Distracted Driving in Mississippi: A Statewide Survey and Summary of Related Research and Policies

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Introduction

Society has made rapid advances in technology that have changed American culture, both benefitting and complicating the driving environment. While making automobile rides more enjoyable and efficient, many technological devices have also introduced more opportunities for driver distraction. Cars are frequently equipped with DVD players that entertain children on long rides, "talking" GPS devices that guide drivers to their destinations, and satellite radios that play hundreds of stations. Other mobile devices that may be used by those driving or riding in automobiles include MP3 and video game players, laptops and mobile cellular telephones (hereafter referred to as cell phones). These new technologies, in combination with routine distractions, such as eating, conversing with passengers and tending to child passengers, create an environment rife with the potential that drivers will engage in distracted driving.

In 2008 alone, over a half million people were injured, and almost 6,000 lost their lives in crashes involving distracted driving, and according to data from the Fatality Analysis Reporting System, 16% of all fatal crashes that year involved driver distraction (National Highway Traffic Safety Administration, 2009a).

The introduction of cell phones into the driving environment and the resulting impact on driving performance has received increasing attention over the past few years. A 2003 study by the Harvard Center for Risk Analysis estimated the annual cost of crashes attributable to cell phone use while driving to be $43 billion (Cohen & Graham, 2003). Cell phones enable constant connection to friends, family and work through phone calls and text messages. "Smart phones" allow users to manage their schedules and communicate via email. However, with the modern expectation for constant availability, cell phones also increase the opportunities for drivers to attempt to multitask behind the wheel. A recent report by the National Safety Council (2010) highlights research which suggests that "multitasking" may not actually involve focusing on two tasks at the same time, but rather switching attention back and forth between the two activities. When driving, this switching of attention between the driving task and a distracting task would create time that the driver's attention is not on the road. Given the multiple and complex ways cell phones can create distraction within the driving environment, a better understanding of the prevalence of their use, implications for driver performance, and public management has become the subject of scientific inquiry and national debate.

Prevalence of Cell Phone Use While Driving

For a perspective on the potential for distraction by cell phones while driving, consider the Cellular Telecommunications and Internet Association's survey results from December 2009 (CTIA, 2010) that estimate cell phone ownership to include approximately 91% of the U.S. population. To estimate the prevalence of cell phone use while driving, two of the most commonly used methods include: observational studies (i.e., observations of cell phone use are recorded as drivers pass a fixed location) and self-report surveys (e.g., telephone or Internet surveys that ask participants to report their behaviors). Both methods aim to generalize behaviors for a sample of the population to form an estimate of behavior prevalence for the general population. Observational studies are powerful in that behaviors are directly observed in the field, but there are limitations due to difficulties in viewing, defining and classifying observed behaviors. Self-report surveys allow researchers to quickly gain detailed information about the prevalence and frequency of cell phone use as well as the attitudes, knowledge, and opinions of respondents. However, self-reported information may be prone to social biases (e.g., underreporting of socially undesirable behaviors, attitudes, or opinions).

A recent National Highway Traffic Safety Administration (National Highway Traffic Safety Administration, 2009b) report, estimated (based on observational data) that, in 2008, approximately 1 out of every 10 cars on the road (11%) during daylight hours was being driven by someone using a cell phone.

Self-report surveys vary on their populations of interest and thus produce slightly different estimates of the prevalence and frequency of cell phone use while driving. For example, some surveys measure the prevalence of cell phone use while driving, but only for respondents who own cell phones. Other surveys measure the prevalence among the adult driving population, regardless of cell phone ownership. Surveys also vary on the age groups and timeframes of interest: some surveys include adults ages 18 and over and others include 16 and 17 year old drivers as well; and finally, some surveys ask about cell phone-related behaviors, but only over the past 30 days (versus if they have ever engaged in that behavior while driving).

The following prevalence and frequency estimates have been reported in recent surveys:

- A 2009 survey conducted by the Insurance Institute of Highway Safety (Braitman & McCartt, 2010) asked current adult drivers (ages 18+) how often they talk on a cell phone while driving. Sixty-five percent reported that they talk on a cell phone while driving, with 40% indicating that they do so daily or a few times each week. In the same survey, 13% of current adult drivers reported that they text while driving with 6% of drivers indicating that they do so daily or a few times each week.
- The 2009 Traffic Safety Culture Index, a survey conducted by the AAA Foundation for Traffic Safety (2009) revealed that 2 in 3 (67%) current drivers (ages 16+) reported that they had talked on a cell phone while driving during the past 30 days. The same survey revealed that about 1 in 5 drivers (21%) reported that they had texted or emailed while driving during the past 30 days.
- A national survey of 16 to 61 year-old drivers conducted by Nationwide Insurance (2008) revealed that approximately 8 in 10 *cell phone owners* (81%) reported that they use their cell phone to talk while driving, and about 2 in 10 *cell phone owners* (18%) text message while driving.
- In a recent Pew Internet and American Life Project survey (Madden & Rainie, 2010), 3 out of 4 cell phone owning adults (75%) ages 18 and older reported that they had talked on a cell phone while driving and nearly half (47%) of surveyed adults who own cell phones and use their phones to text outside of the driving environment reported that they had texted while driving.
- According to these surveys, approximately 65-67% of current drivers and 75-81% of drivers who are cell phone owners have talked on a cell phone while driving. These slight differences in prevalence between current drivers and cell phone owners are not surprising. That is, the prevalence of talking on a cell phone while driving would likely be higher for individuals who own cell phones themselves, compared to those who do not.
- According to these surveys, approximately 13-21% of current adult drivers, 18% of cell phone owners, and 47% of cell phone owners who normally use their phones to text, report that they have texted while driving. As for talking on a cell phone while driving, these discrepancies in the prevalence of texting while driving are not unexpected given that individuals who own cell phones would have more opportunities to text and individuals who normally use their phone to text and/or email, would have even greater access and opportunities to engage in those cell-phone-related tasks while driving.

Research suggests that differences in cell phone use while driving exist among different population groups in the United States. The most commonly reported differences are shown below:

Age.

Clear age differences have been observed with respect to talking on a cell phone and texting while driving. In general, younger drivers are more likely to report using cell phones while driving than are older drivers, especially with regard to texting (AAA Foundation for Traffic Safety, 2008; Braitman & McCartt, 2010).

Race/ethnicity.

Race/ethnicity differences in cell phone use while driving aren't highlighted as much as age differences and the existing results are not as clear-cut as those for age groups. A 2008 Nationwide Insurance survey suggests that, compared to Caucasians, a higher percentage of African Americans and Hispanics report that they text message while driving (16% for Caucasians, 25% for African Americans, and 28% for Hispanics). A 2008 AAA Foundation

for Traffic Safety report found no differences in cell phone use while driving based on race/ethnicity; however, the same study did find that Black/African American respondents were more likely to report texting while driving than non-Hispanic Whites (22.8% vs. 14.9%), which is consistent with the 2008 Nationwide Insurance survey, but large confidence intervals require that the results of the AAA (2008) survey be interpreted with caution.

Gender.

Attempts to evaluate gender differences in cell phone use while driving have yielded somewhat inconsistent results. A 2008 Nationwide Insurance survey reported that female cell phone owners were more likely than male cell phone owners to talk on a cell phone while driving (85% versus 78%). However, Madden and Rainie (2010) found the opposite: that male cell phone owners were more likely to report that they have talked on a cell phone while driving (78% compared to 72% for female cell phone owners). In addition, they also found that, compared to their female counterparts, males who normally use their phone to send text messages, are more likely to text while driving (51% of males who text do so behind the wheel compared to 42% of females). A 2008 AAA report revealed that male drivers were more likely than females to report using a cell phone while driving (56.8% vs. 49.9%). In addition, two recent reports (AAA Foundation for Traffic Safety, 2009; Braitman & McCartt, 2010) found that a higher proportion of males report more *frequent* use of cell phones while driving (e.g., the AAA study found that 31% of males reported that they used cell phones while driving regularly or fairly often, compared to 26% of females who reported the same).

Other demographic categories.

A 2009 report by the AAA Foundation for Traffic Safety indicated that drivers who had obtained a higher level of education were more likely to report that they used a cell phone while driving than those with less education (36% for those who had at least a bachelor's degree compared to 25% for those who had not obtained a bachelor's degree). A 2008 report by the AAA Foundation for Traffic Safety indicated that, compared to married drivers, a higher percentage of single drivers reported that they had texted while driving. Finally, Madden and Rainie's (2010) results suggest that parents are more likely than non-parents to report that they have talked on a cell phone while driving (82% of parents with cell phones vs. 72% of non-parents with cell phones).

Impact of Cell Phone Use While Driving

In general, driver distraction has been defined as "the diversion of attention away from activities critical for safe driving toward a competing activity" (Young, Lee, & Regan, 2008). The National Highway Traffic Safety Administration (2010a) recognizes three main categories or types of distraction: visual distractions (i.e., activities that cause drivers to take their eyes off the roadway), manual distractions (i.e., activities that cause drivers to remove their hands from the steering wheel), and cognitive distractions (i.e., activities that cause drivers to take their mind or attention off the driving task). All three aspects are important to safe driving practices, and a failure at any level can increase risk and raise liability concerns (Brace, Young, & Regan, 2007).

Given the high rates of cell phone use while driving and their potential for producing distraction, the need to understand the consequences for the driving/riding public has grown, and researchers have responded. Much of the current research has focused on placing a call and having a conversation via cell phone, as these are the most common activities. However, as cell phone functionality has increased, researchers are also beginning to consider other aspects of cell phone use, including text messaging, email, and internet applications.

Researchers have used a variety of methods to examine the impact of cell phone use on crash risk and driving performance, and each methodology has its advantages and disadvantages and produces different types of findings (National Safety Council, 2010; Ranney, 2008). The brief summary below outlines some of the most common methodologies and example findings for each:

Crash-based /Epidemiological studies: methods and example findings.

Methods.

Crashed-based research is concerned with determining the role of cell phones in actual crashes that have already occurred.

Crash reconstruction involves an in-depth investigation of a set of crashes or accidents to determine the likely contributing factors (including cell phone use). Crash reconstructions provide detailed information about the outcomes of a crash, but determining the relative importance of potentially numerous contributors is often difficult. In addition, those involved in crashes may not be willing to admit to being distracted at the time of the crash. Finally, crash reconstruction is most often used in fatal accidents, limiting the potential for comparisons to less severe crashes or near-crashes.

Epidemiological research applied to the use of cell phones attempts to establish associations or relationships between cell phone use while driving and crash risk using available data, such as cell phone records and crash data. Two common epidemiological study designs include case-crossover designs and case-control designs. In a case-control design, a group of interest is compared to a control group using available data to better understand the impact of cell phones. For example, one study (Laberge-Nadeau, et al., 2003) compared two groups (cell phone users vs. non-cell phone users) and examined their phone records and crash data to determine if crash risk was higher for cell phone users. In another study, Redelmeier and Tibshirani (1997) used a case-crossover design, which allows participants to serve as their own control group by comparing their cell phone usage just prior to a collision to a comparable time of day on a day before the collision.

Example findings.

With respect to crash risk, epidemiological research suggests that when drivers are talking on a cell phone, they are 4x more likely to be involved in a crash than when they are driving under normal conditions and that there are no differences when considering the use of hands-free versus hand-held cell phones. Redelmeier and Tibshirani (1997) analyzed cell phone records and police reports of crashes causing property damage. They found a fourfold increase in crash risk among those using a cell phone within 10 minutes of a crash, but they also determined that having a cell phone may have been beneficial after the crash, as 39% of drivers were able to call for help. Similarly, McEvoy and colleagues (2005) conducted an Australian study that found drivers 4x as likely to be in a crash that results in a hospital visit when using a cell phone. These conclusions were drawn from driver interviews, records of cell phone activity prior to the crash and medical records. Neither study found different outcomes with respect to crash risk for drivers using hands-free devices over hand-held.

Observational/Naturalistic studies: methods and example findings.

Methods.

Observational studies attempt to observe the impact of cell phones on crash risk and driver performance in a "real world" driving environment. Observational studies include fixed-site studies, where driver behavior is observed and recorded at a particular location, and naturalistic studies where drivers' performance is recorded over time in an instrumented car, often their own. For example, cars might be equipped with video cameras, and brake and speed sensors. Naturalistic studies are the most ecologically valid methods of evaluating driver performance, but investigations can result in large amounts of data with relatively few data points of interest

(i.e., crashes or near crashes). Additionally, it is unknown whether drivers in naturalistic studies may act or drive differently due to their awareness that their performance is being monitored.

Example findings.

Using fixed-site observational studies, researchers have shown, for example, that when drivers are talking on cell phones, they are less likely to come to a complete stop at a stop sign (Strayer & Drews, 2006).

Naturalistic studies have found that when drivers engage in secondary tasks, their driving performance is compromised, resulting in more frequent crashes or near crashes. Also, increasingly complex tasks (particularly those that involve the driver taking his/her eyes off the road) produce more undesired consequences.

Currently, the best-known example of a naturalistic study is the 100-Car Study funded by NHTSA and conducted by the Virginia Tech Transportation Institute (VTTI) (Klauer, Dingus, Neale, Sudweeks, & Ramsey, 2006). This study found that when drivers were dialing a cell phone they were almost 3x more likely to be in a crash or near crash, whereas when they were talking or listening on their phones they were 1.3x more likely.

Stutts et al. (2005) videoed the behavior of 70 drivers for a week and found that, among the 24 cell phone users in the study group, dialing and answering a cell phone was correlated with increased incidences of drivers having their hands away from the steering wheel and having their eyes directed inside the vehicle rather than outside. Talking or listening to a cell phone while driving was associated with drivers having their hands away from the steering wheel.

Experimental/Simulation studies: methods and example findings.

Methods.

Experimental studies use simplified and structured tasks in a laboratory or test track environment to better understand the impacts of cell phone related tasks on driver performance and information processing ability. Experimental research allows for specific behaviors or skills (such as reaction times to objects or events, visual scanning, speed, and lane deviations) to be targeted or monitored, while controlling for outside or confounding variables. As each participant is exposed to the same stimuli in very similar conditions, more reliable patterns of data may result than those available from naturalistic or epidemiological evaluations. Experimental studies allow researchers to measure the impact of visual, manual and/or cognitive distraction.

Driving simulation is one type of experimental study that combines the strengths of naturalistic studies (e.g., greater ecological validity) with the strengths of experimental research (e.g., greater scenario and environment control), thus allowing researchers to evaluate detailed aspects of driver performance in more consistent environments than is typically possible in naturalistic studies. However, because computerized tasks and simulation studies are removed from the "real world," generalizations to actual driver performance or behaviors may be limited.

Another type of experimental study involves taking pictures (or scans) of the brain while participants are engaged in tasks, in order to observe changes in brain activity. For example, participants might be asked to perform a single visual task and then to perform an auditory and visual task together (similar to talking on a cell phone while driving). Brain scans would be captured in both situations and then compared to see the impact that the addition of the secondary auditory task had on brain activity.

Example findings.

Some example findings from laboratory and simulation-based experimental studies relate to the impact of cell phones on driving performance due to reduced brain activity, inattention blindness, increased reaction time to events or objects, and lane maintenance or staying with a driving lane. Each of these performance decrements is explained below.

Through brain imaging, experimental studies have demonstrated the importance of cognitive distraction by showing that secondary auditory tasks (similar to hands-free cell phone conversations) negatively impact spatial and visual processing necessary for maintaining driving performance, due to decreased activation of related brain areas when a secondary auditory task is performed with a visual task (Just, Keller, & Cynkar, 2008).

Researchers interested in the cognitive distraction associated with cell phone use agree with naturalistic researchers that vision is a key component for driving performance. However, they suggest that, as a result of cognitive distraction, even if a person's eyes are open and directed on the roadway, that they may still "fail to see objects or events" there because their attention is directed elsewhere (i.e., on the cell phone conversation). This phenomenon of looking but not seeing is known as inattention blindness (Strayer, Drews, & Johnston, 2003).

Researchers have also discovered that the more attention that is directed to a secondary task, the more driving performance suffers, both in regard to awareness of one's current situation (Ma & Kaber, 2007; Strayer, et al., 2003) and vehicle control measures (Cnossen, Meijman, & Rothengatter, 2004; Stutts, et al., 2005).

Another topic of inquiry for experimental researchers studying distracted driving is reaction time to changing events or objects, which, they find, get slower when the driver is engaging in secondary tasks like handheld or hands free cell phone conversations (Caird, Willness, Steel, & Scialfa, 2008; Strayer, Drews, & Crouch, 2006). Strayer et al. (2006) found that reaction times in a simulated driving task were more negatively affected for distracted drivers than they were for drivers who were at the legal limit for intoxication. Older drivers (i.e., those 55 to 75 years of age), in particular, have been found consistently to be impacted more significantly by distractions, including slower reactions to events and presented stimuli than younger drivers in laboratory, simulator, and test track studies (e.g., Caird, et al., 2008; Hancock, Lesch, & Simmons, 2003). Therefore, even though older drivers are less likely to use cell phones while driving, they may be at greater risk for an accident when they do so.

Experimental studies have found that drivers often compensate for slowed reaction times while engaging in distracting behaviors. Hancock and colleagues (Hancock, et al., 2003; Hancock, Simmons, Hashemi, Howarth, & Ranney, 1999) found that stopping distances were shorter at higher speeds, as participants compensated by braking harder. A similar effect for both stopping distance and braking rate was found comparing the driving-while-distracted trials to driving alone; that is, drivers would brake harder, resulting in a shorter stopping distance when driving while distracted. The harder braking seemed to be compensation for a delayed response, but even with the higher braking rate, participants' stopping distances still indicated a 24% decrease in the 'safety margin' (i.e., the distance between the vehicle and the end of the braking area), suggesting that although participants were aware of a negative impact on their performance, the compensations were not entirely effective. Although drivers may drive more slowly in order to compensate for slower reactions, when an emergency situation occurs the additional compensation may not be enough to prevent a collision. Other researchers (e.g., Briem & Hedman, 1995; Cnossen, et al., 2004) have also recorded instances where drivers apparently attempt to compensate for distraction resulting from multitasking. Ishigami and Klein (2009) noted that drivers maintained increased following distances to compensate when using a hand-held device, but not so with a hands-free device, possibly from an increased sense of confidence that is associated with the use of hands-free phones (AAA Foundation for Traffic Safety, 2008).

Commonalities and differences among studies.

There has been some debate among researchers as to which type of distraction—visual, manual or cognitive—plays a larger role in reduced driving performance and/or crashes and whether cognitive distraction actually underlies other types of distraction. Naturalistic researchers contend their data show that the key type of distraction increasing near-crash/crash risk is visual distraction, or having one's eyes off the forward roadway for over two seconds, stating that "in driving, vision is king" (Lee, 2009a). They often discount experimental studies finding that talking and listening to cell phones poses equal risk, asserting that hands-free talking and listening is not associated with equal risk, and they point to the importance of clarifying what is meant by "hand-held" and "hands-free." A voice-activated system that is integrated into a vehicle's electronics, they argue, may have less impact on a driver's performance than an earpiece that still requires the driver to manually dial his or her phone (Klauer, et al., 2006; McEvoy, et al., 2005). Naturalistic researchers prefer "real-world" studies and often assert that the findings of laboratory experiments are not relevant to real-world risk (Ranney, 2008; VTTI, 2009).

Some experimental researchers assert that, while harder to observe (particularly in naturalistic studies), cell phone use also causes cognitive distraction (Hancock, et al., 1999; Horrey & Wickens, 2006; National Safety Council, 2010). The 2010 National Safety Council White Paper noted the problem of "inattention blindness," where drivers are visually taking in information, but their brains aren't processing it. This concept is backed-up by the findings of studies that demonstrate, through brain scans of distracted individuals, reduced brain activity in areas of the brain important for visual and spatial processing needed for driving performance. These studies conclude that there is no difference in risk associated with complex secondary tasks, such as dialing and texting, and moderate secondary tasks, such as talking and listening to a hands-free device (Just, et al., 2008) and these types of studies generally reveal no differences in performance between hand-held and hands-free conversations.

Epidemiological studies examine phone and crash records, and they conclude that there is no reduced crash risk associated with using hands-free devices. However, since the precise source of the distraction is unknown, the impact of visual versus cognitive distraction in these instances is difficult to determine. As a result of these inconsistencies across methodologies, more research is needed to determine the relative risk associated with different types of driver distraction (i.e., manual, visual or cognitive) involved in cell phone use.

While various methodologies often differ on the relative risks and impacts associated with different types of cell phone-related distractions, some common themes have emerged from the distracted driving literature: Engaging in secondary tasks, such as using a cell phone, while driving increases the likelihood of impaired driver performance and/or crashes, and more complex tasks result in greater risk. Furthermore, in general, using hands-free devices, at least those that require visual attention from the driver for dialing, is not safer than talking on a hand-held device (Caird, et al., 2008; National Safety Council, 2010).

Texting.

Among cell phone-related activities, texting is receiving increasing attention as one of the most dangerous when performed while driving (Drews, Yazdani, Godfrey, Cooper, & Strayer, 2009; Hosking, Young, & Regan, 2006; Jacobson & Gosselin, 2010). At the 2009 DOT Distracted Driving Summit, John Lee described sending text messages while driving as "the perfect storm" because it involves all three types of distraction: visual (looking at the phone to read and/or write messages), manual (holding the phone and typing messages), and cognitive (thinking about the text conversation)(Lee, 2009b).

The pervasiveness of texting among the youngest and least experienced drivers is cause for concern (Hosking, et al., 2006). Younger drivers may prioritize their texting conversations over their driving performance (Backstrom, 2009), or underestimate the challenges and risks of driving and multitasking (Lerner, Singer, & Huey, 2008). In a Pew Internet article, Lenhart and colleagues (2010) reported daily texting by 54% of American teens in September 2009. Furthermore, they state that 1 in 3 teenagers texts over 100 messages per day.

Motor vehicle crashes are the leading cause of fatalities among U.S. teenagers (National Center for Injury Prevention and Control, 2010), and distracted driving has the potential to exacerbate this threat. A 2009 Virginia Tech Transportation Institute (VTTI) research report claimed that drivers were at 23x higher crash risk when they were texting compared to when they were not texting. The report also noted that drivers who were texting during a 6 second interval kept their eyes off the roadway for 4.6 of the 6 seconds, indicating that, at 55 mph, they drove the length of a football field without observing the road (VTTI, 2009).

Public Opinion Regarding Distracted Driving

We have already presented evidence that cell phone-related distraction is a growing phenomenon, and what it might mean for driver performance. Now we will consider driver perceptions and attitudes toward distracted driving. Cell phone use has become so prevalent, in part, because of its perceived benefits to drivers. Some of these benefits include an increased perception of safety (e.g., ability to keep in contact with others about current location), access to emergency and roadside assistance services, increased productivity (Lerner, et al., 2008), and reduced boredom and fatigue (Ranney, 2008). However, many of those surveyed acknowledged their potential danger if used while driving.

According to an annual national survey conducted by the AAA Foundation for Traffic Safety (2009), the majority of respondents felt that the following things posed serious threats to their safety: drivers talking on cell phones (58%) and drivers who were emailing or text messaging (87%). Seventy-one percent felt hand-held phone use was unacceptable while driving, and almost all respondents (95%) indicated that they felt it was unacceptable for drivers to text message while driving. A 2009 Harris Interactive Poll found similar results: 83% of respondents stated that using cell phones while driving was dangerous, and 71% stated that using hands-free cell phones was safer (Harris Interactive, 2009).

The AAA study also showed evidence of a "do as I say, not as I do" driver mentality (Backstrom, 2009). That is, almost all respondents to their survey (95%) indicated that they felt it was unacceptable for drivers to text message while driving, yet 18% of those same respondents admitted that, within the past month, they had emailed or sent a text message while driving. Likewise, 71% felt handheld phone use was unacceptable while driving, yet 30% who felt that way had engaged in that very behavior and an additional 27% had used hands-free phones, which have not generally been shown to be any safer (AAA Foundation for Traffic Safety, 2009). Based on how many respondents admitted to using their phones while driving, it appears that driver opinions often do not reflect driver behavior. Drivers often believe they are less likely to be in a distracted driving-related accident than other drivers (National Safety Council, 2010).

Public sentiment regarding legislation that would restrict or ban cell phone use while driving seems to be reflective of concerns about the safety or risk associated with using cell phones to complete various tasks while driving. A Nationwide Insurance Driving While Distracted Survey report (Nationwide Insurance, 2009) states that 80% of respondents supported legislation to restrict texting while driving, and 67% supported legislation to restrict cell phone calls while driving.

With respect to knowledge of distracted driving legislation and attitudes about enforcement levels, Braitman and McCartt (2010) found, for states with all-driver bans on texting while driving, that just 52% of drivers correctly indicated there was a ban in their state, and only 22% of those respondents felt that it was being strongly enforced. They also found that 82% of drivers in states with an all-driver ban on hand-held cell phone use correctly indicated there was a ban in their state, but only 29% of those drivers felt the ban was being strongly enforced.

Deterrents of Distracted Driving

Although the aforementioned studies have documented driver performance impediments due to cell phone use, the research findings are often lacking potential solutions or approaches to address and mitigate risk for drivers. The most

commonly cited approach is to avoid cell phone distraction entirely, whether through legislation or other methods like Oprah Winfrey's No Phone Zone Pledge (Governors Highway Safety Association, 2010b).

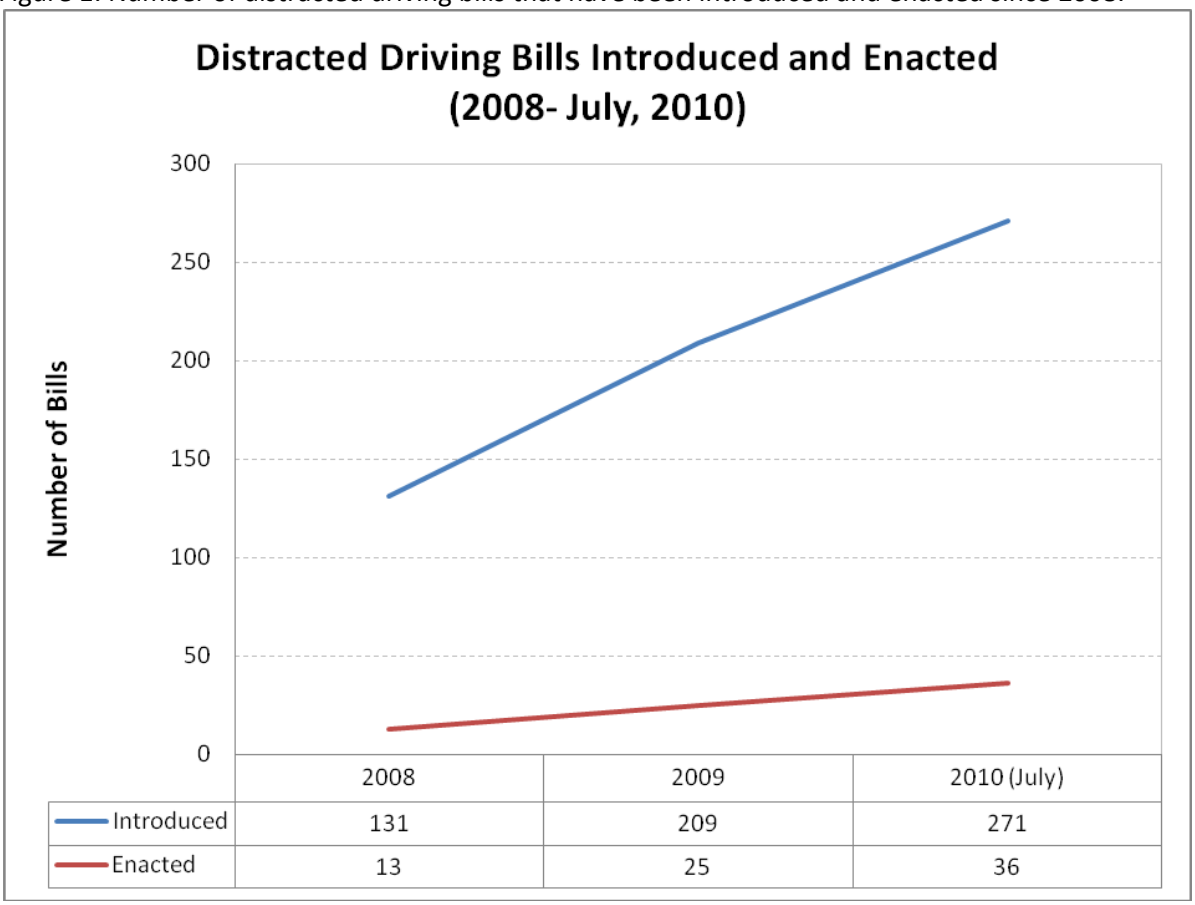
While there does not appear to be a "silver bullet" for addressing the impacts of cell phone distraction on driver performance and behavior, several countermeasures, are currently being discussed and/or pursued in combination:

Environmental strategies and technological innovations.
Environmental strategies include modifications to the driving environment, such as rumble strips, to alert drivers to danger. Technological innovations include in-vehicle or cell phone-based technologies that have the capacity to detect or deter distracted driving by monitoring eye glances, limiting or altering the driver's ability to use certain features of their cell phone while the vehicle is in motion, or warning the driver if the vehicle's radar perceives an impending crash. Some have suggested that automakers should be regulated if they will not voluntarily modify the vehicles they manufacture to respond to newly emerging driving conditions (Gostin & Jacobson, 2010).

Education.
In addition to national efforts such as Oprah's "No Phone Zone" and AT&T's "Texting and Driving: It Can Wait," public education campaigns addressing distracted driving have been or are currently being conducted in 41 states and the District of Columbia (D.C.), and some are employing social media, such as Facebook, You Tube and Twitter. In addition, driver's education programs that incorporate distracted driving awareness are also being considered and have been implemented in 18 states and D.C. (Governors Highway Safety Association, 2010b).

Legislation.
A number of states have enacted legislation to address distracted driving and others are currently considering, or are in the process of passing, such legislation (Governors Highway Safety Association, 2010a; Insurance Institute for Highway Safety (IIHS) Highway Loss Data Institute, 2010). According to the National Conference of State Legislatures' State Traffic Safety Legislation Database, since 2008, 611 distracted driving bills have been considered in all 50 states and 74 of those bills have been enacted. In addition, the number of introduced and enacted bills has steadily increased since 2008 along with the increased interest in the topic of distracted driving (National Conference of State Legislatures, 2010) (see
Figure 1).

Figure 1. Number of distracted driving bills that have been introduced and enacted since 2008.



Source: (National Conference of State Legislatures, 2010)

Legislation varies in the specific cell phone-related behaviors and drivers that it covers. No states currently ban all cell phone use for all drivers. Some states do, however, have laws that ban specific cell phone behaviors while driving, for all drivers. For example, some states completely ban the use of hand-held phones while driving and this ban applies to all drivers. Other states have bans that cover the use of all cell phones (i.e., hand-held and hands-free) while driving, but those bans only apply to specific groups of drivers, such as novice drivers (e.g., Foss, Goodwin, McCartt, & Hellinga, 2009) and/or school bus or transit drivers. Finally, other states have bans that cover specific cell-phone related behaviors (e.g., texting while driving) for specific groups of drivers. Mississippi is one such state. In 2009, Mississippi banned texting while driving but only for learner's permit and intermediate license holders. This is currently Mississippi's only law regarding the use of cell phones while driving (Insurance Institute for Highway Safety (IIHS) Highway Loss Data Institute, 2010).

The tables and maps in this section outline state or jurisdiction-wide cell phone and text messaging laws/bans that have been passed as of July, 2010 (Governors Highway Safety Association, 2010a; Insurance Institute for Highway Safety (IIHS) Highway Loss Data Institute, 2010). A summary of the laws is presented below:

Bans specific to the use of hand-held cell phones while driving.

- 9 states and the District of Columbia have banned the use of hand-held cell phones for all drivers.
- An additional 5 states have banned the use of hand-held cell phones for some drivers or some zones.
    - 3 have banned the use of hand-held cell phones for novice drivers.
    - 2 have banned the use of hand-held cell phones in some zones (e.g., school crossing zones).
- 36 states have no bans in place that are specific to the use of hand-held cell phones while driving.

Bans on the use of all cell phones (both hand-held and hands-free) while driving.

- 0 states have banned the use of all (hand-held and hands-free) cell phones while driving for all drivers.
- 30 states and the District of Columbia have banned the use of all cell phones for some drivers.
    - 28 states plus the District of Columbia have banned the use of all cell phones while driving for novice drivers.
    - 18 states plus the District of Columbia have banned the use of all cell phones while driving for school bus and/or transit drivers.
- 20 states have no bans in place that restrict all cell phone use while driving.

Bans on texting while driving.

- 30 states and the District of Columbia have banned texting while driving for all drivers.
- An additional 8 states have banned texting while driving for some drivers
    - 8 states have banned texting while driving for novice drivers.
    - 2 of those states have also banned texting while driving for school bus and/or transit drivers.
- 12 States have no bans in place that restrict texting while driving.

Table 1. Cell Phone Laws (July, 2010).

State	Bans Specific to Hand-held Cell Phones			Bans on ALL Cell Phones			Bans on Texting		
	Ban	Details	Enforcement	Ban	Details	Enforcement	Ban	Details	Enforcement
Alabama	No ban	N/A	N/A	Partial	(16, 17 with IL< 6 mo.)	Primary	Partial	(16, 17 with IL< 6 mo.)	Primary
Alaska	No ban	N/A	N/A	No ban	N/A	N/A	Complete	All drivers	Primary
Arizona	No ban	N/A	N/A	Partial	school bus drivers	Primary	No ban	N/A	N/A
Arkansas	Partial	≥18 but <21	Primary	Partial	<18, school bus drivers	Primary: school bus drivers; Secondary: <18	Complete	All drivers	Primary
California	Complete	All drivers	Primary	Partial	<18, school bus and public transit vehicle drivers	Primary: <18 (handheld), school bus and transit vehicle drivers; Secondary: <18 (hands free)	Complete	All drivers	Primary
Colorado	No ban	N/A	N/A	Partial	<18	Primary	Complete	All drivers	Primary
Connecticut	Complete	All drivers	Primary	Partial	<18, school bus drivers	Primary	Complete	All drivers	Primary
Delaware	Complete	All drivers	Primary	Partial	LP, IL, school bus drivers	Primary	Complete	All drivers	Primary
D.C.	Complete	All drivers	Primary	Partial	LP, school bus drivers	Primary	Complete	All drivers	Primary
Florida	No ban	N/A	N/A	No ban	N/A	N/A	No ban	N/A	N/A
Georgia	No ban	N/A	N/A	Partial	<18, school bus drivers	Primary	Complete	All drivers	Primary
Hawaii	No ban	N/A	N/A	No ban	N/A	N/A	No ban	N/A	N/A
Idaho	No ban	N/A	N/A	No ban	N/A	N/A	No ban	N/A	N/A
Illinois	Partial	CZ, SZ	Primary	Partial	<19, LP<19, school bus drivers	Primary	Complete	All drivers	Primary
Indiana	No ban	N/A	N/A	Partial	<18	Primary	Partial	<18	Primary

State	Bans Specific to Hand-held Cell Phones			Bans on ALL Cell Phones			Bans on Texting		
	Ban	Details	Enforcement	Ban	Details	Enforcement	Ban	Details	Enforcement
Iowa	No ban	N/A	N/A	Partial	LP, IL	Primary	Complete	All drivers	Secondary
Kansas	No ban	N/A	N/A	Partial	LP, IL	Primary	Complete	All drivers	Primary
Kentucky	No ban	N/A	N/A	Partial	<18, school bus drivers	Primary	Complete	All drivers	Primary
Louisiana	Partial	LP or IL (any age)	Primary	Partial	<18, school bus drivers, 1st license for 12 mo.	Primary: <18, school bus drivers; Secondary: 1st license for 12 mo. (if ≥18)	Complete	All drivers	Primary
Maine	No ban	N/A	N/A	Partial	LP, IL	Primary	Partial	LP, IL	Primary
Maryland	Complete	All drivers	Secondary	Partial	LP and PL<18	Secondary	Complete	All drivers	Primary
Massachusetts	No ban	N/A	N/A	Partial	<18, school bus drivers, public transportation operator	Primary	Complete	All drivers	Primary
Michigan	No ban	N/A	N/A	No ban	N/A	N/A	Complete	All drivers	Primary
Minnesota	No ban	N/A	N/A	Partial	LP and PL for 1st 12 mo., school bus drivers	Primary	Complete	All drivers	Primary
Mississippi	No ban	N/A	N/A	No ban	N/A	N/A	Partial	LP, IL	Primary
Missouri	No ban	N/A	N/A	No ban	N/A	N/A	Partial	≤ 21	Primary
Montana	No ban	N/A	N/A	No ban	N/A	N/A	No ban	N/A	N/A
Nebraska	No ban	N/A	N/A	Partial	LP and IL<18	Secondary	Complete	All drivers	Secondary
Nevada	No ban	N/A	N/A	No ban	N/A	N/A	No ban	N/A	N/A
New Hampshire	No ban	N/A	N/A	No ban	N/A	N/A	Complete	All drivers	Primary
New Jersey	Complete	All drivers	Primary	Partial	LP, IL, school bus drivers	Primary	Complete	All drivers	Primary

State	Bans Specific to Hand-held Cell Phones			Bans on ALL Cell Phones			Bans on Texting		
	Ban	Details	Enforcement	Ban	Details	Enforcement	Ban	Details	Enforcement
New Mexico	No ban	N/A	N/A	No ban	N/A	N/A	No ban	N/A	N/A
New York	Complete	All drivers	Primary	No ban	N/A	N/A	Complete	All drivers	Secondary
North Carolina	No ban	N/A	N/A	Partial	<18, school bus drivers	Primary	Complete	All drivers	Primary
North Dakota	No ban	N/A	N/A	No ban	N/A	N/A	No ban	N/A	N/A
Ohio	No ban	N/A	N/A	No ban	N/A	N/A	No ban	N/A	N/A
Oklahoma	Partial	LP, IL	Primary	Partial	school bus drivers, public transit drivers	Primary	Partial	LP, IL, school bus drivers, public transit drivers	Primary
Oregon	Complete	All drivers	Primary	Partial	<18	Primary	Complete	All drivers	Primary
Pennsylvania	No ban	N/A	N/A	No ban	N/A	N/A	No ban	N/A	N/A
Rhode Island	No ban	N/A	N/A	Partial	<18, school bus drivers	Primary	Complete	All drivers	Primary
South Carolina	No ban	N/A	N/A	No ban	N/A	N/A	No ban	N/A	N/A
South Dakota	No ban	N/A	N/A	No ban	N/A	N/A	No ban	N/A	N/A
Tennessee	No ban	N/A	N/A	Partial	LP, IL, school bus drivers	Primary	Complete	All drivers	Primary
Texas	Partial	SZ	Primary	Partial	IL for 1st 12 months, passenger bus w/minors	Primary	Partial	IL for 1st 12 months, passenger bus w/minors, SZ	Primary
Utah	Complete	All drivers	Secondary	No ban	N/A	N/A	Complete	All drivers	Primary
Vermont	No ban	N/A	N/A	Partial	<18	Primary	Complete	All drivers	Primary
Virginia	No ban	N/A	N/A	Partial	<18, school bus drivers	Primary: school bus drivers; Secondary: <18	Complete	All drivers	Secondary (Primary for school bus drivers)
Washington	Complete	All drivers	Primary	Partial	LP, IL	Primary	Complete	All drivers	Primary

State	Bans Specific to Hand-held Cell Phones			Bans on ALL Cell Phones			Bans on Texting		
	Ban	Details	Enforcement	Ban	Details	Enforcement	Ban	Details	Enforcement
West Virginia	No ban	N/A	N/A	Partial	<18 with LP or IL	Primary	Partial	<18 with LP or IL	Primary
Wisconsin	No ban	N/A	N/A	No ban	N/A	N/A	Complete	All drivers	Primary
Wyoming	No ban	N/A	N/A	No ban	N/A	N/A	Complete	All drivers	Primary
SUMMARY	**Complete**	**10**		**Complete**	**0**		**Complete**	**31**	
	Partial	**5**		**Partial**	**31**		**Partial**	**8**	
	No ban	**36**		**No ban**	**20**		**No ban**	**12**	

Source: Insurance Institute for Highway Safety, Highway Loss Data Institute (http://www.iihs.org)

CZ = Construction Zone; IL = Intermediate License; LP = Learner's Permit; PL = Provisional License; SZ = School crossing/Speed zone

Bans Specific to Hand-held Cell Phones

Complete Ban: (9 states + D.C.)

- California
- Connecticut
- Delaware
- D.C.
- Maryland
- New Jersey
- New York
- Oregon
- Utah
- Washington

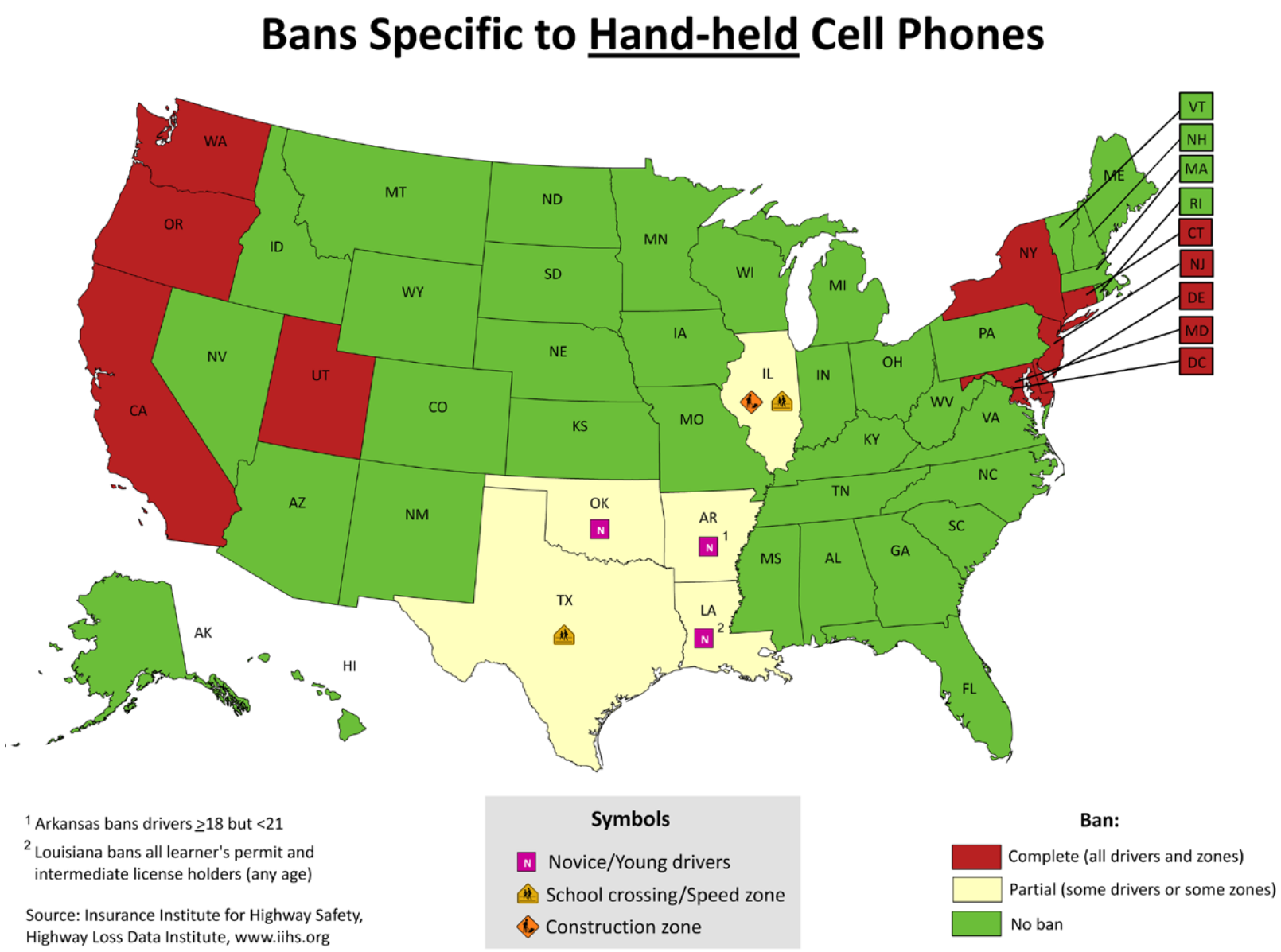
Partial Ban: (5 states)

- Arkansas
- Illinois
- Louisiana
- Oklahoma
- Texas

No Ban: (36 states)

- Alabama
- Alaska
- Arizona
- Colorado
- Florida
- Georgia
- Hawaii
- Idaho
- Indiana
- Iowa
- Kansas
- Kentucky
- Maine
- Massachusetts
- Michigan
- Minnesota
- Mississippi
- Missouri
- Montana
- Nebraska
- Nevada
- New Hampshire
- New Mexico
- North Carolina
- North Dakota
- Ohio
- Pennsylvania
- Rhode Island
- South Carolina
- South Dakota
- Tennessee
- Vermont
- Virginia
- West Virginia
- Wisconsin
- Wyoming

Figure 2. Map of Bans Specific to Hand-held Cell Phones.



Bans on ALL Cell Phones (hand-held and hands-free)

Complete Ban: (0 states)

- None

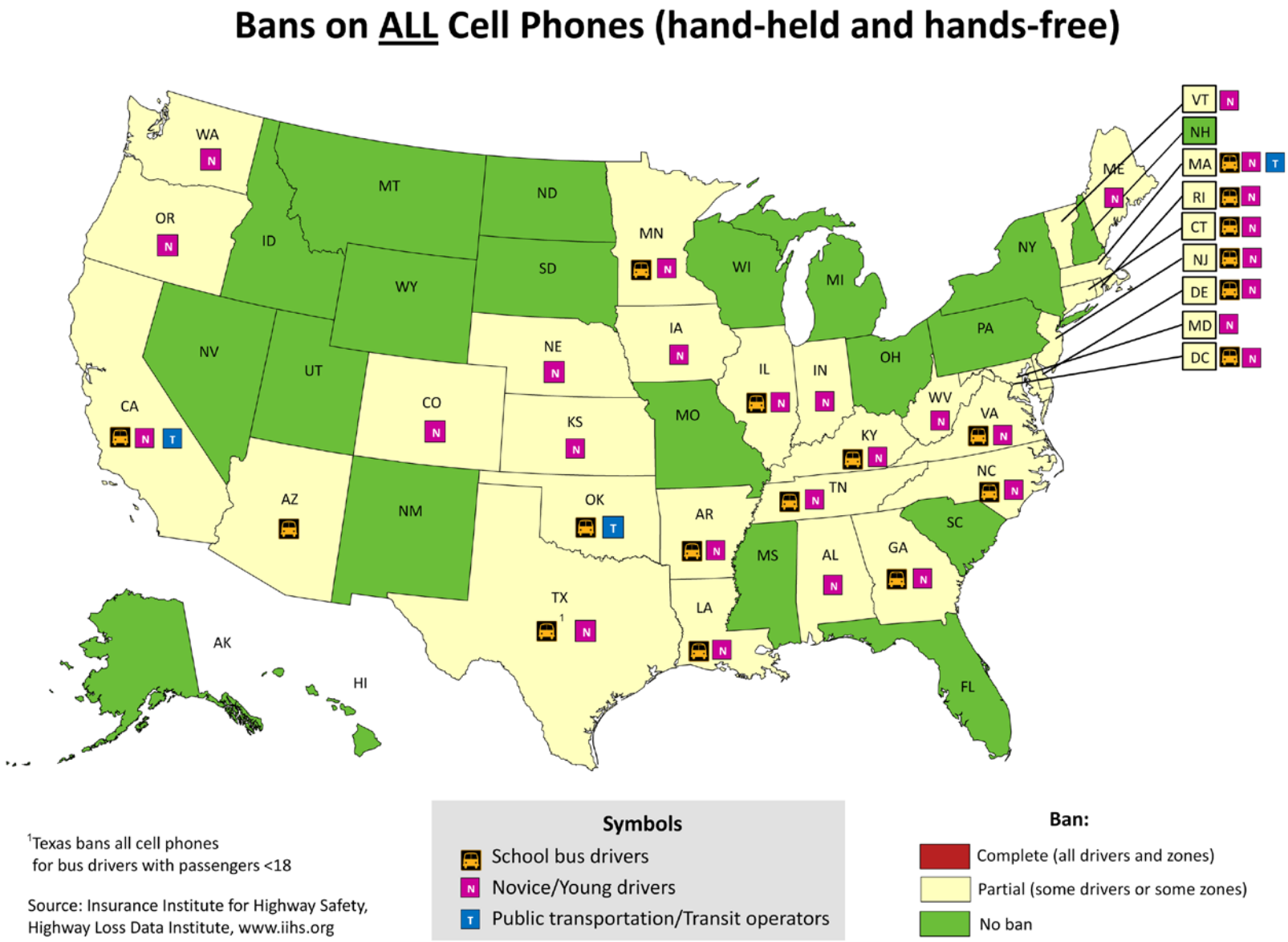
Partial Ban: (30 states + D.C.)

- Alabama N
- Arizona
- Arkansas N
- California N T
- Colorado N
- Connecticut N
- Delaware N
- D.C. N
- Georgia N
- Illinois N
- Indiana N
- Iowa N
- Kansas N
- Kentucky N
- Louisiana N
- Maine N
- Maryland N
- Massachusetts N T
- Minnesota N
- Nebraska N
- New Jersey N
- North Carolina N
- Oklahoma T
- Oregon N
- Rhode Island N
- Tennessee N
- Texas N
- Vermont N
- Virginia N
- Washington N
- West Virginia N

No Ban: (20 states)

- Alaska
- Florida
- Hawaii
- Idaho
- Michigan
- Mississippi
- Missouri
- Montana
- Nevada
- New Hampshire
- New Mexico
- New York
- North Dakota
- Ohio
- Pennsylvania
- South Carolina
- South Dakota
- Utah
- Wisconsin
- Wyoming

Figure 3. Map of Bans on All Cell Phones (hand-held and hands-free).



Bans on Texting

Complete Ban: (30 states + D.C.)

- Alaska
- Arkansas
- California
- Colorado
- Connecticut
- Delaware
- D.C.
- Georgia
- Illinois
- Iowa
- Kansas
- Kentucky
- Louisiana
- Maryland
- Massachusetts
- Michigan
- Minnesota
- Nebraska
- New Hampshire
- New Jersey
- New York
- North Carolina
- Oregon
- Rhode Island
- Tennessee
- Utah
- Vermont
- Virginia
- Washington
- Wisconsin
- Wyoming

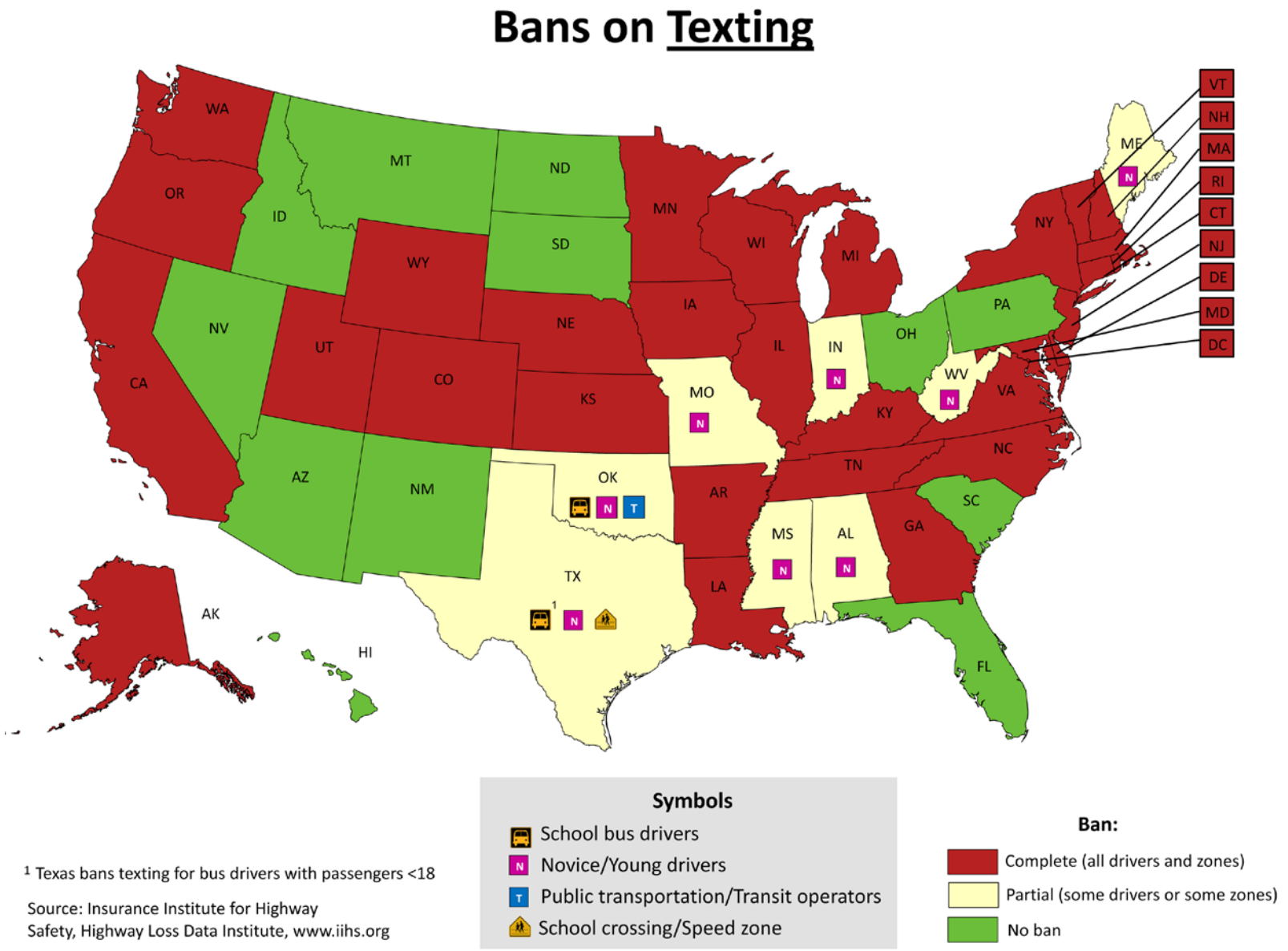
Partial Ban: (8 states)

- Alabama 
- Indiana 
- Maine 
- Mississippi 
- Missouri 
- Oklahoma 
- Texas 
- West Virginia 

No Ban: (12 states)

- Arizona
- Florida
- Hawaii
- Idaho
- Montana
- Nevada
- New Mexico
- North Dakota
- Ohio
- Pennsylvania
- South Carolina
- South Dakota

Figure 4. Map of Bans on Texting.



Enforcement of Distracted Driving Policies

Now that many states are enacting legislation to curb cell phone use while driving, the enforcement of that legislation is the next concern for police officers, researchers and government officials. Enforcement efforts across states are currently neither uniform nor well-documented, and there seems to be little consensus regarding best practices (Governors Highway Safety Association, 2010b). However, a few programs have been or are currently underway to examine the impacts of enforcement programs.

In 2009, New Jersey instituted a distracted driving enforcement and education program, including grants to law enforcement agencies to support specific enforcement programs and new signage informing drivers of the state's ban on texting and hand-held cell phones (Governors Highway Safety Association, 2010b). Police officers successfully observed (at intersections on the street or sitting in vehicles) and issued tickets to drivers who were texting or using a hand-held phone. Since enactment of their ban on hand-held phone use while driving in March of 2008, over 224,000 citations have been issued.

NHTSA is currently testing a pilot program to evaluate distracted driving enforcement programs in New York and Connecticut (Governors Highway Safety Association, 2010b). These programs will be modeled after seat belt enforcement programs (e.g., "Click It or Ticket") and will include four components: 1) data collection prior, during, and after program enforcement periods to assess changes in attitudes and behavior, 2) public service announcements across media domains, 3) highly visible enforcement efforts, and 4) program results announced via a media event and release. The motto of the program is "Phone in one hand. Ticket in the other." This pilot program should be completed by mid-2011 (National Highway Traffic Safety Administration, 2010b).

The lack of consensus and documentation of enforcement programs is undergirded by salient questions: What is actually enforceable, and which enforcement efforts work? Several issues are often raised in association with these questions:

What is enforceable?

Enforcement of distracted driving laws can be particularly difficult. Even when the behaviors that constitute illegal distracted driving have been clearly defined by legislation, observing and measuring those behaviors can be a challenge (Ranney, 2008).

Although many studies have found no differences in the risk associated with using a hand-held versus a hands-free cell phone while driving (McEvoy, et al., 2005; Redelmeier & Tibshirani, 1997), differences in the ease of enforcement have been noted (McCartt, Hellinga, & Braitman, 2006). The use of a hand-held cell phone (i.e., holding a phone to your ear while you talk) is much more easily observed than the use of a hands-free phone or device (McCartt, Hellinga, Strouse, & Farmer, 2009). Not surprisingly, the aforementioned enforcement programs primarily focused on hand-held phone conversations. However, even in states with hand-held cell phone bans, in many cases it is not against the law to manually manipulate the phone to initiate or answer a hands-free call (i.e., drivers can pick up the phone and press buttons to dial a number, scroll through contacts, or to answer a call) – which, according to Klauer et al. (2006) may be primary sources for distraction, as those tasks would take the driver's eyes off the road. Many laws may simply imply that drivers cannot hold the phone to their ear while they talk. This complicates the ability to enforce hand-held cell phone bans as well, since merely observing a driver manipulating a phone may not necessarily mean they are breaking the law.

In another issue regarding enforceability, the constitutionality of enforcing cell phone bans has been raised. According to an article by Jacobson (2010), court rulings upholding mandates on drivers for wearing seat belts and motorcycle helmets have established a precedent for protection of the general public over individual liberties in issues affecting highway safety. However, at the time of this report, we were unable to locate evidence of a consensus regarding enforcement policies, such as confiscation of cell phones and cell phone

records. Concern over the legality and potential extent of such measures has been the subject of news story speculation and online blogs (Boshart, 2010; Champion, 2009; Government of Ontario Ministry of Transportation, 2010; Johnson, 2010), but not much evidence exists for a uniform approach among states regarding this issue. However, it appears that, in most cases where a crash has occurred, cell phone records can be subpoenaed (Car Accident Overview, 2010; Childers, Schluete, & Smith, n.d.).

Which enforcement efforts work?

At a distracted driving summit convened in September, 2009, in Washington, D.C., by U.S. Transportation Secretary Ray LaHood, issues associated with enforcement difficulties were discussed, with a primary theme emerging: Experts agreed that enacting enforceable laws and having highly visible enforcement with significant penalties is the most effective way to affect behavior (Halsey, 2009b).

Primary seat belt enforcement laws, meaning that police officers can stop a vehicle solely for a seat belt violation rather than requiring another reason to stop them, have proven more effective in reducing fatalities than secondary enforcement laws (Liu, Lindsey, Chen, & Utter, 2006). Consequently, of states and jurisdictions enacting texting bans for all drivers (30 total plus D.C.), 26 plus D.C. have adopted primary enforcement, and of states and jurisdictions enacting hand-held cell phone bans for all drivers (9 plus D.C.), 7 plus D.C. have adopted primary enforcement (Governors Highway Safety Association, 2010a; Insurance Institute for Highway Safety (IIHS) Highway Loss Data Institute, 2010).

In a comparison of areas adopting cell phone bans early on, New York and Washington, D.C., Insurance Institute researchers found that the use of hand-held cell phones while driving decreased in D.C. by 41% immediately after a ban on their use was enacted in 2004. Five years later, they determined that hand-held cell phone usage was 43% less than what it would have been without the ban. However, rates in New York had risen since its ban was enacted. The difference was attributed to enforcement (Halsey, 2009a; McCartt, et al., 2009). D.C. officers issued over 28,000 tickets from 2004 to 2008, with fines of $100 per offense.

The severity of the penalty is typically believed to serve as a deterrent to using a cell phone while driving. States have enacted fines from $20 to $750 for cell phone-related offenses (Lohr, 2010). The presence of a more severe penalty (e.g., a higher fine) increases the perceived risk versus the perceived benefit of violating the law (Williams & Hawkins, 1986). Additionally, the size of the deterrent is expected to reduce the level of enforcement necessary to achieve the intended goal, circumventing many of the challenges that come with enforcement (e.g., overly general terminology in the law, difficulty observing the behavior, etc. (Jessop, 2008)) because drivers will elect not to risk the penalty (Kolko, 2009). More generally, the expectation is that larger penalties indicate that lawmakers and stakeholders are serious about the law, improving compliance when combined with enforcement. However, whether these expectations actually hold is still in question, especially for distracted driving laws. Recent investigations of deterrence for other behaviors suggest that the severity of the punishment may play a smaller role in compliance decisions than other factors (Barratt, Chanteloup, Lenton, & Marsh, 2005; Hussain, Nayyar, Brady, Beirne, & Stassen, 2006). It appears that the perceived severity of the penalty is less important than the perceived enforcement in improving compliance levels.

The Current Study

Purpose

The purpose of the current study was to examine behaviors, attitudes, and opinions of Mississippi adults with respect to the use of cell phones while driving. Specifically, the current study used a telephone survey of Mississippi adults to assess the following things:

1. the prevalence and frequency of cell phone use while driving, including the use of hands-free devices, the use of voice dialing, as well as exposure to distracted driving as a passenger
2. risk perception associated with distracted driving behaviors, including restrictions that drivers may place upon themselves when driving (e.g., only use a cell phone during emergencies or when the vehicle is not in motion, pulling off the roadway)
3. the impact of cell phone use while driving on driving performance, including crashes, near crashes, lane deviations, traffic delays, or missed turns/exits
4. opinions toward legislation that would restrict the use of cellular phones while driving, including the potential impact these laws might have on distracted driving behaviors

Methodology

Survey instrument.

The telephone survey instrument was constructed based upon a review of the distracted driving literature, including other distracted driving web-based and telephone surveys. The final questionnaire included items that measured distracted driving prevalence (i.e., Have you ever talked on a cell phone while driving?) and frequency (i.e., During the past 30 days, how often did you talk on a cell phone while you were driving?), exposure to distracted driving (i.e., as a passenger), risk perception, the impact of distracted driving on driving performance, and opinions toward legislation that would restrict the use of cell phones while driving. The final telephone survey instrument is in Appendix A.

Sample and survey procedures.

A telephone survey of Mississippi adults ages 18 and older was conducted between July 2 and July 25, 2010, using a random sample of 18,000 cell phone and landline numbers obtained from Survey Sampling International (SSI), a leader in the research sampling industry. The purpose of including cell phone numbers for this survey was to try to reach Mississippi adults whose only phone is a cell phone. Capturing this group of adults, who would not be reached using a landline-based telephone survey, is particularly important for the current line of research which involves the use of cell phones while driving. According to recent estimates from the National Health Interview Survey (Blumberg & Luke, 2009), approximately 20% of adults in the U.S. live in cell phone only households. The goal for the current survey was to interview at least 30% of the sample on cell phones in an attempt to capture respondents from this important group of cell phone only adults. The combination of cell phone and landline random digit dial (RDD) samples represents Mississippi adults ages 18 and older who have either a cell or landline phone.

Business phones, disconnected/non-working numbers, and fax machines were considered ineligible. Respondents were considered ineligible if they were not (1) at least 18 years of age and (2) a resident of Mississippi. The selection of respondents was slightly different for the two types of phones. For landline phones, interviewers used one of two clauses (chosen randomly by a computer) to select one respondent within a

household: they asked to speak to the person in the household who was at least 18 years old and (1) had the most recent birthday or (2) would have the next birthday. For cell phones, the person who answered the phone was considered the respondent as cell phones are generally owned by individuals and not shared among household members. For cell phone respondents, the interviewer confirmed that the individual was (1) in a location where he/she could safely talk, (2) at least 18 years of age, and (3) a resident of Mississippi. The procedures for the survey were approved by Mississippi State University's Institutional Review Board.

A total of 1,835 participants completed the telephone survey. The Council of American Survey Research Organizations (CASRO) overall response rate was 54.6% and the cooperation rate was 72.8%. See Table 2 below for an explanation of how response and cooperation rates were calculated.

Table 2. CASRO Response and Cooperation Rate Calculations.

Variable	Description of Variable	Total	Formula
A	Completed Interview	1,835	
B	Someone Refused	687	
C	Not Working Number / Did not qualify	10,280	
D	No Answer / Busy Signal	4,314	
E	Incomplete Callback	654	
F	Communication Problem	213	
G	Sample Total	17,983	G = ∑(A:F)
H	Total Eligible	2,522	H = A + B
I	Total Ineligible	10,493	I = C + F
	Cooperation Rate:	**72.8%**	$\frac{A}{(A+B)}$
	CASRO Response Rate:	**54.6%**	$\frac{A}{H+\left(D\frac{H}{(H+I)}\right)}$

Data from 31 participants were discarded before analyses. Data from 29 participants were discarded because their phone ownership (i.e., cell phone only, landline only, or both) could not be determined either because answers were inconsistent on questions about phone ownership, answers were not given to phone ownership questions (i.e., don't know or refused) or because questions about phone ownership were not asked. Data from 2 additional participants were discarded because they reported home zip codes that were not located in Mississippi. After removing data from these 31 participants, 1,804 remained for analyses. 683 (37.9%) were contacted from the sample of cell phone numbers and 1,121 (62.1%) were contacted from the sample of landline numbers.

The margin of error for the results reported in this paper varies according to the level of analysis (i.e., the total sample versus a subset of the sample) as well as the distribution of responses for the item. For a 50% response distribution, the margin of error for results based on the total sample (n=1,804) is no larger than $\pm$ 2.5% at a 95% confidence level. For results based on a subset of the sample, the margin of error would be larger.

Weighting.
The sample was weighted by race, gender, and age, based on the 2008 U.S. Census Bureau's population estimates.

Analyses.
All analyses were conducted on the weighted data and "don't know/missing" responses were not included. Descriptive statistics were calculated to show general response patterns for the overall sample. Pearson Chi-Square analyses were conducted to examine relationships between demographic variables (age, race, and gender) and other variables of interest (e.g., cell phone use, opinions toward legislation, impact of cell phone use on driving performance, etc.). For these analyses, respondents were grouped into 4 age categories which matched the U.S. Census Bureau's age categories that were used during data weighting (18-24, 25-44, 45-64, and 65+). In addition, race categories were collapsed into 2 groups: White and NonWhite (i.e., all other races).

Results

Sample characteristics.

Demographics.
Table 3, Table 4, and Table 5 show the unweighted number and weighted percentages of survey respondents by age group, gender, and race/ethnicity, respectively. For the weighted sample, the majority of respondents were 25-44 years of age (35.6%) with a mean age of 46.4 years. In addition, most respondents were female (53.3%), and White (62.9%). Additional tables with demographic information for the sample (including education, income and marital status) are available in Appendix B.

Table 3. Unweighted N and Weighted % for Respondent's Age Group

Age Group		Unweighted N	Weighted %
Valid	18-24	128	13.9%
	25-44	441	35.6%
	45-64	695	33.4%
	65+	465	17.0%
	Total	1,729	100.0%
Missing	Don't Know/Not Sure /Refused	75	
Total		1,804	

Base: All respondents (1,804)

Table 4. Unweighted N and Weighted % for Respondent's Gender

Gender		Unweighted N	Weighted %
Valid	Male	581	46.7%
	Female	1,223	53.3%
	Total	1,804	100.0%

Base: All respondents (1,804)

Table 5. Unweighted N and Weighted % for Respondent's Race/Ethnicity

Race/Ethnicity		Unweighted N	Weighted %
Valid	White	1,142	62.9%
	Black/African American	597	35.3%
	American Indian/Alaska Native	7	0.4%
	Asian	3	0.2%
	Native Hawaiian/Pacific Islander	1	0.1%
	Multi-racial	8	0.5%
	Some other race	6	0.6%
	Total	1,764	100.0%
Missing	Don't Know/Not Sure/Refused	40	
Total		1,804	

Base: All respondents (1,804)

Cell phone ownership and phone capabilities.

Respondents were classified into three phone ownership groups based on the types of phones they had: Cell phone only, landline only, or both (cell phone and landline). The majority of respondents had both cell phones and landline phones (69.0%). 21.4% only had cell phones and 9.7% only had landline phones (see Table 6). Thus, the majority of respondents had an active cell phone (21.4% cell phone only + 69.0% both = 90.4% cell phone owners).

Table 6. Unweighted N and Weighted % for Respondent's Phone Ownership.

Phone Ownership		Unweighted N	Weighted %
Valid	Cell Phone only	274	21.4%
	Landline only	208	9.7%
	Both	1,322	69.0%
	Total	1,804	100.0%

Base: All respondents (1,804)

Note. Percentages may not equal 100, due to rounding.

For those participants who had active cell phones, 76.3% indicated that their cell phone plans included text messaging and 49.5% indicated their plans allowed them to check their email or access the Internet.

Driving status.

Respondents were classified into three driver classification groups based on their responses to the question, "when was the last time you drove a car or other vehicle?" Respondents were classified as *current drivers* (92.8%) if they indicated that they had driven within the past 30 days, as *previous drivers* (4.9%) if they indicated that it had been more than 30 days since they had driven and as *non drivers* (2.3%) if they had never driven (see Table 7).

Table 7. Unweighted N and Weighted % for Respondent's Driver Classification Group.

Driver Classification Group		Unweighted N	Weighted %
Valid	Current Drivers (within the past 30 days)	1,647	92.8%
	Previous Drivers (> 30 days since driven)	106	4.9%
	Non Drivers (never driven)	47	2.3%
	Total	1,800	100.0%
Missing	Don't know/remember	4	
Total		1,804	

Base: All respondents (1,804)

Current drivers (n=1,647) were also asked to specify the number of days they had driven during the past 30 days. Those responses were classified into three ranges of days driven. The majority of respondents (76.6%) indicated that they had driven between 21-30 days in the past 30 days (see Table 8).

Table 8. Frequency of driving in the past 30 days.

Days driven in the past 30 days		Unweighted N	Weighted %
Valid	1-10 days	189	9.8%
	11-20 days	265	13.6%
	21-30 days	1,174	76.6%
	Total	1,628	100.0%
Missing	Don't Know/Not Sure/Refused	19	
Total		1,647	

Base: Current Drivers - driven within the past 30 days (1,647)

In addition to being asked how many days they drove in the past 30 days, current drivers were also asked to indicate how much time, on average, they spent driving on those days. Current drivers reported that they drove an average of 25 days in the past 30 days and they spent, on average, 105 minutes driving on the days they drove. In addition, by multiplying the number of days they drove by the average time they drove on those days, current drivers spent an average of 47.5 hours driving over the past 30 days which, if divided over all 30 days would translate into about 1.5 hours driving each day.

Prevalence and frequency of cell phone use while driving.

Self reports of cell phone use while driving.

All respondents who indicated that they had driven a vehicle at some point (i.e., current drivers and previous drivers) were asked the three following questions to determine their prevalence of using a cellular phone to talk, text, or email while driving:

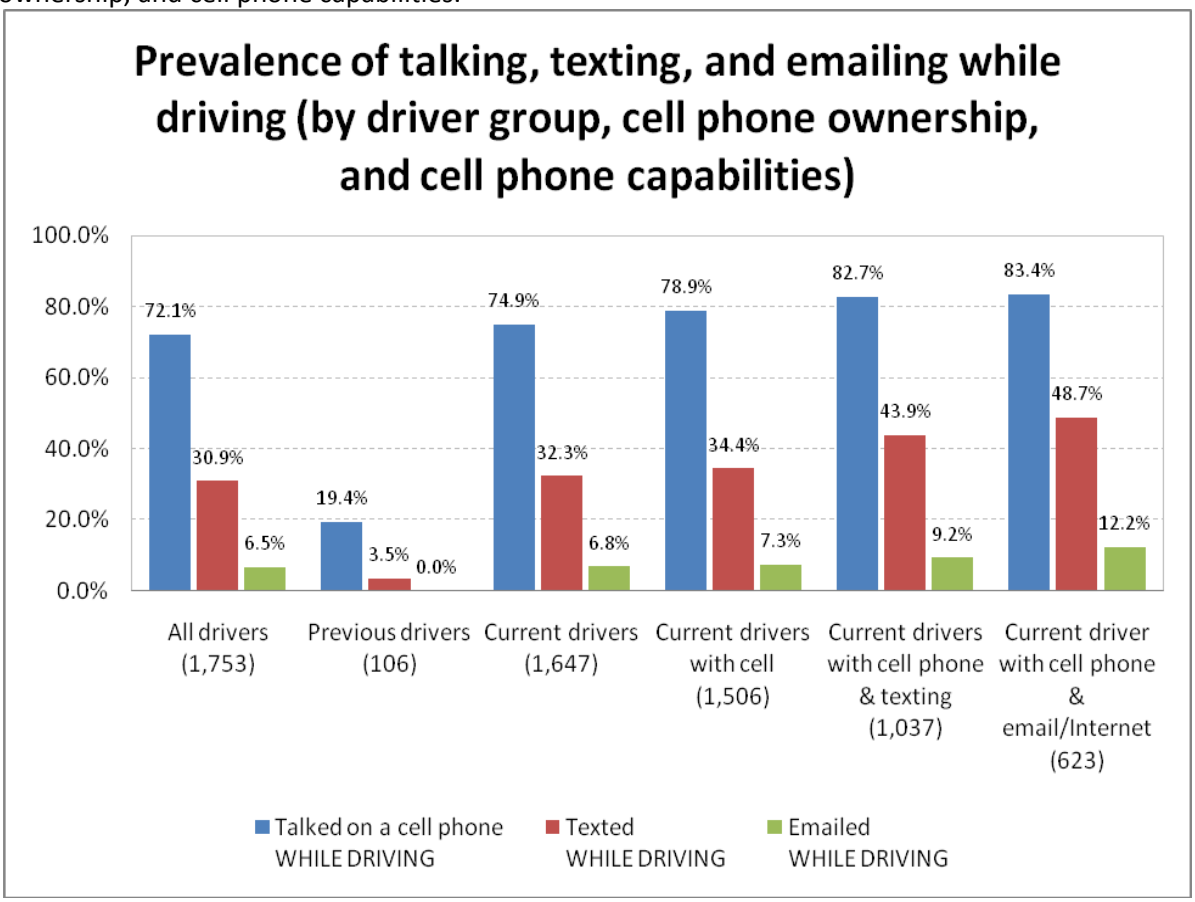
- Have you ever talked on a cell phone while driving?
- Have you ever read, written or sent a text message while driving?
- Have you ever read, written or sent an email while driving?

Table 9 and Figure 5 below show the unweighted number and weighted percentage of respondents who said "Yes" to the questions above.

Table 9. Percentage of drivers who have talked, texted, or emailed while driving by driver group, cell phone ownership, and cell phone capabilities.

Driver Group, Cell Phone Ownership and Capabilities	Talked while driving	Texted while driving	Emailed while driving
All drivers (1,753)	72.1%	30.9%	6.5%
Previous drivers – driven >30 days ago (106)	19.4%	3.5%	0.0%
Current drivers – driven in last 30 days (1,647)	74.9%	32.3%	6.8%
Current drivers with cell (1,506)	78.9%	34.4%	7.3%
Current drivers with cell phone & texting (1,037)	82.7%	43.9%	9.2%
Current driver with cell phone & email/Internet (623)	83.4%	48.7%	12.2%

Figure 5. Percentage of drivers who have talked, texted, or emailed while driving by driver group, cell phone ownership, and cell phone capabilities.



As can be seen in Table 9 and Figure 5, it is necessary to differentiate between *current drivers* and *previous drivers* with respect to distracted driving behaviors given the large differences between their self-reported behaviors. Because *previous drivers* may have driven several years ago, it is possible that their low percentages could be a function of many factors, including the increase in cell phone availability and ownership over the past several years.

Also, as would be expected, it is also apparent that cell phone ownership and calling plan features also influence distracted driving prevalence. It is likely that current drivers who own cell phones, particularly those with texting

and media packages would have more opportunities to talk, text, or email while driving. For the remainder of this report, analyses of self-reported distracted driving behaviors will focus on *current drivers* regardless of cell phone ownership or capabilities as that group would best represent all adult drivers (18+) who are currently on the roadway (not just those who own cellular phones).

The results from the telephone survey suggest that the following statements can be made about current adult drivers (ages 18 and older) in Mississippi:

- approximately 3 out of 4 (74.9%) have talked on a cell phone while driving.
- almost 1 out of 3 (32.3%) have read, written, or sent a text message while driving.
- less than 1 out of 10 (6.8%) have read, written, or sent an email while driving.
- Overall, 75.8% have either talked, texted, or emailed while driving.

To determine how *frequently* these drivers are talking, texting, or emailing while driving, they were asked how often they had engaged in those behaviors in the past 30 days (the response options were: never, rarely, sometimes, usually, or always). For this and all future questions, texting and emailing were combined (i.e., "During the past 30 days, how often did you read, write, or send text messages or emails while you were driving?).

For current drivers who had, at some point, talked on a cell phone while driving, approximately 1 out of 10 (8.3%) indicated that they had not done so in the past 30 days. And, slightly more than 3 out of 10 (32.5%) indicated that they "usually" or "always" talked on a cell phone while driving during the past 30 days (see Table 10).

Table 10. Frequency of talking on a cell phone while driving during the past 30 days.

During the past 30 days, how often did you talk on a cell phone while you were driving?		**Unweighted N**	**Weighted %**
Valid	Never	120	8.3%
	Rarely	419	31.9%
	Sometimes	311	27.4%
	Usually	154	15.6%
	Always	144	16.9%
	Total	1,148	100.0%
Missing	Don't Know/Not Sure/Refused	1	
Total		1,149	

Base: Current drivers who have ever talked on a cell phone while driving (1,149)

For current drivers who had, at some point, texted or emailed while driving, 14.5% indicated that they had not done so in the past 30 days. Approximately 1 out of 4 (25.1%) reported that they "usually" or "always" texted or emailed while driving during the past 30 days (see Table 11).

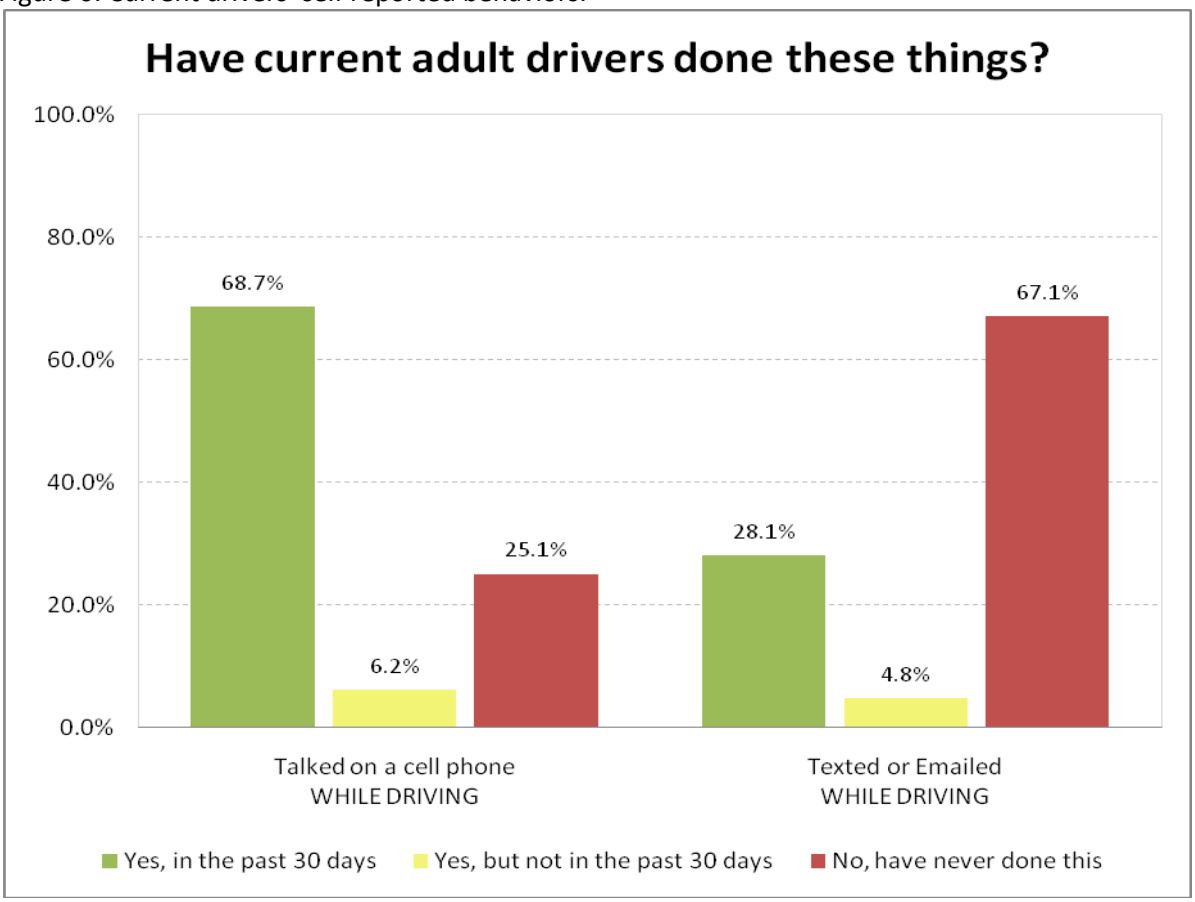
Table 11. Frequency of texting or emailing while driving during the past 30 days.

During the past 30 days, how often did you read, write, or send text messages or emails while driving?		Unweighted N	Weighted %
Valid	Never	64	14.5%
	Rarely	141	33.1%
	Sometimes	105	27.3%
	Usually	40	11.4%
	Always	45	13.7%
	Total	395	100.0%
Missing		0	
Total		395	

Base: Current drivers who have ever texted or emailed (395)

Figure 6 provides a breakdown of distracted driving behaviors for current drivers and specifies which behaviors they have ever engaged in versus those they have engaged in during the past 30 days. Almost 7 out of 10 (68.7%) current drivers reported that they had talked on a cell phone while driving during the past 30 days and almost 3 out of 10 (28.1%) had texted or emailed during that time.

Figure 6. Current drivers' self reported behaviors.



Base: Current Drivers - driven within the past 30 days (1,647)

Age, race, and gender differences in self-reported behaviors.
A series of chi-square analyses were performed to determine if there were associations between distracted driving behaviors and demographic variables (i.e., age, race, and gender).
For these analyses, drivers were classified into the following groups.

- Age – 18-24; 25-44; 45-64; 65+
- Race - White; NonWhite
- Gender – Male; Female

And driver behaviors were classified into the following categories.

- Ever talked while driving – Yes; No
- Ever texted while driving – Yes; No
- Ever emailed while driving – Yes; No

Figure 7, Figure 8, and Figure 9 below show the percentages of current adult drivers who have ever talked, texted, or emailed (by age, race, and gender). The following significant associations were found:

- Age

  Compared to older drivers, younger drivers were more likely to report that they had (a) talked on a cell phone while driving, (b) read, written, or sent text messages while driving and (c) read, written, or sent emails while driving

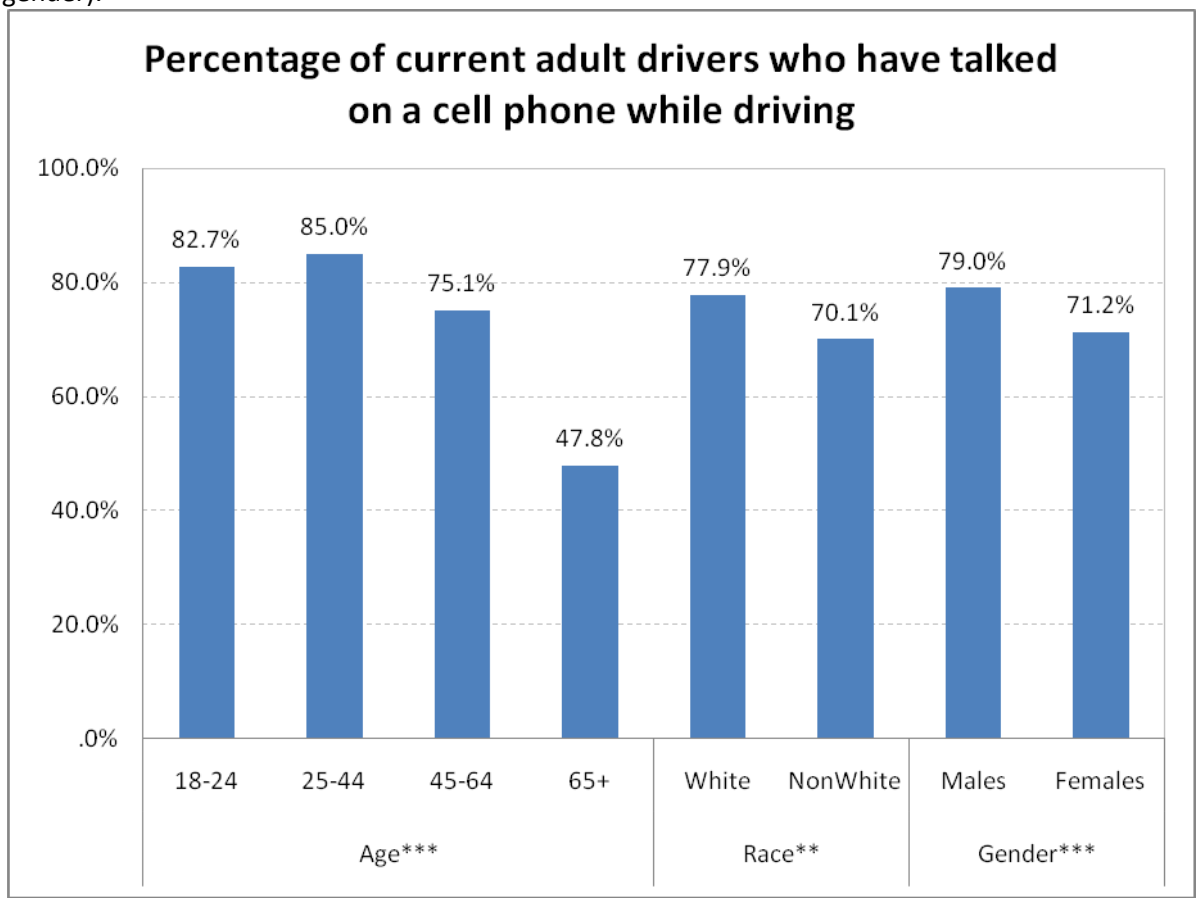
- Race

  Compared to NonWhite drivers, White drivers were more likely to report that they had talked on a cell phone while driving

- Gender

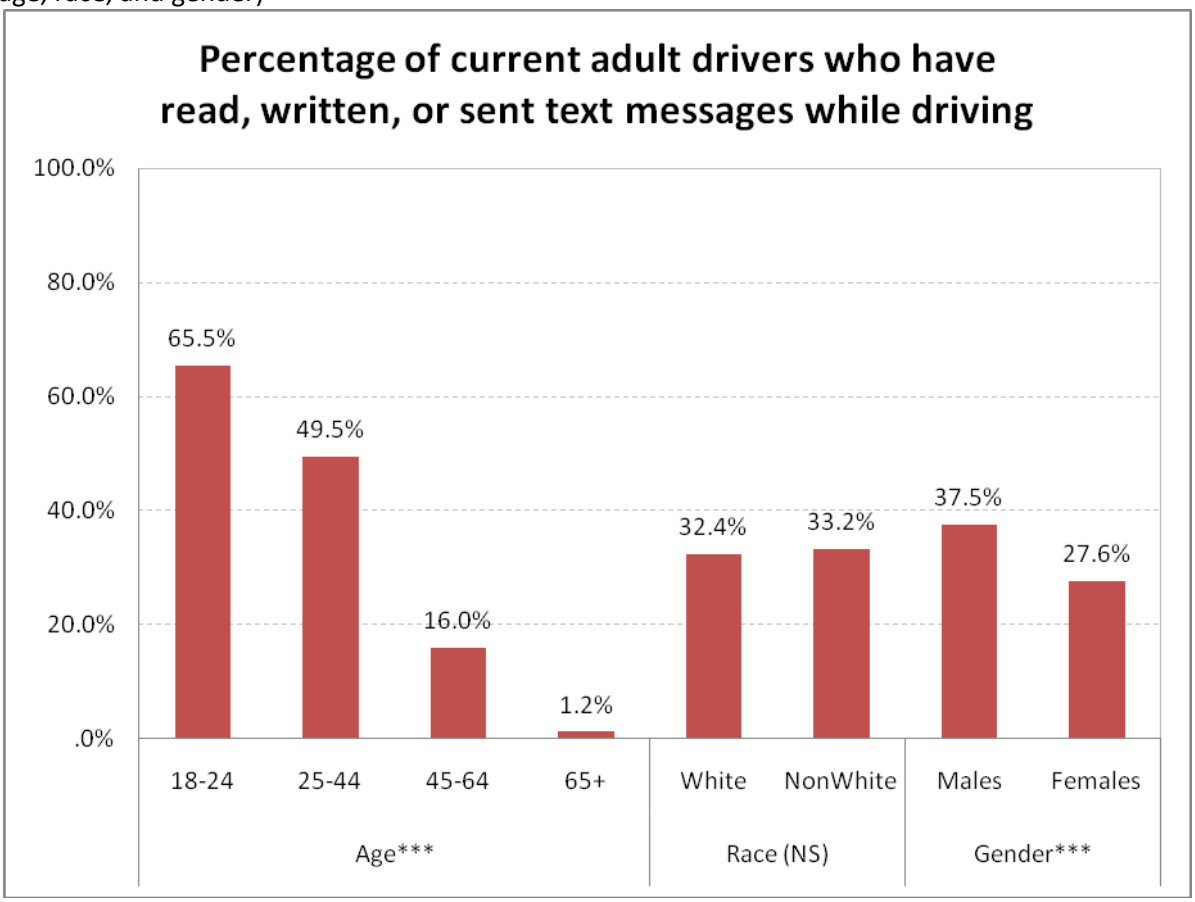
  Compared to females, males were more likely to report that they had (a) talked while driving, (b) read, written, or sent text messages while driving, and (c) read, written, or sent emails while driving

Figure 7. Percentage of current adult drivers who have talked on a cell phone while driving (by age, race, and gender).



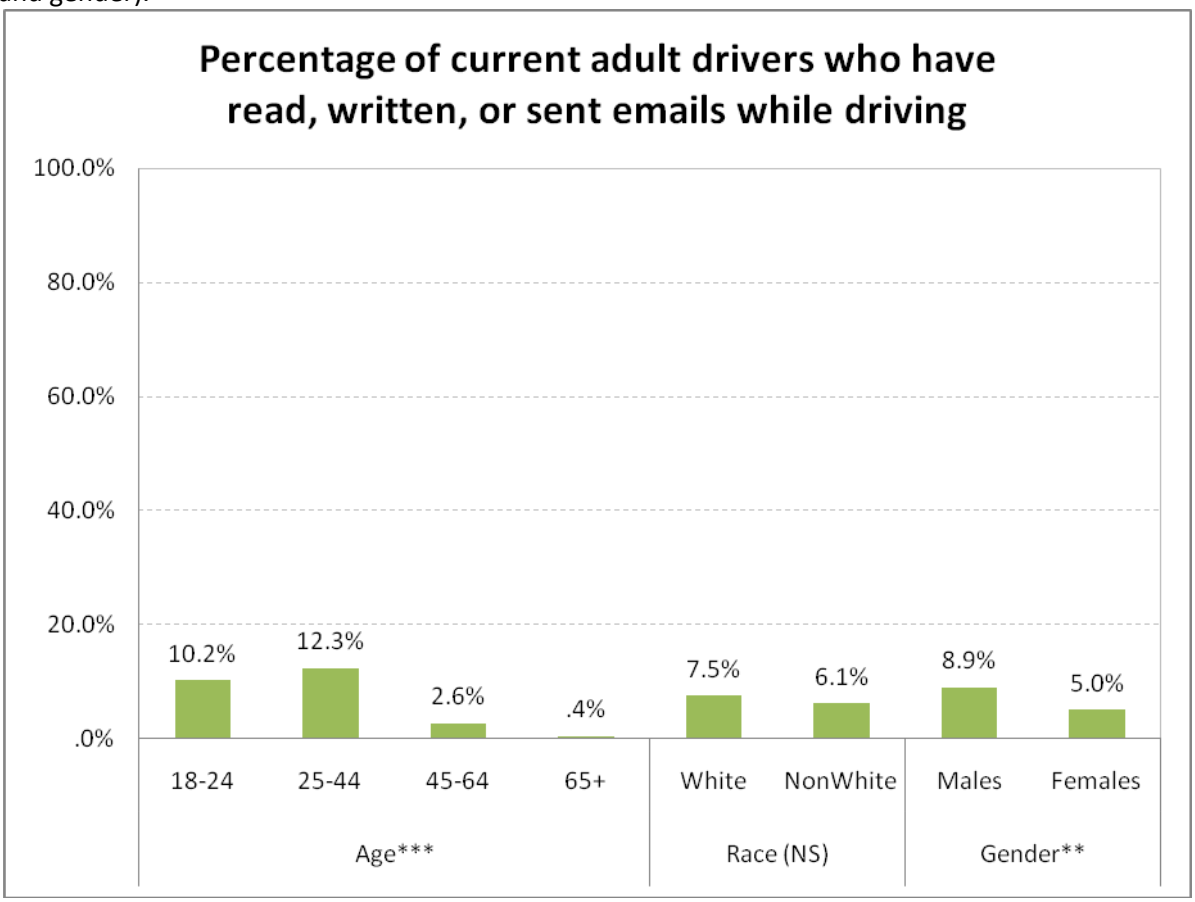
Base: Current Drivers - driven within the past 30 days (1,647)
** p<.01, *** p<.001

Figure 8. Percentage of current adult drivers who have read, written, or sent text messages while driving (by age, race, and gender)



Base: Current Drivers - driven within the past 30 days (1,647)
NS=Not Significant at .05, *** p<.001

Figure 9. Percentage of current adult drivers who have read, written, or sent emails while driving (by age, race, and gender).



Base: Current Drivers - driven within the past 30 days (1,647)
NS=Not Significant at .05, *** p<.001

Use of hands-free devices and voice dialing.

To determine how frequently current drivers use hands-free phones and voice dialing when they talk on a cell phone while driving, respondents were asked to indicate how often they used a hands-free device when they talked on a cell phone during the past 30 days. In addition, they were asked to indicate how frequently they used voice dialing or another hands-free dialing method when they made calls while driving.

Table 12 and Table 13 show responses to these questions. The results indicate that the majority of drivers who talk on a cell phone while driving never use hands free devices (63.0%) and, therefore, always use hand-held phones. However, 14.7% indicated that they always used a hands-free device when they talked on a cell phone while driving. For voice dialing, the majority of current drivers who had made calls in the last 30 days (75.4%) indicated that they never used it when making calls, but 7.5% indicated that they always used voice dialing.

Table 12. Frequency of using hands-free devices when talking on a cell phone while driving.

When you talked on a cell phone, how often did you use a hands-free device?		Unweighted N	Weighted %
Valid	Never	668	63.0%
	Rarely	57	5.6%
	Sometimes	98	10.2%
	Usually	58	6.4%
	Always	147	14.7%
	Total	1,028	100.0%
Missing		0	
Total		1,028	

Base: Current drivers who have talked on a cell phone while driving during the past 30 days (1,028)

Table 13. Frequency of using voice dialing or other hands free dialing method when calling someone while driving.

During the past 30 days, when you called someone while driving, how often did you use voice dialing or some other method that didn't require you to hold the phone?		Unweighted N	Weighted %
Valid	Never	779	75.4%
	Rarely	60	6.1%
	Sometimes	68	6.5%
	Usually	42	4.5%
	Always	76	7.5%
	Total	1,025	100.0%
Missing	Don't Know/Not Sure/Refused	3	
Total		1,028	

Base: Current drivers who have talked on a cell phone while driving during the past 30 days (1,028)

Exposure to distracted driving as a passenger.

Respondents were asked to indicated if they had ever been a passenger in a vehicle that was driven by someone who was either talking, texting, or emailing while driving. Table 14 and Table 15 show that the vast majority of respondents (88.6%) had ridden in a vehicle that was driven by someone who was talking on a cell phone and more than half (53.2%) had ridden with a driver who was texting or emailing.

Table 14. Respondents who had been a passenger when the driver was talking on a cell phone.

Been a PASSENGER when driver was talking on a cell phone?		Unweighted N	Weighted %
Valid	Yes	1,572	88.6%
	No	229	11.4%
	Total	1,801	100.0%
Missing	Don't Know/Not Sure/Refused	3	
Total		1,804	

Base: All respondents (1,804)

Table 15. Respondents who had been a passenger when the driver was texting or emailing.

Been a PASSENGER when driver was texting or emailing?		Unweighted N	Weighted %
Valid	Yes	850	53.2%
	No	943	46.8%
	Total	1,793	100.0%
Missing	Don't Know/Not Sure/Refused	11	
Total		1,804	

Base: All respondents (1,804)

Age, race, and gender differences in exposure to distracted driving as a passenger.

To determine if there were any associations between exposure to distracted driving and demographic variables (i.e., age, race, and gender), chi-square analyses were performed. Figure 10 and Figure 11 show the percentage of all adults who have been a passenger in a vehicle driven by someone who was talking (Figure 10) or sending text messages or emails (Figure 11). The following significant associations were found:

- Age

  Compared to older adults, younger adults were more likely to report that they had been a passenger in a vehicle driven by someone who was (a) talking on a cell phone while driving, and (b) texting or emailing while driving.

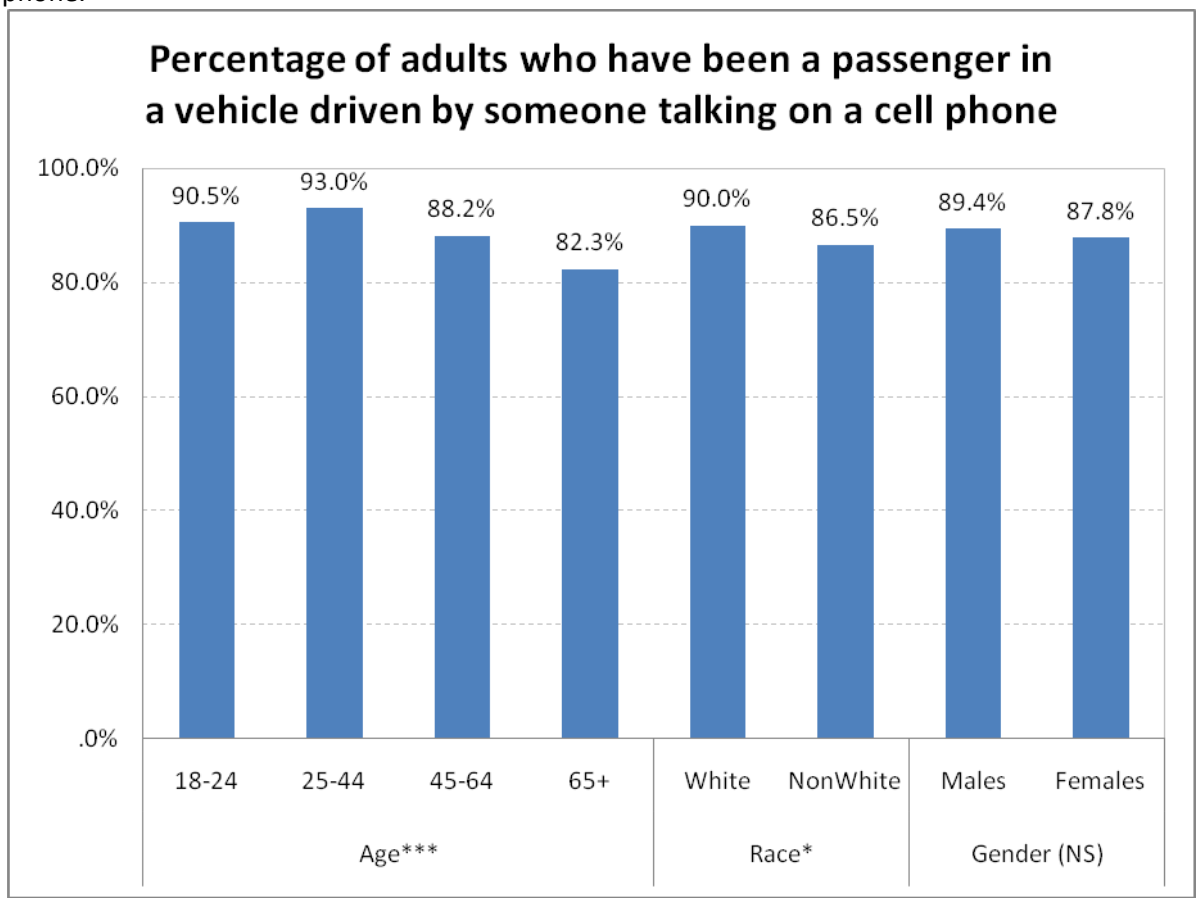
- Race

  Compared to NonWhite adults, White adults were more likely to report that they had been a passenger in a vehicle driven by someone who was talking on a cell phone while driving.

- Gender

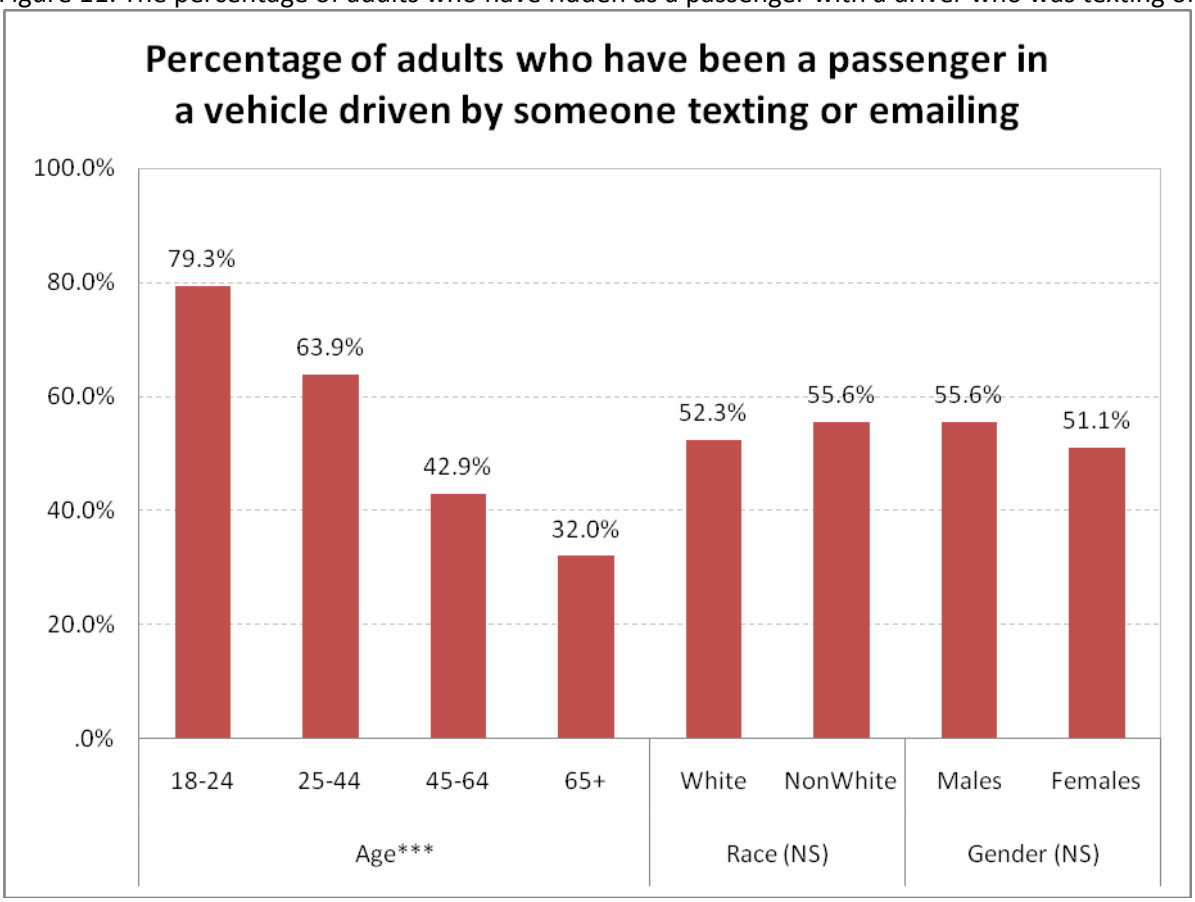
  The results of the chi-square analyses revealed no significant associations between gender and the likelihood of riding as a passenger when the driver was talking on a cell phone or riding with a driver who was texting or emailing.

Figure 10. The percentage of adults who have been a passenger in a vehicle driven by someone talking on a cell phone.



Base: All respondents (1,804)

Figure 11. The percentage of adults who have ridden as a passenger with a driver who was texting or emailing.



Base: All respondents (1,804)

Risk perception associated with distracted driving behaviors.

Respondents were asked to provide ratings of crash risk for various behaviors that people might engage in while driving. They gave risk ratings on a scale of 0-10, with 0 being "no risk beyond normal driving" and 10 being "extremely risky." Table 16 below shows the mean ratings for various traffic safety issues. The table is sorted according to the mean rating where the issues that received higher risk ratings are at the top and issues that received lower risk ratings are at the bottom. The highest mean risk ratings were for "driving while intoxicated," (9.7) followed by, "texting or emailing while driving," (8.7) and "talking on a hand-held cell phone while driving." (6.8). Respondents gave similar ratings to "talking on a hands-free cell phone while driving," (4.3) and "talking to other passengers in the car while driving." (4.1). These results suggest that Mississippi adults, like the nation as a whole see texting as the most risky of cell-phone related distracted driving behaviors, followed by hand-held cell phone use, and then hands-free cell phone use. And, it appears that they do not see talking on a hands-free cell phone as any more risky than talking to other passengers in the car.

Table 16. Risk perception for various traffic safety issues.

On a scale of 0 to 10, with 0 being "no risk beyond normal driving" and 10 being "extremely risky," please rate how risky each of the following are:	Unweighted N (Valid)	Weighted Mean (SD)
Driving while intoxicated?	1,793	9.7 (1.2)
Texting or emailing while driving?	1,782	8.7 (2.1)
Talking on a hand-held cell phone while driving?	1,777	6.8 (2.8)
Talking on a hands-free cell phone while driving?	1,740	4.3 (3.0)
Talking to other passengers in the car while driving?	1,761	4.1 (2.9)

Base: All respondents (1,804)

Age, race, and gender differences in risk perception.

The following trends were observed with respect to risk perception ratings and demographic variables (i.e., age, race, and gender). See Table 17 for the mean ratings for each behavior by age, race, and gender.

- Age

  In general, older respondents rated the traffic safety issues as more risky than younger respondents.

- Race

  In general, NonWhite respondents rated the traffic safety issues as more risky than White respondents.

- Gender

  In general, female respondents rated the traffic safety issues are more risky than male respondents.

Table 17. Crash risk ratings by age, race, and gender.

	Talking to other passengers while driving	Driving while intoxicated	Talking on a hand held cell phone while driving	Talking on a hands free cell phone while driving	Texting or emailing while driving
All Respondents	4.1	9.7	6.8	4.3	8.7
Age					
18-24	4.1	9.6	6.0	3.2	7.8
25-44	3.7	9.7	6.0	3.4	8.3
45-64	4.4	9.9	7.2	4.8	9.2
65+	4.4	9.8	8.0	5.6	9.5
Race					
White	3.6	9.8	6.4	4.1	8.7
NonWhite	5.0	9.7	7.4	4.5	8.8
Gender					
Males	4.1	9.6	6.3	3.9	8.3
Females	4.2	9.9	7.2	4.6	9.1

Base: All respondents (1,804)

Self-imposed restrictions on cell phone use while driving.

Current drivers who had talked, texted, or emailed while driving in the past 30 days were asked to indicate if they had any self-imposed restrictions on when they did so. Table 18 and Table 19 show responses to possible restrictions on talking or on texting/emailing while driving, respectively.

The majority of current drivers who talked on a cell phone while driving in the past 30 days reported that they use their phone for non-emergency calls (75.4%). 24.6% said that they only talk on a cell phone while driving during emergency situations. Because an emergency situation wasn't defined for this question (i.e., calling law enforcement or emergency personnel), it is likely that this reported percentage is higher than the percentage who only use a phone while driving to contact those groups during an actual emergency situation. Thus, this finding should be interpreted with caution. 38.2% of current drivers who had talked on a cell phone in the last 30 days indicated that they don't make calls while driving (i.e., they only take incoming calls). Finally, only 15.5% of respondents indicated that they only made calls when their car was not moving, meaning that the vast majority (84.5%) of current drivers who talk on a cell phone while driving, do so when their car is in motion.

Table 18. Self-imposed restrictions on talking on a cell phone while driving.

I only talk on my cell phone while driving when I'm in an emergency situation		**Unweighted N**	**Weighted %**
Valid	Yes	281	24.6%
	No	739	75.4%
	Total	1,020	100.0%
Missing	Don't Know/Not Sure/Refused	8	
Total		1,028	
I only talk on my cell phone while driving when someone calls me. I don't make calls while driving.		**Unweighted N**	**Weighted %**
Valid	Yes	432	38.2%
	No	583	61.8%
	Total	1,015	100.0%
Missing	Don't Know/Not Sure/Refused	13	
Total		1,028	
I only talk on my cell phone while driving when my car is not moving.		**Unweighted N**	**Weighted %**
Valid	Yes	182	15.5%
	No	836	84.5%
	Total	1,018	100.0%
Missing	Don't Know/Not Sure/Refused	10	
Total		1,028	

Base: Current drivers who have talked on a cell phone while driving during the past 30 days (1,028)

Approximately 1 out of 5 (20.1%) current drivers who had texted or emailed while driving in the past 30 days reported that they only do so when they are in emergency situations. As for talking, this finding should be interpreted with caution as an “emergency situation” was not defined in the question so it is likely that this percentage is inflated. About 1 out of 4 (26.5%) indicated that they only read incoming texts and emails while driving (i.e., they don’t write or send them). And, 23.1% said they only text or email when their car is not moving. This suggests that approximately 3 out of 4 drivers who text or email while driving, do so when their car is in motion (76.9%).

Table 19. Self-imposed restrictions on texting and emailing while driving.

I only text or email while driving when I'm in an emergency situation		Unweighted N	Weighted %
Valid	Yes	72	20.1%
	No	253	79.9%
	Total	325	100.0%
Missing	Don't Know/Not Sure/Refused	6	
Total		331	
I only read texts or emails while driving. I don't write or send them.		**Unweighted N**	**Weighted %**
Valid	Yes	96	26.5%
	No	232	73.5%
	Total	328	100.0%
Missing	Don't Know/Not Sure/Refused	3	
Total		331	
I only text or email while driving when my car is not moving.		**Unweighted N**	**Weighted %**
Valid	Yes	88	23.1%
	No	239	76.9%
	Total	327	100.0%
Missing	Don't Know/Not Sure/Refused	4	
Total		331	

Base: Current drivers who have texted or emailed during the past 30 days (331)

Respondents were also asked how often, in the past 30 days, they had pulled off the roadway when they talked, texted, or emailed while driving. Table 20 and Table 21 below show responses to these questions from drivers who had talked, texted, or emailed during the past 30 days. For both talking and texting/emailing while driving, the majority of respondents who had engaged in those activities during the past 30 days, reported that they never pulled off the roadway to do so. 60.3% of respondents said they never pulled off the roadway when they talked on a cell phone while driving and 66.3% never pulled off the roadway when they texted/emailed while driving. Thus, the majority of current drivers who are engaging in cell phone conversations or in texting/emailing while driving are doing so on the traveled roadway.

Table 20. How often drivers pulled off roadway to talk on a cell phone.

When you talked on a cell phone, how often did you pull off the roadway to do so?		Unweighted N	Weighted %
Valid	Never	591	60.3%
	Rarely	186	17.9%
	Sometimes	155	13.7%
	Usually	63	5.5%
	Always	33	2.6%
	Total	1,028	100.0%
Missing		0	
Total		1,028	

Base: Current drivers who have talked on a cell phone while driving during the past 30 days (1,028)

Table 21. How often drivers pulled off roadway to text or email.

When you texted or emailed, how often did you pull off the roadway to do so?		Unweighted N	Weighted %
Valid	Never	211	66.3%
	Rarely	56	16.8%
	Sometimes	41	10.8%
	Usually	18	5.3%
	Always	4	0.9%
	Total	330	100.0%
Missing	Don't Know/Not Sure/Refused	1	
Total		331	

Base: Current drivers who have texted or emailed during the past 30 days (331)

The impact of cell phone use while driving on driving performance.

Reports of impact on their own driving performance.

Current drivers who had, at some point, talked on a cell phone or texted/emailed while driving, were asked what things had happened to their driving performance when they were performing those activities. Respondents were asked:

Please tell me which of the following have happened to you while you were driving a car and [talking on a cell phone; texting or emailing]:

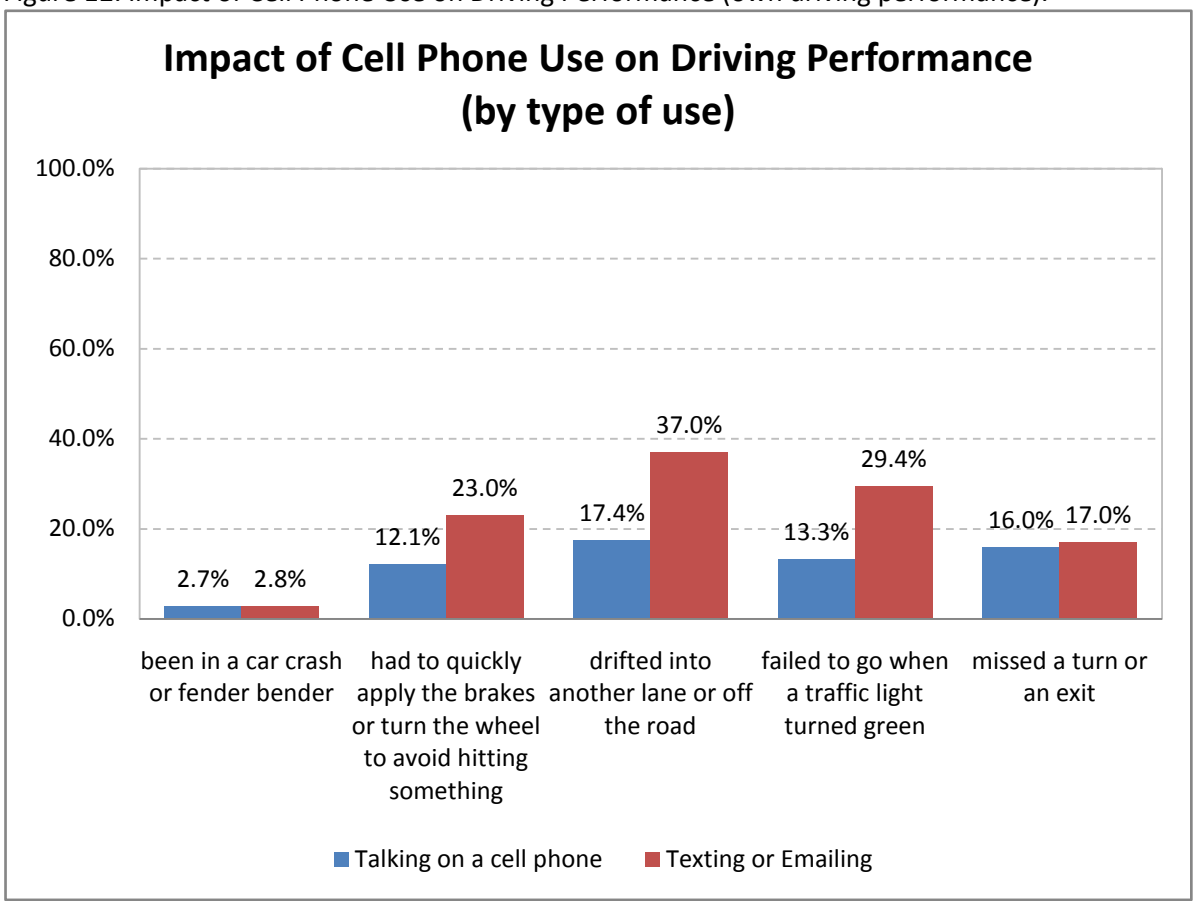
While [talking on a cell phone; texting or emailing], you

- were involved in a car crash or fender bender.
- had to quickly apply the brakes or turn the wheel to avoid hitting something
- drifted into another lane or off the road.
- failed to go when a traffic light turned green.
- missed a turn or an exit.

Overall, almost half (49.3%) of current drivers who had talked, texted, or emailed while driving, reported that, while doing so, they had experienced at least one of the impacts on driving performance from the list above.

Figure 12 below shows the percentages of drivers who responded that they had experienced each type of driving performance detriment while talking, or texting/emailing. The impact reported the most, for both those who had talked on a cell phone and those who had texted/emailed, was that they had drifted into another lane or off the roadway when they were engaged in those activities. Almost 4 out of 10 (37.0%) respondents who had *texted or emailed*, reported that they had drifted into another lane or off the roadway while doing so. And, almost 2 out of 10 respondents who had *talked on a cell phone* while driving reported this impact (17.4%). For those who had texted or emailed, almost 3 out of 10 (29.4%) said that when they were doing so they failed to go when a traffic light turned green, and more than 2 out of 10 (23.0%) said that they had quickly applied the brakes or turned the wheel to avoid hitting something. The results presented in Figure 12 show that, in general, a higher percentage of current drivers who have ever texted/emailed while driving, report that their driving behaviors have been impacted while doing so, compared to drivers who reported experiencing those impacts when driving and talking on a cell phone.

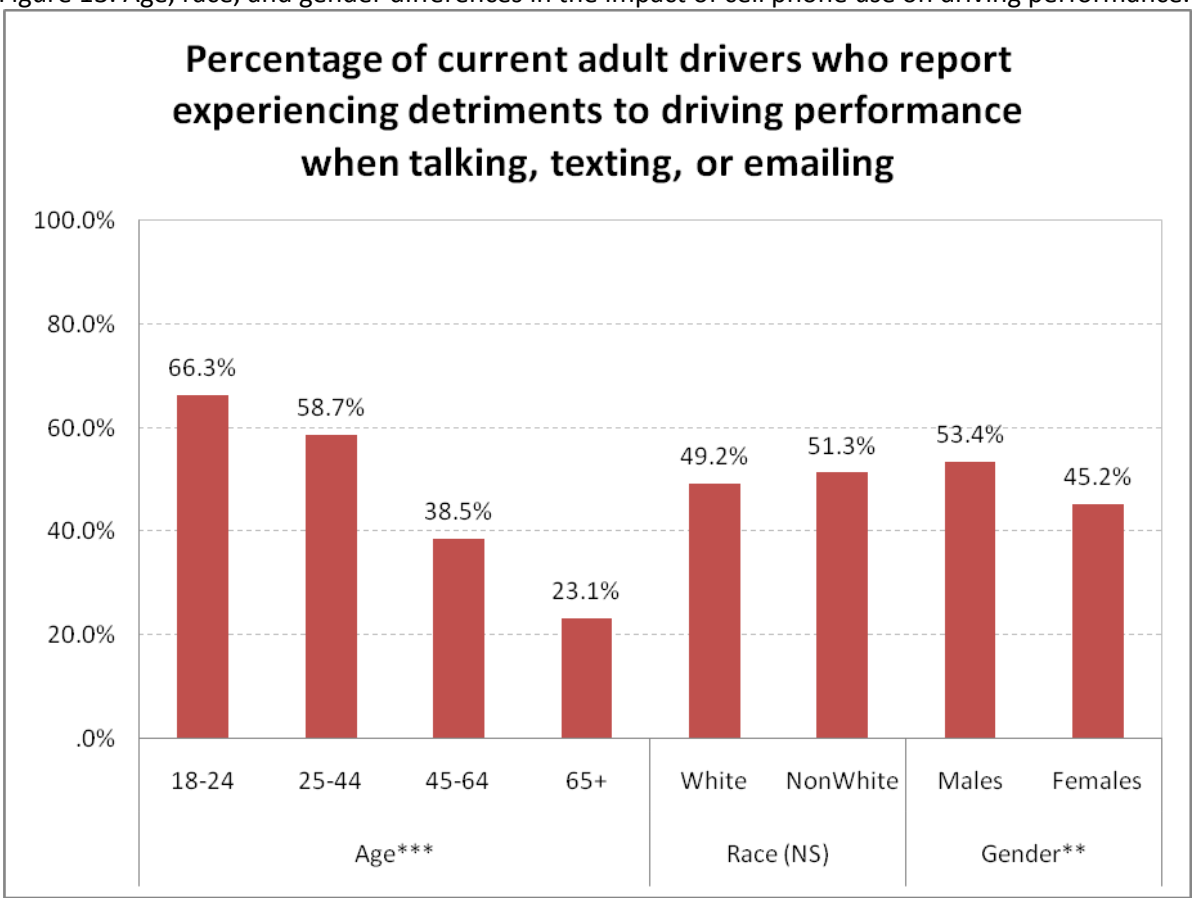
Figure 12. Impact of Cell Phone Use on Driving Performance (own driving performance).



Base for talking on a cell phone: Current drivers who have ever talked on a cell phone while driving (1,149);
Base for texting or emailing: Current drivers who have ever texted or emailed while driving (395)

Age, race, and gender differences in the impact of cell phone use on driving performance.
As previously reported, almost half (49.3%) of current drivers who have talked, texted, or emailed while driving, report that, while doing so, they have experienced at least some detrimental impact on their driving performance. Figure 13 below shows (by age, race, and gender) the percentage of current drivers who reported that they had experienced impacts on their driving performance when they were talking, texting, or emailing. Significant associations were observed between age groups and gender with respect to detriments on driving performance. That is, a higher percentage of young drivers and male drivers reported that their driving performance had been impacted when they were talking, texting, or emailing.

Figure 13. Age, race, and gender differences in the impact of cell phone use on driving performance.



Base. Current drivers who have ever talked, texted, or emailed while driving (1,160)
**p<.01, ***p<.001

Reports of impact on others' driving performance.

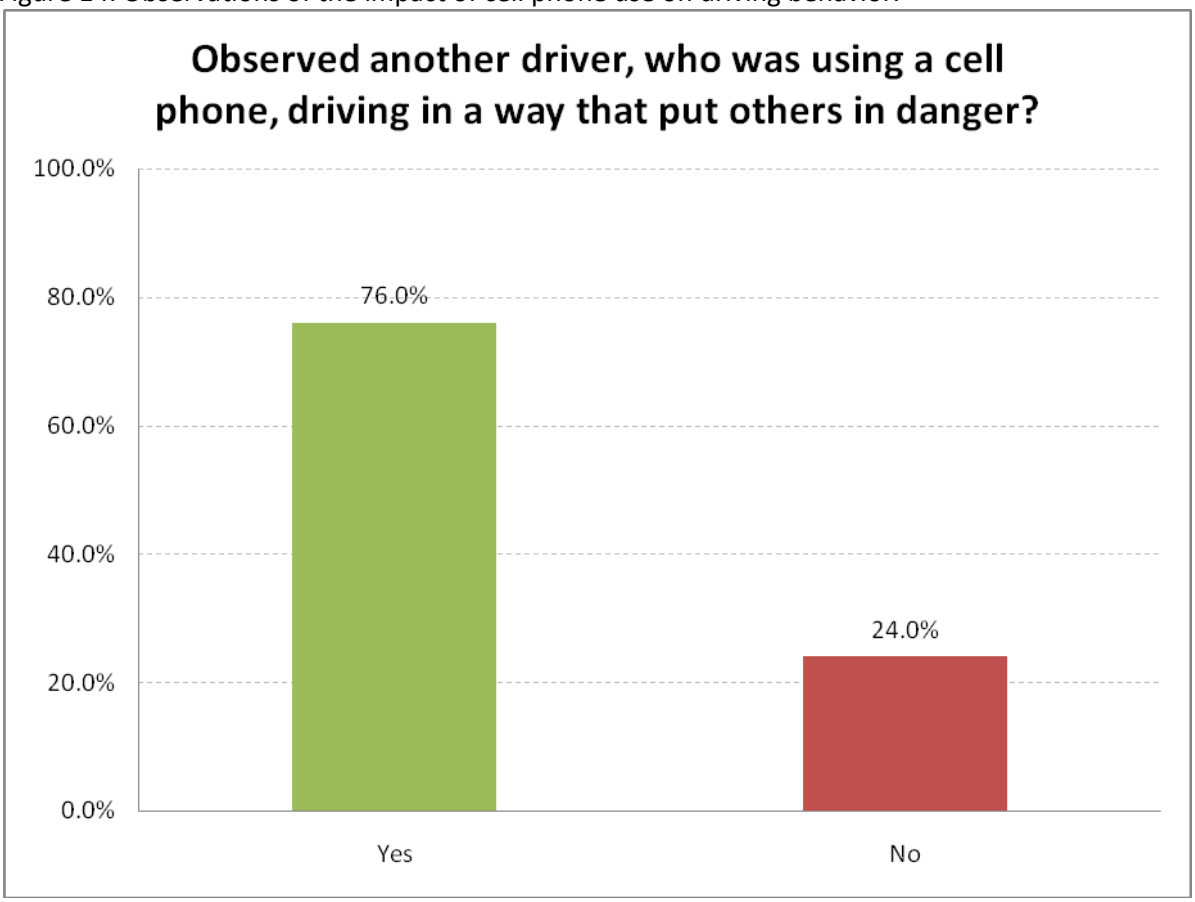
All respondents were asked two questions about their experience either as a passenger or observer of a driver who was talking, texting, or emailing. The first question was, "Have you ever been involved in a car crash or fender bender caused by a driver who was using a cell phone?" The second question was, "Have you ever observed another driver, who was using a cell phone, driving in a way that put others in danger?" Table 22 and Figure 14 below show the responses to those questions. 4.0% of respondents indicated that they had been in a car crash or fender bender that was caused by a driver who was using a cell phone. And, about 3 out of 4 respondents indicated that they had observed a driver using a cell phone driving in a way that put others in danger (76.0%).

Table 22. Percentage of respondents who had been in a car crash or fender bender caused by a driver using a cell phone.

Been in a car crash or fender bender caused by a driver who was using a cell phone?		**Unweighted N**	**Weighted %**
Valid	Yes	64	4.0%
	No	1,728	96.0%
	Total	1,792	100.0%
Missing	Don't Know/Not Sure/Refused	12	
Total		1,804	

Base: All respondents (1,804)

Figure 14. Observations of the impact of cell phone use on driving behavior.



Base: All respondents (1,804)

Opinions toward legislation that would restrict the use of cellular phones while driving.

Support for or opposition to cell phone laws in Mississippi.

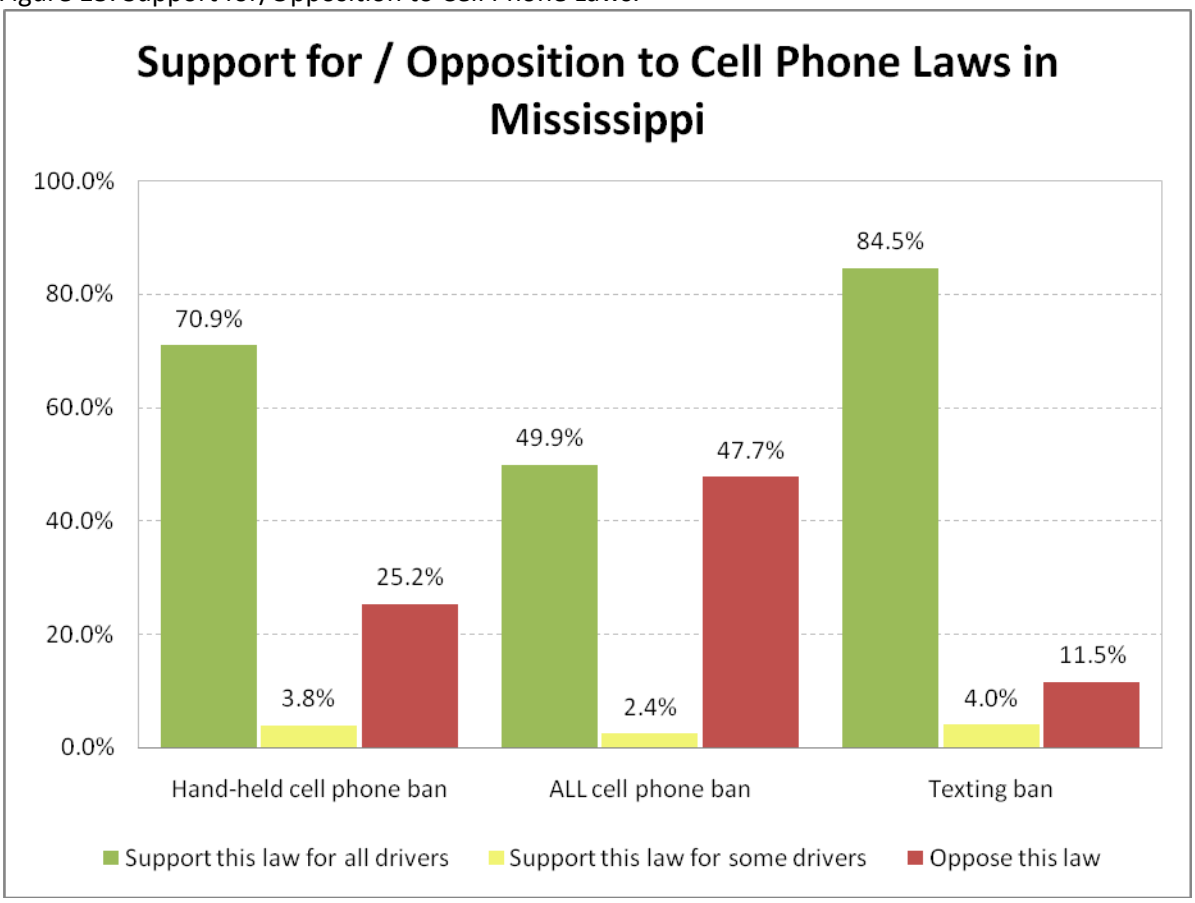
All respondents were asked about their support for or opposition to certain laws in Mississippi that would restrict the use of cell phones while driving. For the three questions below, respondents were asked to indicate if they would (a) support the law for all drivers, (b) support the law for some drivers, such as teens or bus drivers, or (c) if they would oppose the law. The three support/opposition questions were the following:

- Would you support or oppose a law in Mississippi that would make it illegal for drivers to TALK on a cell phone while driving, unless they used a HANDS-FREE DEVICE such as an earpiece, headset, or Bluetooth connection? [this measures support/opposition regarding HAND-HELD bans]
- Would you support or oppose a law in Mississippi that would make it illegal for drivers to have ANY cell phone conversations while driving, except in emergency situations? That is, drivers could not have cell phone conversations even if they used a hands free device. [this measures support/opposition regarding ALL cell phone bans]
- Would you support or oppose a law in Mississippi that would make it illegal for drivers to read, write or send text messages or emails while driving? [this measures support for TEXTING bans]

Figure 15 shows the percentage of Mississippians who would support certain laws for all drivers, support them for some drivers, or oppose them. The highest support was for a law that would ban texting/emailing while driving. More than 8 out of 10 respondents supported this law for ALL drivers (84.5%), 4.0% supported it for

some drivers, and 11.5% opposed this law. The second highest level of support was for a hand-held cell phone ban. More than 7 out of 10 respondents supported this law for ALL drivers (70.9%), an additional 3.8% supported it for some drivers, and 25.2% opposed this law. Finally, respondents were almost equally divided on their support for/opposition to a law that would ban the use of all cell phones while driving, except in emergencies. Approximately one-half of respondents (49.9%) supported this law for all drivers, an additional 2.4% supported this law for some drivers (such as teens and school bus drivers), and approximately one-half (47.7%) opposed this law.

Figure 15. Support for/Opposition to Cell Phone Laws.



Base: All respondents (1,804)

Age, race, and gender differences in support for/opposition to cell phone laws.
Chi-square analyses were conducted to determine if there were any significant associations between support/opposition and demographic variables (i.e., age, race, and gender). The results are presented separately for hand-held bans, all cell phone bans, and texting bans.

Hand-held bans.

Table 23 below shows the percentage of respondents, by age, race, and gender who indicated that they would support or oppose a law that would make it illegal in Mississippi for drivers to talk on a cell phone while driving unless they used a hands-free device. In general, older respondents were more supportive of this law than were younger respondents. NonWhite respondents were more supportive than White respondents and females were more supportive than males.

Table 23. Support for / Opposition to Hand-held cell phone ban (by age, race, and gender of respondent).

Would you support or oppose a law in Mississippi that would make it illegal for drivers to TALK on a cell phone while driving, unless they used a HANDSFREE DEVICE			
	Support for ALL drivers	Support for SOME drivers	Oppose
All Respondents	70.9%	3.8%	25.2%
Age***			
18-24	61.1%	3.8%	35.0%
25-44	63.9%	6.2%	29.9%
45-64	77.1%	2.5%	20.4%
65+	81.9%	1.1%	17.0%
Race*			
White	69.0%	3.5%	27.5%
NonWhite	74.0%	4.5%	21.5%
Gender***			
Males	65.1%	3.1%	31.9%
Females	76.1%	4.4%	19.5%

Base: All respondents (1,804)

*p<.05, **p<.01, ***p<.001

ALL cell phone bans.

Table 24 below shows the percentages of respondents, by age, race, and gender who indicated that they would support or oppose a law that would make it illegal in Mississippi for drivers to have ANY cell phone conversations while driving (hand-held or hands-free), except in emergency situations. As for the hand-held phone bans, older respondents were more supportive of this law than were younger drivers. NonWhite respondents were more supportive than White respondents and females were more supportive than males.

Table 24. Support for / Opposition to an ALL cell phone ban (by age, race, and gender of respondent).

Would you support or oppose a law in Mississippi that would make it illegal for drivers to have ANY cell phone conversations while driving, except in emergency situations?			
	Support for ALL drivers	Support for SOME drivers	Oppose
All Respondents	49.9%	2.4%	47.7%
Age***			
18-24	40.8%	1.3%	57.9%
25-44	37.4%	2.9%	59.7%
45-64	55.0%	2.4%	42.7%
65+	71.6%	2.8%	25.5%
Race*			
White	48.2%	1.9%	49.9%
NonWhite	52.4%	3.3%	44.3%
Gender***			
Males	43.3%	1.6%	55.1%
Females	55.7%	3.1%	41.2%

Base: All respondents (1,804)

*p<.05, **p<.01, ***p<.001

Texting/Emailing bans.

Table 25 below shows the percentages of respondents, by age, race, and gender who indicated that they would support or oppose a law that would make it illegal in Mississippi for drivers to read, write or send text messages or emails while driving. As for the hand-held phone bans, older respondents were more supportive of this law than were younger drivers and females were more supportive than males. However, for this law, White respondents were more supportive than NonWhite respondents, which was not the case for the two previous laws.

Table 25. Support for / Opposition to a texting/email ban (by age, race, and gender of respondent).

Would you support or oppose a law in Mississippi that would make it illegal for drivers to read, write or send text messages or emails while driving?			
	Support for ALL drivers	Support for SOME drivers	Oppose
All Respondents	84.5%	4.0%	11.5%
Age***			
18-24	74.7%	4.4%	21.0%
25-44	77.5%	7.7%	14.8%
45-64	91.9%	1.8%	6.3%
65+	91.0%	0.7%	8.3%
Race***			
White	86.6%	4.1%	9.3%
NonWhite	80.3%	4.1%	15.5%
Gender***			
Males	80.8%	4.7%	14.5%
Females	87.8%	3.3%	8.9%

Base: All respondents (1,804)

Potential impact of laws on cell phone use while driving.

To examine the potential impact that these laws might have on cell phone use while driving, current drivers who had engaged in talking, texting, or emailing in the past 30 days were asked how these bans would influence their cell phone use behaviors. Thus, they were asked the following questions if they had engaged in the specified behavior in the past 30 days.

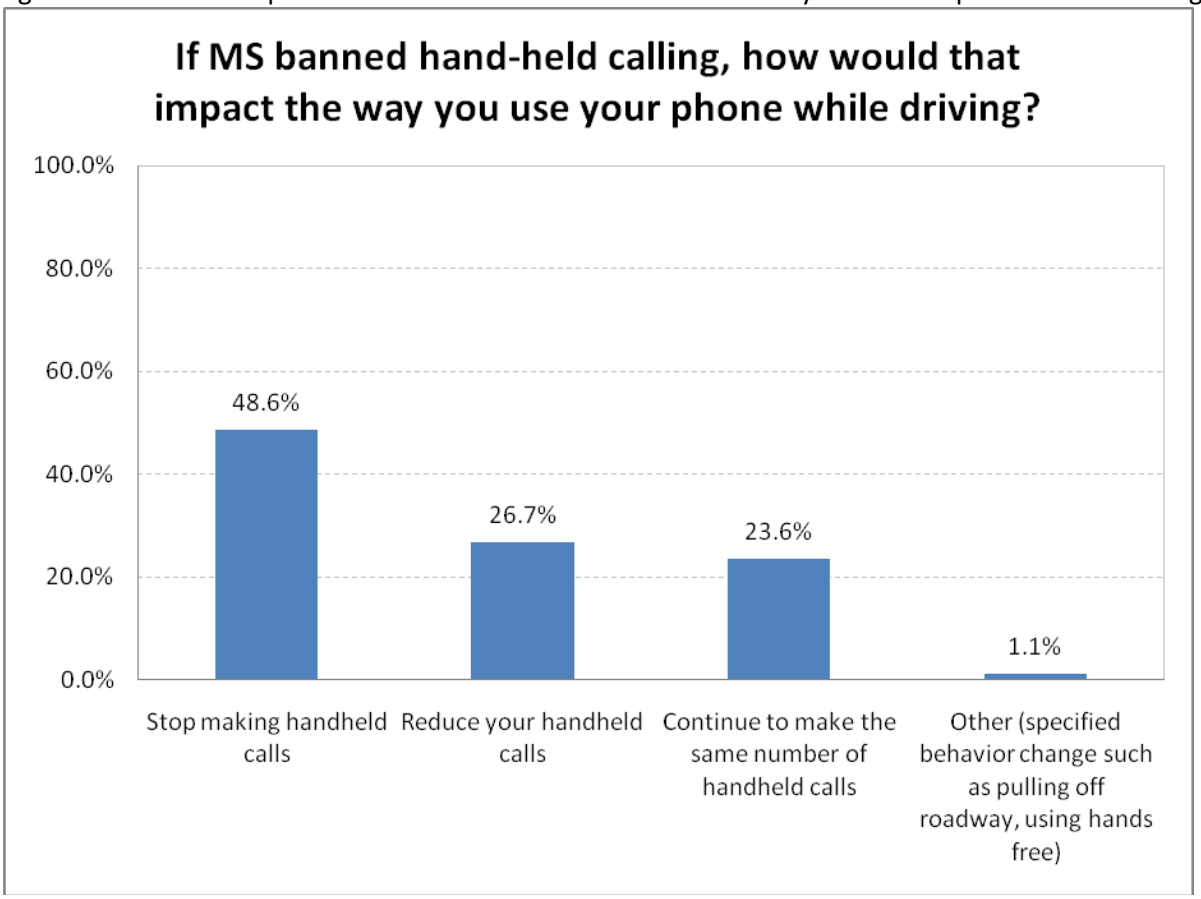
- Hand-held ban – drivers who had talked on a cell phone while driving in the past 30 days were asked, "If Mississippi passed this law and banned HANDHELD calling for all drivers, how would that impact the way you use your phone while driving?"
- ALL cell phone ban – drivers who had talked on a cell phone while driving in the past 30 days were asked, "If Mississippi passed this law and banned cell phone calling for all drivers except in emergencies, how would that impact the way you use your phone while driving?"
- Texting/emailing ban – drivers who had texted or emailed while driving in the past 30 days were asked, "If Mississippi passed this law and banned texting and emailing for all drivers, how would that impact your messaging behaviors?"

Hand-held bans.

Figure 16 below shows responses regarding the potential impact of a hand-held ban on drivers who have talked on a cell phone while driving during the past 30 days. Approximately 3 out of 4 current "talkers" (75.3%) indicated that they would either stop making hand-held calls or reduce their hand-held

calling if Mississippi passed a law that banned hand-held calling. 23.6% of current “talkers” indicated that they would continue to make the same number of hand-held calls.

Figure 16. Potential impact of hand-held ban on those who currently talk on cell phones while driving.

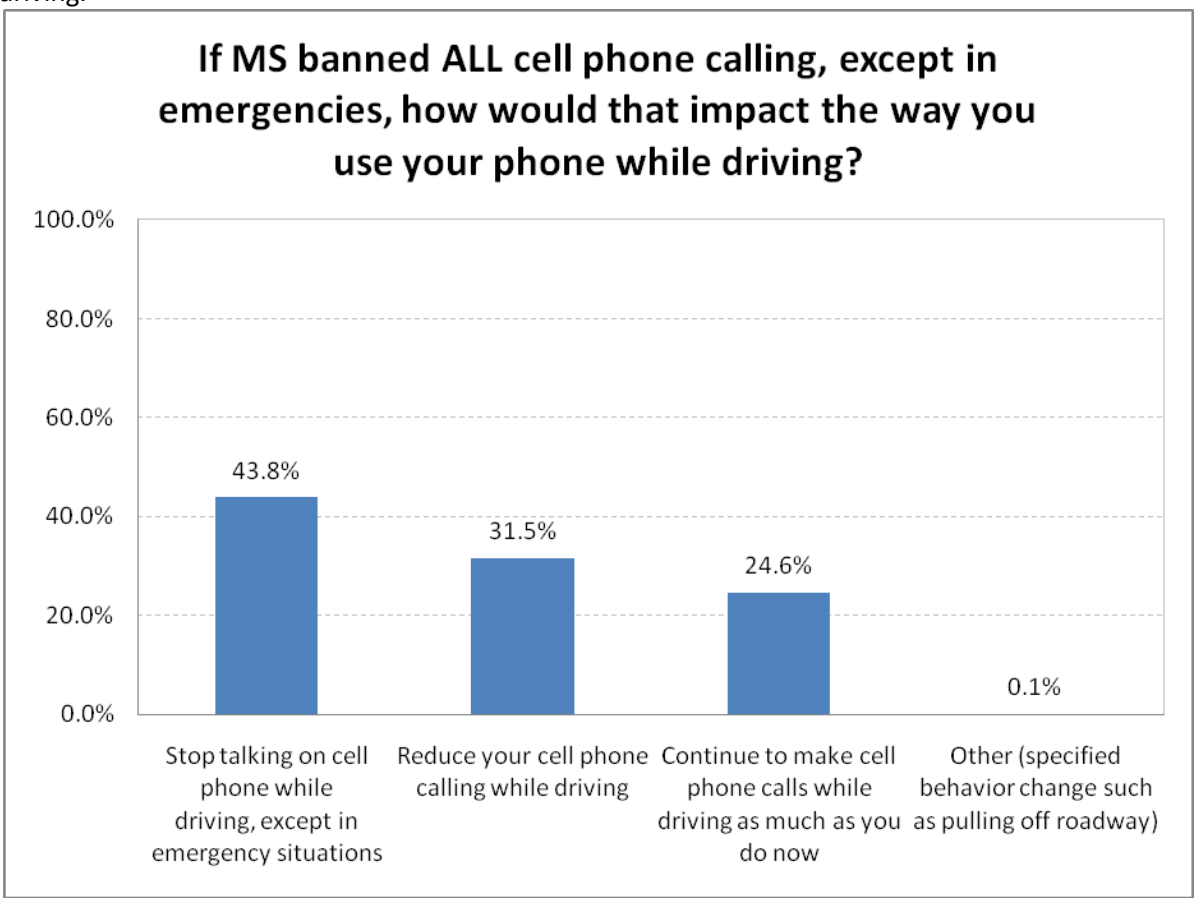


Base: Current drivers who have talked on a cell phone while driving during the past 30 days (1,028)

ALL cell phone bans.

Figure 17 below shows responses regarding the potential impact of a ban on ALL cell phone calling while driving, except in emergency situations. Even though the previous section discussed that a lower percentage of respondents supported this ban, the same percentage of current “talkers” indicated that they would either stop or reduce their cell phone calling while driving. That is, 3 out of 4 current “talkers” indicated they would stop or reduce cell phone calling while driving if an ALL cell phone ban was enacted in Mississippi.

Figure 17. Potential impact of ALL cell phone ban on those who currently talk on cell phones while driving.



Base: Current drivers who have talked on a cell phone while driving during the past 30 days (1,028)

Texting/Emailing bans.

Figure 18 below shows responses regarding the potential impact of a texting/emailing while driving ban in Mississippi. Approximately 8 out of 10 current drivers who texted or emailed within the past 30 days indicated that they would either stop or reduce their amount of texting or emailing while driving if this ban was enacted in Mississippi. The remaining 2 out of 10 indicated that they would continue at their normal rate.

Figure 18. Potential impact of texting/emailing ban on those who currently text or email while driving.

Base: Current drivers who have texted or emailed during the past 30 days (331)

Summary of Key Findings

Prevalence of Distracted Driving Behaviors in Mississippi

Distracted driving is prevalent in Mississippi, with three-quarters of current adult drivers reporting they have talked on a cell phone while driving, and one-third reporting that they have read, written, or sent a text message while driving.

The scale of the issue in Mississippi appears to be similar to distracted driving due to cell phone talking nationwide. Of Mississippi respondents, 68.7% reported that they had talked on a cell phone while driving in the past 30 days. This percentage is comparable to a 2009 national AAA Foundation for Traffic Safety study where 67% of respondents reported talking on a cell phone while driving (AAA, 2009).

Prevalence of distracted driving behaviors appears to differ among demographic groups, with young males being more likely to report talking, texting and emailing while driving. This finding also squares with national studies. The 2009 AAA Foundation for Traffic Safety study found that reports of phone calls while driving were highest among drivers ages 20 to 44, and reports of texting and sending emails was also highest among young respondents (AAA, 2009).

The majority of Mississippians who make cell phone calls while driving are doing so by dialing the numbers by hand. Of current drivers, 63% reported that they never used hands-free devices, and 75.4% reported that they never used voice dialing.

Not only are drivers putting themselves at increased risk by driving while using a cell phone, they are also exposing others in the vehicle to increased risk. The vast majority of Mississippi respondents (88.6%) said they had been a passenger in a vehicle driven by someone who was talking on a cell phone. More than half of respondents said they had been a passenger of a texting/emailing –engaged driver (53.2%). It is interesting to note that the numbers of respondents who report riding with someone who was driving while distracted are higher than those who admit to doing it themselves, possibly painting a more accurate picture of its pervasiveness.

Perceived Risk of Distracted Driving among Mississippians

Mississippi respondents rated some cell phone-related tasks as more risky than others. Texting while driving was considered the most risky, followed by hand-held calling, and hands-free calling. These findings are similar to national results where respondents tend to think that hands-free phones are less dangerous and, therefore, more acceptable. In the current survey, in general, respondents who were younger, White, and male reported these activities as less risky than other respondents.

Self-imposed Restrictions on Cell Phone Use While Driving

Given the awareness of risk, current Mississippi drivers do report that they have self-imposed restrictions on their cell phone use. One out of four current Mississippi drivers reported they only talk on the phone while driving during emergencies, and 1 out of 5 reported that they only text during emergencies. However, because an emergency situation was not defined, and this number appears quite high, this reported figure may not accurately represent the true number of drivers responding to an actual emergency situation and calling or contacting emergency, law enforcement, or medical personnel specifically. Thus, these findings should be interpreted with caution.

It appears that self-imposed restrictions on cell phone use occur among the minority of current Mississippi drivers. About 4 out of 10 indicated that they don't make outgoing calls while driving and that they only take incoming calls, while approximately 1 out of 4 indicated that they only read texts or emails while driving and that they don't write or send them. Less than 2 in 10 said they only talk on their cell phone when their car was not moving, and about 1 out of 4 said they only text or email when their car is not moving, which means that the vast majority of Mississippians who are calling, texting and/or emailing while driving are doing so when their car is in motion.

Impact of Distracted Driving on Current Adult Drivers in Mississippi

Distracted driving also appears to have impacted the driving behaviors of Mississippi respondents, particularly when those respondents were texting or emailing while driving. Thirty-seven percent of "texters" or "emailers" reported that they drifted off the road or into another lane when they were engaged in texting or emailing while driving, and 76% of all respondents reported that they had observed other drivers who were using a cell phone driving in a way that put others in danger. While the actual percentage of reported crashes while distracted is somewhat low, near crashes and impaired driving do increase the risk for being in or causing an accident. Given the poor quality of some of Mississippi's rural roadways, including unforgiving two-lane roads, an increase in near crashes (e.g., drifting into another lane or off the roadway) is cause for concern.

Opinions about Distracted Driving Legislation

Most Mississippians support distracted driving-related cell phone bans. Seven out of ten Mississippians support a ban on hand-held cell phone conversations for all drivers, and approximately one-half support a ban on all cell phone conversations (hand-held and hands-free) for all drivers. While different sampling methodologies and timeframes were

used, these findings are comparable to national survey results. The 2009 AAA Foundation for Traffic Safety study found that 46.3% of all Americans support a ban on all cell phone conversations for all drivers (AAA, 2009).

There is more support for banning texting while driving, with 84.5% of Mississippi adults supporting a texting ban for all drivers. An additional 4% support a texting ban for some drivers, such as teens and bus drivers. Overall then, approximately 9 out of 10 respondents were in support of a texting ban, at least for some drivers. Again, these findings are very consistent with national studies. A 2009 Nationwide Insurance study found that 80% of respondents supported a ban on texting and emailing while driving (Nationwide Insurance, 2009).

Younger male respondents, who reportedly are the most likely to engage in distracted driving behaviors, were the least likely to support bans of cell phone activity while driving. NonWhite respondents were more likely to support bans on cell phone calls while driving, whereas Whites were more likely to support texting bans.

Potential Impact of Laws on Cell Phone Use While Driving

The current study asked Mississippi respondents how various bans on driving-related cell phone use would affect their individual driving behaviors. Results (based on self-reports) suggest that bans would, in fact, curtail some of the activities that cause distracted driving. Of drivers who currently talk on a cell phone, 3 out of 4 said that, if a ban was passed, they would stop or reduce cell phone conversations except for emergencies. This applied to both hand-held cell phone bans and all cell phone calling bans. Eight out of ten of Mississippi's current texters indicated that they would stop or reduce their texting if a ban against texting while driving was passed.

Policy Considerations

Like other states, Mississippi is being confronted with a changing driving environment. The widespread use of cell phones in vehicles is adding to existing and routine distractions for drivers and creating a significant risk for the driving/riding public. Consequently, Mississippians must consider options for responding to the potential financial burden and public health threat imposed on the state by distracted driving.

Legislation

As for distracted driving legislation in Mississippi, the state currently has a texting ban for young drivers with learner's permits or intermediate licenses. Many states are adopting much broader distracted driving legislation to protect their residents.

Texting bans.

Research showing the extremely high crash risk associated with texting while driving has lead to a new slang phrase, "driving while intexticated" (Intexticated, 2007). This phrase suggests the ominous reality behind what is regarded by many as a trendy and essential part of daily life. Texting while driving, like drunk driving, not only puts the person doing it in harm's way; it also endangers the broader driving/riding public.

Mississippi respondents view texting while driving as very risky, assigning it a rating of 8.7 on a scale of 0 to 10, with 10 being extremely risky, and a strong majority support a texting ban (85%). Although texting is quite prevalent in Mississippi (1 out of 3 adult drivers), respondents report that they have experienced impaired driving as a result, and 8 out of 10 "texters" say they would reduce or stop texting if a ban was passed. Nationwide, 30 states and the District of Columbia have passed texting bans for all drivers, and 8 more have passed texting bans for some drivers. However, since officers might have difficulty distinguishing between a

driver who is texting and a driver dialing a cell phone to make a call, it has been noted that texting bans are difficult to enforce without accompanying bans on handheld cell phone calls.

Hand-held cell phone bans versus bans on all cell phones (hand-held and hands-free).
The findings of previous research are clear: using hand-held cell phones while driving (particularly dialing and other tasks that cause visual distraction) should be avoided as they impact driving performance and increase crash risk. In addition, numerous experimental and crash-based studies have pointed to the dangers of all cell phone conversations (hand-held and hands-free) due to the cognitive distraction associated with switching or sharing attention between two tasks. Researchers who conduct naturalistic studies, however, dispute the idea that hands-free calling is as risky, unless visual attention is required for dialing. They argue that true hands free calling may have less impact on a driver's performance than an earpiece or speakerphone that still requires the driver to manually dial his or phone (resulting in time that his/her eyes are off the roadway). The current study reveals that this clarification would be important in Mississippi, as most Mississippians who talk on a cell phone while driving report that they do not use voice-activated dialing systems, and instead dial and hold their phones by hand when they talk while driving.

The enactment of bans on all cell phone usage (hand-held and hands-free) while driving can create complications in enforcing distracted driving legislation, as officers might have difficulty determining if a driver is talking on a hands-free device, as opposed to another passenger, or even themselves. It has been speculated that having a law against a particular driver behavior for which no penalties can be dispensed could dilute distracted driving legislation overall.

Current drivers in Mississippi report the use of cell phones to make calls while driving (75%). However, they also report that they have experienced impaired driving as a result, and 7 out of 10 support a hand-held cell phone ban. Approximately half support a ban on all cell phones (hand-held and hands-free), and 3 out of 4 say they would reduce or stop using their cell phone to make calls if a ban was passed. Statewide hand-held bans for all drivers have been adopted by 9 states and the District of Columbia, while bans on all cell phones are generally applied to just the most vulnerable drivers and/or those responsible for transporting other passengers (e.g., school bus or transit operators).

One potential issue with passing a hand-held cell phone ban (and not a hands-free ban) is that doing so could reinforce Mississippi drivers' current perception that the use of a hands-free device is safer than using a hand-held phone (Lee, 2009). Mississippi respondents rated hand-held cell phone use as more risky than hands-free phone use, even though a large number of scientific studies suggest that this is not the case (especially when hands-free calls still involve dialing and visual distractions). In fact, many respondents to our survey gave similar ratings for hands-free calling as they did for passenger conversations, despite research indicating that hands-free calls are more dangerous. This has been explained with the theory that passengers and drivers who are inside the same car share situation awareness and passengers can keep an eye on the roadway and assist the driver, when necessary, in attending to potential threats, which is something that a person who is connected to the driver only through the phone call cannot do (Drews, Pasupathi, & Strayer, 2004). Therefore, a hand-held cell phone ban would need to be accompanied by public education. And, according to the literature, would need to disallow dialing or other activities that would cause drivers to take their eyes off the roadway while driving.

Cell phone bans for some groups and/or locations.
Some states have chosen to send strong messages regarding the safety of distracted driving by restricting cell phone use for certain drivers and/or in certain locations. Novice drivers, bus drivers and public transit drivers have all been targeted for more restrictive bans. Construction zones and school crossing/speed zones have all been identified in some states as locations worthy of more restrictions. Currently, almost all states have partial bans aimed at one or more of these groups or locations. In the current study, when Mississippians were supportive of cell phone laws, they generally supported the law for all drivers. However, there were some

respondents who did not support a law for all drivers, but felt it should apply to some drivers, such as teens and/or school bus drivers (see Figure 15).

Many state laws stipulate that their distracted driving bans only apply to drivers whose vehicles are in motion. It has been noted that this requirement can lead to enforcement and traffic problems. Often, intersections are the best locations for law enforcement to implement highly visible distracted driving enforcement efforts. However, this provision would render that tool ineffective given that drivers could legally use their phones while stopped at intersections. Furthermore, distracted driving can impact traffic safety even when a vehicle is stopped. For example, in the current study, almost 3 in 10 drivers who text while driving said that, while they were texting, they have failed to go when a traffic light turned green. 13.3% of talkers said the same had happened to them when they were talking on a cell phone and driving.

Enforcement

The enforceability of distracted driving laws has been a concern among policymakers, leading some to conclude that no action might be preferable to incomplete action. However, when one considers the actual penalties dispensed for not wearing a seat belt or speeding versus the ever-present threat of a potential penalty, the impact of having laws and visible enforcement, combined with public education campaigns becomes more apparent.

Multiple strategies.

When it comes to distracted driving as a result of cell phone use, the literature is clear that some activities are more dangerous than others (e.g., those causing extended visual distraction, such as texting and dialing), and some activities are clearly more easily enforced than others (those that are easily observable by law enforcement). Therefore, to change the culture of distracted driving, it has been proposed that different aspects of cell phone use may have to be addressed using different deterrents. While some aspects of the problem are within the potential purview of law enforcement, such as monitoring the use of hand-held devices and enforcing "phone in one hand, ticket in the other" policies, others such as the use of hands-free devices, may be more reliant on future research, technological innovations and public education.

Experts have noted that, in order to enforce distracted driving legislation, the public must recognize a high likelihood of receiving a penalty for doing so, creating a higher risk than benefit for the behavior (Halsey, 2009b). This might be achieved through primary enforcement laws, high-visibility enforcement, and tough penalties that are carried through.

All aspects of curbing distracted driving, however, are dependent on strong public education regarding its dangers. Regardless of the specifics of distracted driving legislation, a public education campaign is important to a) explain why the legislation is being enacted, and b) why the public should engage in self-restriction regarding cell phone use while driving. In the current study of Mississippi adults, distracted driving behaviors and support for legislation generally aligned with perceived risk for performing a task while driving. That is, Mississippi drivers rated texting as the most risky of cell-phone related distractions, and they also showed the highest level of support for texting bans, and lower rates of engaging in texting while driving, compared to talking while driving (which was rated as less risky). Likewise, younger, male respondents, in general gave lower risk ratings for cell-phone related distractions, reported the lowest support for bans on cell phones, and indicated the highest rates of talking on a cell phone while driving. Thus, public education highlighting the risk associated with certain cell phone related behaviors would be important.

Given the prevalence of cell phone use among drivers and the rarity of an accident, drivers are generally reinforced that using a cell phone while driving is safe. When people understand the actual risk and the potential magnitude of the effects on their safety, they are more like to change their behavior. Tough ads promoting Georgia's recent texting ban equate texting while driving to driving drunk and refer to perpetrators of

both activities as “Georgia’s deadliest drivers” (Lohr, 2010). Furthermore, public campaigns can be beneficial because multiple exposures to a particular message can influence behavior (Hafstad, et al., 1997; Hersey, et al., 2005; McKenzie, Pinger, & Kotecki, 2005).

Targeted messaging.

Currently, particularly for many younger drivers, using a cell phone while driving is an integral part of life, and that isn’t going to change without a change in the very culture of using cell phones among this population.

The current study found that, in general, younger males talk and text while driving more than other groups. They are also least likely to perceive cell phone use while driving as risky, and are the least likely group to support cell phone and texting bans. Consequently, messaging targeted at this group could have an impact on the safety of MS roadways.

Conclusion

In response to growing national concern, texting and cell phone bans are being adopted across the country, with 30 states and D.C. having texting bans for all drivers and 9 states and D.C. having hand-held bans for all drivers. Almost all states, including Mississippi, restrict some form of cell phone use for particular drivers, such as teens and bus drivers, or for particular locations, such as construction and school zones. However, many of these hand-held bans do not cover the act of dialing a phone, which may be a main cause of distraction (i.e., visual distraction resulting in the driver taking his or her eyes off the road).

Distracted driving is a problem in Mississippi, with a high percentage of adult drivers reporting use of cell phones while driving, as well as impaired driving while engaging in cell phone-related tasks. Despite their widespread use, Mississippians recognize the risk associated with the use of cell phones and support distracted driving bans: 85% support a texting ban, and 7 out of 10 support a ban on hand-held cell phones. Interestingly, young males are the most likely to use cell phones while driving and the least likely to support cell phone bans. This finding may point to the need for targeted efforts for this group.

One of the key issues in passing distracted driving legislation is enforcement. In order to have an impact, it has been stated that distracted driving legislation must be backed up by primary enforcement, high-visibility enforcement and educational campaigns. However, the enforcement of cell phone bans can be challenging, and different types of bans produce different enforcement implications. The dangers of hands-free devices have been noted in experimental and crash-based studies, though their use can be difficult to detect. Bans on hand-held calling and texting might be more easily enforced since officers can visually identify usage of the phone. Some have recommended the use of educational campaigns and/or in-vehicle technologies as alternative means of curbing the use of hands-free devices. However, bans on all cell phone use, while difficult to enforce on a broad scale, do send a strong message of zero tolerance that may be useful for some groups and/or locations.

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Appendix A: Telephone Survey Instrument

Question Q1

When was the last time you drove a car or other vehicle?

1. Within the past 30 days
2. More than 30 days ago, but within the past year
3. More than 1 year ago, but within the past 3 years
4. More than 3 years ago, but within the past 5 years
5. More than 5 years ago
6. I have never driven a car or other vehicle
7. Don't Know/Remember
8. Refused

Note: Do NOT read responses.

Question Q2

Have you ever talked on a cell phone WHILE DRIVING?

1. Yes
2. No
3. Don't Know/Not Sure
4. Refused

Question Q3

Have you ever read, written or sent A TEXT MESSAGE while driving?

1. Yes
2. No
3. Don't Know/Not Sure
4. Refused

Question Q4

Have you ever read, written or sent AN EMAIL while driving?

1. Yes
2. No
3. Don't Know/Not Sure
4. Refused

Question INTRdef

Please note that for this interview, the word "texting" refers to reading, writing, or sending text messages and the word "emailing" refers to reading, writing, or sending emails.

Press Any Key to Continue.

Question Q10toQ14

Please tell me which of the following have happened to you while you were driving a car and texting or emailing?

While TEXTING OR EMAILING, you …

[Q10] were involved in a car crash or fender bender.
[Q11] had to quickly apply the brakes or turn the wheel to avoid hitting something
[Q12] drifted into another lane or off the road.
[Q13] failed to go when a traffic light turned green.
[Q14] missed a turn or an exit.

1. Yes
2. No
3. Don't Know/Not Sure
4. Refused

NOTE: Repeat "While TEXTING OR EMAILING" for each item.

Question Q5toQ9

Next, I am going to ask you about some things that might happen while driving and TALKING on a cell phone. Please tell me which ones have happened to you while you were driving a car and talking on a cell phone?

While TALKING ON A CELL PHONE, you …

[Q5] were involved in a car crash or fender bender.
[Q6] had to quickly apply the brakes or turn the wheel to avoid hitting something
[Q7] drifted into another lane or off the road.
[Q8] failed to go when a traffic light turned green.
[Q9] missed a turn or an exit.

1. Yes
2. No
3. Don't Know/Not Sure
4. Refused

NOTE: Repeat "While TALKING ON A CELL PHONE" for each item.

Question Q15

Have you ever been a PASSENGER in a vehicle that was driven by someone who was TEXTING OR EMAILING?

1. Yes
2. No
3. Don't Know/Not Sure
4. Refused

Question Q16

Have you ever been a PASSENGER in a vehicle that was driven by someone who was TALKING on a cell phone?

1. Yes
2. No
3. Don't Know/Not Sure
4. Refused

Question Q17

Have you ever been involved in a car crash or fender bender caused by a driver who was using a cell phone?

1. Yes
2. No
3. Don't Know/Not Sure
4. Refused

NOTE: This includes when they were the passenger in a car.

Question Q18

Have you ever observed another driver, who was using a cell phone, driving in a way that put others in danger?

1. Yes
2. No
3. Don't Know/Not Sure
4. Refused

NOTE: Examples: they pulled out in front of someone, drifted into another lane or off the road, failed to stop at a traffic light or stop sign, or failed to go when a traffic light turned green.

Question INTRDID

Next, I'm going to ask how often you did certain things during the past 30 days.

Press Any Key to Continue.

Question Q19

During the past 30 days, how often did you read, write, or send TEXT MESSAGES OR EMAILS while you were driving? Would you say:

1. Never,
2. Rarely,
3. Sometimes,
4. Usually, or
5. Always?
6. Don't Know/Not Sure
7. Refused

Question Q20

When you texted or emailed, how often did you pull off the roadway to do so?

1. Never,
2. Rarely,
3. Sometimes,
4. Usually, or
5. Always?
6. Don't Know/Not Sure
7. Refused

Question Q21

During the past 30 days, how often did you TALK on a cell phone while you were driving? Would you say:

1. Never,
2. Rarely,
3. Sometimes,
4. Usually, or
5. Always?
6. Don't Know/Not Sure
7. Refused

Question Q22

When you talked on a cell phone, how often did you pull off the roadway to do so? Would you say:

1. Never,
2. Rarely,
3. Sometimes,
4. Usually, or
5. Always?
6. Don't Know/Not Sure
7. Refused

Question Q23

When you talked on a cell phone while driving, how often did you use a hands free device such as an earpiece, headset or Bluetooth connection? Would you say:

1. Never,
2. Rarely,
3. Sometimes,
4. Usually, or
5. Always?
6. Don't Know/Not Sure
7. Refused

Question Q24

During the past 30 days, when you CALLED someone while driving, how often did you use voice dialing or some other method that didn't require you to hold the phone? Would you say:

1. Never,
2. Rarely,
3. Sometimes,
4. Usually, or
5. Always?
6. Don't Know/Not Sure
7. Refused

Question Q25

During the past 30 days, on how many days did you drive a vehicle? days

NOTE: Try not to allow Don't Know, best guess is fine.

NOTE: If None enter 0; Don't Know/Not Sure 32; Refused 33.

Question Q26h

On the days you drove, how much time did you spend driving each day,
on average? hours minutes

NOTE: Try not to allow Don't Know, best guess is fine.

NOTE: If less than one hour enter 0 then enter minutes,
Don't Know/Not Sure 25, Refused 26.

Question Q26m

On the days you drove, how much time did you spend driving each day,
on average? hours minutes

NOTE: If no minutes enter 0; round to nearest minute.

Question Q27h

Of the hours and minutes you drove each day, on average, how much time
did you spend TEXTING OR EMAILING? hours minutes

NOTE: If less than one hour enter 0 then enter minutes,
Don't Know/Not Sure 25, Refused 26.

Question Q27m

Of the hours and minutes you drove each day, on average, how much time
did you spend TEXTING OR EMAILING? hours minutes

NOTE: If no minutes enter 0; round to nearest minute.

Question Q28h

Of the hours and minutes you drove each day, on average, how much time
did you spend TALKING on a cell phone? hours minutes

NOTE: If less than one hour enter 0 then enter minutes,
if over 6 hours enter 7, Don't Know/Not Sure 8, Refused 9.

Question Q28m

Of the hours and minutes you drove each day, on average, how much time did you spend TALKING on a cell phone? hours minutes

NOTE: If no minutes enter 0; round to nearest minute.

Question INTRlaws

Next, I am going to ask you if you would support or oppose certain laws that would restrict the use of cell phones while driving in Mississippi. For each one, please indicate if you would support the law for ALL drivers, if you would support it for SOME DRIVERS such as teens or school bus drivers, or if you would OPPOSE the law altogether.

Press Any Key to Continue.

Question Q29

Would you support or oppose a law in Mississippi that would make it illegal for drivers to read, write or send text messages or emails while driving? Would you:

1. Support this law for all drivers;
2. Support this law for some drivers, such as teens and school bus drivers; or
3. Oppose this law?
4. Don't Know/Not Sure
5. Refused

Question Q30a

Should this law apply to teenage drivers?

1. Yes
2. No
3. Don't Know/Not Sure
4. Refused

Question Q30b

Should this law apply to school bus drivers?

1. Yes
2. No
3. Don't Know/Not Sure
4. Refused

Question Q30c

Should this law apply to any other group of drivers?

1. Yes
2. No
3. Don't Know/Not Sure
4. Refused

Question Q30c1

To what other groups of drivers should this law apply?

NOTE: If Don't Know/Not Sure enter DK; Refuse enter REF.

Question Q31

If Mississippi passed this law and banned texting and emailing for all drivers, how would that impact your messaging behaviors? Would you:

1. Stop texting or emailing while driving,
2. Reduce your amount of texting or emailing while driving, or
3. Continue texting and emailing while driving as much as you do now?
4. Other (specify:)
5. Don't Know/Not Sure
6. Refused

Question Q32

Would you support or oppose a law in Mississippi that would make it illegal for drivers to TALK on a cell phone while driving, unless they used a HANDS-FREE DEVICE such as an earpiece, headset, or Bluetooth connection? Would you:

1. Support this law for all drivers,
2. Support this law for some drivers, such as teens or school bus drivers, or
3. Oppose this law?
4. Don't Know/Not Sure
5. Refused

Question Q33a

Should this law apply to teenage drivers?

1. Yes
2. No
3. Don't Know/Not Sure
4. Refused

Question Q33b

Should this law apply to school bus drivers?

1. Yes
2. No
3. Don't Know/Not Sure
4. Refused

Question Q33c

Should this law apply to any other group of drivers?

1. Yes
2. No
3. Don't Know/Not Sure
4. Refused

Question Q33c1

To what other groups of drivers should this law apply?

NOTE: If Don't Know/Not Sure enter DK; Refuse enter REF.

Question Q34

If Mississippi passed this law and banned HANDHELD calling for all drivers, how would that impact the way you use your phone while driving? Would you:

1. Stop making handheld calls,
2. Reduce your handheld calls, or
3. Continue to make the same number of handheld calls?
4. Other (specify:)
5. Don't Know/Not Sure
6. Refused

Question Q35

Would you support or oppose a law in Mississippi that would make it illegal for drivers to have ANY cell phone conversations while driving, except in emergency situations? That is, drivers could not have cell phone conversations even if they used a hands free device. Would you:

1. Support this law for all drivers,
2. Support this law for some drivers, such as teens or school bus drivers, or
3. Oppose this law?
4. Don't Know/Not Sure
5. Refused

Question Q36a

Should this law apply to teenage drivers?

1. Yes
2. No
3. Don't Know/Not Sure
4. Refused

Question Q36b

Should this law apply to school bus drivers?

1. Yes
2. No
3. Don't Know/Not Sure
4. Refused

Question Q36c

Should this law apply to any other group of drivers?

1. Yes
2. No
3. Don't Know/Not Sure
4. Refused

Question Q36c1

To what other groups of drivers should this law apply?

NOTE: If Don't Know/Not Sure enter DK; Refuse enter REF.

Question Q37

If Mississippi passed this law and banned cell phone calling for all drivers except in emergencies, how would that impact the way you use your phone while driving? Would you:

1. Stop talking on a cell phone while driving, except in emergency situations,
2. Reduce your cell phone calling while driving, or
3. Continue to make cell phone calls while driving as much as you do now?
4. Other (specify:)
5. Don't Know/Not Sure
6. Refused

Question Q38_Q40

Some drivers have restrictions on when they TEXT or EMAIL while driving.
Tell me which of the following statements apply to you?

[Q38] I only TEXT OR EMAIL while driving when I'm in an emergency situation.
[Q39] I only READ TEXTS OR EMAILS while driving, I don't write or send them.
[Q40] I only TEXT OR EMAIL while driving when my car is not moving.

1. Yes
2. No
3. Don't Know/Not Sure
4. Refused

Question Q41_Q43

Some drivers may have restrictions on when they TALK ON A CELL PHONE while driving. Tell me which of the following statements apply to you?

[Q41] I only TALK ON MY CELL PHONE while driving when I'm in an emergency situation.
[Q42] I only TALK ON MY CELL PHONE while driving when someone calls me.
[Q43] I only TALK ON MY CELL PHONE while driving when my car is not moving.

1. Yes
2. No
3. Don't Know/Not Sure
4. Refused

Question Q44_Q48

Doing some things while driving might put drivers at a greater risk for being in a car crash. On a scale of 0 to 10, with 0 being "no risk beyond normal driving" and 10 being "extremely risky," please rate how risky each of the following are:

[Q44] Talking to other passengers in the car while driving.
[Q45] Driving while intoxicated.
[Q46] Talking on a cell phone while driving and holding the phone to your ear.
[Q47] Talking on a cell phone while driving and using a hands free device.
[Q48] Texting or emailing while driving.

NOTE: Enter answer, for Don't Know enter 11, Refused 12.

Question INTRPHON

The next few questions are about the phones that you use.

Press Any Key to Continue.

Question Q49l

Do you have an active cell phone?

1. Yes
2. No
3. Don't Know/No Sure
4. Refused

Question Q49c

Do you have an active residential landline (regular) phone in your household?

1. Yes
2. No
3. Don't Know/Not Sure
4. Refused

Question Q50

Not including numbers that are only used by a computer or fax machine, how many active residential landline telephone numbers does your household have?

Note: If None enter 0; More than 6 enter 7; Don't Know/Not Sure 8; Refused 9.

Question Q51

Of all the telephone calls that your household receives, are:

1. All or almost all received on cell phones,
2. Some received on cell phones and some on the landline phone, or
3. All or almost all received on the landline phone?
4. Don't know/Not sure
5. Refused

Question Q52

Does your cell phone plan include text messaging?

1. Yes
2. No
3. Don't Know/Not Sure
4. Refused

NOTE: If they are not sure, example to give them: you might have 200, 1500, or unlimited text messages as part of your monthly package.

Question Q53

Does your cell phone plan allow you to check email or access the Internet?

1. Yes
2. No
3. Don't Know/Not Sure
4. Refused

Question INTRDEMO

Finally, the following background questions are just for statistical purposes. Remember, all of your answers are confidential.

Press Any Key to Continue.

Question Q54

In what year were you born? 19

Note: If before 1901 enter 0; if Don't Know/Not Sure 98; Refused 99.

Question Q55

What is your race? Would you say:

1. White,
2. Black or African American,
3. American Indian or Alaska Native,
4. Asian, or
5. Native Hawaiian or other Pacific Islander?
6. Respondent indicated multi-racial
7. Respondent indicated some other race
8. Don't Know/Not Sure
9. Refused

Question Q56

Do you consider yourself Hispanic (or Latino)?

1. Yes
2. No
3. Don't Know/Not Sure
4. Refused

Question Q57

Are you currently:

1. Single (never been married),
2. A member of an unmarried couple,
3. Married,
4. Divorced,
5. Widowed, or
6. Separated?
7. Don't Know/Not Sure
8. Refused

Question Q58

What was the last grade or year in school that you completed?

1. Never attended school or only attended kindergarten
2. Grades 1 through 8 (Elementary)
3. Grades 9 through 11 (Some high school)
4. Grade 12 or GED (High school graduate)
5. College 1 year to 3 years (some college or technical school)
6. College 4 years or more (College graduate)
7. Don't Know/Not Sure
8. Refused

NOTE: Read answer categories if necessary.

Question Q59

I am going to read some income categories, please stop me when I get to the category that best describes your total 2009 household income before taxes.

1. Below $20,000
2. $20,000 to $40,000
3. $40,000 to $60,000
4. $60,000 to $80,000
5. $80,000 to $100,000
6. $100,000 and above
7. Don't Know/Not Sure
8. Refused

Question Q60

What is your zip code?

NOTE: Enter 40000 for zip code other than 38601 through 39776 (MS codes); 39998 for Don't Know/Not Sure; 39999 for Refused

Question Q61

What is the respondent's gender?

1. Male
2. Female
3. Refused and couldn't tell for sure

Question THANKS

This completes our interview. Thank you for participating.
Do you have any questions about the survey?

1. Yes
2. No

Thank you again for your participation.

Good Bye.

Press Any Key to Continue.

Appendix B: Tables of Demographic Information

Age Group		Unweighted N	Weighted %
Valid	18-24	128	13.9%
	25-44	441	35.6%
	45-64	695	33.4%
	65+	465	17.0%
	Total	1,729	100.0%
Missing	Don't Know/Not Sure /Refused	75	
Total		1,804	

Base: All respondents (1,804)

Gender		Unweighted N	Weighted %
Valid	Male	581	46.7%
	Female	1,223	53.3%
	Total	1,804	100.0%

Base: All respondents (1,804)

Race/Ethnicity		Unweighted N	Weighted %
Valid	White	1,142	62.9%
	Black/African American	597	35.3%
	American Indian/Alaska Native	7	0.4%
	Asian	3	0.2%
	Native Hawaiian/Pacific Islander	1	0.1%
	Multi-racial	8	0.5%
	Some other race	6	0.6%
	Total	1,764	100.0%
Missing	Don't Know/Not Sure/Refused	40	
Total		1,804	

Base: All respondents (1,804)

Latino or Hispanic Origin		Unweighted N	Weighted %
Valid	Yes	27	1.5%
	No	1,747	98.5%
	Total	1,774	100.0%
Missing	Don't Know/Not Sure/Refused	30	
Total		1,804	

Base: All respondents (1,804)

Education		Unweighted N	Weighted %
Valid	Never attended school/kindergarten only	1	0.1%
	Grades 1 through 8	46	2.2%
	Grades 9 through 11	161	9.4%
	Grade 12 or GED	638	34.9%
	College 1 year to 3 years	447	26.4%
	College 4 years or more	476	27.0%
	Total	1,769	100.0%
Missing	Don't Know/Not Sure/Refused	35	
Total		1,804	

Base: All respondents (1,804)

Marital Status		Unweighted N	Weighted %
Valid	Single	378	28.2%
	Member of an unmarried couple	33	2.9%
	Married	983	52.2%
	Divorced	159	8.4%
	Widowed	185	6.5%
	Separated	33	1.9%
	Total	1,771	100.0%
Missing	Don't Know/Not Sure/Refused	33	
Total		1,804	

Base: All respondents (1,804)

2009 Household Income[1]		Unweighted N	Weighted %
Valid	Below $20,000	313	23.1%
	$20,000 to $40,000	369	27.0%
	$40,000 to $60,000	255	19.9%
	$60,000 to $80,000	148	11.3%
	$80,000 to $100,000	85	6.7%
	$100,000 and above	150	12.1%
	Total	1,320	100.0%
Missing	Don't Know/Not Sure/Refused	484	
Total		1,804	

Base: All respondents (1,804)

[1]Participants stopped interviewers when they read the income category that best described their total 2009 household income before taxes. Therefore, it is assumed that participants whose income fell at the end of one category and the beginning of another would have stopped the interviewer when he/she read the first category (e.g., someone who made $40,000 would've stopped on the $20,000-$40,000 category)