CHARACTERISTICS OF IMPAIRED DRIVING OFFENDERS

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The Sober Smart Driving education program is produced by the **Traffic Injury Research Foundation** with funding from **Beer Canada**. It shares knowledge and science to answer common questions about alcohol, its effects on driving skills, and impaired driving.

Who drinks and drives and how often?

Drinking drivers are not a homogenous group. They come from all walks of life and have different characteristics including sex, education level, marital status, and employment. Several characteristics associated with drinking and driving have been identified (Voas and Lacey 2011; Karjalainen et al. 2014; Jewett et al. 2015).

According to data collected through self-report surveys, males are more likely to drink and drive than females. Drivers who believe the problem of drinking and driving is not very big are more likely to report driving after drinking. Also, those drivers who believe it is unlikely they will be involved in a collision after drinking are at higher risk of drinking and driving. An increased number of traffic tickets (excluding parking tickets) within the past year is associated with drinking and driving as is a decreased level of concern about road safety in general (Beirness and Beasley 2010; Sanna et al. 2015; Carlson et al. 2011).

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a) Is age a factor in drinking and driving?

Impaired drivers fall into a range of age categories although the majority of impaired drivers are between 20 and 45 years old. In 2016, the distribution of age among all fatally injured legally impaired drivers revealed for example that 4.2% of all deaths involved 16-19-year-olds. The percentages for all age categories are:

- 16-19 years = 4.2%
- 20-25 years = 20.1%
- 26-35 years = 25.7%
- 36-45 years = 25.7%
- 46-55 years = 15.9%
- 55+ years = 8.4%

A similar age distribution of drivers is apparent when examining the percentage of all drivers involved in alcohol-related serious injury crashes (i.e., there was at least one drinking driver or drinking pedestrian in the fatal crash):

- < 16 years = 0.3%
- 16-19 years = 10.3%
- 20-25 years = 19.7%
- 26-35 years = 21.9%
- 36-45 years = 17.4%
- 46-55 years = 14.0%
- 55+ years = 11.2%
- Unknown = 5.1%

b) Is sex a factor in impaired driving?

Males accounted for 84.4% of all fatally injured drivers who were over the legal limit in 2016. However, males dominate the picture largely because they account for 78.0% of all drivers killed (753 of the 965 fatalities in 2016). This is because males drive more than females and because males are more prone to taking risks when driving.

Of all the drivers involved in alcohol-related serious injury crashes, 75.2% were males. And, when considering all serious injury crashes by sex, 17% of male drivers were involved in alcohol-related serious injury crashes compared to 11.0% of female drivers (Brown et al. 2020). However, in recent years there has been an increase in the U.S. in the number of females arrested for impaired driving (McKay 2010; Robertson et al. 2013; Fell et al. 2016).

What types of drivers are at heightened risk of crashing when driving after drinking?

Everyone who drives after drinking increases their risk of crashing. This is because alcohol impairs motor coordination and inhibits a driver's ability to divide their attention across the multiple tasks involved in driving a motor vehicle. Laboratory studies have revealed impairment begins as low as a .02 blood alcohol concentration (BAC). Epidemiological studies, however, show the risk of crashing is relatively low at low BACs but increases dramatically once BACs reach .10 or greater.

Some segments of the population are at greater risk of crashing when driving after drinking even small amounts of alcohol and these groups are discussed in more detail below.

Young drinking drivers

A majority of youth do not drive after drinking. More than 90% of alcohol-related deaths involve individuals over the age of 20. Of all age groups, youth account for only a small percentage of the impaired driving problem. However, youth are considered a high-risk group because when they do drink and drive, they are much more likely to crash.

Young drivers are at very high risk of crashing after they have consumed even small amounts of alcohol. Their high-risk status can be attributed to two key factors:

- inexperience driving; and,
- inexperience drinking.

Even when sober, 16-19-year-olds have a fatal crash rate more than four times as high as drivers aged 25-34, and nine times as high as drivers aged 45-54 (Mayhew et al. 2005). Second, as inexperienced drinkers, they are more impaired at even low levels of alcohol. Of equal concern, they may also engage in binge drinking (frequently defined as occasions of heavy drinking measured by the consumption of at least four to five drinks in one sitting) or excessive consumption of alcohol.

Unfortunately, BACs over .08 (the legal limit for adults) are not uncommon among young drivers both in Canada and the U.S. For example, in 2016, 24.9% of all fatally injured legally impaired drivers were between the ages of 16-25 (Brown, Vanlaar and Robertson 2020). Comparable numbers exist in the U.S. as over 20% of all fatally injured legally impaired drivers were between the ages of 16-24 (NHTSA 2016).

a) Why is it more dangerous for youth to drink and drive?

As mentioned above, it is more dangerous for youth to drink and drive for several reasons. First, young drivers have less driving experience and therefore, a lower skill level. Young drivers, particularly those that are 16 and 17 years old have been a significant road safety concern in both Canada and the U.S. for decades. Research has consistently shown that these drivers have crash rates that are far higher than those of older and more experienced drivers (Mayhew and Simpson 1999; Mayhew et al. 2004; Voas and Lacey 2011; McCartt & Teoh 2015).

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In fact, drivers under the age of 20 with a zero BAC have a crash risk equivalent to older drivers with a BAC between .05 and .08 (Mayhew et al. 1986; Blomberg et al. 2005). These elevated crash rates do not only pertain to property damage collisions but also serious injury and fatal collisions. It is also worth noting that this problem not only affects teen drivers but teen passengers and other road users as well because many of them are victims of crashes caused by teen drivers (AAAFTS 2006; Fell et al. 2011).

Second, youth also have less experience consuming alcohol and are frequently unfamiliar with the impact it can have on motor coordination and divided attention tasks such as those relevant to driving (Lange and Voas 2001). It is not uncommon for youth to engage in unsafe drinking practices such as binge drinking (typically defined as occasions of heavy drinking measured by the consumption of at least four to five drinks in one sitting). While youth consume alcohol less frequently than adults, they tend to drink more in a single sitting; the rates of heavy monthly drinking among youth is almost double that

of adults. Of the 66.0% of grade 12 students who consumed alcohol in 2019 in Ontario, 28.2% reported consuming five or more drinks on one occasion in the past month (Boak et al. 2020).

Those with a tendency to binge drink and/or drink heavily also tend to be risk-takers. This behaviour is often considered an age-related factor in crashes as youthful exuberance, risk-taking, and thrill-seeking are all attributes that make this population more susceptible to the impairing effects of alcohol (Mayhew et al. 2006; Peck et al. 2008; Bergen et al. 2012).

According to the 2016-2017 Canadian Student Tobacco, Alcohol and Drugs Survey, the majority of Canadian youth aged 15 and older have consumed alcohol in the past year (64.5%). The average age that these youth are initiated into drinking is 13.9 years (Health Canada 2018). Similar numbers exist in the U.S. as the 2008 National Survey on Drug Use and Health found that about 10.1 million Americans between ages 12-20 report current alcohol consumption; this represents nearly 26% of this age group for whom alcohol consumption is illegal (SAMHSA 2008). The good news is that the other 74% are not consuming alcohol.

Statistics such as these are concerning because the earlier the age of alcohol consumption, the greater the likelihood that alcohol usage may develop into an addiction. The earlier youth start drinking, the more likely they are to drink heavily on a frequent basis and they are also more likely to report alcohol-related harm (National Alcohol Strategy Working Group 2007). The use of substances, such as alcohol, at a young age is also identified as a precursor to involvement in illegal activity such as impaired driving (Alexander 2000; Zhang et al. 2014).

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Although most youth may refrain from drinking and driving, it remains a source of continued concern and an important social issue. While youth are at risk to become repeat offenders, they also have the greatest potential for change.

b) How many youth face criminal sanctions for impaired driving in Canada and the United States?

The magnitude of the problem is also clearly illustrated by the number of impaired driving charges and court cases among youth on both sides of the border. In Canada in 2008, there were 1,138 youth under the age of 18 charged with impaired driving (Taylor-Butts 2008). Data from 2015 also shows the rate of persons charged with impaired driving was highest among those aged 20-24 (480 charged per 100,000 population). Those in the youngest age group, aged 16 to 19 years old, had rates of impaired driving charges 56% lower than those drivers aged 20-24 (Perreault 2016).

In the United States, Uniform Crime Reports for 2018 from the Federal Bureau of Investigation (FBI) reveal that a total of 4,064 youths under age 18 and a total of 149,476 youth under 25 were charged with impaired driving in 2012 (FBI 2019). Youth aged 24 were most frequently charged.

c) What types of penalties are imposed on youth who drive while impaired?

Common penalties imposed with this population include fines, probation supervision, and, in some cases, treatment. To date, not much is known about effective strategies to manage young drunk drivers. The bottom line is young impaired drivers demand attention for two reasons, not only are they at risk of becoming the high-risk repeat drunk drivers of tomorrow, but they are also more amenable to behaviour change.

Female impaired drivers

Female impaired drivers are one type of offender that is a growing concern. Historically, the impaired driving problem has primarily been attributed to men. However, the percentage of females among persons charged with impaired driving in Canada rose from 8% in 1986 to 20% in 2015 (Perreault 2016). In 2006, 23.8% of fatally injured female drivers tested positive for alcohol use. This number decreased slightly to 23.6% in 2016. During the same period, the percentage of fatally injured male drivers who tested positive for alcohol use decreased from 40.1% to 35.8%. With regard to sex distribution among the total number of fatally injured impaired drivers in Canada in 2006, 60 out of 348 (17.2%) were female. This percentage dropped to 16.4% in 2016 (35 out of 214).

American studies have found that although men still account for nearly 80% of the arrests for impaired driving, there was a 28.8% increase in the number of impaired driving arrests among women in the decade between 1997 and 2007 (McKay 2010). The 2008 report on Crime in the United States revealed an even greater difference in 1999: a 35% increase in impaired driving arrests of women. By contrast, in the same period, total impaired driving arrests involving men actually decreased by 6.6%.

These trends are worrisome, especially given the fact that if both sexes consume the same amount of alcohol, women's BAC will be higher due to physiological differences between men and women.

Also of some concern, most drunk driving countermeasures have been developed to target male offenders. Some research suggests women have better outcomes with sex-sensitive interventions, particularly with regard to treatment (White and Hennessey 2007; Robertson et al. 2013; Robertson and Ireland 2016; Robertson and Barrett 2018). For this reason, there is a need to review the extent to which these programs are appropriate for females and to develop measures specifically for women.

Legal drinking drivers

The majority of people who drive after drinking do so rarely and when they do, they usually have a low BAC. As one indication of this, roadside surveys in Canada show about 80% of drinking drivers have a BAC under the legal limit. For drivers with low BACs, the risk of being involved in a serious crash is relatively low, compared to the average non-drinking driver. Such risk also varies as a function of age and sex (Zador et al. 2000; Voas et al. 2012). Nevertheless, a BAC of 0.03 is associated with about a two- to three-fold increase in risk and a BAC of .05 has between a six and 17 times increase in risk. So, while those drivers with a BAC below the legal limit have a lower crash risk relative to drivers with a BAC over the legal limit of 0.08, they still have a higher crash risk relative to drivers who do not consume alcohol at all.

This group, although less at risk of causing a serious crash than drivers with high-BACs, comprises a large group of drinking drivers, so collectively they need to be deterred. Fortunately, there is evidence that such individuals are more amenable to traditional interventions such as conducting high visibility enforcement, which creates general deterrence and increases the perceived risk of arrest (Voas and Fisher; Moulton et al. 2010).

First offenders

First offenders account for a large portion of the impaired driving problem. Once a drunk driver is arrested, research shows that about two-thirds of them will be deterred by their experience with the criminal justice system and will not be apprehended again (Voas and Fisher 2001). However, approximately one-third will re-offend. Some of these first offenders are likely to have an alcohol dependency issue which increases the likelihood that they will recidivate (Rauch 2005). As a result, there is a need to consider screening and/or assessment even for first offenders, especially those with a high-BAC in order to identify those who are at an elevated level of risk.

What are the latest data available about drinking and driving in Canada?

Impaired driving can be measured using a variety of indicators from different data sources, including fatal crash data, police charge data, and self-reported survey data. Each of these indicators provides an important window on the problem. An examination of trends associated with each of these indicators suggests impaired driving has generally declined in Canada for more than a decade. Trend analysis (excluding BC) reveals a 34.0% decline in the number of alcohol-related fatalities between 2000 and 2016, and a 32.0% reduction in the total number of all road fatalities. This trend is evident after controlling for the general downward trend that has occurred across all types of road crashes during this period.

The average blood alcohol concentration (BAC) among fatally injured drinking drivers who were tested for alcohol has consistently been .17 since 2000. Similar to other indicators, the percent of fatally injured drivers with BACs over the legal limit of .08 also generally decreased from 28.4% in 2000 to 25.4% in 2016. Most recently, an analysis of 2016 data regarding drivers killed in fatal crashes showed that 33.2% of drivers who were tested were drinking (as compared to 34.8% in 2000). Among these drivers who tested positive, more than three-quarters (76.4%) of them had a BAC over .08 whereas 23.6% had a BAC between .01 and .08. These data demonstrate the majority of drinking drivers in fatal crashes had a BAC well above the current limit of .08 (Traffic Injury Research Foundation 2020).

Self-reported survey data from Canada showed in 2019, 14.6% of drivers reported that they drove at least once after drinking alcohol in the past 30 days. When asked if they had driven when they were over the legal limit at least once in the past year, 8.6% of drivers admitted to this behaviour (Lyon et al. 2019). In that same year, 20.0% of U.S. drivers reported that they drove when they thought they were over the legal limit (Vanlaar et al. 2019).

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What does the Sober Smart Driving Education Program (SSD) contain?

The Sober Smart Driving Education Program contains facts to help Canadians learn about the risks associated with drinking and driving and encourages everyone to speak up and talk about why they choose not to drink and drive.

Key topics discussed on this site include:

- Drinking and its effects on driving
- Magnitude & characteristics of drinking & driving
- Basics of the impaired driving system
- Impaired driver programs & penalties
- Myths & misconceptions about drinking and driving

Each of these topics contains a series of fact sheets structured in a question and answer format which are available for free download and sharing (with attribution). These resources are designed to support the education and prevention efforts of communities, schools, health and road safety professionals and advocacy organizations.

To view more fact sheets, or to get more information about alcohol, its effects on driving skills, and impaired driving, visit **SoberSmartDriving.tirf.ca**.

Traffic Injury Research Foundation

The mission of the Traffic Injury Research Foundation (TIRF) is to reduce traffic-related deaths and injuries. TIRF is a national, independent, charitable road safety research institute. Since its inception in 1964, TIRF has become internationally recognized for its accomplishments in a wide range of subject areas related to identifying the causes of road crashes and developing programs and policies to address them effectively.

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