	53 (48 to 57)	72 (68 to 76)	59 (55 to 63)
45 to 54	57 (53 to 61)	82 (79 to 85)	57 (53 to 61)
55 to 64	56 (52 to 60)	86 (83 to 89)	61 (57 to 65)
65+	64 (60 to 68)	84 (81 to 87)	66 (63 to 70)
Alcohol-impaired driving[b]			
Yes	41 (29 to 52)	79 (66 to 92)	35 (24 to 46)
No	56 (54 to 58)	78 (77 to 80)	60 (58 to 62)
Race/ethnicity			
White, non-Hispanic	58 (56 to 60)	83 (82 to 85)	60 (58 to 62)
Black, non-Hispanic	43 (38 to 48)	65 (60 to 70)	58 (53 to 63)
Hispanic	57 (53 to 61)	75 (71 to 79)	61 (57 to 65)
Other, non-Hispanic	52 (46 to 58)	62 (56 to 68)	49 (43 to 55)
Employed?			
Yes	55 (53 to 57)	78 (76 to 80)	58 (56 to 60)
No	57 (54 to 59)	79 (77 to 81)	60 (58 to 63)
Education			
High school or less	55 (52 to 57)	77 (75 to 79)	61 (58 to 63)
Some college/bachelor's	57 (54 to 59)	79 (77 to 81)	58 (56 to 61)
Graduate school or higher	55 (51 to 60)	80 (76 to 84)	58 (53 to 62)
Marital status			
Divorced/separated	58 (53 to 64)	81 (77 to 85)	57 (52 to 62)
Married	58 (56 to 60)	82 (80 to 83)	61 (59 to 64)
Widowed	60 (52 to 68)	81 (75 to 88)	62 (54 to 70)
Domestic partnership	59 (51 to 66)	86 (81 to 91)	57 (49 to 64)
Never married	48 (45 to 51)	70 (67 to 73)	55 (52 to 59)
Annual household income			
Under $30,000	52 (49 to 56)	69 (66 to 72)	52 (48 to 55)
$30,000–59,999	57 (53 to 60)	80 (78 to 83)	62 (59 to 65)
$60,000–99,999	55 (52 to 59)	80 (77 to 82)	60 (57 to 64)

Characteristic	Agrees alcohol-impaired driving is a big problem in their community,% (95% CI[a])	Has heard of interlocks being required for the cars of convicted drunk drivers, % (95% CI[a])	Agrees interlocks should be required for all convicted drunk drivers,% (95% CI[a])
$100,000+	58 (54 to 61)	84 (81 to 86)	61 (58 to 65)
Census region			
Northeast	50 (46 to 54)	76 (72 to 79)	58 (54 to 61)
Midwest	58 (55 to 62)	83 (80 to 85)	58 (55 to 62)
South	55 (52 to 58)	75 (73 to 77)	59 (57 to 62)
West	58 (55 to 62)	82 (80 to 85)	61 (57 to 64)
Community size			
Metro	55 (53 to 57)	78 (77 to 80)	60 (58 to 62)
Non-metro	58 (54 to 62)	79 (75 to 82)	55 (51 to 60)
Overall	**56 (54 to 57)**	**78 (77 to 80)**	**59 (58 to 61)**

Bold data indicate significance at the $p \leq 0.05$ level.

[a] CI = confidence interval.

[b] As determined by response to: “During the past 30 days, have you driven when you’ve had perhaps too much to drink?”

Table 2

Crude and adjusted prevalence ratios for agreeing that ignition interlocks should be required for all driving while intoxicated offenders, including first-time offenders, FallStyles 2015 (n = 3,536).

Characteristic	Crude prevalence ratio (95% CI[a,b])	Adjusted prevalence ratio (95% CI[a,b])
Sex		
Female	**1.1 (1.1 to 1.2)**	**1.1 (1.1 to 1.2)**
Male	Ref	Ref
Age (years)		
18 to 24	Ref	Ref
25 to 34	1.1 (0.9 to 1.2)	1.0 (0.9 to 1.2)
35 to 44	1.1 (1.0 to 1.2)	1.1 (1.0 to 1.2)
45 to 54	1.1 (0.9 to 1.2)	1.0 (0.9 to 1.1)
55 to 64	1.1 (1.0 to 1.3)	1.1 (1.0 to 1.2)
65+	**1.2 (1.1 to 1.4)**	1.1 (1.0 to 1.3)
Alcohol-impaired driving[c]		
Yes	Ref	Ref
No	**1.7 (1.2 to 2.3)**	**1.6 (1.2 to 2.2)**
Race/ethnicity		
White, non-Hispanic	**1.2 (1.1 to 1.4)**	1.1 (1.0 to 1.3)
Black, non-Hispanic	1.2 (1.0 to 1.4)	1.1 (1.0 to 1.3)
Hispanic	**1.2 (1.1 to 1.4)**	1.1 (1.0 to 1.3)
Other, non-Hispanic	Ref	Ref
Employed?		
Yes	1.0 (0.9 to 1.0)	–
No	Ref	–
Education		
High school or less	1.1 (1.0 to 1.2)	–
Some college/bachelor's	1.0 (0.9 to 1.1)	–
Graduate school or higher	Ref	–
Marital status		
Divorced/separated	1.0 (0.9 to 1.1)	–
Married	1.1 (1.0 to 1.2)	–
Widowed	1.1 (1.0 to 1.3)	–
Domestic partnership	1.0 (0.9 to 1.2)	–
Never married	Ref	–
Annual household income		
Under $30,000	Ref	Ref
$30,000–59,999	**1.2 (1.1 to 1.3)**	**1.2 (1.1 to 1.3)**
$60,000–99,999	**1.2 (1.1 to 1.3)**	1.1 (1.0 to 1.3)
$100,000+	**1.2 (1.1 to 1.3)**	**1.2 (1.1 to 1.3)**
Census region		
Northeast	Ref	–

Characteristic	Crude prevalence ratio (95% CI[a,b])	Adjusted prevalence ratio (95% CI[a,b])
Midwest	1.0 (0.9 to 1.1)	–
South	1.0 (1.0 to 1.1)	–
West	1.0 (1.0 to 1.1)	–
Community size		
Metro	1.1 (1.0 to 1.2)	–
Non-metro	Ref	–
Knowledge of interlocks		
Yes	**1.3 (1.2 to 1.4)**	**1.2 (1.1 to 1.4)**
No	Ref	Ref

[a] Prevalence ratios in bold are statistically significant at the $p \leq 0.05$ level.

[b] CI = confidence interval.

[c] As determined by response to: “During the past 30 days, have you driven when you’ve had perhaps too much to drink?”