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Policies on Hand-Held Mobile Device Use While Driving: Considerations for Mississippi

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Background: Mississippi enacted a texting/accessing social networking sites ban for all drivers in 2015; this ban is due for reauthorization in 2018. *Purpose:* Examine state policies prohibiting mobile device use while driving and changes in behaviors, attitudes, and opinions over time for Mississippi adults regarding distracted driving. *Methods:* Review literature and enacted policies. Analyze traffic, death, and survey data statewide from 2010 to 2017. *Results:* Mississippi's crash death rate rose significantly (22.7 to 25.6 per 100,000; $p < .01$) from 2010 to 2015. Mississippi adults surveyed said they had talked on a mobile device (75.4%), texted (45.5%), or emailed (10.1%) while driving in 2017. Each reported risky driving behavior increased significantly ($p < 0.05$) from 2010. Most Mississippians support bans on texting (95%) and hand-held device use (89%) while driving. Support for these types of bans significantly ($p < 0.05$) increased from 2010 to 2017. Enacted policies vary among states and include mobile device use bans for novice drivers ($n = 38$) and texting ($n = 47$) and hand-held ($n = 14$) bans for all drivers. While safety campaigns coupled with aggressive enforcement are found effective, officials cite enforcement difficulties. Only three texting citations were issued to Mississippi drivers during 2016. *Conclusions:* Enforcement of policies addressing drivers' mobile device use is a key factor to consider in reducing crash-related deaths.

Introduction

Hand-held mobile device use while driving is linked with improper following distances, poor lane positioning, and slower reaction times (Olson, Hanowski, Hickman, & Bocanegra, 2009). The use of a mobile device when driving has been demonstrated to limit a driver's performance to a similar level as driving while alcohol-impaired (Strayer, Drews, & Crouch, 2006). Despite the known risks, drivers continue to use mobile devices while driving. A recent study showed Mississippi drivers ranked second-highest in the nation for the extent of cell phone use while driving as measured by applications capturing actual driver behavior (Zendrive, 2017).

Injuries are the top cause of death for persons 1–44 years of age in Mississippi, and motor vehicle accidents are the leading cause of these types of injury-related deaths (Mississippi State Department of Health, 2015). Thus, the state's young, able-bodied residents are affected the most. Research indicates that, for each motor vehicle crash death, even more people are hospitalized for serious injuries and treated for moderate injuries in emergency departments. Based on the average medical cost of treating moderate to severe crash-related injuries (Centers for Disease Control and Prevention, 2014), the estimated medical cost in Mississippi was \$38.6 million in 2012 alone (Center for Mississippi Health Policy, 2014). High-risk driving behaviors related to distracted driving contribute to the costs, as one out of ten motor vehicle crashes is due to driver distraction—one in seven of these is due to mobile device use while driving (National Highway Traffic Safety Administration, 2016). Most states have enacted laws designed to prevent crashes due to mobile device distractions when driving (National Conference of State Legislatures, 2017).

To address the growing problem of driver distraction from mobile device use in Mississippi, the state enacted a texting and accessing social networking sites ban for all drivers in 2015 (Mississippi Code, 2015). The law was set to expire unless reauthorized by state policymakers in 2018. To inform the ongoing policy debates, an examination of the effectiveness of states' mobile device use policies was conducted, as well as a comparison of the changes in Mississippians' behaviors, attitudes, and opinions regarding driving while distracted.

Methods

Data Sources

The Center for Mississippi Health Policy reviewed the literature, examined the most recently enacted policies by states related to mobile device use while driving, analyzed state traffic safety and vital statistics records, and commissioned researchers with the Social Science Research Center (SSRC) at Mississippi State University to survey Mississippi adults in 2017 to assess their behaviors, attitudes, and opinions related to distracted driving. This survey follows up on a

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similar survey conducted in 2010 by the SSRC, which was also commissioned by the Center for Mississippi Health Policy (Cross, Hanna, Garrison, & McKee, 2010).

Survey Design

The 2017 SSRC survey involved the development of a telephone-based survey instrument designed to provide comparisons to the data collected in 2010 by SSRC researchers. While there are minor differences between the 2010 and 2017 survey instruments due to changes in communication technologies in the intervening years, replication and subsequent comparisons remained the goal. The Center for Mississippi Health Policy and Mississippi State University collaborated to develop the survey questions. While many questions remained in their original format as developed in 2010 and were replicated exactly for the 2017 survey, some were slightly revised to reflect relevant changes in technology, communication trends, and Mississippi law since 2010. Some of the additional questions asked in the 2017 survey included use of camera function, social media, and other applications while driving; awareness of the law that makes it illegal for drivers to write, send, read, or post with a mobile device while driving; and how mobile device use when driving has been impacted since the passage of the law.

Survey Data Collection

The telephone-based survey was conducted by the Wolfgang Frese Survey Research Laboratory at the SSRC from October 2017 to December 2017 to a representative sample of adult respondents (age 18 and older) residing in the state of Mississippi. A dual-frame design that included both cellular and landline telephone numbers assigned to the target area was employed. To ensure that a reproducible and representative sample was obtained, independent probability-based samples were selected via random-digit-dial (RDD) within the sampling frame. In total, 10,000 landline and 19,000 cellular telephone numbers were sampled. The survey secured 1,000 completed interviews. Responses were weighted using the United States Census Bureau's population estimates for Mississippi and adjusted along several dimensions using SUDAAN statistical software (2017).

A similar survey was administered by SSRC researchers as commissioned by the Center for Mississippi Health Policy in 2010. The survey of Mississippi adults ages 18 and over was conducted in July 2010 using a random sample of 18,000 cell phone and landline numbers that resulted in 1,835 completed interviews. The sample of responses was weighted using Mississippi's 2008 Census Bureau population estimates (Cross et al., 2010).

Data Analysis

Results from the 2017 survey were tabulated and then compared for statistically significant differences between the responses over the two survey periods at an alpha level of 0.05 utilizing SPSS Statistics version 25. Death rates due to motor vehicle crashes in Mississippi were calculated from 2010 to 2015 from state vital statistics records. The calculated rates were then

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tested for statistically significant differences at an alpha level of 0.05 using chi-squared tests for trend in Microsoft Excel 2016 software. In the following section, note that the term significantly refers to $p < 0.05$.

Results

Survey Comparisons

At 75.4%, most Mississippi adults surveyed in 2017 said they had talked on a mobile communications device while driving; 45.5% said they had texted, and 10.1% said they had emailed while driving. Each distracted-driving behavior increased significantly ($p < 0.05$) from those reported in 2010, as shown in Figure 1.

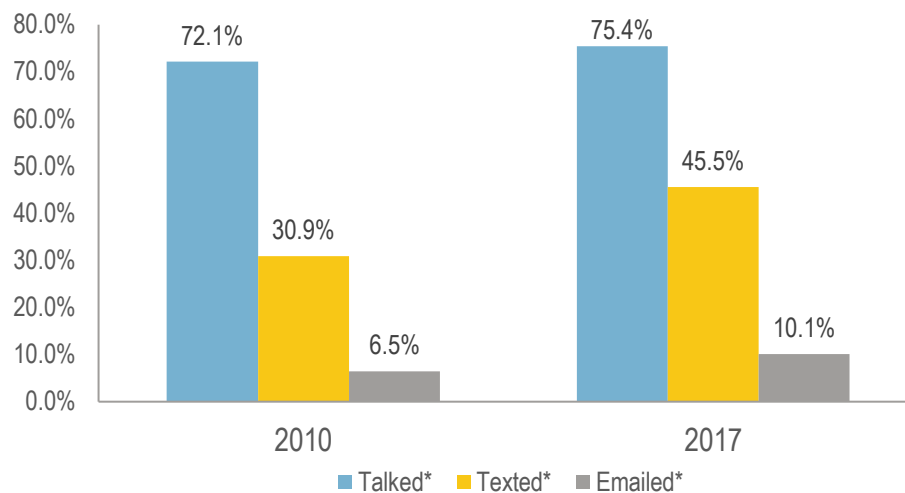


Figure 1. Mississippi adults' self-reported distracted-driving behaviors, 2010 and 2017.

*Statistically significant difference ($p < 0.05$) in responses between 2010 and 2017 surveys.

Source: Mississippi State University Social Science Research Center (Cross et al., 2010; Edwards et al., 2017).

In 2017, a significantly higher percentage of respondents said they usually (41%) or always (22%) talked on a mobile phone while driving within the past 30 days compared to those who said they usually (16%) or always (17%) talked on a mobile phone while driving in 2010. Significantly more adults said in 2017 they never (36%) texted or emailed on a mobile phone while driving in the past 30 days when compared to those who said they never (14%) did so in 2010. Although the percentage of those who reported ever texting and emailing on a mobile device while driving rose from 2010 to 2017 as illustrated in Figure 1, over the same time frame,

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significantly fewer adults said they usually or always texted or emailed while driving (25% versus 12%) in the past 30 days.

Comparing 2017 responses to 2010, significantly more Mississippians 45 years of age or older reported they had ever talked on a mobile phone while driving. Over the same time frame, there was no significant change in those 18–44 years of age who reported ever talking on a mobile phone while driving. The percentage of those 18–24 years of age who reported texting on a mobile phone while driving did not change significantly from 2010 to 2017, but this age group was the largest percentage to have reported having done so, at 63% (2010) and 68% (2017). However, the most dramatic shifts in behavior were for Mississippians age 25 or older who reported they had ever texted on a mobile phone while driving, which increased significantly over the period examined.

When asked to rate the level of risk perceived for select driving behaviors, with 0 being the lowest level of risk and 10 being the highest level of risk, the highest average level of risk reported was for driving while intoxicated, followed by texting or emailing, then driving while talking and holding a mobile phone, as shown in Figure 2. On average, driving while talking hands-free on a mobile phone or while talking to other passengers was rated as lower risk than the other selected driving behaviors. The average rating of perceived risk for each select driving behavior rose significantly from 2010 to 2017.

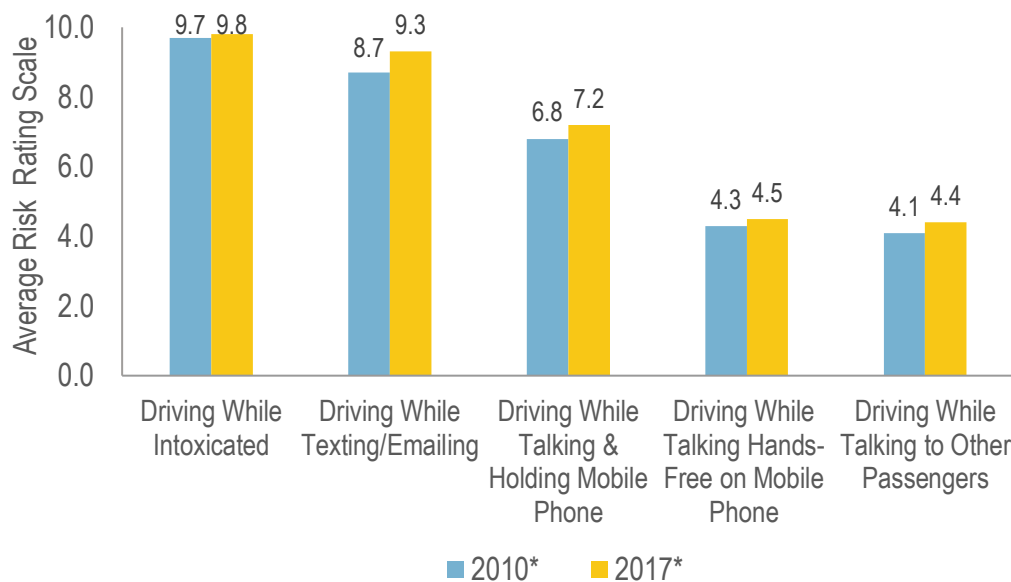


Figure 2. Average rating of perceived risk of select driving behaviors, 2010 and 2017.

*Statistically significant difference ($p < 0.05$) in responses between 2010 and 2017 surveys.

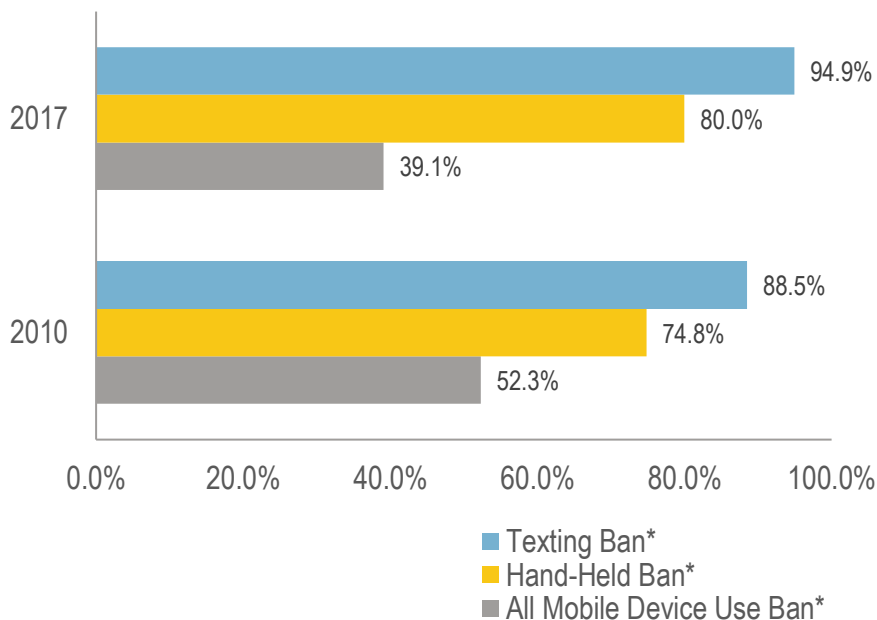
Source: Mississippi State University Social Science Research Center. (Cross et al., 2010; Edwards et al., 2017).

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In 2017, a significantly higher percentage of respondents said they usually (11%) or always (46%) used a hands-free device when they talked on a mobile phone while driving compared to those who said they usually (6%) or always (15%) did so in 2010. In 2017, a significantly higher percentage of adults also said they usually (10%) or always (25%) used voice dialing or another method that didn't require holding a phone when they placed a call on a mobile phone when driving compared to those who said they usually (5%) or always (8%) did so in 2010. There was no significant change from 2010 to 2017 for how often adults reported pulling off the roadway to talk on a mobile device while driving. However, there was a significant change from 2010 to 2017 for how often adults reported pulling off the roadway to text or email on a mobile device while driving, with an increase in those reporting they usually or always do so.

The percentage of adults observing another driver's cell phone use while driving in a way that put others in danger increased significantly from 76% in 2010 to 83% in 2017. Significantly more adults also reported involvement in a car crash or fender bender (10% versus 4%) that was caused by another driver's mobile phone use over the period examined.

When surveyed in 2010 and again in 2017, Mississippi adults expressed support for texting and hand-held device bans for all drivers, but not for bans on all mobile device use, as displayed in Figure 3. Specifically, support for texting (95% versus 89%) and hand-held bans (80% versus 75%) increased significantly over the period, but support declined significantly for bans on all mobile device use (39% versus 52%) by drivers.



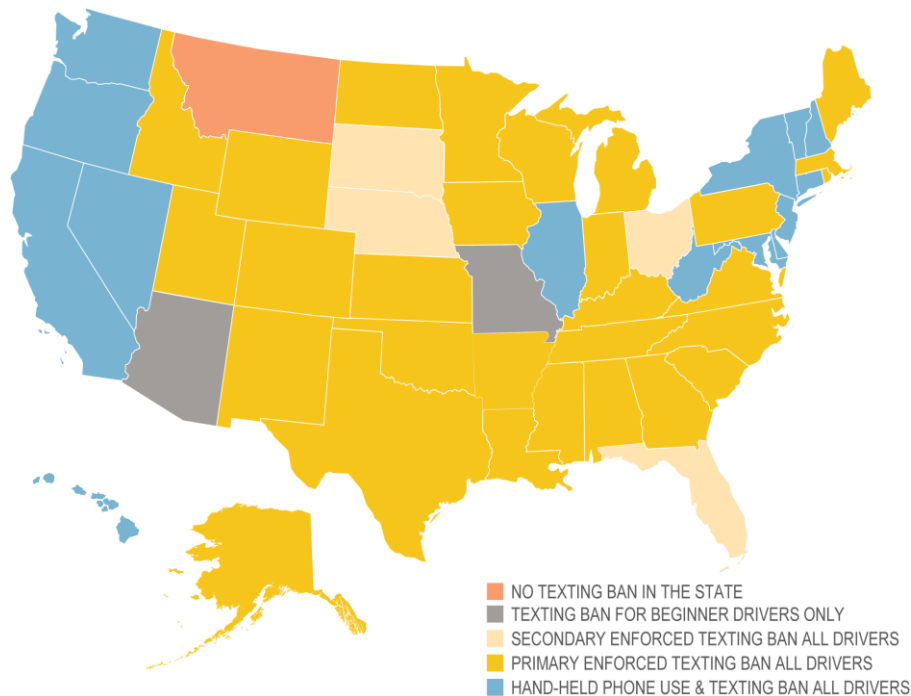
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Figure 3. Support for restrictions on mobile device use while driving, 2010 and 2017.
 *Statistically significant difference ($p < 0.05$) in responses between 2010 and 2017 surveys.
 Source: Mississippi State University Social Science Research Center, (Cross et al., 2010; Edwards et al., 2017).

Many Mississippians surveyed (79%) reported a behavioral change of either reducing or stopping mobile device use while driving since the enactment of the ban on texting while driving. Most Mississippians also reported they would either reduce or stop mobile device use while driving if a hand-held ban were enacted (78%) or if a ban on all mobile device use were implemented (76%).

Policy Enactment

According to the National Conference of State Legislatures (2017), states have enacted a variety of policies to curtail the use of mobile devices while driving, as shown in Figure 4. All states, except for Montana, have enacted bans that apply to some or all drivers and include either primary (officers can cite drivers directly) or secondary (officers must pull a driver over for another reason before they can cite) enforcement mechanisms. Forty-seven states (including Mississippi; Mississippi Code, 2015) and Washington, D.C., ban text messaging for all drivers. Hand-held mobile phone bans for all drivers have been adopted by 14 states. No state has enacted bans on all mobile phone use for all drivers.



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Figure 4. Laws on mobile device use while driving in the United States by state, 2017. Source: National Conference of State Legislatures (2017). Traffic safety trends.

Death and Traffic Records Data

From 2010 to 2015, the statewide motor vehicle crash death rate rose significantly ($p < .01$) from 22.7 to 25.6 per 100,000 (Mississippi State Department of Health, 2017)). Figure 5 illustrates that some Mississippi counties, particularly those located in more rural areas, experienced even higher death rates than others.

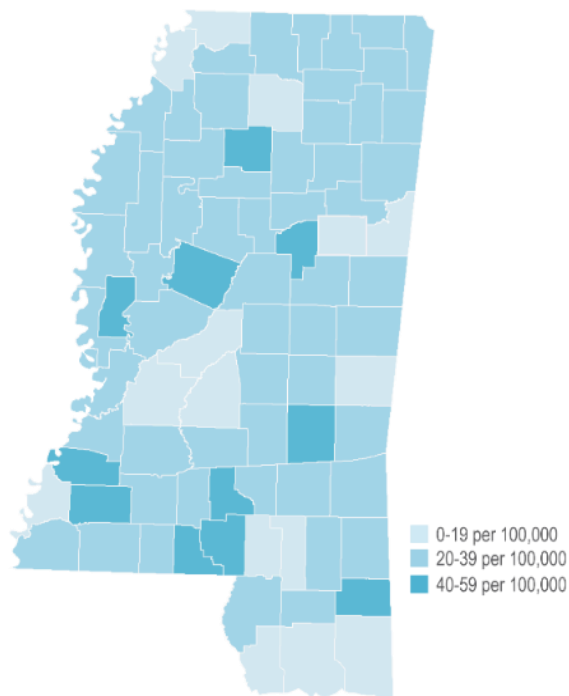


Figure 5. Mississippi motor vehicle crash death rates by county, 2010–2015. Source: Mississippi State Department of Health. (2015). Vital death records 2010–2015.

From 2010 to 2016, total traffic crashes reported in Mississippi rose by 19.7%. In 2016, the first full year that the Mississippi Department of Public Safety was required by law (Mississippi Code, 2015) to collect data on traffic crashes involving drivers using mobile devices, 1,567 traffic crashes were reported under these circumstances (Mississippi Department of Public Safety, 2017). According to Mississippi Department of Public Safety records, only three texting-while-driving citations were issued statewide in 2016, the first full year the ban was implemented (Mississippi Department of Public Safety, 2017).

Discussion

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Mobile device use while driving is a common and growing cause of driver distraction and contributes to the high burden of injury in Mississippi. Mississippi has enacted some restrictions to discourage these behaviors; however, problems persist, and enforcement has proven difficult.

Research commissioned by the National Highway and Traffic Safety Administration (NHTSA) found safety campaigns coupled with aggressive enforcement are effective in reducing distracted-driving behaviors (Chaudhary, Casanova-Powell, Cosgrove, Reagan, & Williams, 2014). However, researchers often cite enforcement as challenging due to difficulty with witnessing the specific type of infraction and proving that it occurred. A study examining traffic citations issued in 14 states over a 6-year period found drivers' cell phone use accounted for only 1% of all traffic citations. For the citations that were issued, the research revealed violations for using hand-held mobile devices were more common than for texting while driving (Rudisill & Zhu, 2016).

Laws banning hand-held mobile device use while driving have also been shown as more effective in reducing mobile device use by drivers. Research indicates the states that have enacted hand-held cell phone bans for all drivers have significantly fewer observations of driving while having a hand-held phone conversation when compared to states without such a ban for all drivers (Rudisill & Zhu, 2017). Most Mississippi adults expressed support for bans on texting and hand-held mobile device use while driving, and support for these types of bans has increased over time.

In 2018, policymakers in Mississippi were provided with a summary of these findings in an issue brief format (Center for Mississippi Health Policy, 2017). The law banning texting and accessing social networking sites for all drivers was debated and reauthorized during the 2018 Mississippi legislative session.

Conclusions

Most Mississippians report that policies prohibiting mobile device use while driving did or could change risky distracted-driving behavior. However, the enforcement of distracted-driving policies is also a key factor in reducing crash-related death rates. State policymakers will likely continue to debate policies on hand-held mobile device use while driving. Evidence will need to be collected, compiled, translated, and provided to policymakers to help inform ongoing debates.

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