Texting While Driving: Does the New Law Work Among Healthcare Providers?

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Introduction: This study assessed whether Georgia Senate Bill 360, a statewide law passed in August 2010, that prohibits text messaging while driving, resulted in a decrease in this behavior among emergency medicine (EM) and general surgery (GS) healthcare providers.

Methods: Using SurveyMonkey®, we created a web-based survey containing up to 28 multiple choice and free-text questions about driving behaviors. EM and GS healthcare providers at a southeastern medical school and its affiliate county hospital received an email inviting them to complete this survey in February 2011. We conducted all analyses in SPSS (version 19.0, Chicago, IL, 2010), using chi-squared tests and logistic regression models. The primary outcome of interest was a change in participant texting or emailing while driving after passage of the texting ban in Georgia.

Results: Two hundred and twenty-six providers completed the entire survey (response rate 46.8%). Participants ranged in age from 23 to 71 years, with an average age of 38 (SD=10.2; median=35). Only three-quarters of providers (n=173, 76.6%) were aware of a texting ban in the state. Out of these, 60 providers (36.6%) reported never or rarely sending texts while driving (0 to 2 times per year), and 30 engaged in this behavior almost daily (18.9%). Almost two-thirds of this group reported no change in texting while driving following passage of the texting ban (n=110, 68%), while 53 respondents texted less (31.8%). Respondents younger than 40 were more than twice as likely to report no change in texting post-ban compared to older participants (OR=2.31, p=0.014). Providers who had been pulled over for speeding in the previous 5 years were about 2.5 times as likely to not change their texting-while-driving behavior following legislation passage compared to those without a history of police stops for speeding (OR=2.55, p=0.011). Each additional ticket received in the past 5 years for a moving violation lessened the odds of reporting a decrease in texting by 45%. (OR=0.553, p=0.007).

Conclusion: EM and GS providers, particularly those who are younger, have received more tickets for moving violations, and with a history of police stops for speeding, exhibit limited compliance with distracted driving laws, despite first-hand exposure to the motor vehicle crashes caused by distracted driving. [West J Emerg Med. 2014;15(5):604–608.]

INTRODUCTION

An estimated 25% of motor vehicle crashes in the United States are caused by distracted driving,[1] and fatalities from distracted driving increased by 28% from 2005 to 2008.[2] Novice and experienced drivers alike demonstrate decreases in driving performance while using phones,[3] often demonstrating similar levels of violations as those who are driving while intoxicated.[4] While 12% of people self-report texting while

driving,[5] the increase in texting volumes between 2001 and 2007 has resulted in over 16,000 *additional* motor vehicle fatalities.[2] Drivers who text make an increased number of errors, such as responding more slowly to the onset of brake lights and impairment in forward and lateral driving control, sustaining more crashes than drivers who do not text.[6–9] Texting has been shown to be more dangerous than other forms of distracted driving, such as talking on the phone.[10]

To date, 39 states and the District of Columbia have enacted distracted driving laws, with several more considering adoption.[11–12] Georgia Governor Sonny Perdue approved the passage of a state law that effectively banned texting while driving, beginning in July 2010 However, this law's actual role in deterring texting behind the wheel is questionable at best, with no studies so far demonstrating a valid effect since the law's inception and very few citations issued since.

As first-hand witnesses to injuries and fatalities as a result of motor vehicle crashes, emergency medicine and general surgery physicians, mid-level providers and nurses are well aware of the bodily risks associated with distracted driving. Emergency medicine (EM) providers are critical to educating patients about the dangers of texting while driving, as they are often the first to treat victims of motor vehicle collisions that could be caused by distracted driving. Personal texting behavior likely has a significant correlation with patient counseling on similar behaviors, as previous studies have shown that physicians with poor personal health behaviors, such as tobacco or alcohol use, lack of exercise, and lower rates of seatbelt use, are less likely to counsel their patients about these health practices.[13] With the initiation of Georgia's ban on texting while driving, it is unclear whether this law will actually have its intended effect of decreasing the prevalence of texting behind the wheel, particularly among healthcare providers who are vital in providing counseling to at-risk patients.

The aim of this study was to evaluate if the passage of Georgia Senate Bill 360, which prohibits text messaging while driving, effectively decreased the incidence of texting while driving among emergency medicine and general surgery providers. Secondary aims were to determine if texting behavior varies with gender, age, time spent driving daily, position, occurrence of previous moving violations, texting and emailing frequency, and attitudes towards this behavior. We assessed survey responses for a change in self-reported texting while driving after the passage of the law.

METHODS

This study employed a cross-sectional online survey to evaluate the attitudes and behaviors of EM and general surgery providers. The providers were all employees of a nationally renowned medical school or its affiliate county teaching hospital, located in a large, southeastern city in the U.S. The study protocol was reviewed by the departmental review committee and the institutional review board and granted an IRB exemption.

We used the online survey tool SurveyMonkey® to create a web-based survey containing up to 28 multiple choice and free-text questions, depending on participant responses. Emails inviting participants to complete a brief online survey about driving behaviors were sent to all EM and general surgery residents, fellows, faculty, mid-level providers, and nurses in January 2012. An email reminder was sent to the same providers after one week. We included all surveys completed within 1month; any survey responses that were incomplete were omitted from study results. Only those providers who regularly drove a car or used a cell phone were included in this study, and the one respondent who did not usually drive was excluded.

The primary outcome of interest assessed respondents for a change in texting and emailing while driving before and after passage of the texting ban in Georgia. Logic design allowed for an assessment of texting behaviors prior to the ban only if participants demonstrated knowledge of the existing ban in Georgia. In addition to these variables, demographic characteristics such as gender, age, specialty, position, and clinical site, were queried, as various providers and clinical sites provide different exposure to trauma. Participants were also asked what type of car they usually drove, how long they drove on a typical workday, how often they sped, and if they had received tickets for moving violations, including speeding tickets. These variables were assessed as vehicle choice and driving habits can reflect perceptions of safety and subsequent behavior while driving. We assessed survey respondents on cellular phone use, including how many minutes they spent talking on the phone daily, how many texts and emails they received and sent per day, how many minutes they talked on the phone while driving, and if they used hands-free technology to communicate while driving. Attitudes towards texting and driving were assessed with several questions regarding the perceived danger level of this behavior, the need for a texting ban in Georgia, and the relative effectiveness of different hypothetical scenarios that aimed to curb texting while driving.

All responses were automatically entered into a database in SurveyMonkey®, and were exported to SPSS (version 19.0, Chicago, IL, 2010) for analysis by the PI. We checked the data for missing and improbable values; responses that were improbable were treated as missing values, and incomplete survey responses were deleted from the dataset.

We used frequency percentages w to evaluate demographic characteristics. The variable "age" was dichotomized to greater and less than 40 years for purposes of performing chi-square analyses. For each provider that reported awareness of a texting ban, we calculated a delta score to determine if texting while driving significantly changed with passage of this law, which we analyzed with frequency percentages. As this outcome variable could then be dichotomized into "decrease in texting" versus "no decrease in texting," we used chi-square tests and binary logistic regression analyses to determine if behavior

Table 1. Demographics of healthcare providers participating in texting-while-driving survey.

	Frequency (n)	Valid percent (%)
Gender		
Female	130	57.3
Male	97	42.7
Specialty		
Emergency medicine	161	70.9
General surgery	66	29.1
Position		
Registered nurse	50	22.0
Physician assistant or nurse practitioner	17	7.5
Resident 1	23	10.1
Resident 2	16	7.0
Resident 3	18	7.9
Resident 4	5	2.2
Resident 5 or higher	3	1.3
Fellow or clinical instructor	14	6.2
Assistant professor or higher	81	35.7
Primary clinical site		
Children's hospital	8	3.5
Suburban affiliate hospital	1	0.4
Main university hospital	77	33.9
Affiliate university hospital	33	14.5
County hospital	148	65.2
Type of car		
4-door sedan	121	53.3
2-door coupe	21	9.3
Station wagon	6	2.6
Convertible	6	2.6
Sports car	10	4.4
Minivan	9	4.0
Sport utility vehicle	58	25.6
Pick-up truck	4	1.8
Don't usually drive	1	0.4
Motorcycle	1	0.4
Average time spent driving daily**		
31 min–1 hour	100	44.1
Frequency of speeding**		
Almost daily	108	47.6
Number of tickets for moving violation**		
0	122	53.7
Number of minutes spent on phone daily	51.5	44.3
Number of texts sent/received daily	20.6	28.6

Table 1. Continued.

	Frequency (n)	Valid percent (%)
	Mean	Standard deviation

* Some participants had primary affiliations with more than one site, so values do not sum to 100%.
† Reported as median of aggregate data.

change was differentially associated with gender, position, and age, as well as other driving behaviors and attitudes.

RESULTS

Two hundred and twenty-six surveys were completed, with some questions skipped among different respondents based on logic design. Participants ranged in age from 23 to 71 years, with a mean age of 38.2 years (SD 10.2, median age 35 years). More than half of respondents were female (n=130, 57.3%). Most survey participants were EM practitioners (n=161, 70.9%). Twenty-two percent of respondents were nurses (n=50), 34.8% were residents or fellows (n=79), and 35.7% were at the assistant professor level or higher (n=81). Most providers primarily worked at the affiliate county hospital (n=148, 65.2%). Over half of the sample reported usually driving a 4-door sedan (n=121, 53.3%), and a quarter of the respondents drove SUVs (n=58, 25.6%). See Table 1 for details of the demographic data collected.

Only three-quarters of providers (n=173, 76.6%) were aware of a texting ban in the state. Out of these, only 60 (36.6%) reported never or rarely sending texts while driving (0 to 2 times per year), and 30 engaged in this behavior almost daily (18.9%). Almost two-thirds of this group reported no change in texting while driving following passage of the texting ban (n=110, 68%), while 53 people texted less (31.8%). See Table 2 for further details on changes in texting while driving behavior after passage of the ban.

Respondents 40 or older were more likely to report a decrease in texting post-ban than younger participants (OR=2.31, p=0.014). Providers who had been pulled over for speeding in the previous 5 years were less likely to decrease their texting while driving following legislation passage (OR=2.55, p=0.011). Logistic regression showed a significant relationship between the number of tickets received in the past 5 years for moving violations and change in texting behavior, with each additional ticket lessening the odds of reporting a decrease in texting by 45%. (OR=0.553, p=0.007). No significant differences in texting behavior changes were found between behavior change and our other variables, including gender, specialty, position, clinical site, or indicators of daily

Table 2. Change in texting while driving after Georgia state law banned the practice.

	Frequency (n)	Valid percent (%)
Change in texting after ban		
Texted more (Delta<0)	1	0.6
No change (Delta=0)	110	67.5
Texted minimally less (Delta=1–2)	40	24.5
Texted much less (Delta=3–4)	12	7.3

phone use. Table 3 details these variables that were found to have significant associations with a change in texting while driving.

DISCUSSION

This study demonstrates that only three-fourths of healthcare providers were aware of a texting ban in Georgia that, at the time of the survey, had been in place for approximately 18 months. Efforts should be made to increase community awareness of this legislation, which could potentially increase compliance and decrease injury rates due to distracted driving. Even among the providers who were aware of the ban, almost two-thirds did not report a change in their texting while driving following legislation passage. EM physicians and trauma surgeons can provide valuable counseling to the patients they treat for injuries related to distracted driving. However, those who text and drive will be less likely to effectively counsel their patients against driver texting, which has been shown to cause significant morbidity and mortality in motor vehicle collisions.

The rate of providers who reported texting while driving more than twice a year (63%) was higher than the self-reported rate of 12% found in the literature.[2] This was likely due to the increased prevalence of texting over time since publication of this statistic, as use of personal phones with texting capabilities has become more widespread. Compared with the general population, medical providers also are likely in better economic positions to have access to personal phones with texting functions, which would also account for an increased rate of texting while driving compared with the general population.

Older drivers were more likely to report a decrease in texting while driving, which is consistent with numerous studies demonstrating that these drivers tend to have less traffic violations than younger drivers. Individuals who reported receiving tickets for speeding and other moving violations were much less likely to report a decrease in texting following the ban compared to those with better driving records. These findings pose a potential difficulty for effective enforcement of this legislation, as those receiving more violations might not significantly or consistently alter their behaviors.

While driver texting increases injuries and fatalities, the efficacy of laws banning texting while driving, such as the one enacted in Georgia in 2010, have yet to be proven, as even many providers who were aware of a ban did not change their behavior. Communities should invest in education programs to increase awareness of the dangers due to texting while driving, from commercials and roadside signs to increasing prominence in drivers' education classes. Attention should specifically be paid to initiatives that target healthcare providers, who can have a significant role in counseling their patients against this dangerous behavior.

LIMITATIONS

As this study sought to evaluate texting while driving among healthcare providers, generalizability of study results is limited to this particular population and geographic area. All survey data was collected anonymously, though the potential for misrepresentative data due to social desirability bias still exists. Some participants did not complete the survey in its entirety, which limited some comparisons of different variables. As we did not want to indicate whether Georgia had passed a texting ban, we did not evaluate if participants had received any tickets for texting while driving; however, we evaluated ticketing of different offenses such as speeding and moving violations in general. Also, recall bias could have influenced the results, as participants were required to self-report

Table 3. Significant associations with change in texting while driving.

	Increase/no change in texting (%)	Decreased texting (%)	p-value	Odds ratio (confidence interval)
Age			0.014	2.31 (1.18–4.55)
<40	75 (75%)	25 (25%)		
40+	35 (56.5%)	27 (43.5%)		
Pulled over for speeding in the past 5 years			0.011	2.55 (1.23–5.29)
Yes	51 (79.7%)	13 (20.3%)		
No	60 (60.6%	39 (39.4%)		
Number of tickets for moving violations in the past 5 years			0.007	0.55 (0.36–0.85)

behaviors that occurred in the past, and inaccurate representations of their behaviors could have affected results. Finally, the scope of texting while driving was limited in this study to sending and receiving text messages and emails. However, Georgia Senate Bill 360 prohibited all use of cellular phones when not used for spoken communication. This could include activities such as typing in directions in map applications or checking social media websites. Thus, this study did not examine the full spectrum of activities that would qualify as cell phone-related distracted driving.

CONCLUSION

In conclusion, the 2010 Georgia ban on texting while driving did not demonstrably change this behavior among EM physicians or trauma surgeons. Younger providers as well as those who reported police stops for speeding and more moving violations in the past 5 years were least likely to change their behaviors. Future studies should evaluate the efficacy of different interventions in enhancing compliance with this law. Additionally, the same survey could be repeated among the same population to assess if increased awareness of the law has changed their texting while driving frequencies.

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