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Who's not driving among U.S. high school seniors: A closer look at race/ethnicity, socioeconomic factors, and driving status

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Abstract

Objectives—We examined associations among race/ethnicity, socioeconomic factors, and driving status in a nationally representative sample of >26,000 U.S. high school seniors.

Methods—Weighted data from the 2012 and 2013 Monitoring the Future surveys were combined and analyzed. We imputed missing values using fully conditional specification multiple imputation methods. Multivariate logistic regression modeling was conducted to explore associations among race/ethnicity, socioeconomic factors, and driving status, while accounting for selected student behaviors and location. Lastly, odds ratios were converted to prevalence ratios.

Results—23% of high school seniors did not drive during an average week; 14% of white students were nondrivers compared to 40% of black students. Multivariate analysis revealed that minority students were 1.8 to 2.5 times more likely to be nondrivers than their white counterparts, and students who had no earned income were 2.8 times more likely to be nondrivers than those earning an average of ≥$36 a week. Driving status also varied considerably by student academic performance, number of parents in the household, parental education, census region, and urbanicity.

Conclusions—Our findings suggest that resources—both financial and time—influence when or whether a teen will learn to drive. Many young people from minority or lower socioeconomic families who learn to drive may be doing so after their 18th birthday and therefore would not take advantage of the safety benefits provided by graduated driver licensing. Innovative approaches may be needed to improve safety for these young novice drivers.

Keywords

Young drivers; epidemiology; graduated licensing; adolescent; motor vehicles

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Introduction

During 2004–2013, the number of passenger vehicle drivers aged 16–19 years involved in fatal crashes in the United States declined by 55% from 5,724 to 2,568 (Insurance Institute for Highway Safety [IIHS] 2015a). Possible contributors to the decline include teens waiting longer to get licensed and driving less. However, the limited amount of timely, accurate information on teen licensure rates and driving experience has limited our understanding of the factors contributing to the decline in fatal crashes (Curry et al. 2014; Foss 2014).

4 recent national surveys have reported racial/ethnic discrepancies in teen licensure rates and driving (Shults et al. 2015; Shults and Williams 2013; Tefft et al. 2014; Triplett et al. 2015). Findings from the 2010 Monitoring the Future (MTF) survey indicated that 37% of black high school seniors and 14% of white seniors did not drive during an average week (Shults and Williams 2013). Similar findings were reported from a telephone survey of 549 teens aged 16–19 years, in which nearly 23% of black and Hispanic respondents reported never driving compared to 10% of white respondents (Triplett et al. 2015). A 2013 survey of approximately 13,500 high school students aged ≥ 16 indicated that 69% of black students and 76% of Hispanic students had driven during the past 30 days compared to 83% of white students (Shults et al. 2015). Lastly, results of an online survey of 1,039 persons aged 18–20 years reported that 37% of blacks and 29% of Hispanics were licensed by age 18 years compared to 67% of whites (Tefft et al. 2014).

Racial/ethnic and economic discrepancies were examined in a recent ecologic study of licensing patterns in New Jersey. Curry, Pfeiffer, Durbin, Elliott, and Kim (2015) reported that by age 18 years, 89% of residents living in ZIP codes with the highest proportion of non-Hispanic whites were licensed, whereas only 52% of residents living in ZIP codes with the lowest proportion of non-Hispanic whites were licensed. In addition, by age 18 years, 87% of residents living in the highest-income ZIP codes were licensed compared to only 36% of those living in the lowest-income ZIP codes.

Such findings have raised concern that teens from lower-income or minority families might have difficulty meeting the requirements for licensure (Curry, Pfeiffer, Durbin, Elliott, and Kim 2015; Tefft et al. 2014). Young persons' stated reasons for not obtaining a license provide some support for this concern; commonly reported reasons include not having access to a car and the costs of driving (Schoettle and Sivak 2014; Tefft et al. 2014; Williams 2011). Other common reasons, however, include being able to get around without driving and parents not having the time to supervise driving (Schoettle and Sivak 2014; Tefft et al. 2014; Williams 2011).

Findings of racial/ethnic and economic discrepancies in teen licensure rates and driving experience are consistent across the small number of published studies, each of which used unique study measures and methodology. However, the reports to date have had limited socioeconomic information and lacked information on individual teen behaviors that may be associated with race/ethnicity, socioeconomic factors, and teen driving experience. Additionally, several national surveys had relatively small samples sizes (N<1,500) and either unpublished response rates (Schoettle and Sivak 2014) or response rates of <40%

(Tefft et al. 2014; Triplett et al. 2015; Williams 2011). To help address these limitations, we analyzed data from the MTF survey, a large, annual, nationally representative survey of U.S. high school seniors with a response rate of >80%. The large sample size and unique set of independent variables enabled us to more thoroughly explore factors associated with teen driving status. We explored associations among race/ethnicity, socioeconomic factors, and driving status, while accounting for location (census region and urbanicity) and 3 student behaviors (academic performance, truancy, and average number of evenings out for fun or recreation).

Methods

Data source

The Monitoring the Future project has conducted annual surveys of nationally representative samples of U.S. high school seniors since 1975. The survey employs a multistage sampling method to select about 17,000 seniors from about 135 schools in the 48 contiguous states. Confidential questionnaires are administered by University of Michigan employees during school hours. Further details about the survey methods are available elsewhere (Bachman et al. 2014, 2015; Johnston et al. 2014). For this study, data from the 2012 and 2013 surveys were combined to provide a large sample size. Student response rates were 83% in 2012 and 82% in 2013 (Johnston et al. 2014).

Outcome and independent variables

Driving was assessed by the question, “During an average week how much do you usually drive a car, truck, or motorcycle?” Response options included not at all, 1–10 miles, 11–50 miles, 51–100 miles, 100–200 miles, and >200 miles. Because the study’s outcome of interest was “not driving,” we dichotomized the driving variable for bivariate and multivariate analyses. Students who did not drive during an average week were considered nondrivers.

Race/ethnicity was categorized as black, Hispanic, Asian, white, and other. Age (16–17 years or ≥ 18 years) and sex were included because each has been associated, albeit weakly, with driving initiation. Socioeconomic indicators included average weekly earnings from “a job or other work” (categorized as $0, $1–35, or ≥$36), average weekly amount of money received from “other sources (allowances, etc.)” ($0, $1–35, or ≥$36), number of parents in the household, highest level of parental education (≤high school, some college, ≥college graduate), and whether the mother had a paid job working half-time or more while the student was growing up (no, at least some of the time).

Student behavior measures of “average grade so far in high school” (A or A−, B+ or B, or B − or below), truancy (skipped or cut 0 or ≥1 days of school in the past 4 weeks), and average number of evenings out in a typical week for fun and recreation (0–2 or ≥3) have been associated with driving after drug or alcohol use (O’Malley and Johnston 2013), but their association with driving status has not been established. Therefore, we included them. Lastly, because the proportion of teens that drive varies by location (Shults et al. 2015; Tefft et al. 2014), we included the variables U.S. Census region (Northeast, Midwest, South,

West) and urbanicity (large metropolitan statistical area [MSA], other MSA, or non-MSA; Johnston et al. 2014).

Analytic approach

Frequency distributions for the driving outcome and all of the independent variables for years 2012 and 2013 were first compared to assess whether the distributions were similar. For all variables except for number of evenings out, the distribution percentages for the 2 separate years were within approximately 2 percentage points; for number of evenings out, the distributions varied by 5 percentage points. The 2012 and 2013 data were combined, resulting in an initial unweighted sample size of 27,521. We excluded 714 observations that were missing data for all of the study variables except for census region and urbanicity, which were created by the MTF staff, and 7 observations from respondents who were <16 years old; the 104 16-year-old respondents were retained, resulting in a final unweighted sample size of 26,800. Analyses were restricted to students aged ≥16 years because 16 years, 0 months is the oldest minimum age for obtaining a learner's permit in the United States (IIHS 2015b). Thus, all of the respondents were old enough to have begun learning to drive. Sample weights were assigned to each respondent to correct for unequal probabilities of selection arising from the multistage sampling procedure (Bachman et al. 2014). The final weighted sample size was 26,790.

18% of the observations (n = 4,827) were missing data for at least one of the 12 self-reported study variables. The proportions of missing data ranged from 3.8% for the number of parents in the household to 12.0% for average weekly earnings from a job or other work, hereafter referred to as "average weekly earnings"; 6.5% of the observations were missing the driving variable. To reduce the likelihood of loss of precision and biased estimates, we imputed the missing values using fully conditional specification multiple imputation methods (Lee and Carlin 2010; Liu and De 2015; van Buuren et al. 2006). All 14 study variables were included in the modeling. We produced 20 imputed data sets, which were pooled to generate a single data set with the imputed values (Liu and De 2015; van Buuren et al. 2006). As the descriptive and multivariate analyses were conducted, results from the imputed data set were compared to the corresponding results from the weighted data set before the multiple imputation modeling to check that the results were similar (Lee and Carlin 2010; Liu and De 2015).

Frequency distributions with 95% confidence intervals (CIs) were calculated for the number of miles driven during an average week, using all categories of the variable and each of the independent variables. The miles driven variable was then dichotomized into 0 miles and >0 miles, and we produced frequency distributions for all of the independent variables stratified by driving status (nondrivers and drivers).

Survey logistic regression models were fitted for each of the independent variables to estimate crude odds ratios (ORs) for not driving. Because the association between race/ethnicity and driving status was of primary interest, next we constructed separate bivariate logistic models for nondrivers with the race/ethnicity variable and each of the other independent variables and compared to the crude ORs for race/ethnicity to assess the added variable's effect on the race/ethnicity ORs. If adding the second variable resulted in a change

of >5% in the OR of any of the categories of race/ethnicity, the variable was retained in the final model. Variables that were not associated with race/ethnicity were excluded from the final model to improve the precision of the race/ethnicity ORs. The final survey logistic regression model was fitted to estimate the adjusted odds ratios (AORs) of the retained independent variables. All analyses up to this point were conducted using SAS 9.4 version (SAS Institute Inc., Cary, NC).

Odds ratios approximate prevalence ratios in cross-sectional studies only when the study outcome is relatively rare (<10%; Diaz-Quijano 2012). Because our study outcome was not rare (23% of respondents were nondrivers), we converted all of the ORs and 95% CIs to prevalence ratios (PRs) and 95% CIs using the R package named *orsk* (Wang 2013).

Results

Table 1 displays miles driven during an average week and the frequency distributions for the independent variables for the total population and stratified by driving status. 23% of students did not drive during an average week, 36% estimated driving 1–50 miles, and the remaining 41% estimated driving >50 miles. Overall, 60% of students were white, whereas only 36% of the nondrivers were white. Driving status varied by socioeconomic indicators; 67% of nondrivers and 40% of drivers had no earned income. Smaller differences existed for money received from other sources such as allowance. As for household socioeconomic indicators, 54% of nondrivers and 70% of drivers lived in 2-parent households. 36% of nondrivers and 55% of drivers had at least one parent with a college degree or higher. Driving status also varied by census region and MSA. Students living in the Midwest represented 25% of the total study population but only 14% of the nondrivers, whereas students living in the Northeast represented 17% of the total study population and 21% of the nondrivers. Likewise, students living in large MSAs represented 31% of the total study population and 40% of the nondrivers.

Large differences existed in the proportion of nondrivers by race/ethnicity; 40% of black, 37% of both Hispanic and Asian, and 30% of students of other races/ethnicities were nondrivers compared to 14% of their white counterparts (Table 2).

The crude prevalence ratios suggested that among the characteristics under study, race/ethnicity and the student's average weekly earned income were most strongly associated with driving status (Table 2). The multivariate model confirmed these findings. Racial/ethnic minority students were 1.8 to 2.5 times more likely to be nondrivers than white students. Students who reported no average weekly earnings were 2.8 times more likely to be nondrivers than their counterparts earning an average of ≥$36 a week, and those earning an average of $1–$35 were 1.7 times more likely to be nondrivers than their counterparts earning an average of ≥$36 a week. A similar inverse gradient existed between money received from other sources and driving status, with students who did not receive money from other sources such as allowance being 1.9 times more likely to be nondrivers than those who received an average of ≥$36 a week. Academic performance was also associated with driving status; students with average grades of B− or below were 60% more likely to be nondrivers compared to students with an A or A−average.

Household socioeconomic indicators also exhibited inverse gradients with driving. Students who did not live with either parent were 70% more likely to be nondrivers than students living in 2-parent households, whereas students living with one parent were 40% more likely to be nondrivers than their counterparts living with both parents. Similarly, students whose parents had a high school education or less were 60% more likely to be nondrivers than students who had at least one parent with a college degree or higher.

Driving status also varied considerably by census region. Students living in the Northeast were twice as likely to be nondrivers as their counterparts living in the Midwest. Likewise, students living in large metropolitan areas were 60% more likely to be nondrivers than their counterparts living in nonmetropolitan areas.

Discussion

U.S. teens may obtain a learner's permit between the ages of 14 and 16 years, depending on the state they live in (IIHS 2015b). In 38 states, teens may receive an intermediate license, which permits independent driving under certain conditions, either before they turn 16 or on their 16th birthday (IIHS 2015b). In this study, every student met the age requirement for holding a learner's permit, and the 99% of students who were ≥17 years were old enough to qualify for an intermediate license. However, our finding that nearly one in 4 high school seniors (23%) did not drive during an average week suggests that these teens were not actively learning to drive or driving independently. Furthermore, minority students were about twice as likely as white students to be nondrivers after accounting for geographic location and socioeconomic factors including student earned income, money received from other sources such as allowance, number of parents in the household, and parental education.

In addition to the described racial/ethnic discrepancies, we found an independent, inverse gradient between each of the measured socioeconomic indicators and driving; the probability of a student being a nondriver increased as resources such as earned income, number of parents in the household, and parental education declined. These findings add to the growing body of evidence indicating that resources, including financial, parental time, and teen time, influence when or whether a teen will learn to drive. Financial resources include access to a vehicle, driver education, and insurance. AAA (2015) estimated the average cost of owning and operating a sedan in 2015 to be nearly $8,700. About 80% of licensed teens in the United States participate in a driver education course (Curry et al. 2012). Typical costs of driver education courses range from approximately $350 to $450 for the classroom or online instruction and 6 h of behind-the-wheel lessons (Washington Joint Transportation Committee 2014). Once a teen is licensed, the family's vehicle insurance costs rise. Insurance industry estimates of the average annual insurance rates for teens range from about $2,500 for 19-year-olds to about $4,000 for 16-year-olds (Gusner 2016). In addition, during the learner permit period, most states require teens to complete a minimum number of practice driving hours under the supervision of licensed adult driver; the number of required hours range from 20 to 70 (IIHS 2015b). When surveyed, unlicensed teens commonly report that either they are too busy to learn to drive or their parents are too busy to supervise their driving (Schoettle and Sivak 2014; Tefft et al. 2014; Williams 2011). Because most teens are supervised during the learning period by a parent or guardian

(Williams et al. 2011), teens who do not learn to drive before leaving home may have fewer opportunities for practice driving with a supervisor.

To our knowledge, this is the first study to explore the association between students' earned income and driving status. Students who had no earned income were nearly 3 times as likely to be nondrivers compared to those with average weekly earnings of ≥$36 a week, after accounting for other included socioeconomic indicators. Because the study was cross-sectional, neither a causal association nor the direction of an association can be inferred. However, given the strength of the association, the relationship between teen driving and employment status merits further research. Questions might include whether teens' job opportunities are more plentiful in areas where driving is more common, whether teens who desire or need to work are more motivated to get licensed, or whether teens with jobs are more likely to be drivers because of their earned income.

Our study confirmed earlier findings that where teens live influence when or whether they learn to drive (Curry, Pfeiffer, Durbin, Elliott, and Kim 2015; McDonald and Trowbridge 2009; Shults et al. 2015; Tefft et al. 2014). Teens living in more densely populated areas are less likely to drive, in part because of shorter travel distances and transportation alternatives including walking, bicycling, and taking public transportation (Davis et al. 2012; McDonald and Trowbridge 2009; Rockefeller Foundation 2014; Tefft et al. 2014).

Delaying initiation of independent driving beyond age 16 years has safety benefits in the general population (Williams et al. 2010). However, teens who learn to drive after their 18th birthday, many of whom are from low-income or minority families, do not participate in their state's graduated driver licensing program (GDL). GDL provides teens with a protective learning environment through supervised practice driving and by restricting nighttime driving and the number of young passengers allowed during the first months of independent driving (Masten et al. 2011; Shope 2007). Further research is needed to understand the safety benefits and risks associated with young people getting licensed after their 18th birthday (Curry, Pfeifer, Durbin, and Elliott 2015; Tefft et al. 2014). In the meantime, some researchers have recommended extending GDL requirements to young novice drivers aged >17 years to potentially reduce their crash risk during the early months of independent driving (Curry, Pfeiffer, Durbin, Elliott, and Kim 2015; McCartt and Teoh 2015; Tefft et al. 2014; Williams 2014).

There may be cause for concern over the race/ethnicity and socioeconomic discrepancies in driving status among teens and young adults. A recent survey of unlicensed persons aged 18–39 reported that 46% of respondents were unemployed, a rate 4 times higher than exists in the general population of the same age (Schoettle and Sivak 2014). This finding raises the possibility of a reciprocal relationship between driving status and economic opportunity; resource limitations may prevent a person from obtaining a driver license and, in turn, not having a license may limit employment prospects. Furthermore, discrepancies in fatal crash risk by race/ethnicity and socioeconomic status among young drivers and passengers have been documented over time (Baker et al. 1998; Chen et al. 2010; Males 2009). These discrepancies appear to have widened in recent years. Harper et al. (2015) reported that in 1995, fatal crash rates were 2.5 times higher among persons aged ≥25 years with less than a

high school education compared with persons with a college degree of greater; this figure increased to 4.3 by 2010.

Our findings suggest that many young people from minority or lower socioeconomic families who learn to drive are doing so after their 18th birthday and therefore would not take advantage of the safety benefits provided by GDL. Furthermore, fatality data indicate that these young people are more likely to die in a motor vehicle crash than their wealthier or white counterparts (Baker et al. 1998; Chen et al. 2010; Males 2009), and their risk of dying in a crash relative to their wealthier or white counterparts may be increasing over time (Harper et al. 2015). Taken together, these findings suggest the need for innovative approaches to improve the safety for older teen novice drivers, particularly those from minority or lower socioeconomic families (Children's Hospital of Philadelphia 2015).

Limitations

Several limitations warrant consideration. Reasons why students might choose not to drive, such as perceived need to drive and availability of alternate modes of transportation, were not assessed. Because the data were self-reported, the extent of any underreporting or overreporting cannot be determined. The cross-sectional nature of the study precludes making causal inferences about the measured associations. Because the survey was conducted among high school seniors, the results may not be representative of the approximately 5% of teens aged 16–18 who are not enrolled and have not completed high school (U.S. Census 2014). Although the surveys' response rates were >80%, nonresponse bias is still possible.

Cross-sectional surveys such as MTF provide useful but incomplete information about the learning-to-drive process. Longitudinal study designs that periodically survey cohorts of teens as they age into early adulthood and link to license and driving violations data could answer questions that cannot be addressed with cross-sectional data. Questions might include the following: How does the learning-to-drive process differ for young people who begin driving after their 18th birthday versus those who are licensed by age 18 years? How do safety benefits and risks to young people who learn to drive after their 18th birthday differ by socioeconomic status? Would extending GDL age requirements provide safety benefits to beginning drivers who are ≥18 years? and Does delaying or not learning to drive have long-term consequences such as limiting housing or employment options?

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Table 1

Selected characteristics of U.S. high school seniors, Monitoring the Future, total and by driving status, 2012 and 2013 (weighted N = 26,790).

Characteristic	Total Column % (95% CI)	Nondrivers Column % (95% CI)	Drivers Column (95% CI)
Miles driven per average week			
None	23 (21, 25)	–	–
1–10 miles	10 (10, 11)	–	–
11–50 miles	26 (25, 27)	–	–
51–100 miles	21 (19, 22)	–	–
101–200 miles	12 (11, 13)	–	–
≥200 miles	8 (7, 9)	–	–
Race/ethnicity			
Black	11 (8, 14)	19 (15, 24)	9 (6, 11)
Hispanic	15 (12, 18)	25 (20, 30)	12 (10, 15)
Asian	4 (3, 5)	6 (4, 8)	3 (2, 4)
Other	10 (9, 11)	13 (12, 15)	9 (8, 10)
White	60 (56, 64)	36 (32, 41)	67 (63, 70)
Age			
16–17 years	42 (40, 44)	46 (44, 49)	41 (39, 42)
≥18 years Sex	58 (56, 60)	54 (51, 56)	59 (58, 61)
Female	50 (49, 51)	55 (53, 57)	49 (47, 50)
Male	50 (49, 51)	45 (43, 47)	51 (50, 53)
Average weekly earnings from a job or other work			
$0	46 (44, 47)	67 (64, 69)	40 (38, 41)
$1–$35	9 (9, 10)	8 (7, 9)	10 (9, 10)
≥ $36	45 (43, 47)	25 (23, 27)	51 (49, 52)
Money received from other sources (allowances, etc.)			
$0	44 (43, 46)	48 (46, 50)	43 (42, 44)
$1–$35	39 (38, 40)	38 (37, 40)	39 (37, 40)
≥ $36	17 (16, 18)	13 (12, 15)	18 (17, 19)
Parents in household			
None	6 (5, 7)	9 (8, 10)	5 (4, 6)
One	28 (26, 29)	37 (35, 39)	25 (24, 27)
Two	66 (64, 68)	54 (52, 56)	70 (68, 72)
Highest level of parental education			
≤High school	27 (24, 29)	37 (35, 40)	23 (21, 26)
Some college	20 (19, 21)	20 (18, 21)	20 (19, 21)
≥ College graduate	50 (48, 53)	36 (33, 39)	55 (52, 57)
Don’t know	3 (3, 4)	6 (5, 7)	2 (2, 3)
Mother employed			
No	13 (12, 14)	16 (15, 17)	12 (12, 13)
At least some of the time	87 (86, 88)	84 (83, 85)	88 (87, 88)

Characteristic	Total Column % (95% CI)	Nondrivers Column % (95% CI)	Drivers Column (95% CI)
Average grade			
B− or below	27 (26, 29)	38 (36, 40)	24 (23, 26)
B+ or B	37 (36, 38)	36 (35, 38)	37 (36, 38)
A or A−	36 (34, 37)	25 (24, 27)	39 (37, 41)
Truancy in past 4 weeks			
≥1 day	30 (28, 32)	26 (24, 29)	31 (29, 33)
None	70 (68, 72)	74 (71, 76)	69 (67, 71)
Evenings out in typical week			
0–2	57 (56, 59)	67 (65, 69)	54 (53, 56)
≥3	43 (41, 44)	33 (31, 35)	46 (44, 47)
Region			
Northeast	17 (13, 21)	21 (15, 27)	16 (12, 19)
South	34 (29, 38)	35 (29, 42)	33 (29, 37)
West	24 (20, 29)	30 (23, 36)	23 (18, 27)
Midwest	25 (22, 29)	14 (11, 18)	29 (24, 33)
Urbanicity			
Large metropolitan statistical area	31 (24, 38)	40 (31, 49)	28 (21, 35)
Other metropolitan statistical area	49 (42, 56)	46 (37, 54)	50 (43, 57)
Nonmetropolitan statistical area	20 (17, 23)	15 (11, 17)	22 (19, 25)

Table 2

Proportions of nondrivers and drivers by selected characteristics and crude and adjusted prevalence ratios associated with not driving among U.S. high school seniors, Monitoring the Future, 2012 and 2013 (weighted $N = 26{,}790$).[a]

Characteristic	Nondrivers (95% CI)	Drivers (95% CI)	Crude PR (95% CI)	Adjusted PR (95% CI)
Race/ethnicity				
Black	40 (37, 44)	60 (56, 63)	2.8 (2.7, 3.0)	2.5 (2.3, 2.7)
Hispanic	37 (34, 41)	63 (59, 66)	2.8 (2.7, 2.9)	2.0 (1.8, 2.1)
Asian	37 (30, 43)	63 (57, 70)	3.3 (2.5, 4.4)	2.4 (1.9, 3.1)
Other	30 (26, 33)	70 (67, 74)	2.1 (1.9, 2.2)	1.8 (1.6, 1.9)
White	14 (13, 16)	86 (85, 88)	Referent	Referent
Age				
16–17 years	25 (23, 28)	75 (72, 77)	1.2 (1.1, 1.3)	–
≥18 years	21 (19, 23)	79 (77, 81)	Referent	–
Sex				
Female	25 (23, 28)	75 (72, 77)	1.2 (1.1, 1.3)	–
Male	21 (19, 23)	79 (77, 81)	Referent	–
Average weekly earnings from a job or other work				
$0	33 (31, 36)	67 (64, 69)	2.7 (2.5, 2.8)	2.8 (2.6, 2.9)
$1–$35	20 (17, 23)	80 (77, 83)	1.6 (1.4, 1.8)	1.7 (1.6, 1.9)
≥$36	13 (11, 15)	87 (85, 89)	Referent	Referent
Money received from other sources (allowances, etc.)				
$0	25 (23, 27)	75 (73, 77)	1.4 (1.3, 1.5)	1.9 (1.8, 2.0)
$1–$35	23 (20, 25)	77 (75, 80)	1.3 (1.2, 1.4)	1.4 (1.3, 1.5)
≥$36	18 (15, 20)	82 (80, 85)	Referent	Referent
Parents in household				
None	35 (32, 38)	65 (62, 68)	2.1 (1.9, 2.4)	1.7 (1.5, 1.9)
One	30 (28, 33)	70 (67, 72)	1.6 (1.6, 1.7)	1.4 (1.3, 1.4)
Two	19 (17, 21)	81 (79, 83)	Referent	Referent
Highest level of parental education				
≤High school	32 (30, 35)	68 (65, 70)	1.9 (1.8, 2.0)	1.6 (1.5, 1.7)
Some college	23 (21, 26)	77 (74, 79)	1.4 (1.3, 1.5)	1.3 (1.2, 1.4)
≥College graduate	17 (15, 18)	83 (82, 85)	Referent	Referent
Don’t know	46 (40, 51)	54 (49, 60)	3.8 (3.1, 4.7)	2.3 (1.8, 2.8)
Mother employed				
No	28 (24, 31)	72 (69, 76)	1.3 (1.2, 1.4)	–
At least some of the time	22 (20, 24)	78 (76, 80)	Referent	–
Average grade				
B− or below	32 (29, 35)	68 (65, 71)	2.0 (1.9, 2.1)	1.6 (1.5, 1.7)
B+ or B	23 (21, 25)	77 (75, 79)	1.4 (1.3, 1.5)	1.2 (1.2, 1.3)

Characteristic	Nondrivers (95% CI)	Drivers (95% CI)	Crude PR (95% CI)	Adjusted PR (95% CI)
A orA−	16 (14, 18)	84 (82, 86)	Referent	Referent
Truancy in past 4 weeks				
≥1 day	20 (18, 23)	80 (77, 82)	1.2 (1.1, 1.2)	–
None	24 (22, 26)	76 (74, 78)	Referent	–
Evenings out in typical week				
0–2	27 (24, 29)	73 (71, 76)	1.5 (1.4, 1.6)	–
≥3	18 (16, 20)	82 (80, 84)	Referent	–
Region				
Northeast	28 (23, 33)	72 (67, 77)	2.0 (1.9, 2.2)	2.0 (1.9, 2.2)
South	24 (20, 28)	76 (72, 80)	1.9 (1.7, 2.0)	1.3 (1.2, 1.3)
West	28 (23, 33)	72 (67, 77)	1.6 (1.5, 1.7)	1.4 (1.3, 1.5)
Midwest	13 (10, 16)	87 (84, 90)	Referent	Referent
Urbanicity				
Large metropolitan statistical area	30 (25, 35)	70 (65, 75)	1.8 (1.7, 2.0)	1.6 (1.5, 1.7)
Other metropolitan statistical area	21 (19, 24)	79 (76, 82)	1.4 (1.3, 1.5)	1.3 (1.2, 1.4)
Nonmetropolitan statistical area	16 (14, 18)	84 (82, 86)	Referent	Referent

[a]Variables that were not associated with race/ethnicity were excluded from the final model to improve the precision of the race/ethnicity effect estimates.