

Safety Insights and Indicators for North Dakota's Teen Drivers

Issue Brief: September 2010



Background

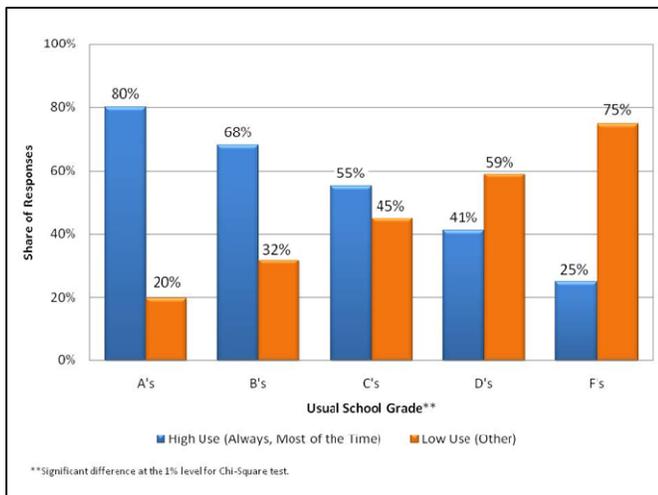
Teens are at high risk for crashes relative to other drivers. While some initial progress has been made in reducing teen crash deaths, North Dakota remains among the worst states in terms of teen crash incidence. Research here looks at a survey of ND teens safety performance with special attention to the role of seat belts and driver education. Researchers analyzed a survey of 2,284 ND teens which included information on seat belt use, education, experience, and safety.

Seat Belts

Teens were asked about their own seat belt use along with use by their parents or guardians. Only 31.4% of teens indicate that they always use their seatbelts. Younger teens, 14 to 16 years, were most likely to report high seat belt use, with about 70% indicating they wear a seat belt always or most of the time. Among the 17- and 18-year-olds the share drops to about 62%.

An inverse relationship between seat belt use and school performance is found. Fewer than half of the students who indicated D or F work as typical reported using their seat belt all or most of the time. For those reporting A's as typical, 80% had high seat belt use (Figure 1).

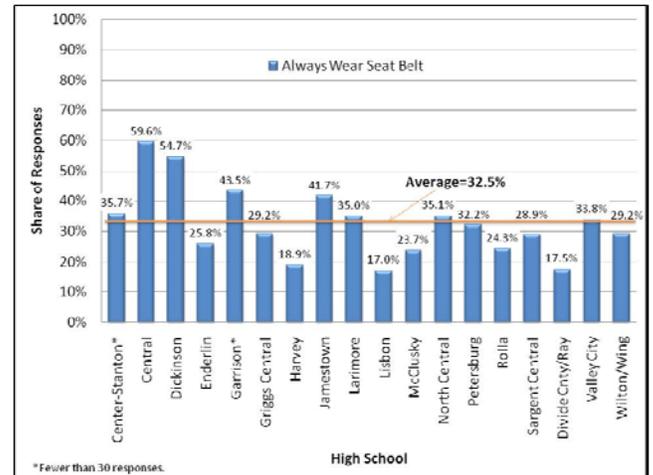
Figure 1. Seat Belt Use by Age



Gender is also a factor as males are two times more likely to report low seat belt use than females. The hours teens drove prior to licensing is significant in that teens who had 6 hours or fewer behind the wheel were 1.4 times more likely to have low seat belt use. The oldest teens are also more likely to have low seat belt use.

Seat belt use varied widely among the school classrooms (Figure 2). Rural schools were more likely to report high seat belt use than their urban counterparts. A significant difference by region was not found in comparing students from East and West.

Figure 2. Seat Belt Use among Participating High Schools



The most common reason for not using a seat belt was "short trip" with 28%. "I forget" was second with 27%. Answers show that 15% of students just choose not to wear their seat belts. Seat belt use may be a broader indicator of driver safety; it has a significant correlation with crash involvement and driving tickets. Low belt use is reported by 29% of teen drivers who have been involved in a crash compared to 21% of teens with no crash history. Among teens who have received tickets for moving violations, 42% report low belt use compared to 20% of teens with no record of moving violations. Seat belt use at participating schools was far below the desired 100% use rate among teens (Figure 2).

Teen Driver's Characteristics and Training

Teens averaged weekly driving of 100 miles. A majority drove 5 to 15 miles per day, with one in four driving fewer than 20 miles per week. A significant correlation was found between current weekly driving and crash involvement background. For teens driving more than 15 miles per day, 31% had been involved in a crash. Only 16% of teens driving fewer than 20 miles per week reported crash involvement. Driving more miles per week is also positively correlated with ticket incidence. Only 15% of teens driving less than 35 miles per week had received a ticket, compared to 41% of teens who reported driving more than 104 miles weekly.

Among the teens, 77% had completed a driver education course through their public school and 18% had completed driver education through a private driving school (Table 1). Fifteen-year-olds had the highest share that completed a private education course at 29%, nearly double the rate for other age groups.

Age	Total Number=	Education Type		
		None	Public	Private
14	40	0%	83%	18%
15	222	3%	68%	29%
16	383	4%	80%	16%
17	410	6%	79%	15%
18	198	7%	79%	15%

Among teen drivers, 27% report receiving at least one ticket. A significant difference in likelihood for tickets for a moving violation was found in comparing teens by the driver education background. For teens who had not completed any approved driver education course, 28% had been ticketed, compared to 25% among teens who had completed driver education in a public school and 36% of teens who had completed an approved private driver education course. Overall, 23% of licensed teens who reported their education background have been involved in at least one crash. Crash involvement was highest among 18-year-old drivers (32%) and lowest among 14-year-olds (16%).

Correlations among crash involvement, age, driver education, driving experience, and early licensure show no relationship between driver education or early licensure and crash involvement. When age is controlled, driving experience is found to be a significant factor in crash involvement among the teen respondents. Ticket involvement was also found to have no correlation with driver education or driving experience.

Multivariate Analysis

Logistic regression is used to measure the safety outcomes for 15-, 16-, and 17-year-old drivers. Safety outcomes are modeled as a function of driving exposure, driver education, and demographic factors. The dependent outcomes are presented in the models of crash involvement, driving citations, and seat belt use.

Results show the oldest teen drivers are nearly twice as likely to report crash involvement compared to 15-year-old drivers. This may be due to cumulative driving exposure. The most recently licensed teens were less likely to report crash involvement. Teens residing in urban counties are 1.8 times more likely to report crash involvement than teens from rural counties. Those reporting low seat belt use were 71% more likely to report crash involvement.

Parameter	Seat Belt	Crash	Ticket
16 Years	1.368	1.548	2.574**
17 Years	1.861*	1.918*	3.695**
Region Geography		1.773**	1.993**
Gender	2.030**		1.998**
Low Grades	3.551**		5.509**
Low Experience	1.447*		.938
Low Seat Belt Use		1.712**	2.681**
Early Licensure		.474*	.247**
High Exposure	1.488**	1.514**	1.723**
No Driver Education	.654	.790	.788
*p=0.05 n=837			
**p=0.01			

The largest factor in determining ticket likelihood is average school grade. Teens who receive primarily D's and F's are 5.5 times more likely to have been ticketed for a driving violation. Age is also important as 16-year-olds are 2.5 times more likely to have received a ticket than 15-year-olds. Drivers two years older are 3.7 times more likely to have a ticket history than 15-year-olds. Males are twice as likely to have been ticketed, compared to females. Low seat belt users are 2.7 times more likely to report they've been ticketed than other teens.

Summary

While the findings cannot be generalized to the student population, teen responses provide potential gains from learning points. Teens may need messages to reinforce the legal requirement to wear seat belts. Traffic safety programs for teens with low school grades may also produce positive results.

To read the entire research report and find references, please visit the RTSSC website: <http://www.ugpti.org/rtssc>

North Dakota State University does not discriminate on the basis of race, color, national origin, religion, sex, disability, age, Vietnam Era Veteran's status, sexual orientation, marital status, or public assistance status. Direct inquiries to the Vice President of Equity, Diversity, and Global Outreach, 205 Old Main, Fargo, N.D., (701) 231-7708.

The content of this report reflects the views of the authors, who are responsible for the facts and accuracy of the information presented. This document is disseminated under the sponsorship of the North Dakota Department of Transportation and the Federal Highway Administration.



For more information contact:
 Rural Transportation Safety and
 Security Center
 UGPTI, NDSU
 Fargo, ND 58105
 Email: rtssc@ugpti.org
 Phone: 701.231.7767