

TEEN DRIVING FATALITIES

By

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A Thesis respectfully submitted

To

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Florida Metropolitan University Online

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Chapter I

Introduction

My name is Russell Brown. I have been a police officer for almost twenty years. Sixteen of those years have been with the police department in Evanston, Illinois. For the last ten years, I have been a traffic officer. A good portion of my responsibilities have been educating the public in traffic related matters as well as investigating fatal traffic crashes, and enforcing laws aimed at impaired drivers. In my work, I have educated teens at our local high school, giving several presentations on impaired driving. I have also arrested some of the high school teens for impaired driving, and unfortunately, I have investigated fatal crashes involving those same teens.

This thesis reviews the problem of traffic fatalities caused by teen drivers. Thousands of teens die every year on the streets and highways of America. There are various causes and conditions that account for these deaths. This thesis opens with a look at the factors surrounding teens dying on our roads. It explores many of the contributing factors leading up to the deaths, as well as measures that can be taken to help reduce the numbers of teens killed in vehicles. Finally, this thesis will offer recommendations to reduce the number of teens killed in motor vehicle crashes.

Chapter II

Need for the Study

FOCUS STATEMENT

Traffic fatalities are the leading cause of death among teens and young adults. Driving, itself, is an inherently risky behavior. When other factors are added in, driving becomes even more dangerous, especially for teens. Having other teens in the vehicle, nighttime driving, speeding, not wearing seatbelts, and other factors increase the chance of a teen being killed in a crash. However, when alcohol is factored in, the risk of a teen being killed is dramatically increased. This thesis will examine the factors surrounding teen traffic fatalities and will focus on the issue of impaired teen driving. The thesis will also examine the effect intervention programs have on reducing the likelihood of a teen being killed in an alcohol related traffic crash, as well as other programs and laws that have been shown to reduce the numbers of teens killed on the roads.

PURPOSE

It has been proven that the highest mortality rate among teens involves traffic crashes. Many factors associated with driving, especially among teens, tend to increase this risk. Teens inherently take greater chances and participate in “risky” behaviors that increase their risk of being killed either when driving, or riding in a car being driven by a teen. There is, however, one behavior that makes their chances of dying greatly higher. If alcohol is added as a part of the equation, the mortality rate for teens sky-rockets. There are, however, things

that can be done to prevent this. New laws have been enacted, and programs offered to help teens cope with the newly-learned skill of driving. Programs have also been developed and improved upon to help prevent teens from getting behind the wheel after drinking, or into a car where the driver has been drinking.

PROBLEM STATEMENT

In all the traffic fatalities where teens are involved, there is a high percentage where alcohol has been a factor in the crash. Whether it is the driver that is killed after drinking, or a passenger in the vehicle of a drinking driver, the rate of teen fatalities is significantly increased. This is not just a theory. There is documented evidence that supports this claim. Many studies have been conducted by health organizations, The U.S. government, and the insurance industry to support this claim. It is a proven fact that the chances, for a teen, of dying in a vehicle crash are much higher when there is alcohol involved. However, if teens have previously been exposed to some type of an intervention program, the chances of them dying in an alcohol related crash are reduced.

RESEARCH QUESTION

The question to be answered in this thesis will involve the rates teens are killed in alcohol related vehicle crashes and the effectiveness of intervention programs. Specifically, how much greater is the chance for a teen to die in a crash involving alcohol than in a crash where alcohol is not a factor, and do intervention programs help lower the risk?

RESEARCH HYPOTHESIS

There have been many studies regarding the mortality rates among teen drivers. More teens are killed in car crashes than any other manner. There is more evidence that alcohol plays a significant factor in the rate teens are killed in vehicle crashes. For this thesis, this hypothesis was tested: There is a greater risk of teens being killed in a crash where alcohol is involved. However, if teens are subjected to intervention programs, the risk of dying in an alcohol related crash is lessened.

Chapter III

Review of the Literature

Concepts Defined

To have an accurate understanding of this topic, the reader must be aware of the concepts that will be put forward. There are terms and ideas to be presented that deal with the issue at hand. Some of the key concepts that will be examined are;

Teen Drivers – The age groups for this class are drivers 15-20 years of age.

Traffic Crash – This is a crash involving a motor vehicle.

Single Vehicle Crash – This is a crash where only one vehicle is involved. This may include striking an object such as a tree, or pole. This may also include striking a pedestrian or bicyclist.

Injury Crash – This is a crash where one or more persons are injured.

Fatal Crash – This is a crash where one or more people are killed.

Graduated Driver's License Program – A program developed to gradually increase the driving privileges of new teen drivers.

Minimum Legal Drinking Age (MLDA) – The minimum age that a person can legally purchase and consume alcohol.

Intervention Program – A program aimed at teens to discourage them from drinking and / or drinking and driving.

Facts

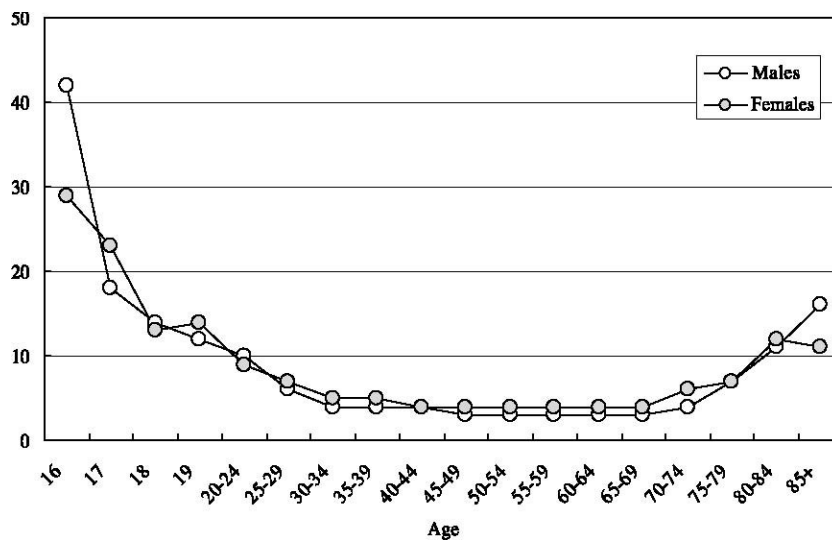
In 2000, there were 190.6 million licensed drivers in the U.S. Of those, 12.9 million (6.8%) were teens age 15-20. Motor vehicle crashes are the leading cause of death and injury to teens. There are, annually, over 6,000 crashes where teens are killed or injured. Of those 6,000, 14% were fatal crashes. Of those fatal crashes, 60% of the teens killed were un-restrained. In 65% a teen was driving the vehicle. In 50%, a sixteen year old was driving, and the crash was single vehicle and finally, 41% occurred at night. Out of the numbers of miles traveled, teens, by far, have the highest rate of crashes.

Scope of the Problem

Impaired driving and crashes resulting from it is nothing new. From the invention of the auto, there have been impaired drivers. The problems associated with teen drivers are also not new concepts. According to the National Highway Traffic Safety Administration (NHTSA), motor vehicle crashes are the leading cause of death for teens age 15-20. In 2001, there were 3,608 teens killed, and 337,000 injured in crashes. The human element is not the only problem. These crashes had a total cost of over 42 million dollars. With the rapidly growing youth population, and the amount of new drivers growing every day, the amount of teen fatalities is also expected to rise. It is up to the lawmakers, parents, and police to make sure that all the necessary steps are taken to help teen drivers make good decisions, and limit their driving, access to alcohol, and educate them as to the dangers associated with driving in general, and impaired driving in particular.

Teen Driving Fatalities

Traffic fatalities are the leading cause of death among teens and young adults, accounting for one-third of all deaths among those 15-20 years of age. Driving is an inherently risky behavior, and teens rarely die of other non-violent causes. Teens also face levels traffic-related risks that are substantially higher than those of older, more experienced drivers. The teen traffic fatality rate is nearly double the rate for adults 25 and older. Since teens drive less than adults, this ratio increases to nearly 2.5 when denominated by miles traveled.¹ For new drivers, sixteen year olds, in particular, traffic fatalities are even more prevalent. From 1975 – 1996, the traffic fatality rate for sixteen year olds increased by about 50 percent. They went from 362 deaths in '75 to 547, annually, in '96. This equates to 19 deaths per 100,000 miles driven in '75 to 35 per 100,000 in '96.² The chart below shows the number of deaths, by age, per million miles traveled in 1995.



Risk Taking and Driving

There are many factors that come into play when looking at the high mortality rates of teen drivers. One striking factor is the inherent risk taking behaviors of younger people. Young adults are known for their risky behaviors. Many have not had the life experiences and opportunities that help mold the common senses of older adults. Driving, like many other tasks, is a learned skill. Young drivers have not had the numerous learning experiences that older drivers have been subjected to, and their willingness to take risks that more experienced drivers would not have proved to be fatal mistakes. Things such as speeding and tailgating are examples of driving behaviors more experienced drivers may be reluctant to do, whereas a younger driver does not recognize the dangers involved. Differences have been observed in the choices drivers of all ages make about appropriate driving speed, following distance, gap acceptance and so on. A number of observational studies have found that young drivers tend to accept narrower gaps when pulling into traffic. They have also been observed with narrower gaps when pulling into traffic, shorter following distances, and driving faster.³ As Brown and Groeger (1988) point out, risk perception involves not only an assessment of the potential hazards in the traffic environment but also an assessment of the abilities of the driver and the vehicle to prevent potential hazards from becoming actual crashes. Only a small fraction of potential hazards represents any real danger for a driver in any given situation, but more experienced drivers will be able to better quantify the degree of a given danger and respond appropriately.⁴ Brown and Groeger also point out there is evidence

that novice drivers are less able to assess hazards in the traffic environment. Novice drivers have a different visual fixation and scanning pattern than experienced drivers, focusing less on distant hazards. McKnight and McKnight (2000) also reported deficits in the ability of young drivers to identify potential risks on the road. For example, they reported among young drivers, inadequate search, including not watching the car ahead, contributed to a greater percent of crashes.⁵ There is evidence that despite their inexperience, young drivers perceive their own risk of being in a crash as significantly lower than that of their peers, or older male drivers.⁶ It has been well established that few drivers believe they are bad drivers – the bad drivers are the other people. Thus, drivers of all ages tend to rate their own driving skills as better than average.⁷ In a study by Matthews and Moran (1986), young drivers consistently rated their own abilities as equal to that of older drivers and higher than that of their peers.⁸ As we will see, one of the riskiest behaviors a teen can subject themselves to is mixing driving and alcohol use.

Seat Belt Use

Seat belts are a very effective means of reducing the risk of injury or death in the event of a crash. However, there is abundant evidence from observations and crash data that teenage drivers and passengers use belts less often than older occupants.⁹ Observational studies of teens have reported lower use rates among males versus females, passengers versus drivers, passengers with teen drivers versus adult drivers, and occupants of pick-ups versus cars.¹⁰ Studies that have examined seat belt use among fatally injured teenage drivers indicate

that belt use is even lower in situations of higher crash risk, such as late at night or when drivers have consumed alcohol, increasing further the potential for injury.¹¹ Safety belts saved more than 12,000 American lives in 2001. Yet during that same year, nearly two thirds (60 percent) of passenger vehicle occupants killed in traffic crashes were unrestrained.¹² In 2001, 5,341 teens were killed in passenger vehicles involved in motor vehicle crashes. Again, two thirds of those teens were also unrestrained.¹³ Many high school students fail to use their safety belts even when riding with adults who are buckled up. An observational study conducted at twelve high schools found that 46 percent of high school student were not wearing their safety belts when riding with adult drivers. About half of the unbelted students were riding with adults who were belted.¹⁴ Another study showed that male high school students (18 percent) report they are likely to rarely or never use safety belts compared with female high school students (10 percent).¹⁵

Passengers in the vehicle

As the number of passengers increase in a car being driven by a teen driver, so does the likelihood of fatal injury to the driver, according to researchers at the Johns Hopkins School of Public Health.¹⁶ The research found that drivers aged 16 and 17 years had a much higher risk of dying in a crash than did older drivers, and that, compared with driving alone, driving deaths per 10 million trips increased with the number of passengers. The highest death rate was among drivers aged 16 years carrying three or more passengers (5.61 per 10 million trips).¹⁷ A NHTSA study determined that children 15 and under had twice the risk

of becoming a fatality if the driver is 20 or younger than if the driver is in the age range of 35 to 40.¹⁸ The potential effects of passengers on crash involvement have long been recognized. Having passengers in the vehicle creates a social system that can affect driving behavior. Recent research has brought increasing recognition that the presence of passengers can powerfully affect the likelihood of a crash, and the effects can be positive or negative. Earlier research suggested that young drivers were more likely to crash if passengers were present (Foldvary and Lane, 1969)²⁰, and more recent research has confirmed and elaborated that finding. It is a very high risk situation for teenage drivers to have passengers present, particularly teenage and multiple passengers. Passengers increase the risk for property damage, non-fatal injury, and fatal crashes, and teen drivers transporting teen passengers is a high exposure activity and a major contributor to the overall problem.²¹ More than half of all deaths in the crashes of 16 to 17 year old drivers occur when passengers younger than 20 are being transported and there is no adult in the vehicle.²² The below chart shows typical findings of crash deaths and passengers.

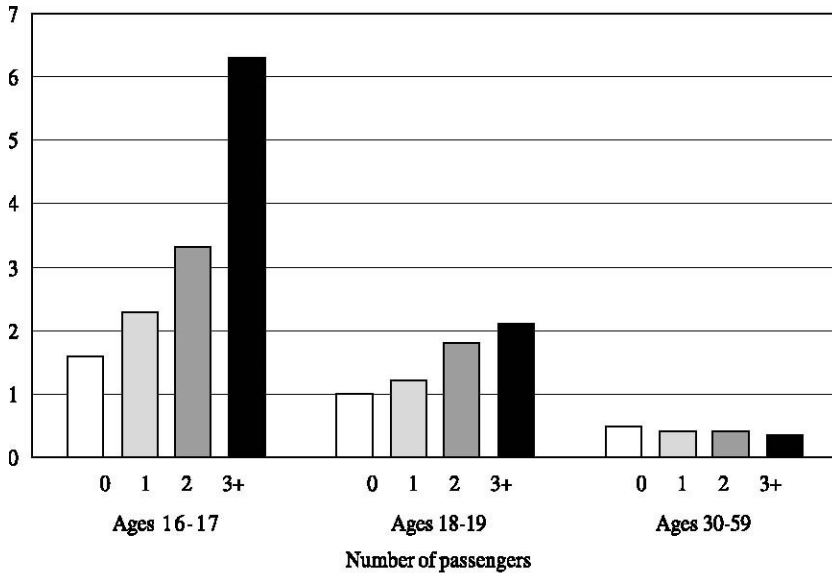


Fig. 13. Crash rates by driver age and passenger presence per 10,000 trips.

This figure illustrates a central feature of the heightened crash risk associated with passenger presence. It shows it increases the risk only for teens, especially the youngest teenagers. The figure also shows that crash risks for teen drivers increases exponentially with one, two, or three or more passengers. With three or more passengers, the crash risk is about four times greater than when driving alone.²³ Studies have shown that both male and female drivers have increased risk with passengers present, and the increased crash risk exists for both day and nighttime hours in about the same proportion.²⁴ Crash risks with passengers can be expected to differ by the nature of the relationship among vehicle occupants, trip purpose, and other factors. The sex of the passenger has also been studied and shown to have an affect. Most studies showed that male passengers had the greatest effect on the crash risk, no matter the sex of the driver. In a study by McKenna, Waylen & Burkes, it was shown that young drivers with male passengers drove more dangerously than drivers without passengers.

They drove faster and accepted smaller gaps at intersections with the male passengers in the vehicle. However, males with female passengers drove slower and did not follow vehicles as closely as did males driving alone.²⁵

Other Factors

Age, experience, seatbelt use, and passengers in a vehicle account for quite a few teen deaths. There are, however, other issues that coupled with a teen driver have increased the likelihood of a crash fatality for teen drivers. It has been shown that summer has unique factors that have shown to increase the risk of teen driving fatalities. Teens tend to drive more during the summer months than they do during the school year. Teen drivers average 44 percent more hours behind the wheel during the summer (23.6 hours) than during times when school is in session (16.4 hours).²⁶ During the summer months, teens are more likely to have passengers in their vehicle. As shown above, the more passengers there are in the vehicle, the greater the chance of being killed in a crash. Twenty three percent of teen drivers are more likely to drive with three or more teens in the car in the summer, compared to six percent during the school year.²⁷ According to 2001 data, more than a quarter (27 percent) of teen driving deaths, aged 16-19, occur between the hours of 9 p.m. and 2 a.m. Teens report they stay out later during the summer months; meaning, in the absence of state licensing laws that restrict the time of day when they can drive, they are potentially driving their vehicles in a more tired physical and mental state.²⁸ Forty seven percent of teens reported they are more likely to be out driving late at night during the summer than the six percent during school.²⁹ Late night driving increases the crash risk

among young drivers for a variety of reasons: the driving task is more difficult in darkness; many newly licensed drivers will have had less driving practice at night than during the day; fatigue – thought to be a problem for teenagers at all times of the day – may be more of a factor at night; and recreational driving is considered to be high risk, sometimes involving alcohol use, is more likely to take place at night.³⁰ With evidence accumulating that teenagers often do not get enough sleep, the issue of fatigue as a risk factor is growing in prominence. There is evidence that adolescents' sleep patterns undergo a shift towards later times for both sleeping and waking. This shift is counter to the very early high school starting times in many areas. The result is an increase in daytime sleepiness among adolescents and even greater potential for sleepiness at night, especially if combined with alcohol. There is also some evidence that acute sleepiness while driving can increase the risk of an injury crash independent of the effects of alcohol. However, the contribution of fatigue to teenage crashes is not well established. A recent study reported elevated late night crash risk among younger drivers (18-24), excluding crashes where alcohol use was suspected, but no research to date has specifically examined the youngest drivers (16-17).³¹ Late night driving increases crash risk, but only for serious crashes. The table below shows that the nighttime (9 p.m. to 5:59 a.m.) fatal crash risk for 16 year old drivers is particularly high, about three times the daytime risk.

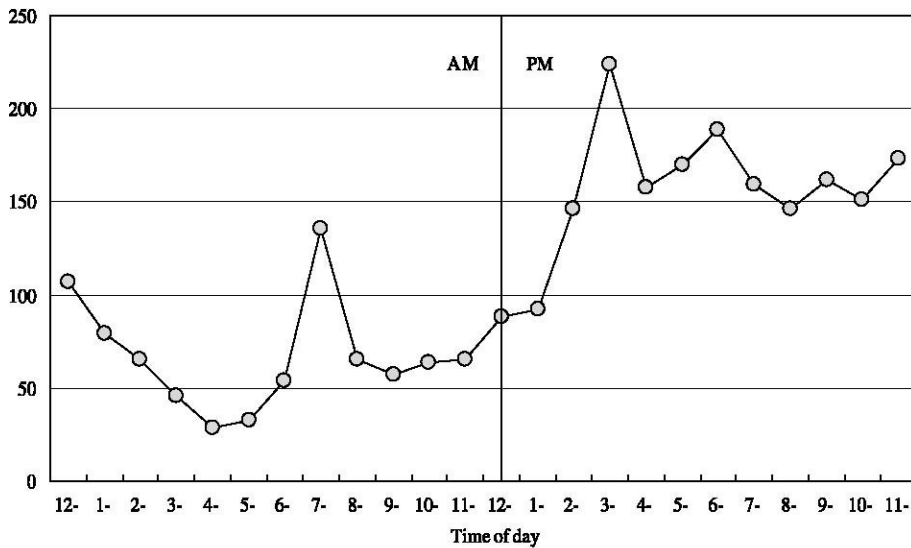


Fig. 11. Sixteen- to 17-year-old drivers in fatal crashes, hour by hour, 1995.

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With the proliferation of cell phone ownership and the growing evidence of an increased crash risk when people use cell phones while driving, more emphasis is being put on the issue of in-vehicle distractions. Many devices already in vehicle such as radios and CD players have the potential to distract drivers. Furthermore, manufacturers are incorporating additional technologies that may require interaction while driving, such as navigation devices. Although very few studies have examined the distracting effects of cell phone use on beginning drivers, it is possible that they may be more affected by distractions than more experienced drivers. Studies suggest that young drivers are not as efficient as more experienced drivers in processing the visual information needed to drive safely while attending to non-driving tasks at the same time.³³ Many studies have attempted to quantify the effects of cell phone use on the driving task. These studies measured the attentional burden associated with the driving task in a number of ways, including the use of a driving simulator, driving a vehicle on an off-road track, and driving in actual driving conditions. Overall,

these studies suggest that using a cell phone while driving can impair driving performance, specifically in the maintenance of lane position, appropriate traffic speed, appropriate following distance, and gap acceptance. Using a cell phone can also reduce driver awareness of other traffic on the road and can increase reaction times.³⁴ However, most studies have not examined the risk of cell phone use specifically for novice drivers. One study examined the length of drivers' glances away from the road while performing a secondary task, either changing a cassette, dialing a cell phone, or searching for a station on the radio during on the road driving. Novice drivers showed a greater variability in glance duration, with more short and more long glances directed at the in-car task. None of the experienced drivers took glances longer than three seconds while 29 percent of novices did. These longer glances were associated with greater lateral displacement of the vehicle.³⁵

A few studies indicate that teens are more likely than the overall driving population to drive older and smaller vehicles, a factor that can increase their chances of injury in the event of a crash.³⁶ Smaller vehicles provide less protection than larger ones, and older vehicles do not have the latest crash protection features such as front and side impact air-bags. For example, among 16-19 year old drivers, the risk of dying in a crash is much higher if they are driving the smallest cars compared with the largest cars (26 vs. 17 deaths per 10,000 crashes).³⁷ In a study about why teens drive vehicles that are less safe, one researcher found that the reasons were based more on practicalities; already owned the vehicle, vehicle was cheap, the teen wanted it, than on safety.³⁸

Contributing to the risk of poor vehicle choices is the fact that teens who own their own vehicles tend to drive more miles, report more risky driving, and report more vehicle crashes than non-owners.³⁹

Drinking and Driving

Although there are numerous factors that make teens more likely to die in a car crash, the factor that, by far, outweighs all others is the combination of drinking and driving. By mixing these two components, the chances of being killed in a car crash sky-rocket. Underage drinking is itself a national epidemic. In 2003, a survey of 6th, 7th, and 8th grades showed 37 percent reported drinking all types of alcohol, and underage drinkers are estimated to consume 19.7 percent of all alcohol consumed in the U.S.⁴⁰ Not only is this an issue for the health of the teens involved, but there are social and economic costs as well. In the category of social costs,

- Alcohol plays a significant role in the four leading causes of death among persons ages 10 to 24: (1) motor-vehicle crashes, (2) unintentional injuries, (3) homicide, and (4) suicide.
- Young people who drink before 15 are four times more likely to develop alcohol dependence than those who begin drinking at age 21.
- 59.2 percent of 6th through 12th graders who consumed liquor in 2002 – 2003 reported having trouble with the police.
- 17.2 percent of male high school students reported driving a car after drinking alcohol, compared to 9.5 percent of female students,

within 30 days prior to responding to the survey. Out of all high school students, 13.3 percent drove after drinking.

- Of youth age 15-20 involved in fatal traffic crashes in 2000, 30.1 percent died in a crash with alcohol-impaired young drivers. Of those alcohol related traffic fatalities, more than twice as many youth had BAC levels of 0.10 or greater, compared to youth with BAC levels of 0.01 – 0.09.
- High alcohol consumption is associated with lower GPA's, lower academic achievement, and lower wage potential.

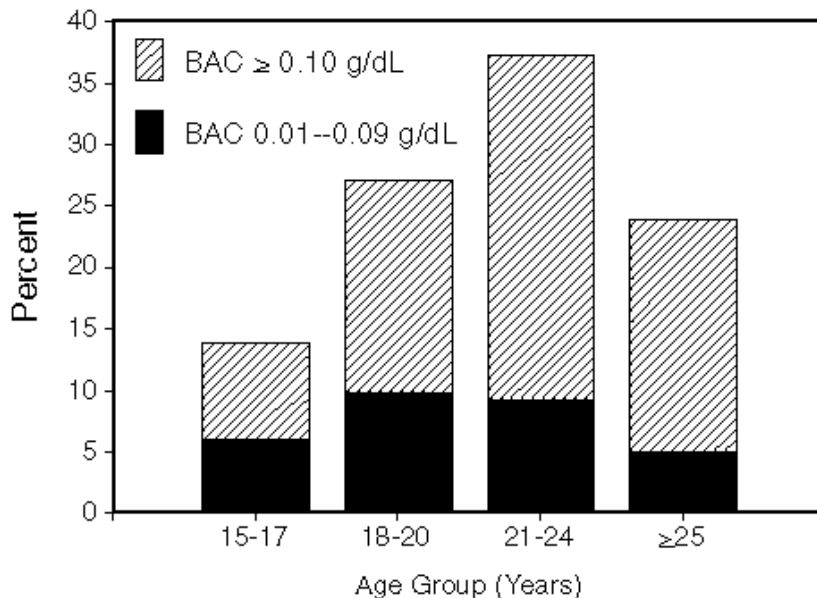
As economic costs go:

- The cost to Americans of underage drinking totals nearly \$53 billion, equivalent to \$200 for every man, woman, and child in the U.S.
- The cost of alcohol related teen violence and delinquency totals an estimated \$29.4 billion annually.⁴¹

The costs to Americans, as one can see, are staggering. However, when driving is included, the costs can be much greater. Although persons between 16 and 24 years old compromise only 20 percent of the total licensed population, and 20 percent of the total vehicle miles traveled in this country by all licensed drivers, they cause 42 percent of all fatal alcohol related crashes.⁴² Mothers Against Drunk Drivers (MADD) has long been an advocate in reducing the number of alcohol related traffic fatalities.

In a study conducted by MADD on youth drinking and driving, it showed that young drinkers are most likely to be involved in single-vehicle collisions. In nearly two-thirds of the alcohol involved multiple vehicle crashes it was the fatally injured teen driver who had been drinking and not the other driver. By the time a teen driver reaches a blood-alcohol level (BAC) of 0.10 that driver is 51 times more likely than a non-drinking driver to be involved in a fatal crash.

Distribution of blood alcohol concentrations (BACs) among alcohol-involved drivers in crashes in which at least one person was killed,* by age group of driver — United States, 1994



*The driver may or may not have been killed in the crash.

Source: Fatal Accident Reporting System, National Highway Traffic Safety Administration.

The survey also showed that one in ten Americans aged 12 and older in 2000 (22.3 million persons) drove under the influence of alcohol at least once in the 12 months prior to the interview for the survey.⁴² Another study conducted in 2000 by the National Center on Addiction and Substance abuse looked at teen alcohol related crashes. The study

showed that in that year, 16,653 people were killed in alcohol related crashes. 30 percent of 15-20 year old drivers killed had been drinking, and 21 percent in that age group were legally intoxicated. The costs associated with teen alcohol related crashes totaled \$19.5 billion. Of this amount, \$13 billion was due to pain and suffering, \$5.3 billion was due to work loss, property damage and emergency services, and \$1.1 billion was due to medical care.⁴³ The phenomenon of drinking and driving with teens seems to follow certain guidelines according to age, sex, and race. For drivers age 15 to 20, alcohol involvement is higher among males than in females. In 2002, 27 percent of the young male drivers involved in fatal crashes had been drinking at the time of the crash, compared with 11 percent of the young female drivers involved in a fatal crash.⁴⁴ In the area of race, in a Center for Disease Control (CDC) survey in 1999, they found that Caucasian students had the highest rate of drinking and driving with 14.6 percent. Hispanic students were next at 12.7 percent, and African American students were last with 7.9 percent.⁴⁵ Being killed in an alcohol related crash is not just a problem for the impaired driver. The passengers in their vehicles are also at risk. Another issue relating to drinking and driving fatalities is the day of the week. Many surveys have found that weekend nights are more deadly for teens. In 2000, 54 percent of fatal traffic crashes involving alcohol occurred on Friday, Saturday and Sunday.⁴⁶ Another time of the year that sees an increase in teen alcohol related crash fatalities is the months surrounding prom and graduation.

The below table supplied by NHTSA shows the percentage of teens killed in alcohol related crashes during prom and graduation weekends in 1999

Prom / Graduation Dates	Total Traffic Fatalities	Total Fatalities Alcohol-Related	Percent Alcohol-Related
4/16/99 - 4/18/99 (6:00 pm Friday to 5:59 pm Sunday)	188	107	57%
4/23/99 - 4/25/99 (6:00 pm Friday to 5:59 pm Sunday)	217	134	62%
4/30/99 - 5/2/99 (6:00 pm Friday to 5:59 pm Sunday)	248	130	52.5%
5/7/99 - 5/9/99 (6:00 pm Friday to 5:59 pm Sunday)	242	130	53.6%
5/14/99 - 5/16/99 (6:00 pm Friday to 5:59 pm Sunday)	261	135	51.6%
5/21/99 - 5/23/99 (6:00 pm Friday to 5:59 pm Sunday)	238	127	53.6%
5/28/99 - 5/30/99 (6:00 pm Friday to 5:59 pm Sunday)	257	151	58.6%
6/4/99 - 6/6/99 (6:00 pm Friday to 5:59 pm Sunday)	204	110	53.8%
6/11/99 - 6/13/99 (6:00 pm Friday to 5:59 pm Sunday)	261	155	59.3%

It is very evident that this rite of passage for teens can have deadly ramifications if alcohol and driving are combined. In a 2000 study, 58 percent of traffic fatalities were alcohol related during this same period. This compares with 41 percent the rest of the year.⁴⁷

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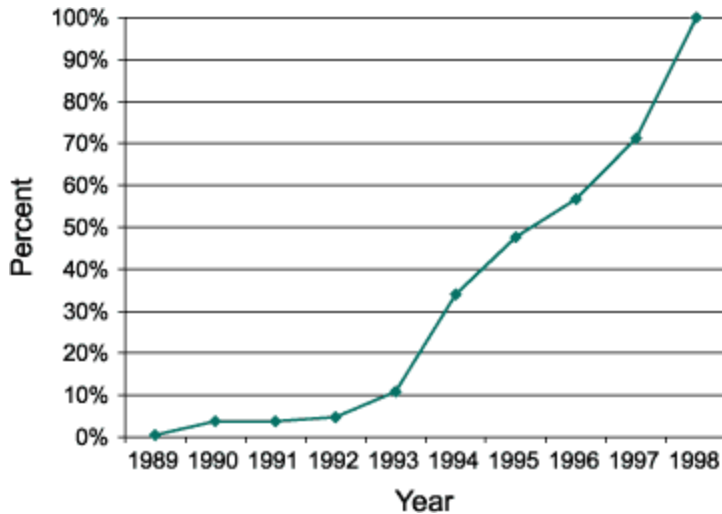
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vided that states that failed to raise their MDLA to 21 would lose a portion of their federal aid for highway construction and funding. By 1988, all states had raised their MDLA to 21.

Zero Tolerance Laws

Zero tolerance laws are a combination of MDLA laws that prohibit drinking by teens and per se laws that make it illegal to drive with a BAC exceeding a specific level. If it is illegal for teens to drink, then it should be illegal for teens to drive with any alcohol in their system. Most zero tolerance laws set the maximum BAC a teen driver can have at 0.00. A teen caught with a BAC higher than that faces suspension and/ or revocation of their driving privileges. Once again, Congress stepped in to legislate a national zero tolerance law. The National Highway Systems Designation Act accomplishes the same goals for zero tolerance as were used for the MDLA laws. It reduces Federal highway funding for those states that do not have a zero tolerance law in effect.

Percent of U.S. population age 16-20 covered by zero tolerance laws



NHTSA

Law Enforcement

Law enforcement can also play an active role in reducing the number of teen fatalities. The appearance of strict enforcement of drinking and driving laws, as well as other pro-active measures like DUI roadblocks, spot checks of liquor establishments, purchasing stings, and education can have positive influences. Having the perception of strict enforcement of the DUI laws is one of the best tools to have. If the teens feel there is a strong likelihood they will get caught if they drink and drive, there is the hope that the fear of arrest would dissuade them. One way for law enforcement to uphold that image is to conduct numerous, publicized, DUI roadblocks. Although they may not be as effective, the appearance is that the police agency is taking steps to reduce the number of impaired drivers on the road.

School and community youth programs

Another major strategy used over the last twenty years is to motivate youth not to drink and drive through positive means by education on crash and injury risks posed by drinking and driving and the effects of alcohol use and abuse. This is done by providing positive role models that discourage the use of alcohol, establish youth norms that do not include alcohol, and by encouraging youth activities that do not involve or lead to alcohol use. These strategies are implemented through school or community programs. There are several programs throughout the U.S. that fall into this category. SADD (Students Against Drunk Driving) was founded in 1981 as a high school based program to reduce teen drinking and driving. The original model included assemblies, chapter meetings, alcohol free activities, a curriculum, and a “contract” that the students signed with their parents. This contract specified that if the student had been drinking, they could call their parents for a ride home, and the parent would pick them up and not berate them for their behavior. By 1994, there over 16,000 SADD chapters in high schools throughout the U.S.

Several states have also created programs that also attempt to educate teens on drinking and driving. Colorado developed “refusal skills”, an alcohol education program which was part of the regular school curriculum. This program later evolved into STAND (Students Taking a New Direction), which resembles the SADD program, and has been affiliated with SADD for several years. Colorado has also developed the GAMMA program which is tailored to college age students and is present on many of the college campuses throughout Colorado. Connecticut has developed the Project Graduation program. This

program teams with local police officers and is conducted around the prom and graduation times of the year. This program also contacts the at risk population and educates the teens on the issues surrounding drinking and driving. Kansas has implemented a pilot drug and alcohol program in several Wichita schools. This program later spread throughout the state and promotes drug and alcohol free lifestyles. Nevada also developed their own program, which was later joined with SADD. New Jersey developed the SOBER campaign. This program is a community level public information campaign involving SADD, MADD, and several other programs. Ohio has been a leader in the prevention arena. Over 1,300 high school programs were conducted in Ohio from 1986 to 1991. Ohio also teams with local police to encourage enforcement of the MLDA and zero tolerance laws. Pennsylvania and Washington are also leaders in developing high school based programs aimed at reducing alcohol related deaths among teen drivers. In 1988, Massachusetts began the Saving Lives Program. This intervention, titled the Saving Lives Program, organized multiple city departments and private citizens to reduce alcohol-impaired driving, related driving risks, and traffic deaths and injuries. In each of the five program communities a full time coordinator organized a task force of concerned private citizens, organizations, and officials representing various city departments. Each community developed most of the program initiatives, which included media campaigns, business and public information programs, hotlines, various training and education programs, and increased liquor outlet surveillance, among others. These activities, as well as the program coordinator positions and increased law enforcement activities

were grant-funded. To determine program effects, fatal crash and injury data were examined for the five year period before the program began and the five year period after it was implemented. Annual surveys of speeding and seat belt use were conducted during the program, and four telephone surveys were conducted to assess program awareness, beliefs about police enforcement, and frequency of drinking and driving. Saving Lives cities were compared with five other cities which had also applied for the program. There are numerous other programs that are aimed at reducing alcohol consumption by teens in general, not just as it relates to driving. One successful program out of Minneapolis is the Communities Mobilizing for Change on Alcohol (CMCA). CMCA is a community-organizing program designed to reduce adolescent (13 to 20 years old) access to alcohol by changing community policies and practices. Initiated in 1991, CMCA has proven that effectively limiting the access to alcohol to people under the legal drinking age not only directly reduces teen drinking, but also communicates a clear message to the community that underage drinking is inappropriate and unacceptable. CMCA employs a range of social organizing techniques to address legal, institutional, social, and health issues in order to reduce youth alcohol use by eliminating illegal alcohol sales to youth by retailers and obstructing the provision of alcohol to youth by adults. Project Northland is a multilevel, multiyear program proven to delay the age at which young people begin drinking, reduce alcohol use among those who have already tried drinking, and limit the number of alcohol-related problems of young drinkers. Designed for sixth, seventh, and eighth grade students (10 to 14 years old), Project Northland

addresses both individual behavioral change and environmental change. Project Northland also strives to change how parents communicate with their children, how peers influence each other, and how communities respond to young adolescent alcohol use. Components include:

- Parent involvement and education programs
- Behavioral curricula
- Peer participation
- Community activities

Each intervention year has an overall theme and is tailored to the developmental level of the young adolescent. Alcohol is the focus of the Project Northland program because it is American teenagers' drug of choice and inflicts the greatest harm among youth. Protecting You/Protecting Me (PY/PM) is a 5-year, classroom-based alcohol-use prevention curriculum for elementary students in grades one through five (6 to 11 years old) and high school students in 11th and 12th grade (16-18 years). Designed to reduce alcohol-related injury and death in our Nation's youth, PY/PM:

- Is proven to change students' knowledge about their brains and personal development
- Improves elementary students' vehicle safety skills: their ability to protect themselves when they have no option but to ride with an adult who is not alcohol-free

- Increases high school students' perceptions of the risks associated with underage alcohol use
- Improves high school students' teaching and presentation skills

The curriculum:

- Incorporates the latest research on human brain development
- Focuses on the immediate risks of using alcohol before age 21
- Includes parental involvement activities

The program can be taught by trained high school students, as well as by teachers. Start Taking Alcohol Risks Seriously (STARS) for Families is a health promotion program for preventing alcohol use among at-risk middle and junior high school youth (11 to 14 years old). The goal of STARS for Families is to have all youth postpone alcohol use until adulthood. STARS for Families matches media-related, interpersonal, and environmental prevention strategies to each child's specific stages of alcohol initiation, stages of readiness for change, and specific risk and protective factors. This innovative program has been shown to result in avoidance of, or reductions in, alcohol use among participating youth.⁵³ Every 15 Minutes is an emotionally charged and heart-wrenching program is designed to dramatically instill teenagers with the potentially dangerous consequences of drinking alcohol. This powerful program challenges students to think about drinking, personal safety, and the responsibility of making mature decisions when lives are involved. The program's name was derived from the fact that Every 15 Minutes someone in the United States had died (*1990 statistic,

Washington) from an alcohol-related traffic collision. In this program, there is a dramatization of a fatal crash where alcohol was a factor. Real cars are used, and there is a response from police and fire personnel. A “real life” rescue is performed and passengers are removed from the crashed vehicles and transported to a local hospital where one “victim” is pronounced dead. The other student actor is arrested and charged with the homicide. Students from the school participate and act as victims and offenders. Their classmates witness the events as they unfold. Later in the day there is a mock trial of the impaired driver and the remainder of the day is used to discuss the events with the students.

Other Measures

There are other measures that can be taken to reduce the amount of alcohol related traffic crashes among teens. These measures relate to the general consumption of alcohol by teens. These measures tend to fall under the category of liquor control and reducing the availability of alcohol to teens. Some of these measures include;

Taxation – if there are higher taxes on alcohol, this increases the purchase price of the alcohol and limits its availability to those with limited funds.

Reducing commercial availability of alcohol – These measures are directed at alcohol retailers. The goal is to encourage responsible sales of alcohol. Police operations to ensure compliance among the retailers is an effective measure to verify laws are being observed. Another aspect in this category is the limiting of

home delivery of alcohol. Home purchase of alcohol has been a proven way for underage teens to acquire alcohol.

Eliminating underage possession of alcohol – These are strategies to direct actions toward regulations and enforcement against children who are in possession of alcohol. Some considerations could be banning the possession of alcohol by anyone under the MLDA, whether in a public or private setting.

Strengthening the laws on false identification possession could also serve as a deterrent for teens.

Reducing Demand – This area focuses primarily on advertising of alcohol.

Regulations could be stiffened to prohibit advertising of alcohol in public places and limiting sponsorship by alcohol companies at sports venues.

Chapter IV

Evaluations and Conclusions

Conclusions

Youth drinking driver fatal crash involvement has decreased substantially, by 61 percent nationally, from 1982 to 1998 in all regions of the country, and in most states. Nationally, involvement per 100,000 population has decreased 59 percent, from 21.0 in 1982 to 8.6 in 1998. Involvements per population have also dropped by more than 50 percent in 45 states. Thirty-six states raised their minimum drinking age to 21 between 1983 and 1987. The other 14 states had established MLDA 21 before 1983, and all states adopted zero tolerance laws for all drivers under 21 between 1991 and 1998.⁵⁴

Effects of the Laws

The effects of the drinking age law changes on traffic crashes, injuries, and fatalities have been studied extensively. These effects are relatively easy to evaluate for several reasons. Each law applied to all drivers in an entire state as of a specific date, so crash results can be compared within the state, before and after the law, and with other states that did not change their laws at the same

time. Each reduction or increase in a state's drinking age provided a new opportunity to evaluate effects. The United States General Accounting Office reviewed and synthesized results from all 49 studies that had adopted MLDA 21 by 1986. They concluded that raising the drinking age has a direct effect on reducing alcohol related traffic accidents among youths affected by the laws, on average.⁵⁵ MLDA laws clearly reduce teen drinking and driving. The laws appear to have two distinct effects. First, they reduce youth drinking directly. Second, they seem to encourage teens to separate their drinking from their driving. The MLDA laws reduce teen drinking by reducing the availability of alcohol to teens, as well as establishing the threat of punishment. The MLDA laws have also had an effect on teens, and their parents, in that they drive home the risks of drinking and driving. The zero tolerance laws have also has an effect on reducing the number of teen deaths from drinking and driving. Hingson, Heeren, and Winter (1995) studied 12 states that lowered their BAC limit for some young drivers before 1991. They found a 22 percent reduction in single vehicle nighttime fatal crashes in states with a 0.00 BAC limit, compared to a 2 percent reduction in comparison states; a 17 percent reduction in states with a 0.02 BAC limit compared to a 4 percent increase in comparison states; and no effect in states with a 0.04 to 0.06 BAC limit. Blomberg (1992) found an 11 percent reduction in crash-involved drinking drivers in Maryland. In six counties that publicized the zero tolerance laws heavily, teen alcohol related crashed decreased by 50 percent. Voas, Tippetts, and Fell (1999) found that zero tolerance laws reduced the proportion of underage drinking drivers in crashes by 24 percent.⁵⁶ Zero

tolerance laws definitely have reduced teen drinking and driving. There are two reasons for this. First, they deter teens through fear of losing their license if they drive after drinking. Second, they help reinforce the broad disapproval of driving after drinking. Zero tolerance laws also help strengthen the attitudes raised by the MLDA 21 laws. They stigmatize the concept of drinking and driving as well as removing the intermediate issue of underage drinking.

Law Enforcement Effectiveness

The relationship between law enforcement, for MLDA and drinking and driving laws, and youth drinking and driving was examined further using data provided by the FBI. The data set contained the number of DWI arrests and the number of liquor law violation arrests of persons under 21 years of age in each state annually for 1989 through 1995. A general linear model was constructed using DWI arrests, liquor law arrests, year and state as independent variables and the number of youth drinking drivers involved in fatal crashes as the dependent variable. The model showed no significant relationship between these enforcement measures and youth drinking drivers involved in fatal crashes.

This result is not especially surprising as previous studies have not found a strong relationship between DWI arrest totals and alcohol-related crashes. It is generally agreed that laws are most effective in deterring the behavior they prohibit if the public believes that violators are highly likely to be arrested and punished. Good enforcement programs seek to increase the public's perception of enforcement levels, not just raise arrest levels. Some enforcement efforts such

as checkpoints produce few DWI arrests but create substantial publicity; other strategies can raise arrests but have little or no effect on public perceptions. In short, arrest levels generally are not a good measure of public perceptions of enforcement.⁵⁷

Youth Programs Effectiveness

The volume and variety of youth drinking and driving program activity is barely suggested by the preceding information. Unfortunately, most of these activities have not been evaluated, so the evidence of their effects is meager. This section reviews what's available.

SADD.

Two studies attempted to evaluate SADD's activities and effects. Klitzner et al (1994) examined SADD programs in two schools (one each in California and New Mexico). They concluded that neither school implemented the model SADD program well, student participation in SADD was low, and comparisons with similar schools without SADD chapters showed no evidence for SADD effects on any drinking and driving measure. Leaf and Preusser (1995) examined six schools with strong SADD programs (in Arizona, Ohio, and Wisconsin), matched with similar schools with no similar program. They found that students in the SADD schools were exposed to more information about drinking, drugs, and

driving while impaired and were more likely to hold attitudes opposed to drinking and driving. Self-reported drinking and driving behavior was slightly, though not consistently, lower in SADD schools.

Community programs

Two studies show that well-organized community traffic safety programs can reduce youth drinking and driving. The first is the Massachusetts Saving Lives program discussed and evaluated by Hingson et al. (1996). The program operated in six Massachusetts communities beginning in 1989 and conducted many activities addressing all aspects of traffic safety. An evaluation compared results in these communities with five similar communities and with the rest of the state. The evaluation found that the proportion of 16-19 year olds reporting driving after drinking in the previous month dropped from 19 percent in 1988 to 9 percent in 1993 in program cities, a 40 percent decline relative to the rest of the state.

Communities Mobilizing for Change on Alcohol (CMCA) was directed very specifically at reducing youth access to alcohol and youth drinking (Wagenaar et al., 2000). It was conducted in seven Minnesota and Wisconsin communities with eight others serving as controls. Local CMCA organizations implemented many changes in community policies, procedures, and practices regarding alcohol service, backed up with extensive media and community support. The evaluation found that merchants in CMCA communities increased age identification checking and reduced sales to minors. The proportion of 18-20 year olds who

drank in the past 30 days decreased 7 percent compared to the control communities.

Other evaluation evidence

As part of a guide to reducing youth alcohol use, Stewart (1999) reviews the evidence supporting the effectiveness of 36 different strategies. The three strategies directed specifically at driving all involve legislation and enforcement, and all "can be very effective": zero tolerance laws, sobriety checkpoints, and vigorous overall impaired driving law enforcement. The remaining strategies are directed at alcohol use in one way or another. The only strategies that have been proven effective also involve laws and enforcement: enforcement against retailers selling alcohol to youth, better laws prohibiting alcohol possession by youth, increased alcohol taxes, media campaigns supporting enforcement, and school policies regarding alcohol use. All other strategies, including the youth program activities discussed above, either have not been evaluated or evaluations have not found consistent effects. For example:

- Prevention curricula (in schools or youth clubs): evaluations have found weak and inconsistent effects on alcohol use.
- Alcohol-free activities for youth: have not been specifically evaluated.
- Keg registration laws (so that beer keg purchasers may be identified): have not been specifically evaluated.

Clearly, states and communities conducted extensive youth drinking and driving programs in the past two decades. Other organizations concerned with traffic safety - insurance companies, automobile manufacturers, MADD, AAA, and many others - did the same through public education and specific program activities. But there is little evidence of the effects produced by these activities. The CMCA and Massachusetts Saving Lives results show that community programs can be successful. But these two examples were well-organized and well-funded and certainly may not be representative of many other community programs. The SADD evaluations show that effective SADD chapters certainly affect students' knowledge and attitudes and may affect behavior. Again, it is not clear how many SADD chapters operate at this level. When states evaluate the effects of their overall youth impaired driving programs they typically examine the bottom-line measures of youth crashes or fatalities without attempting to disaggregate the effects of specific program components. With the exception of Massachusetts Saving Lives, there is no direct proof that any of the myriad youth traffic safety program activities not involving laws and enforcement had any direct effect on youth drinking and driving. But there also is no proof that they did not. The accumulation of information, education, skills, role models, and the like provided by these programs may have been the crucial force in the youth attitude, behavior, and crash changes documented in Chapter III.⁵⁸

EVERY 15 MINUTES SUMMARY REPORT

FEBRUARY, 2001

This summary includes the responses of students designated as the "living dead" or who participated as part of the crash scene in the Every 15 Minutes program during the 1999-2000 school year.

Participants:

- 1198 participants completed pre and post tests from 47 high schools
- 539 were male and 654 were female
- age range was 14-20 years of age with an average age of 16.74 years
- 5.2% of the students were freshmen; 6.9% were sophomores; 37% were juniors; and 50.4% were seniors

time between pre and post tests ranged from 19 to 118 days with an average of 58 days

Statistically Significant Results from Pre to Post tests:

- students decreased the number of daily and weekly drinking episodes
- less likely to drive when drinking
- less likely to drive when they had drunk 3-4 drinks or 5 or more drinks
- less likely to be a passenger with a driver who had been drinking
- less likely to ride with a driver who had drunk 1-2 drinks or 3-4 drinks
- more likely to watch how much their friends are drinking
- more likely to worry about how much their friends are drinking
- more likely to prevent their friends from driving when the friends are drinking
- more likely to talk with their own parents about drinking
- more likely to talk with a teacher about drinking

- more likely to designate a non-drinking driver
- more likely to buckle their seat belts
- more likely to monitor their own intake of alcohol
- more likely to call for a ride home rather than drink and drive
- more likely to choose not to drink
- more likely to take some ones keys or hand over their keys if drinking
- less likely to engage in drinking games
- less likely to binge drink
- more likely to walk home rather than drive
- more likely to get a ride home rather than drink and drive
- more likely to write a contract with parents regarding circumstances of drinking and driving behavior

Program Evaluation:

On a scale of 1-5, students were asked to rate the meaningfulness of the different components of the program. They are listed here with the most meaningful to the least meaningful.

Event / Goal Rating

- Memorial Assembly 4.02
- Learning about the grief process 3.68
- Retreat 3.53
- Understanding my own vulnerability 3.46
- Legal aspects of drinking and driving 3.42
- Hearing from professionals 3.41

- Collision scene/arrest 3.33
- Obituary 3.00
- Being pulled out of class 2.44

Statistically Significant Results from Pre to Post test for Parents:

- More prepared to control or prevent alcohol problems
- More confident teenager does not drink and drive

Program Evaluation:

On a scale of 1-4, parents were asked to rate the meaningfulness of the different components of the program. They are listed here with the most meaningful to the least meaningful:

Event/Goal Rating

- Child learning about the grief process 3.75
- Child learning legal aspects of drinking and driving 3.63
- Child understanding their own vulnerability 3.53
- Memorial Assembly 3.11
- Letter writing/reading 2.98
- Hearing from professionals 3.56
- Obituary 2.51
- Death notification 2.50

Statistics provided by Every 15 Minutes

The Greene County, Missouri DWI (Driving While Intoxicated) Task Force wanted to determine the effectiveness of "Every 15 Minutes" before deciding to sponsor it for a third time in 2000. Therefore, the purpose of their study was to measure the pre- and post-intervention prevalence of alcohol consumption, student attitudes, and behaviors towards drinking alcohol and driving at Kickapoo High School in Springfield, MO. The Greene County DWI Task Force is a community-based, volunteer organization in Springfield, MO. Its members include representatives from the local school PTAs (Parent, Teacher, and Student Associations), school district administration, the Mayor's office, Springfield Police Department, Greene County Sheriff's Department, Missouri Highway Patrol, and community volunteers who meet to implement activities designed to reduce drinking and driving in Greene County, Missouri. The task force first piloted the "Every 15 Minutes," a teen drinking and driving intervention program at Glendale High School in May 1998, and planned to run the intervention again in May of 1999 at Kickapoo High School in Springfield.

PRE-INTERVENTION RESULTS

The baseline prevalence of drinking behavior was similar at both high schools. The KHS pre-survey and PHS control survey showed similar responses in all categories except that PHS students reported drinking at a slightly younger age. Other differences did not reach statistical significance in terms of prevalence of recent alcohol use, riding with students who have been drinking, or actual drinking and driving behavior. More than 90% of students both at KHS and PHS

had previously participated in the D.A.R.E. program or similar substance abuse programs. The response to questions about attitudes and behaviors toward drinking and driving was the same at KHS and PHS, and was similar to the 1999 Centers for Disease Control Youth Risk Behavior Surveillance Survey (YRBSS) (CDC, 2000) for both U.S. and State of Missouri.

Approximately one-half of the students at both high schools were actively drinking in the thirty days prior to the survey. One-third of the students at both high schools reported heavy drinking, five drinks or more in one evening, at least once in the prior thirty days of the survey. One-third of students had ridden with someone who had been drinking during the previous thirty days. One in six students reported drinking and driving within the thirty days preceding the survey.

POST-INTERVENTION RESULTS

Uncontrolled intervention effectiveness questions for the "Every 15 Minutes" program are displayed in the table. The proportion of teens responding that the program favorably affected them was typically three to one. This uncontrolled data suggests a favorable affective response of the students to the program, but the controlled data demonstrates much less impact. The intervention significantly affected students' attitude toward drinking and driving as measured by questions asking if the students believed that drinking and driving is dangerous and if they would try to stop a friend from drinking and driving. The change in responses was significant for the KHS pre-survey results compared to the post-survey and the PHS control survey. However, the magnitude of the change was not large. The

proportional change, 80.1% to 84.1%, in favorable response to the question asking teens if they believe it is dangerous to drink and drive reflects an absolute change in attitude of 4%. Similarly, the favorable proportional change, 90.7% to 94.2%, for teens that would try to stop a friend from drinking and driving after the intervention demonstrates an absolute change of only 3.5%. The relatively small magnitude of proportional change is due to a high baseline favorable response in the pre-surveys. Questions dealing with teen behavior for drinking and driving do not show a statistically significant change in behavior. The KHS pre-survey data for behavior changes does not reach statistical significance in comparison to KHS post-intervention nor with the PHS control for the same time frame.

Questions on each of the three surveys, KHS pre-and post-surveys, and PHS control survey, were divided into age sets and analyzed for attitudes towards drinking, and driving and behaviors for drinking and driving. The age sets chosen were ages 14 and 15, non-driving, and ages 16 and above, driving age. As would be logically expected, the non-driving ages showed no improvement in the answers related to drinking and driving, since there were so few who actually reported drinking and driving. Analyzing the data for ages 18-19 showed that older students were less likely to view drinking and driving as dangerous: 73.8% versus 81.3% for ages 14-17 ($[X.\text{sup}.2] = 10.4, p < .001$). The pattern of gender-specific differences in responses from the pre-survey was also found in the post-survey. Consistent with the pre-survey results, females reported significantly less drinking and driving behavior than males: 12.7% versus 21.1%, ($[X.\text{sup}.2] = 16.3, p < .000$).

Baseline Pre-Survey Results Compared To 1999 CDC YRBSS

Questions	US *	MO *	KHS	PHS
Drank alcohol (ever) other than a few sips (yes)	81.0%	79.4%	68.4%	73.4%
Drank alcohol before age 13 (yes)	32.2%	33.5%	18.4%	26.4%
Drank alcohol in the prior 30 days (yes)	50.0%	49.9%	48.5%	48.7%
Heavy (5 drinks at one time) in the past month	31.5%	32.0%	37.0%	37.3%
Ridden with a driver who had been drinking & driving in past month (yes)	33.1%	35.1%	31.8%	34.0%
Been drinking and driving in past month (yes)	13.1%	15.9%	16.7%	16.7%

* Comparative data for US and MO derived from CDC YRBSS 1999

Post-Survey Results.

Did the program affect your attitude toward drinking & driving? Yes (81.6%)

After seeing the program,

are you more or less likely to: More Likely No Change Less Likely

Ride with a friend who has been drinking?

2.6% 22.3% 75.0%

Drive after drinking?

3.6% 20.0% 76.4%

Try to stop a friend from driving who has been drinking?

71.1% 16.3% 12.6%

Strongly Disagree Disagree Not Sure Agree Strongly Agree

I think my friends who saw the program will be less likely to drive while

intoxicated.

4.9% 7.3% 28.8% 42.6% 16.5%

The program has further convinced me not to drink & drive.

5.1% 2.9% 19.1% 36.2% 36.7%

I had not really talked with my friends about their decisions to drink & drive before the program. 9.7% 21.0% 30.5% 29.0% 9.8%

It is more likely that I will talk with my friends about drinking & driving as a result of the program. 6.2% 9.0% 33.4% 36.0% 15.3%

Pre and Post-Intervention Comparison of Attitude and Behavior Questions.

KHS P PHS P

Pre Post value control value

Ridden with someone drinking & driving in the past month (yes).

31.8% 31.0% .660 34.0% .197

X²=.194 X²=1.81

Been drinking & driving in past 30 days (yes).

16.7% 16.% .913 16.7% .944

X²=.012 X²=.005

Believe it is dangerous to drink & drive (yes).

80.1% 84.1% 0.01 * 80.2% .0311 *

X²=6.66 X²=4.62

Would not ride with someone drinking & driving or would take keys

(yes). 67.3% 74.4% .074 72.6% .152

X²=3.19 X²=2.05

Would try to stop a friend from drinking & driving (yes) 90.7% 94.2%

0.001 * 89.8% <.001 *

X²=10.77 X²=12.41

* Significant at less than or equal to 0.0559

Public campaigns promoting adverse messages and images of underage drinking and driving might also be attributable to the change in driving behavior. A study conducted with 34,898 drivers over a four year period indicated that drivers younger than 21 were more successful than drivers over 21 in separating drinking from driving. The research pointed not only to legislation but to publicly directed messages regarding the consequences of underage drinking and driving.⁶⁰

Chapter V

Recommendations

It is evident that teen traffic fatalities are among the highest in the country. These deaths are occurring for various reasons. Inexperience, behaviors, disregard of laws, and poor choices are to blame for many. Whether the teen drivers are ignoring laws to buckle up, not to drink and drive, or follow traffic controls, there must be constant vigilance in assuring these drivers are taught the skills needed to safely operate motor vehicles to prevent them from being killed. The first step in assuring this is to mandate graduated licensing programs in every state. With these programs, teens are slowly immersed into their newly learned skill of driving. Their routes, times and passengers can be severely restricted until they have developed and practiced the skills needed to drive safely. Constant vigilance by law enforcement is also critical. Ensuring there is full compliance with seat belt laws is a must. If the teens feel the police do not care if they are using belts, they will be less likely to buckle up every time they

are in a vehicle. Police also must be vigilant in enforcing the zero tolerance laws. These laws have proven to be effective in reducing underage drinking and driving. It is, however, extremely important for the police to continue to enforce these laws. If the teens do not fear being caught, the laws are useless. The courts must also pick up the ball when the police catch teens violating these laws. If there is not backing by the courts, the efforts of the police to enforce the laws are moot. The courts must not treat these offenses as petty or minor. The courts must affirm that these are serious offenses and treat them as such. If the teens feel they will only get a “slap on the wrist” by the courts, their fear of getting caught will be lessened. The final components to these items are prevention programs aimed at teens. As it has been shown, teens were dramatically impacted by programs such as every 15 minutes. The post program surveys showed a dramatic change in the attitudes of the students that were subjected to it. There must be a continuation, and expansion, of these types of programs throughout the country. Making these types of programs a mandatory requirement as a component of the graduated licensing program could be a start. To graduate to full driver status, the teen driver would have to participate in an intervention program that was sanctioned by the federal transportation system. This way, every new driver would have the benefit of participating in a program aimed at informing and educating them on the issues surrounding drinking and driving.

There have been significant reductions of teen driving fatalities in the past few decades. These declines can be attributed to stricter laws, raising the

minimum drinking age, and slowly introducing the new driver to full driving privileges. Intervention programs are also beneficial in this reduction by showing teens the true hazards involved. However, this issue is not one that a victory will ever be able to be claimed. Battles may be won, but this war will never end. Reducing teen traffic deaths is something that will require constant vigilance and supervision. New and innovative strategies will need to be developed to continually challenge and inspire teens to accept their new responsibility seriously. To not give 110 percent to this issue will only lead to a rise in the rate teens die on our roads and highways.

Chapter VI
Charts and Graphs

	1982	1999	2000	Percent Change	
				82-2000	99-2000
YOUTH (15-20) FATALITIES					
Total Fatalities	8,508	6,378	6,390	-24.9	0.2
A/R Fatalities	5,380	2,273	2,339	-56.5	2.9
% of Total	63.2	35.6	36.6	-42.1	2.8
0.01-0.09 BAC	1,257	686	701	-44.2	2.2
% of Total	14.8	10.8	11.0	-25.7	1.9
0.10+ BAC	4,123	1,587	1,638	-60.3	3.2
% of Total	48.5	24.9	25.6	-47.2	2.8
YOUNG DRIVERS INVOLVED IN FATAL CRASHES					
Total Drivers	10,080	8,187	8,155	-19.1	-0.4
A/R Fatalities	4,378	1,711	1,815	-58.5	6.1
% of Total	43.4	20.9	22.3	-48.6	6.7
0.01-0.09 BAC	1,287	593	645	-49.9	8.8
% of Total	12.8	7.2	7.9	-38.3	9.7
0.10+ BAC	3,092	1,119		-62.2	4.6

	Percent Change				
	1982	1999	2000	82-2000	99-2000
% of Total	30.7	13.7	14.3	-53.4	4.4

YOUNG DRIVERS KILLED

Total Drivers	4,526	3,564	3,594	-20.6	0.8
A/R Fatalities	2,501	1,066	1,063	-57.5	-0.3
% of Total	55.3	29.9	29.6	-46.5	-1.0
0.01-0.09 BAC	548	294	291	-46.9	-1.0
% of Total	12.1	8.2	8.1	-33.1	-1.2
0.10+ BAC	1,953	772	772	-60.5	0.0
% of Total	43.2	21.7	21.5	-50.2	-0.9

YOUTH FATALITIES BY ALCOHOL INVOLVEMENT OF YOUNG DRIVERS

Total Fatalities	6,723	5,333	5,345	-20.5	0.2
A/R Fatalities	3,753	1,561	1,609	-57.1	3.1
% of Total	55.8	29.3	30.1	-46.1	2.7
0.01-0.09 BAC	990	506	534	-46.1	5.5
	14.7	9.5	10.0	-32.0	5.3
0.10+ BAC	2,763	1,055	1,076	-61.1	2.0
% of Total	41.1	19.8	20.1	-51.1	1.5

A/R = Alcohol-Related

Comparison of Mean Drinking and Driving or Riding After Drinking, Before and After Blood Alcohol Concentration (BAC) Law Changes in 30 States: High School Seniors, 1984–1998

No. of Students			Mean		SD		Effect Size ^a
	Before	After	Before	After	Before	After	
Means as "quasi-continuous" counts							
Drinking, past 30 days	5086	5301	3.862	4.006	7.212	7.307	2.0 (NS)
Drinking ≥5 drinks	5062	5282	1.069	1.054	2.138	2.017	-0.7 (NS)
Drive after drinking alcohol	5309	5537	0.513	0.416	1.511	1.258	-6.4**
Drive after drinking ≥5 drinks	5239	5475	0.333	0.256	1.353	1.096	-5.7*
Ride with drinking driver	5275	5503	0.732	0.680	1.759	1.627	-3.0 (NS)
Ride with driver, ≥5 drinks	5234	5468	0.429	0.371	1.402	1.259	-4.1 (NS)
Drive and ride, driver drinking	5275	5503	1.237	1.096	2.841	2.464	-5.0*
Drive and ride, driver drinking ≥5 drinks	5197	5434	0.759	0.627	2.433	2.036	-5.4*
Miles driven per week	5266	5472	73.83	77.79	68.94	68.25	5.7*

Means adjusted for secular trends

Drinking, past 30 days	5086	5301	-0.040	0.111	7.192	7.286	2.1 (NS)
Drinking ≥ 5 drinks	5062	5282	0.046	0.012	2.134	2.015	-1.6 (NS)
Drive after drinking alcohol	5309	5537	0.051	-0.034	1.509	1.257	-5.6*
Drive after drinking ≥ 5 drinks	5239	5475	0.032	-0.048	1.354	1.097	-5.9**
Ride with drinking driver	5275	5503	0.013	-0.018	1.755	1.627	-1.8 (NS)
Ride with driver, ≥ 5 drinks	5234	5468	0.022	-0.037	1.403	1.260	-4.2 (NS)
Drive and ride, driver drinking	5275	5503	0.063	-0.047	2.835	2.462	-3.9 (NS)
Drive and ride, driver drinking ≥ 5 drinks	5197	5434	0.056	-0.080	2.434	2.038	-5.6*
Miles driven per week	5266	5472	2.19	2.21	68.97	68.05	0.0 (NS)

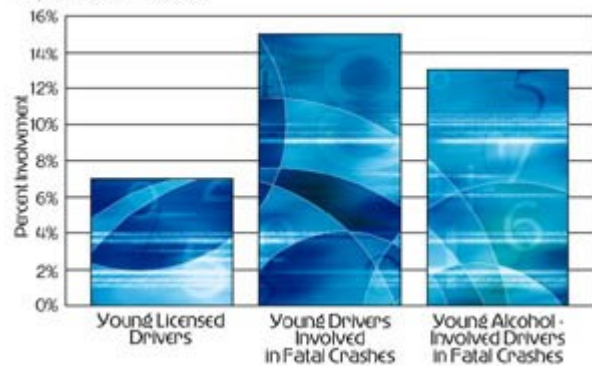
Note. NS=not significant.

aExpressed as percentage of baseline SD.

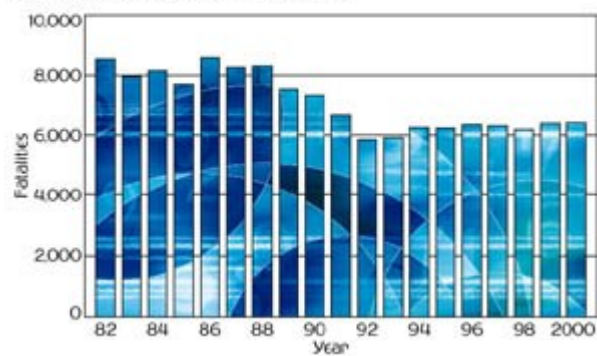
*P<.05; **P<.01.

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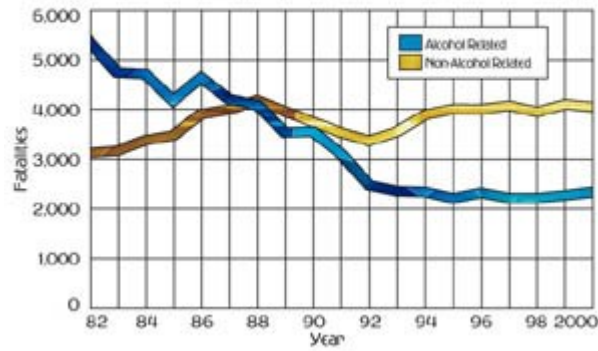
Young Drivers Over-Involvement in Fatal Crashes Ages 15-20 – 2000



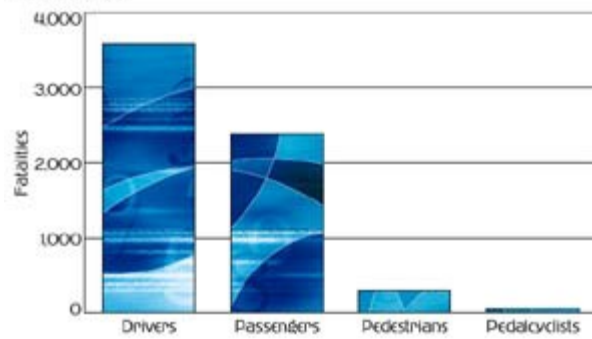
Youth Fatalities (Ages 15-20) Motor Vehicle Deaths, 1982-2000



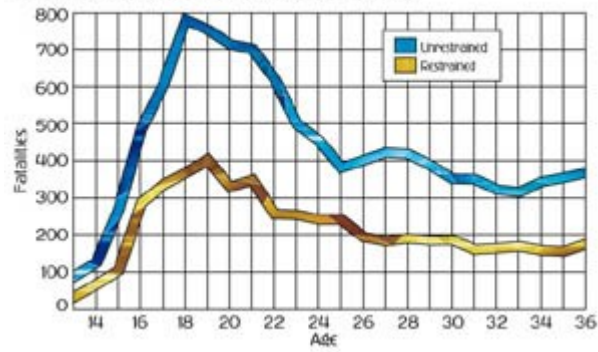
Youth Fatalities (Ages 15-20) Alcohol vs. Non-Alcohol Related



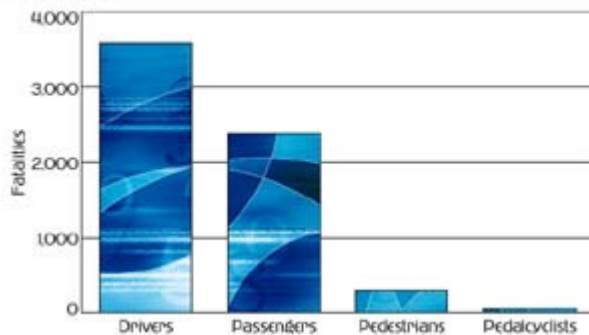
2000 Youth Motor Vehicle Fatalities Ages 15-20



Motor Vehicle Fatalities by Use of Restraints Seat Belts and Motorcycle Helmets – 2000



2000 Youth Motor Vehicle Fatalities
Ages 15-20



Chapter VII

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