TRAFFIC INJURY RESEARCH FOUNDATION

THE ROAD SAFETY MONITOR 2013
DRUGS AND DRIVING

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The knowledge source for safe driving

THE 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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THE ROAD SAFETY MONITOR 2013
DRUGS AND DRIVING

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INTRODUCTION

The Road Safety Monitor (RSM) is a public opinion survey conducted annually by the Traffic Injury Research Foundation (TIRF) under sponsorship from Beer Canada, Toyota Canada Foundation and Aviva Canada. The survey takes the pulse of the nation on key road safety issues by means of a telephone and on-line survey of a random, representative sample of Canadian drivers. The survey examines:

- what Canadians see as priority road safety issues and how concerned they are about them;
- their views about how to deal with these problems;
- how they behave on the road; and,
- the prevalence of certain behaviours on the road.

The RSM includes a core set of questions that are asked each year to provide information on trends in attitudes, opinions, and behaviours. This is supplemented each year by a set of questions that probe more deeply into special, topical, and emerging issues. This report summarizes national results from the 2013 RSM data on drugs and driving in Canada.

METHOD

This edition of the RSM contained 53 items designed to probe the knowledge, attitudes, and concerns of Canadians with respect to a range of road safety issues, and to obtain information on their driving practices. The survey required an average of approximately 10 minutes to complete.

The survey was administered by telephone (301 respondents) and online (900 respondents) to a random sample of Canadian drivers who had driven in the past 30 days and had a valid driver's licence. The sample was stratified by province and weighted according to gender and age to avoid bias. Opinion Search Inc. fielded this survey in September, 2013.

A total of 1,201 qualified drivers completed the interview. The data were analyzed using Stata 13, taking into account the stratified and weighted sampling design, using both univariate and multivariate approaches. As well, logistic regression analyses were conducted to evaluate statistical significance of results, while also controlling for gender and age differences within the population, where applicable. Based on a sample of this size, on average, the results can be considered accurate within plus or minus 2.8%, 19 times out of 20.

BACKGROUND

More than 40 years of research has proven that the risks associated with driving while under the influence of alcohol are substantial, resulting in widespread recognition of this social problem. However, there is less concrete evidence regarding the prevalence, risks and implications of drugged driving, or drug-impaired driving (Kay and Logan 2011). At the same time, there are indications that the problem is a growing source of concern (CCSA 2013). As a consequence, the issue of drug-impaired driving has emerged as an internationally recognized problem in the past decade, bringing with it competing perspectives, misconceptions and dissenting opinions about how to address it.

How is drug-impaired driving different from alcohol-impaired driving?

To date, this problem is not as easily researched, nor as well-understood as the issue of drinking and driving or drunk driving. Yet it is apparent that drug-impaired driving is a problem that requires increased awareness and attention. Drugs, other than alcohol, are found in about one-third of the fatally injured drivers in Canada who are tested for drugs (Transport Canada 2011). In fact, in some provinces, a greater percentage of fatally injured drivers test positive for drugs compared to those testing positive for alcohol (Beasley and Beirness 2011).

Drug-impaired driving also presents challenges that are distinct from those that accompany drunk driving. Drug-impaired driving can involve numerous drug types or combinations of substances. Due to the large number of available substances, both licit and illicit, and the differing effects they can have on the body and over time, the level of impairment resulting from drugs is more challenging to measure than alcohol impairment. Unlike alcohol, drugs do not have a clear dose-response relationship which makes it difficult to determine the level of impairment. Finally, drug impairment is more difficult to detect than alcohol impairment at the roadside without screening devices.

Are there tests to detect drugs in drivers?

Although science and technology are advancing, it remains difficult to test for drug impairment in drivers. As opposed to alcohol, there are currently no standardized roadside measures in Canada for detecting different types and levels of substances in the body. In addition, even if reliable and cost-effective roadside drug tests were available, there are too many potentially impairing substances to test for on roadways. To put the magnitude of this problem into perspective, the National Fatality Database, maintained by TIRF, contains an index of over 200 different substances that have been detected in fatally injured drivers in Canada.[1] While this large variety of drug types is cause for concern, it is important to remember that detection of a particular substance does not necessarily imply impairment of a driver.

[1] TIRF's National Fatality Database collects information from police reports, coroners and medical examiners on persons fatally injured in motor vehicle collisions across Canada.

The percentage of fatally injured drivers that are tested for drugs varies widely across jurisdictions. Nationally in Canada, the average percentage of fatally injured drivers that were tested for drugs between 2000 and 2008 was 47.2%, although the variation in testing percentages across provinces was considerable (Beasley and Beirness 2011). This represents a much smaller percentage than the percentage of fatally injured drivers who were tested for alcohol in 2010 (82.9%) nationally (Brown et al. 2013). As well, the types of tests that are used to detect drugs in fatally injured drivers vary by province, creating difficulty in generating meaningful comparisons across jurisdictions.

In the United States, there was an overall increase in the percentage of fatally injured drivers tested for the presence of drugs between 2005 (56%) and 2009 (63%) (NHTSA 2010). The percentage of drivers tested varies widely between United States jurisdictions. This variance ranges from no testing at all in some jurisdictions, to testing percentages of more than 80% of all fatally injured drivers in a small number of states.

With respect to drivers stopped at roadside, the Criminal Code of Canada (CCC) was strengthened during July of 2008, to enable police officers to request a driver suspected of impaired driving to submit to a number of physical coordination tests (e.g., horizontal gaze nystagmus,[2] walk and turn, one leg stand), known as the Standardized Field Sobriety Tests (SFST) (Transport Canada 2011). If these tests indicate possible impairment, police officers who are trained in recognizing impairment in drivers under the influence of drugs other than, or in addition to alcohol, called Drug Recognition Evaluators (DREs), may be called in for additional evaluation of the suspected driver. DREs are responsible for determining if the driver is impaired; if impairment is due to alcohol, drugs or other causes such as illness; and, if applicable, what category of drug is likely to be causing impairment (DECP 2014). During this examination, bodily fluid samples (i.e., oral fluid, urine, or blood) can be collected to test for the presence of any drugs in the body.

In the United States, DRE programs have been well established since the 1980s. The International Association of Chiefs of Police (IACP), in association with the National Highway Traffic Safety Administration (NHTSA), regulates DRE programs which are now implemented in all 50 states and the District of Columbia (DECP 2014). As well, the Advanced Roadside Impaired Driving Enforcement (ARIDE) program was developed by NHTSA to enhance police officers' knowledge of drug impairment, beyond that of SFST training and to bridge the gap between SFST and the Drug Evaluation and Classification (DEC) program.

How prevalent is drug-impaired driving?

Research shows that the prevalence of drugs detected in the body of drivers is not insignificant in many jurisdictions. In Canada, the prevalence of drugs found in drivers has been shown to rival that of alcohol (Jonah 2013). In 2008, using data from TIRF's National Fatality Database, a study by the Canadian Centre on Substance Abuse (CCSA) found that a greater percentage of fatally injured drivers tested positive for

[2] Nystagmus is used to describe the involuntary bouncing or jerking motion of the eye. Studies have shown that alcohol suppresses the central nervous system, causing a specific type of nystagmus (i.e., the horizontal gaze nystagmus) that can be easily identified by a trained police officer as an indication of the presence of alcohol in a driver (Dietrich & Frost 1999).

drugs compared to alcohol in Ontario, British Columbia and Nova Scotia (Beasley and Beirness 2011). Additionally, a roadside survey conducted in 2012 found that approximately 7.4% of all drivers in British Columbia tested positive for at least one psychoactive substance, other than alcohol (Beasley and Beirness 2012).

Of importance, the mere presence of drugs in the body does not necessarily imply impairment. For instance, marijuana can be detected in drivers by urine and blood tests days or even weeks after the impairing effects of the substance have worn off; and the impairing effects of benzodiazepines change with extended use. Thus, interpreting the prevalence of drugs found in drivers must be approached carefully and with caution (Compton and Berning 2009).

Several self-report studies also demonstrate the prevalence of the drug-impaired driving problem in Canada. In 2011, CCSA found that 2.2% of drivers of all ages admitted to driving after marijuana use, with higher reported incidents of marijuana-impaired driving than alcohol-impaired driving occurring in drivers aged 15-24 (CCSA 2013). Studies also reveal that the prevalence of different types of drugs varies; a 2012 study by the Canadian Council of Motor Transport Administrators (CCMTA) found that 9.8% of respondents admitted to driving after taking prescription drugs; 8.6% after taking non-prescription drugs; 2.4% after using marijuana; and, less than 1% after using street drugs (Jonah 2013).

Drug-impaired driving among Canadian youth in particular is cause for concern. In 2011, TIRF released an RSM on young drivers which showed that 21.4% of drivers aged 16-24 reported using marijuana. Furthermore, the study showed that 19.7% of young marijuana users reported driving within two hours of using marijuana. Similarly, the same study found that 9.5% of young drivers who reported using illegal drugs also reported driving within two hours of taking these drugs (Marcoux et al. 2011). Between 2007 and 2008, 14-21% of Grade 12 students reported driving within an hour of using marijuana and more than 33% of grade 12 students reported having been a passenger with someone who had used marijuana (Young et al. 2011). In terms of lifetime occurrences, 13.6%-21.0% of grade 12 students reported driving a motor vehicle under the influence of marijuana at least once in their lifetime, and 10.6%-16.2% within the previous 12 months.

In the United States, the drug-impaired driving issue is a source of growing attention. NHTSA and the National Institute on Drug Abuse (NIDA) conducted studies from 1999-2001 which concluded that, among drivers who were stopped for an infraction and failed the SFST, drugs were just as prevalent as alcohol (Crouch et al. 2002). Similarly, drugs were present among drivers almost as often during the daytime as at night. In an American national roadside survey in 2007, oral fluid test results showed that 14.4% of nighttime drivers and 11.0% of daytime drivers tested positive for drugs (Compton and Berning 2009; Lacey et al. 2007). As well, between 2000 and 2010, within nine states studied in the U.S., approximately 27% of fatally injured drivers who died at the scene of the crash were found to have drugs in their system (Fell and Romano 2013).

Internationally, similar trends have been reported. In Australia, for example, drug-impaired driving was found to be a factor in approximately 7% of fatalities on roadways (Australian Transport Council 2011). In Europe, a project conducted by the European Union called DRUID, or Driving under the Influence of Drugs, Alcohol, and Medicines, estimated the prevalence of illicit substances in drivers throughout Europe to be around 1.90% and ranging from 0.22-8.20% throughout different regions (Schulze et al. 2012).

How do drugs affect the body and behaviour?

In general, it is difficult to measure or quantify the effects that drugs can have on an individual while driving. This is because there are variations in how different drugs interact with the body, how different bodies react to drugs, and how the effects of some drugs change over time depending on usage. These variations can include: the type of drug consumed; body size and composition; drug tolerance of the individual; and, dosage. As well, there are ethical and legal limitations imposed on researchers wishing to study the effects of drugs on driving behaviour. For example, in laboratory settings, it is not necessarily possible to dose people to the same levels of drug use found in the real world, or to combine certain drugs when dosing people in order to measure their impairing effects.

Although there are several barriers to identifying the impairing effects of drugs on driving, some progress is being made. According to NHTSA there are five essential driving domains of behaviour that are affected by drugs (Kay and Logan 2011):

- alertness/arousal;
- attention and processing speed;
- reaction time and psychomotor functions;
- sensory-perceptual functioning; and,
- executive functions (i.e., planning, organizing, monitoring and approaching).

With respect to these domains, NHTSA was able to analyze the potential effects of drugs on driving behaviours, concluding that many drugs have the capacity to negatively affect driving. For instance, the presence of gamma-amino butyric acid (GABA) in the brain, induced by using benzodiazepines, results in general slowing of brain activity. Benzodiazepines also cause significant sedation; somnolence (i.e., drowsiness); slurring of speech; abnormal coordination; and, memory impairment, all of which are relevant to the five domains that effect driver performance. The following sections further detail some specific drug types commonly found in drug-impaired drivers and their effects on the body and behaviour.

Marijuana

Cannabis, marijuana, hashish, or weed, is one of the most common substances found in drug-impaired drivers. A recent review of the literature on drug-impaired driving found that marijuana has been shown to nearly double the risk of a driver being involved in a motor vehicle collision resulting in serious injury or death at certain concentrations (Asbridge et al. 2012). Advances in technology have illustrated the effects of marijuana on the brain and body. For instance, positron emission tomography (PET) scans of the brain show that delta-9-tetrahydrocannabinol (i.e., THC or the active ingredient in marijuana) crosses the blood-

brain barrier, affecting areas critical for motor control and visual processing. Higher concentrations of THC were found in fatally injured drivers than non-fatally injured drivers and elevated levels of THC in the blood stream were associated with an increased risk of crash. As well, tolerance to marijuana has been shown to influence the severity of impairment in drivers, with more frequent users showing less impairment than infrequent users at the same dosages, except in cases where alcohol is used in combination with marijuana (Wolff et al. 2013). Still, it remains difficult to quantify how marijuana affects driving behaviours due to the lack of consensus regarding its dose-response relationship. Some studies have even shown that marijuana may yield a protective effect on the overall crash rates of drivers. For instance, a recent study in the United States found that in states where medical marijuana was legalized, there has been an associated 8 to 11 percent decrease in traffic fatalities (Anderson et al. 2012). Some researchers hypothesize that the reason for these sharp declines may be due to the decreased number of alcohol-impaired drivers on the road as a result of the legalization of medical marijuana. As well, they further explain that while marijuana has been shown to have impairing effects on driving, the effects from alcohol are more substantial and more dangerous compared to the effects of marijuana alone, which may actually cause drivers to drive slower as a result of impairment.

Marijuana and alcohol

As indicated above, the combination of marijuana and alcohol can have an especially detrimental influence on the body and mind while driving. The results of the European study, DRUID, found that injury risk to drivers is much greater with the combination of alcohol and drug use compared to the risk of alcohol use alone (Schulze et al. 2012). While studies have not conclusively proven the impairing effects of marijuana on driving performance, they have shown that the combined effects of alcohol and marijuana are far more impairing than either substance alone (Sewell et al. 2009). Similarly, an Australian study found that those drivers with THC and alcohol in their system at the time of crash were found to be significantly more positively associated with culpability (i.e. being responsible for the crash) than those testing positive for alcohol alone (Drummer et al. 2004).

Cocaine

Cocaine use has also been associated with adverse effects on driving behaviours. One study found that collision involvement was significantly higher among cocaine users (18.9%) than non-cocaine users (7.4%) (Stoduto et al. 2012). Cocaine use at high doses reveals substantial impairing effects on driving performance including: inability to follow directions; losing control of the vehicle; confusion; hostility towards other drivers; time distortion; poor balance and coordination; and, increased risk taking (Couper and Logan 2004).

Other psychoactive drugs

In an Australian study of fatally injured drivers, it was concluded that drivers who tested positive for psychoactive drugs, or drugs that alter the mind, were significantly more likely to have been found culpable for the crash than drug-free drivers (Drummer et al. 2004). Benzodiazepines, for example, have been shown to have serious effects on bodily functions that are considered essential for driving. These

effects include sedation, induction of sleep, partial amnesia, and reduction in overall speed of information processing and motor response (Wolff et al. 2013). Opiates (e.g., morphine; heroin; oxycodone; and, methadone) have a broad range of effects on the body and behaviour depending on the specific type of opiate (i.e., illicit versus medicinal), dosage levels, and individual body tolerance. Although they are known to cause adverse side effects that can negatively impact driving, when used for pain control, opioids have been shown to actually improve driving performance in some studies (Wolff et al. 2013). Conflicting findings have made it difficult to determine the risks associated with certain drugs. Furthermore, the extent to which stimulants, such as amphetamines and MDMA (ecstasy), can impair driving has also been disputed (Ramaekers, 2011).

Prescription drugs

Prescription and over-the-counter (OTC) medications are often presumed safe because they are legal. While many prescription and OTC drugs do not necessarily affect driving abilities, many of these drugs can have side effects severe enough to impair driving, even at safely prescribed doses. According to the American Automobile Association (AAA), the following drugs have the potential to impair driving (AAA 2011):

- tranquilizers;
- narcotic pain pills;
- sleep medicines;
- some antidepressants;
- cough medicines;
- antihistamines; and,
- decongestants.

Older people may be more susceptible to side effects because they often use multiple medications in combination, many have heightened sensitivity to medications, and they are more likely to have pre-existing conditions that can increase both the frequency and severity of adverse effects (MacLennan et al. 2009). As well, prescription drug use and abuse is an emerging problem among Canadian teenagers, warranting concern that these behaviours could influence rates of prescription drug-impaired driving (Boak et al. 2013). It should not be assumed that just because a prescription drug is considered safe to take that it will not impair driving. Impairment caused by any drug while driving, whether licit or illicit, is illegal and can lead to a conviction in Canada.

What are some of the characteristics of drug-impaired drivers?

While drug-impaired drivers are often included in the broader general category of "impaired drivers", it is important to recognize that the characteristics of drug-impaired drivers are, to some extent, distinct from the characteristics of drivers impaired by alcohol. To illustrate, a CCSA study which evaluated data from TIRF's National Fatality Database found that a much larger percentage of fatally injured male drivers tested positive for alcohol (41.4%) compared to female drivers (23.8%) between 2000 and 2008. Conversely, the percentage of male (33.9%) and female (31.4%) fatally injured drivers testing positive for drugs, other than

alcohol, was almost equal (Beasley and Beirness 2011). However, gender differences have been noted with respect to specific drug types such as with marijuana. Studies show that a greater percentage of fatally injured male drivers are found with marijuana in their system compared to females. Conversely, fatally injured female drivers are more likely than males to test positive for central nervous system depressants and benzodiazepines (Romano and Pollini 2013; Beasley and Beirness 2011). Additionally, compared to drunk driving, which more frequently occurs at nighttime and on the weekend, drug-impaired driving has been found to occur just as frequently during the week and during the day as on weekends and evenings (Beasley et al. 2013; Romano and Pollini 2013). However, it should be noted that there are limited roadside studies observing the prevalence of daytime drinking and driving, so these findings should be interpreted with caution.

As is the case for drinking and driving in Canada, where approximately 33% of fatally injured drivers in alcohol-related crashes are aged 16-25, young drivers are over-represented in relation to drug-impaired driving (Brown et al. 2013). Drivers aged 16-24 in Canada accounted for 26.9% of fatalities involving drugs between 2000 and 2008 (Beasley and Beirness 2011). However, unlike the alcohol-impaired driving spectrum, drug-impaired driving rates actually increase after age 55. This is most likely due to the general trend toward an increase in prescription drug use after that age (Transport Canada 2011).

The Office of National Drug Control Policy (ONDCP) in the United States found that drug-impaired drivers were also more likely to have alcohol in their system. Among drivers who tested positive for any drug, 48% also tested positive for alcohol in 2009 (ONDCP 2011). As well, 55% of drivers in fatal crashes who tested positive for drugs were also found to be unbelted.

What legislation and penalties apply to drug-impaired drivers in Canada?

In Canada, it is illegal to drive while under the influence of drugs. The Criminal Code of Canada states that everyone commits an offence by operating a vehicle while the person's ability to operate the vehicle is impaired by alcohol or a drug (Department of Justice Canada 2013).

Additionally, the Tackling Violent Crime Act was passed in 2008, allowing police officers to demand that any driver they suspect to be operating a vehicle under the influence of alcohol or drugs, submit to SFSTs. If these tests indicate that drugs are likely present, further steps such as collecting a bodily fluid sample can be taken. Furthermore, this Act also states that anyone commits an offence who fails or refuses to comply with these tests.

Some jurisdictions in Canada also have their own provincial/territorial penalties for driving while impaired by drugs. Although these penalties and sanctions exist, the majority of Canadians are either unaware or unsure about them. Over half of Canadians (58%) were found to be unsure of whether their province or territory had administrative laws dealing with drug-impaired driving (Jonah 2013). The same study found that only 26% of drivers believed that it was very likely that a driver would be stopped and charged for having driven under the influence of marijuana.

The United States also has laws against drug-impaired driving. Several states have introduced per se drug-impaired driving laws, forbidding certain levels of substances to be present in the body while driving. Although they are often referred to as per se laws, most of these states actually enforce zero tolerance legislation (e.g., Georgia, Iowa). This means that in those states with zero tolerance per se drug-impaired driving laws, a driver found with any amount of specified drugs in their system is subject to conviction, even if those drugs are not necessarily causing impairment. The other type of per se law that is used in some states (e.g., Washington, Nevada) sets specific limits for the amount of a substance that must be present in a driver in order to be deemed impaired. Drugs can cause various levels of impairment in a person based on dosage, body composition, and tolerance making it hard to achieve consensus regarding standardized limits or per se laws. As well, setting per se limits for illicit drugs while driving presents a legislative issue, implying that it is acceptable to drive while using illegal drugs below certain thresholds.

What steps are being taken to reduce drug-impaired driving?

There are a number of challenges associated with efforts to reduce the drug-impaired driving problem. Perhaps one of the most significant barriers is overcoming the misperception that drug-impaired driving is not an issue at all. While there is strong agreement from the public that alcohol impairs driving ability, fewer people believe that other drugs, especially marijuana and prescription drugs, have impairing effects on driving (Jonah 2013). Of concern, driving high is not always portrayed in the media as risky or dangerous behaviour, which can create difficulty in gaining support for anti-drug initiatives (CARSP 2012). As well, increasing public awareness about an issue is often not sufficient to change behaviour, which is an important goal for policy makers and safety programs.

Similarly, preventative programs to reduce drug-impaired driving among young drivers, an already vulnerable population, are limited. CCSA recently sponsored a systematic review of the literature, conducted by TIRF, to identify effective models for preventing drug-impaired driving among youth. The study found that while limited evidence-based information is available, some strategies such as encouraging responsibility and open communication with young drivers; teaching coping and peer pressure avoidance skills; and, involving parents and communities in preventative initiatives against drug-impaired driving appear to have promising implications for future programs (Holmes et al. 2014).

Similarly, valid and practical drug detection devices are only beginning to make their way onto the market. Currently, the most precise tests for identifying drugs in drivers involve procuring oral saliva or blood samples which take time to analyze, must be conducted in a sterile environment, and are not as economical or practical as roadside breathalyser tests for alcohol. However, recent research studies have shown promise in the development of new devices that can test for drugs, with relative accuracy, using oral fluid samples on-site, yielding almost immediate results (Blencove et al. 2011; Desrosiers et al. 2012). It remains, however, that the dose-response relationship between drugs and driving impairment, as well as the accuracy of measuring levels of drugs with these devices, are not fully understood. Further

development and research into these methods is necessary to determine their effectiveness in combatting the drug-impaired driving problem.

Due to the differing perspectives and inconsistencies surrounding how drugs can influence impairment, convictions for drugged driving offences are also more difficult to obtain compared to alcohol-impaired driving offences. Additionally, when alcohol is also found to be present in drug-impaired drivers, offenders are often charged with an alcohol-impaired driving offence, since it is less complex to show evidence that warrants conviction in court for alcohol-related offences as compared to drugs (Lacey et al. 2010). This also leads to difficulty in analyzing and tracking drug-impaired driving trends, especially since there is often no record of the amount of a drug present upon arrest, unlike alcohol-impaired driving records (NHTSA 2010).

Aside from the challenges surrounding illicit drug use, driving under the influence of licit drugs presents its own set of difficulties. Medication labels may not adequately warn drivers of the effects of prescription drugs on driving abilities and crash risk (Kay and Logan 2011). Furthermore, it becomes next to impossible to efficiently test for all types of prescription drugs due to the variety and combination of substances that are available. As with illicit substances, it is difficult to determine the extent of impairment from prescription and over-the-counter drugs in drug testing, due to the varying effects that specific drugs can have depending on body type, chemistry, and frequency of use among other factors.

Summary

Although the research community currently lacks consensus on the drug-impaired driving problem, it is clear that there is evidence to warrant further investigation and monitoring. In particular, there is a need for more evidence-based information to inform decision-making with regard to policies, programs and proposed strategies to address it. Currently, there are several studies underway which examine the magnitude of the drug-impaired driving problem, the impairing effects of drugs on driving skills, and the development of improved detection devices for road-side testing of drugs (NHTSA 2014). Research is also being conducted to investigate new measures to detect drugs in drivers (e.g., exploratory research into the potential for capturing the presence of THC in the breath) (Himes et al. 2013).

The 2013 Drugs and Driving RSM highlights these issues related to drug-impaired driving with a number of questions related to:

- concerns about drug-impaired drivers;
- drug use in general;
- the percentage of Canadians who drive while under the influence of drugs;
- characteristics of drug-impaired drivers; and,
- trends in drug-impaired driving.

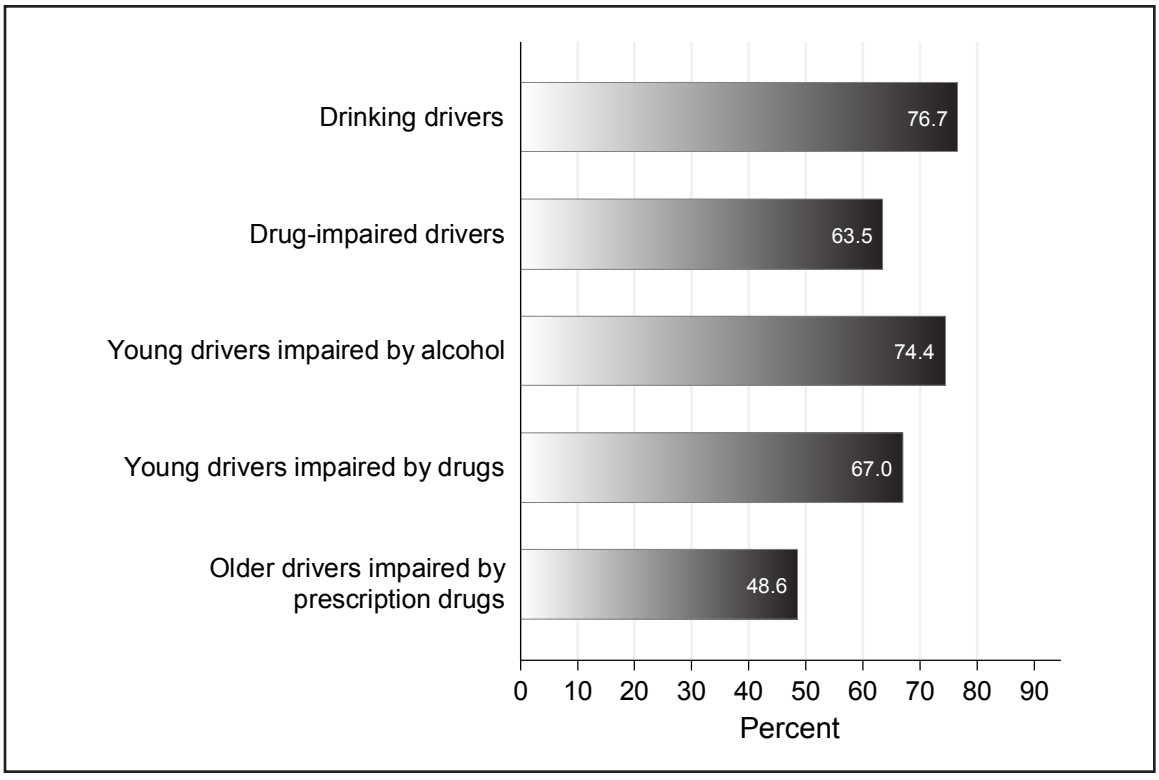
RESULTS

Are Canadians concerned about the issue of drug-impaired driving?

Results of the 2013 RSM showed that the majority of Canadians felt that drug-impaired drivers are a very or extremely serious problem. Overall, 63.5% of respondents said they felt that drug-impaired drivers posed a serious threat to traffic safety, compared to 68.0% in 2012. Similarly, 67.0% of Canadians felt that young drivers impaired by drugs other than alcohol was a very or extremely serious issue. A much lower percentage of respondents, around 48.6%, viewed older drivers impaired by prescription drugs as a very or extremely serious issue.

When comparing public concern about drug-impaired driving behaviours to concerns surrounding drinking and driving, it became clear that drinking and driving continued to be perceived as a serious issue to a larger percentage of Canadians in 2013. More than three-quarters (76.7%) of Canadians were very or extremely concerned about the problem of drinking drivers, compared to the 63.5% who thought drug-impaired drivers were a serious issue. As well, more respondents (74.4%) were concerned about young drivers impaired by alcohol compared to the 67.0% who were concerned about young drivers impaired by drugs.

Percentage of Canadians who were concerned about impaired driving: 2013



Who is concerned about the problem of drug-impaired driving?

According to the results of the 2013 RSM, it was the youngest and oldest drivers in Canada who were the most concerned about drug-impaired drivers. Approximately 71.9% of 16-24 year olds and 78.5% of drivers aged 65 and older thought that drug-impaired drivers was a very or extremely serious issue with respect to traffic safety. The concern among these two populations was significantly higher than the 53.3% of 25-44 year olds who considered drug-impaired drivers to be a serious road safety issue. Similarly, people who were aged 65 years and older were significantly more concerned about drug-impaired drivers, compared to the 66.5% of drivers aged 45-64 years who thought it was a very or extremely serious issue. Additionally, a larger percentage of female respondents (67.2%) viewed drug-impaired drivers as a very or extremely serious problem compared to male respondents (59.5%).

Older drivers were found to be significantly more concerned than other age groups within the population about young drivers impaired by drugs. Approximately 80.2% of drivers aged 65 and older said they were very or extremely concerned about young drivers impaired by drugs. This was significantly higher than the 64.9% of drivers aged 16-64 who perceived young drivers impaired by drugs as a major road safety concern. Furthermore, almost equal percentages of all male and female drivers, 66.2% and 67.6% respectively, indicated that they thought young drug-impaired drivers were a very or extremely serious traffic safety issue.

The older driver population was also more concerned about the issue of older drivers impaired by prescription drugs. Results showed that drivers aged 45 and older were significantly more likely to regard older drivers impaired by prescription drugs as a very or extremely serious traffic safety issue compared to drivers aged 16-24 and drivers aged 25-44. This may be an indication that younger individuals did not believe that prescription drugs could have potentially negative effects on driving. Alternatively, younger drivers may have also perceived the issue of older drivers impaired by prescription drugs as a less serious problem because they were unaware of, or could not relate to, the potential effects of prescription drugs on driving abilities.

Drug use

Results from the 2013 RSM revealed that a noticeable proportion of the Canadian driver population admitted to using both licit and illicit drugs that are known to affect driving ability at some point within the past year. Note that these data refer to drug use only, and not to the prevalence of drug-impaired driving among Canadian drivers, which is discussed in the next section. Approximately 7.6% of the Canadian driver population reported using marijuana or hashish in the previous 12 months. The majority of marijuana users, around 70%, were between the ages of 16-44. A smaller percentage of the population reported using illegal drugs (3.8%) compared to those who used marijuana or hashish, but a similar distribution of use among age categories was seen, with 72.2% of illegal drug users falling between the ages of 16-44. It should be recognized that while marijuana use is discussed separately from the broader category of illegal

drug use in this report, unauthorized possession, distribution and use of marijuana is, according to the CCC, prohibited in Canada and can be considered within the illegal drug category.

Overall, some 13.4% of Canadian drivers reported using prescription drugs that they have been advised might affect their driving. The age distribution of prescription drug users differed from the distribution of marijuana and illegal drug users in that 9.7% were between the ages of 16-24; 32.3% were aged 25-44; 45.8% were aged 45-64; and, 12.3% of people who reported taking potentially impairing prescription drugs were aged 65 and older. As alluded to in the background section, the higher percentage of older individuals within the prescription drug user population, as opposed to marijuana and other illegal drug users, is most likely due to the increase in overall prescription drug use as people age. It should also be noted that the reason for prescription drug use (i.e., taken as prescribed by a doctor or misused or stolen) was outside the scope of this study.

Prevalence and characteristics of drug-impaired drivers in Canada

Although results showed that many drivers in Canada admitted to using drugs that may affect their driving, the data revealed that only a relatively small percentage of the population chose to get behind the wheel while under the influence of these drugs in 2013. However, while the percentage of drug-impaired driving incidents was small compared to the percentage of drivers who admitted to driving within two hours of consuming any amount of alcohol (17.8% in 2013) and the percentage of people who drove when they thought they were over the legal limit (4.9% in 2013), these numbers still reflect a large number of drivers on Canadian roadways who may be impaired by drugs. The following sections highlight the prevalence of drug-impaired driving within the Canadian driver population in 2013, as well as some common characteristics among drug-impaired drivers.

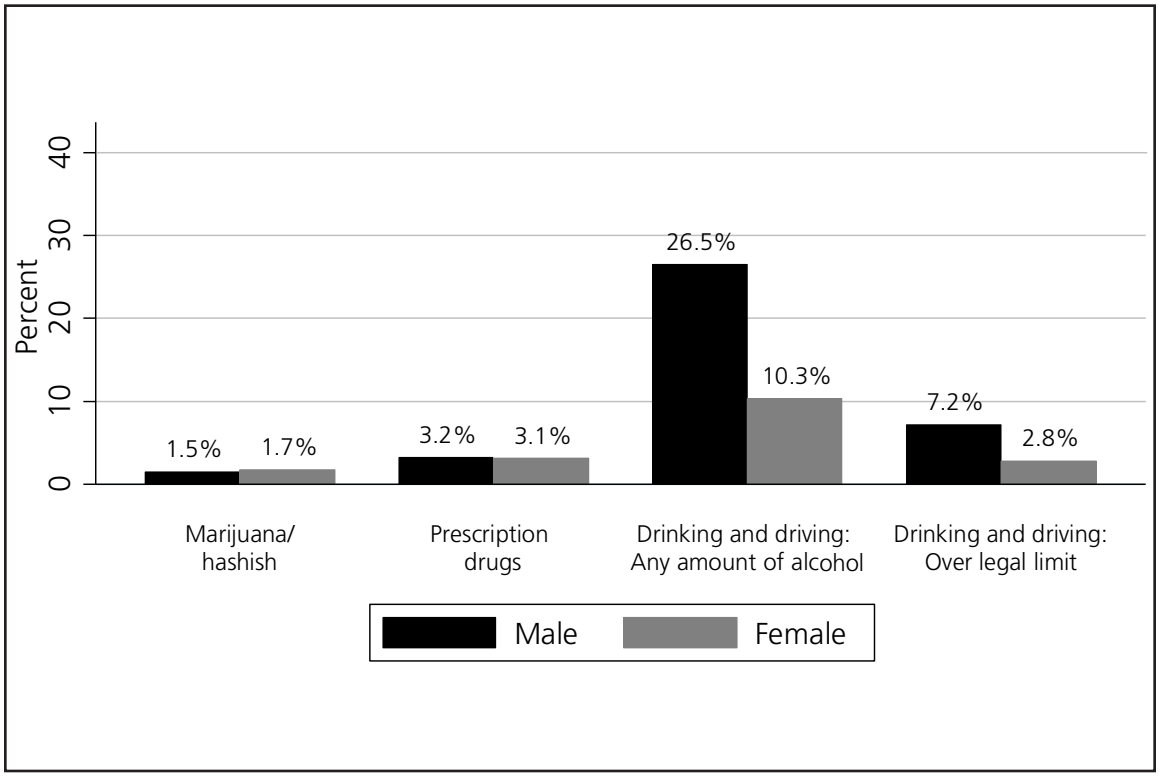
Marijuana/hashish

Just less than two percent (1.6%) of Canadian drivers said that they had driven a motor vehicle within two hours of using marijuana or hashish at least one time during the previous 12 months in 2013. Of drivers who admitted to this behaviour, 9.0% were between the ages of 16-24; 60.6% were between 25-44 years old; and, 30.4% were at least 45 years old. Additionally, no significant differences were found with respect to gender differences among drivers who drove within two hours of using marijuana (1.5% of males versus 1.7% of females). This represents a stark contrast to the gender differences found among drinking drivers in this poll, where males were significantly more likely than females to have reported driving within two hours of consuming any amount of alcohol (26.5% of males versus 10.3% of females), as well as driving when they thought they were over the legal limit (7.2% of males versus 2.8% of females).

Participants were also asked whether or not they had ever been injured in a motor vehicle crash to the extent that they required medical attention. Approximately 3.6% of marijuana-impaired drivers also reported that they had been injured in a motor vehicle incident at some point, compared to 1.1% of other drivers. In fact, additional analysis controlling for gender and age differences suggested that individuals

who drove under the influence of marijuana had a 71% increase in the odds of reporting that they had been injured in a motor vehicle collision, compared to drivers who had never driven under the influence of marijuana. This finding demonstrates the risks associated with the drug-impaired driving problem, suggesting that drivers who engage in drug-impaired driving behaviours are at a higher risk of injury as a result of a motor vehicle incident compared to drivers who do not engage in such activities.

Percentage of drivers who engaged in impaired-driving behaviours, by drug classification and gender: 2013



Illegal drugs

Almost one percent, or approximately 0.8%, of the Canadian driver population admitted that they had driven a motor vehicle within two hours of taking illegal drugs in the previous year. Due to the small number of respondents who admitted to this behaviour, it became difficult to discern with statistical accuracy the proportion of people, with respect to the larger population, who engaged in driving after taking illegal drugs based on age or gender factors.

Prescription drugs

Overall, about 3.2% of drivers in Canada reported driving within two hours of taking prescription drugs that they had been advised may affect their driving. This equates to almost 780,000 drivers[3] on Canadian roadways who drove while under the influence of potentially impairing prescription drugs in 2013. One possible explanation for the large percentage of drivers who reported prescription drug-impaired driving compared to those who reported driving under the influence of marijuana and other illegal drugs may be

[3] This estimate was calculated using results from this RSM which found that 3.2% of the total sample of drivers reportedly used potentially impairing prescription drugs within two hours of driving and an estimated 24.310 million licensed drivers in 2013. This estimate of 24.310 million was calculated by increasing the 2011 number of 23.831 million licensed drivers (Transport Canada 2013) with an anticipated growth of 1% per year.

that they did not see driving while taking these drugs as a potentially risky behaviour. This may be because the drugs were prescribed by a doctor and could be obtained legally. It is also possible that this percentage was a reflection of the growing amount of prescription drug spending, and ultimately use, in Canada. It was estimated by the Canadian Institute for Health Information (CIHI) that Canadians spent $29.3 billion on prescribed drugs in 2013, accounting for almost 14% of total health spending in Canada (CIHI 2014).

A significant difference in the prevalence of driving after prescription drug use was found between specific groups of drivers, with respect to age. Drivers over the age of 65 were significantly less likely to report that they drove after taking potentially impairing prescription drugs, compared to drivers aged 16-24. Approximately 7.9% of drivers aged 16-24 admitted to driving within two hours of taking potentially impairing prescription drugs, compared to only 1.3% of drivers aged 65 and older in 2013. This percentage of young drivers was significantly greater than the percentage of 16-24 year olds who admitted to driving within two hours of taking impairing prescription drugs in 2002 (0.9%). Although these findings are robust, they should be interpreted with caution due to the fact that limited data were available from previous years, making it difficult for researchers to make more definitive conclusions regarding this trend. Although speculative, this concerning percentage of young drivers engaging in prescription drug-impaired driving may speak to the increased percentage of prescription drug abuse among teenagers in Canada (Boak et al. 2013; Health Canada 2013).

As with marijuana-impaired driving behaviours, no statistically significant differences were found between males and females in terms of whether or not they drove within two hours of taking prescription drugs. Although these findings are consistent with the evidence presented in the background section of this report indicating that fatally injured male and female drivers are equally as likely to be found with drugs in their system, they do not reflect the differences generally found among fatally injured drivers with respect to specific drug types (e.g., a greater percentage of fatally injured male drivers test positive for marijuana compared to females).

Not only did the results of the poll reveal that many Canadians reportedly drove while under the influence of prescription drugs, but another finding emerged that illustrated the dangers of driving after taking impairing prescription drugs. Results showed that individuals who chose to drive after taking prescription drugs that may affect their driving had a 60% increase in the odds of self-reporting injury as a result of a motor vehicle crash compared to those who did not drive after taking prescription drugs, even after controlling for differences in age and gender.

Alcohol and drug-impaired driving

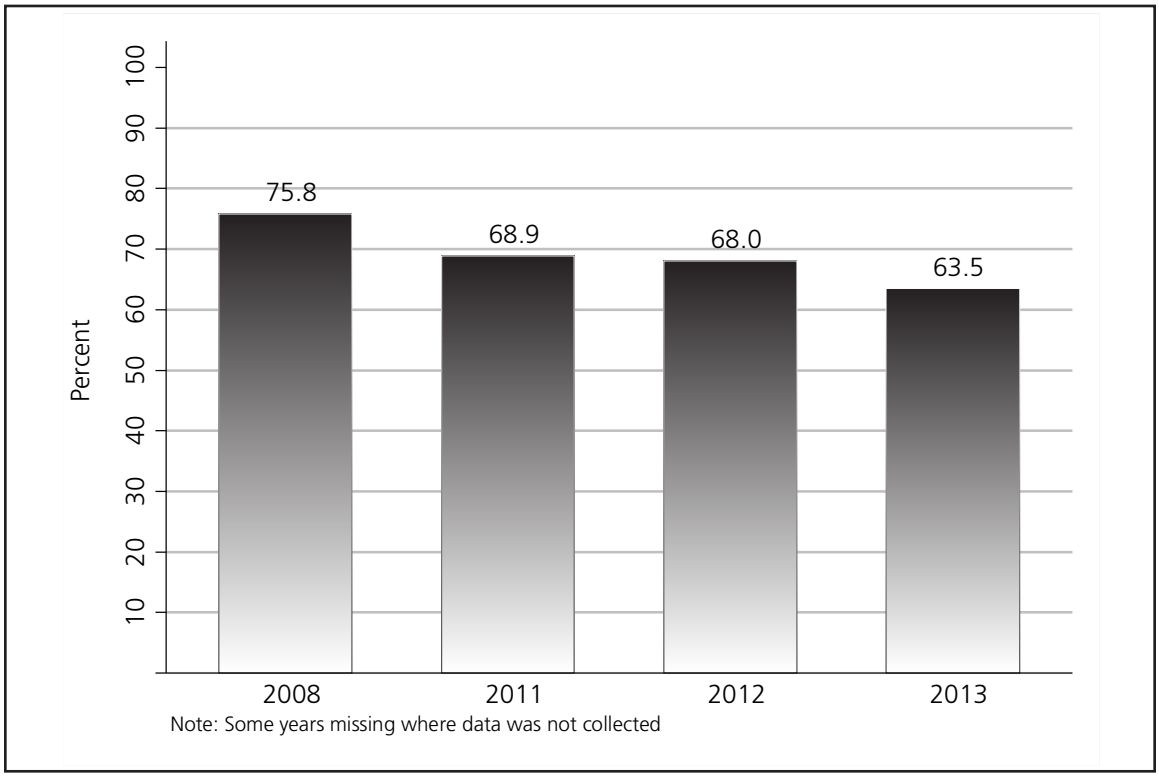
As noted earlier in this report, alcohol can compound the negative effects of drug-impaired driving. In 2013, results of the RSM revealed that many Canadians who engaged in drug-impaired driving also engaged in drinking and driving at some point in the previous 12 months, which has serious implications for the safety on our roadways. One quarter (25.6%) of drivers who admitted to driving within two hours of taking prescription drugs that they had been told could impair their driving also admitted to driving

within two hours of consuming any amount of alcohol. A large percentage of drivers who admitted to driving under the influence of marijuana (60.3%) also reported drinking and driving. Similarly, 71.7% of drivers who drove within two hours of taking illegal drugs also reportedly engaged in drinking and driving. This suggests that a larger percentage of illicit drug-impaired drivers engaged in drinking and driving compared to prescription drug-impaired drivers.

Trends in drug-impaired driving

Since the same questions about drug-impaired driving were asked in past years, results can be compared to examine trends over time. Since 2008, the first year that data were collected with respect to concern for drug-impaired drivers, there has been a small but noticeable decline in public concern for drug-impaired drivers. The difference in the percentage of Canadians who were concerned about drug-impaired drivers in 2008 (75.8%) compared to those who were concerned in 2013 (63.5%) was found to be statistically significant. However, data from future years is needed to determine whether this apparent decline in concern will persist.

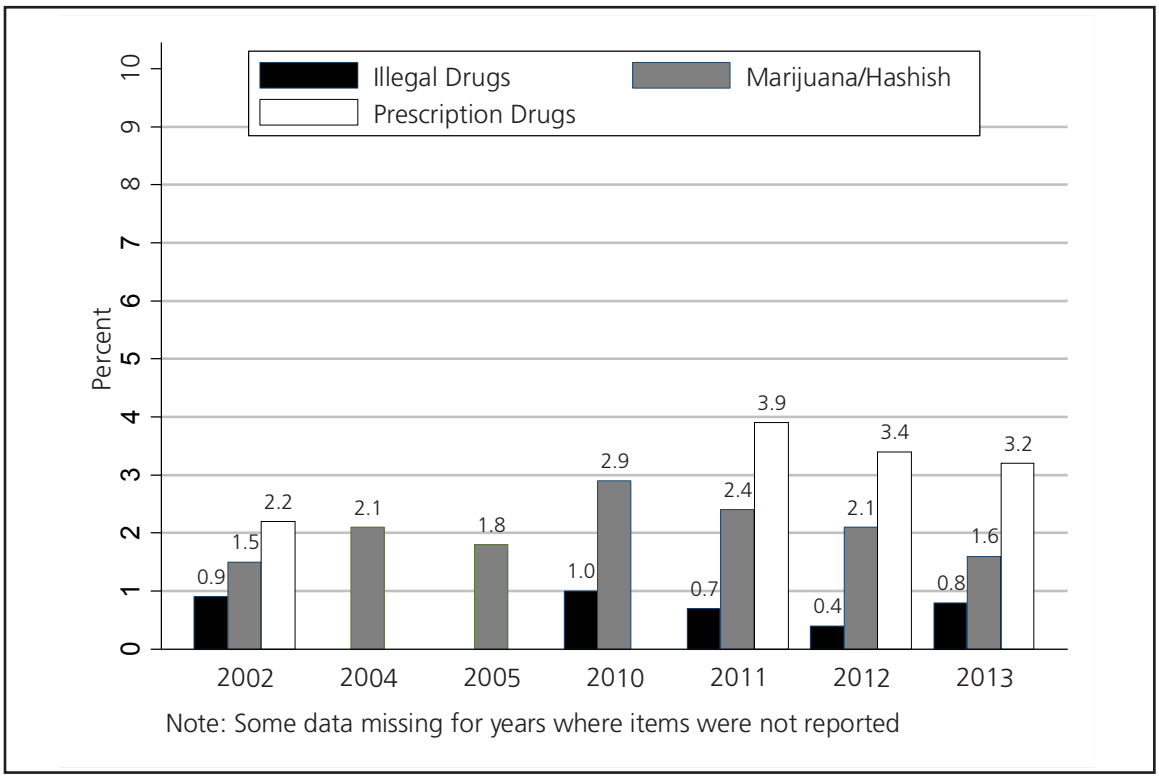
Trends in the percentage of Canadians who are very or extremely concerned about drug-impaired drivers, 2008-2013



Very little variation in the percentage of Canadians who reported driving after using marijuana and other illegal drugs has been seen in the years where these data were collected. For instance, in 2002 the percentage of Canadians who admitted to driving within two hours of using marijuana or hashish was 1.5%. The highest percentage of drivers who reported this behaviour was recorded in 2010, when 2.9% of respondents admitted to driving within two hours of using marijuana. This percentage declined again

to a low of 1.6% in 2013. Similarly, the percentage of drivers who said they drove within two hours of taking illegal drugs was collected in 2002, as well as in every year since 2010. The percentage of Canadians admitting to this risky behaviour has remained relatively constant, at about 1%, with the lowest recorded percentage occurring in 2012, when 0.4% of drivers reported operating a motor vehicle under the influence of illegal drugs. Again, more data are needed to understand these trends.

The prevalence of driving within two hours of using potentially impairing prescription drugs has also remained relatively constant overall. Although there has been a significant increase in the prevalence of driving after prescription drug use among 16-24 year olds since 2002, the total percentage of Canadians who drove after taking potentially impairing prescription drugs only increased slightly, from 2.2% in 2002 to 3.2% in 2013. The only other years recording these data were 2011 and 2012 where 3.9% and 3.4% of drivers admitted to this behaviour.



Trends in the percentage of drug-impaired drivers in Canada, 2002-2013

SUMMARY AND CONCLUSIONS

Results from the 2013 RSM showed that drug-impaired driving is a prevalent issue among Canadians. Although there was a slight decline in the perceived seriousness of the problem of drug-impaired drivers within the past decade, the issue continues to draw serious concern from the majority of drivers. As well, while the data available suggested that the overall percentage of drug-impaired drivers neither significantly increased nor decreased, there was still a large number of Canadian drivers getting behind the wheel while under the influence of various substances, particularly prescription drugs, that may affect their driving.

The survey revealed no significant gender differences among drug-impaired drivers in the general population, which is consistent with previous research evaluating the overall characteristics of drivers found with drugs in their system, but not consistent with research evaluating gender differences in fatally injured drivers with respect to specific drug types (e.g. marijuana). This inconsistency may be due to the differences in the types of data evaluated. As well, results suggest that many more young drivers (aged 16-24) were driving under the influence of prescription drugs in 2013, compared to the past. This is concerning given the heightened awareness of prescription drug abuse among teenagers in recent years.

Results also showed that drug-impaired drivers were at an increased risk of injury compared to drivers who did not use drugs and drive. Both marijuana-impaired and prescription drug-impaired drivers reported increased prevalence of being injured in a motor vehicle incident compared to those who did not use these drugs. This suggests that people who use drugs and drive are at an increased risk of injury compared to the rest of the Canadian driver population, ultimately putting the lives of all road users at risk.

These findings give rise to the need for an increased understanding of drug-impaired drivers, particularly prescription-drug impaired drivers who comprise a greater percentage of Canadians than both marijuana and illegal drug-impaired drivers combined. Not only is there a need for further research to be conducted, but there is also the need for increased public awareness to ensure that all Canadians understand the risks associated with drugs and driving.

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