

## Distracted Drivers in School Zones



### Background and Related Research:

Cell phones, music devices and fast food have all become a major part of American culture. For example, cell phone use has rapidly increased from 38 million users in the 1980s to 210 million users in the late 1990s thus demonstrating the dependence people have on these devices. However, safety

concerns related to talking or texting on cell phones, using global positioning devices (GPS) for navigation, and listening to music while driving continue to be documented.

The main issue deals with the inability of the human brain to effectively perform multiple tasks while driving at the same time. During every moment of the "Driving Task," vehicle operators are constantly being challenged by a changing environment and road conditions; by the actions of other drivers, bicyclists, and pedestrians; and by the actions and behavior of passengers and objects in the car. Many drivers also operate their vehicles under less than ideal conditions such as being tired or being physically/emotionally stressed. The sum effect of all these factors makes driving an extremely complex task even under the best of conditions.

While it is very hard to measure the actual number of crashes caused by cell phones, it is estimated that drivers are at far greater risk when talking or texting on phones, according to the recent study by the Virginia Tech Transportation Institute. In this study they documented an almost six times greater risk when dialing a phone and 23 times greater risk when texting. Similarly, other studies show that automobile drivers using a phone are four times more likely to crash than drivers not using a phone. This is comparable to drivers with blood-alcohol content of .08.

The National Highway Traffic Safety Administration estimates that in 2003, 240,000 car crashes and 955 deaths occurred due to cell phone use. This may be an underestimation of the true number since it is particularly challenging for police and crash investigators to identify cell phone use as a factor contributing to a crash or death. Knowing this, the Harvard Center for Risk Analysis estimated that cell phone use was a factor in 6% of crashes in 2003. That estimation translated to 636,000 crashes involving 12,000 major injuries and 2,600 deaths.



Distractions, however, are caused by more than just cell phones and texting devices. In 2001, the University of North Carolina's Highway Safety Research Center conducted a "naturalistic" study where they video recorded 70 drivers for 10 hours in a week and observed the types of activities drivers engaged in while operating their vehicles. They reported that 15% of the time the vehicles were moving drivers were in an active conversation with passengers; 5% of the time they were preparing, eating or spilling food; 4% of the time they were reaching or leaning; 2% of the time they were smoking; 1% of the time they were using a cell phone; and 1% they were adjusting the radio/CD/music device controls.

A recent Canadian study used spatial analysis to show that the 150 meter area around schools had the highest proportion of child-car collisions and proportion of fatalities as compared to areas 300 meters or more away from schools. Moreover, this study showed that 50% of these collisions occurred in months and times-of-day when children were most likely to be walking to or away from school. While this study is important in establishing that excessive risk exists in school zones, it does not describe factors that are associated with this risk. Previous studies have shown that factors associated with child pedestrians and car collisions include school density, population density, traffic volume, rush hour time periods, socioeconomic status, season, and the spatial relationship between schools, streets, and parking areas. To date, no studies have addressed the issue of distracted drivers in school zones.

#### Methods:

In order to better understand the magnitude and characteristics of distracted drivers in active school zones, the study's coordinators used road-side observations of drivers in active school zones.

Observations were made by trained observers at 20 middle schools located in 15 states.

Each study site had a SAFE KIDS coalition member serving as a study coordinator who was trained on data collection protocols. Each data collector was stationed approximately at the middle of the school zone road segment, assigned a lane of traffic and instructed to face traffic and record observations by looking through the front windshield of an approaching car as to avoid any obstruction from side window tinting. A paper data collection form was designed to simplify rapid documentation of driver and vehicle characteristics such as gender, seat belt use, type of vehicle (car or pickup/SUV/Minivan), vehicle classification (private or commercial). Each study site made multiple observations on three different days of the week during a normal school session. Driver distraction rates were calculated as the number of drivers engaging in a distraction divided by the total number of vehicles observed.

## Results:

Of the 41,426 cars that were observed traveling through an active school zone, one in six drivers were distracted. Both male and female drivers had high distraction rates. It was calculated that for every 1,000 female drivers 187 were distracted and for every 1,000 male drivers 154 were distracted. Cell phone/electronics was the leading distracter, followed by eating/drinking/smoking, reaching/looking behind, grooming, and reading. Female drivers were more distracted by cell phones and grooming activities than men; however, males and females were distracted by eating, reaching behind, and reading about equally.

The majority of distracted drivers were observed during the afternoon school zone hours as compared to the morning hours. Distracted drivers appeared more frequently in school zones without flashing lights and in school zones that had a daily traffic volume of 10,000 or more cars. School zones that have an associated decrease in speed limit showed a higher distracted driver rate than school zones that did not change the speed limit. Drivers of larger vehicles such as sports utility vehicles, pickup trucks, and minivans were more distracted than car drivers. Females in commercial vehicles were significantly less distracted than females in private vehicles whereas males had the opposite trend where they were more distracted in commercial vehicles as compared to private vehicles. Regardless of gender, if the driver was not wearing their seatbelts then they were 35% more likely to be distracted as compared to drivers using seatbelts. Likewise, drivers in states that restrict the use of handheld electronics for all drivers (regardless of age) were 13% less likely to be distracted as compared to drivers in states that have no restrictions.

It was observed that unbelted female drivers were 40% more likely to be distracted as compared to belted female drivers and that female drivers observed in the afternoon school zone times were 29% more likely than female morning drivers to be distracted. When analyzing the distracted driving behaviors among males in school zones it was observed that unbelted males were 38% more likely to be distracted than belted males and that males on high traffic volume roads were 17% more likely to be distracted than male drivers on low volume roads. Likewise, males driving large vehicles (SUVs/pickup trucks/minivans) were 17% more likely to be distracted than males in cars.

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