The Road Safety Monitor 2007

Elderly Drivers

TRAFFIC INJURY RESEARCH FOUNDATION

A DRIVING FORCE FOR SAFETY

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 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.

Traffic Injury Research Foundation
171 Nepean Street, Suite 200
Ottawa, Ontario K2P 0B4
Ph: (613) 238-5235
Fax: (613) 238-5292
Email: tirf@trafficinjuryresearch.com
Website: www.trafficinjuryresearch.com

April 2008

ISBN: 978-0-920071-74-8

The Road Safety Monitor 2007

Elderly Drivers

Ward Vanlaar
Patricia Emery
Robyn Robertson

Financial support provided by:

Primary sponsors:

Transport Canada

Canada

Brewers Association of Canada

L'Association des brasseurs du Canada

Toyota Canada Inc.

TOYOTA
make things better

Table of Contents

Executive Summary

- *The Road Safety Monitor* (*RSM*) is an annual public opinion survey conducted by the Traffic Injury Research Foundation (TIRF) and sponsored by Transport Canada, the Brewers Association of Canada and Toyota Canada Inc. The survey takes the pulse of the nation on key road safety issues by means of a telephone survey of a random, representative sample of Canadian drivers.

- The annual results of the *RSM* are released in a series of reports (available at: www.trafficinjuryresearch.com) – the present one focuses on elderly drivers.
- In 2006, 13.2% of all licensed drivers, or some 3 million Canadians, were 65 or older. As the population continues to age, these numbers are expected to increase, and it is estimated that there will be 6 million licensed drivers aged 65 or older by 2031, corresponding to about 23% of all licensed drivers.
- In addition to normal, age-related declines in abilities such as slower reaction-times and limited mobility, elderly drivers may also be affected by other conditions such as visual impairment, heart disease, stroke, and dementia and by impairment due to medications related to those conditions. Consequently, as the population continues to age, issues related to elderly drivers will likely become more prevalent.
- Of considerable concern, elderly drivers account for a significant proportion of the road death toll, ranked second only to young drivers aged 15 to 24.
- This elevated risk can partly be explained by their physical frailty. Also, some elderly drivers drive less, but when they drive, they do so primarily on high-risk roads. The elevated risk is most pronounced after the age of 80 and especially among those who drive infrequently.
- In general, Canadians are moderately concerned about the issue of elderly drivers. About 33% view elderly drivers as a very important road safety concern.
- It appears that Canadians have a fairly accurate grasp of the issue of elderly drivers, with the exception that they tend to over-estimate its magnitude.
- However, it is not clear whether Canadians recognize that the problem is likely to become more prevalent as the population continues to age.
- A majority of Canadians support the following measures to address the issue of elderly drivers: (1) Elderly drivers should be required to complete training in order to maintain their driving privileges after a certain age (75.7% in agreement); (2) programs are needed to improve the skills of elderly drivers (65.1% in agreement); and (3) elderly drivers who are having difficulty driving because of their impairment should be given restricted driving privileges such as no driving after dark and only driving within a 25 km radius of their home (71.1% in agreement).
- Conversely, a majority of Canadians disagree (61.5%) that elderly drivers should lose their driving privileges if they cause a crash.
- Older drivers are less concerned in general about the issue of elderly drivers and less supportive of a variety of counter-measures. Any strategy to overcome issues related to elderly drivers will have to be sensitive to this.

Introduction

The Road Safety Monitor (*RSM*) is an annual public opinion survey developed and conducted by the Traffic Injury Research Foundation (TIRF) to take the pulse of the nation on key road safety issues. 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;
- what they know and do not know about safe driving practices; and
- how they behave on the highways.

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 describes the findings from the 2007 *RSM* regarding the issue of elderly drivers.

Method

The seventh edition of the *RSM* contained 95 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 15 minutes to complete.

The survey was administered by telephone to a random sample of Canadian drivers who have driven in the past 30 days and have a valid driver's license. The sample was stratified by province and weighted according to gender and age to avoid bias. Opinion Search Inc. fielded this survey in September, 2007. Among the 11,625 households contacted in which a person was asked to participate, 8,800 (76%) refused and 885 (7.6%) were not qualified.

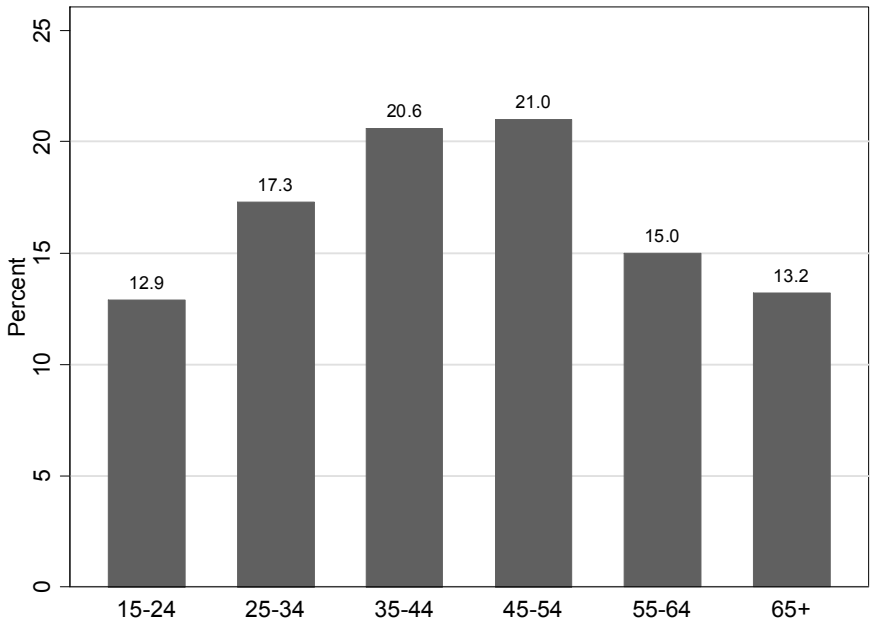
A total of 1,238 drivers completed the interview. About 12% were 16 to 24 years old, 21% were 25 to 34 years old, 21% were 35 to 44 years old, 18% were 45 to 54 years old, 14% were 55 to 64 years old, and about 14% were 65 or older. The data were analyzed taking account of the stratified and weighted sampling design (see StataCorp. 2007 for information about the modeling procedures), using both univariate and multivariate approaches. Based on a sample of this size, on average, the results can be considered accurate within 2.8%, 19 times out of 20.

Elderly Drivers in Canada

Background

According to official 2006 statistics, people aged 65 or older comprised 13.7% of the Canadian population, or some 4,335,245 Canadians (Statistics Canada 2008). A majority of these (2,950,695) were licensed drivers (Transport Canada 2007), making up 13.2% of the total population of licensed drivers. As can be seen in Figure 1, the proportion of licensed drivers aged 65 and older (13.2%) is roughly equivalent to that of young drivers aged 24 and under (12.9%).

Figure 1. Percentage of Licensed Drivers by Age Group, Canada, 2006



The population of elderly Canadians is expected to increase in the next two decades. Assuming medium population growth, Statistics Canada (2008) projects that 18.7% (6,846,660 Canadians) will be 65 or older by 2021, and that this will grow to 23.7% (9,136,000 Canadians) by 2031. Based on today's licensing rates, this means that over 4.6 million Canadians aged 65 or older will likely continue to maintain their driving

privileges after 2021; that number is expected to reach 6 million by 2031, corresponding to about 23% of the entire 2031 driving population[1]. As a consequence, as the population continues to age, and as more seniors may retain their license, issues related to elderly drivers will likely become more prevalent.

There were almost 3 million Canadian drivers aged 65 and older in 2006, and their numbers are expected to double to 6 million by 2031.

What factors affect elderly drivers?

Many factors associated with advancing age can impact driving ability. Some factors, such as slower reaction times and reduced mobility, occur as a function of normal age-related declines in abilities (Alvarez and Fierro 2008; Dobbs 2005; Hakamies-Blomqvist et al. 2004). In addition, there are many medical issues that commonly occur among the elderly which may adversely affect driving, such as visual impairment (Charlton et al. 2004; Dobbs 2005; Owsley et al. 2002), more pronounced physical limitations that affect a driver's ability to move (Charlton et al. 2004; Dobbs 2005; Lyman et al. 2001), such as arthritis (Charlton et al. 2004; Dobbs 2005; McGwin et al. 2000), in addition to other medical factors such as heart disease (Charlton et al. 2004; Dobbs 2005; McGwin et al. 2000), stroke (Charlton et al. 2004; Lyman et al. 2001; McGwin et al. 2000), and cognitive declines (Charlton et al. 2004; Dobbs 2005; Lundberg and Hakamies-Blomqvist 2003) such as dementia (Adler et al. 2006; Carr et al. 2006; Charlton et al. 2004; Dobbs 2005).

The driving ability of elderly people may also be further impaired by a number of medications, such as antidepressants, antihistamines, and benzodiazepines (Dobbs 2005). This is important because the frequency and quantity of prescription drug use increase with age. Although some medications may have a positive impact on driving skills (e.g., pain reduction), others, such as benzodiazepines, non-steroidal anti-inflammatory drugs, anticoagulants, and angiotensin converting enzyme inhibitors have been shown to be associated with at-fault crashes in older adults (McGwin et al. 2000).

[1] A licensing rate of 68% and a 2031 population of approximately 38,000,000 are assumed, meaning that the total population of licensed drivers in 2031 is expected to be equal to approximately 26,000,000.

Are elderly drivers a road safety risk?

Concern about the issue of elderly drivers is warranted. According to Transport Canada, seniors aged 65 and older accounted for the second-largest proportion of road deaths, at 16% (or 462 road fatalities) and also accounted for 7.8% (15,545) of injuries in 2006. Only youth aged 15 to 24 accounted for a larger proportion of deaths, at 24.7% (Transport Canada 2007). Moreover, seniors have the second highest motor vehicle death rate among licensed drivers, with an average of 15.7 deaths per 100,000 licensed drivers, compared to 24.7 deaths for drivers aged 15 to 24, and 9.6 deaths for drivers aged 25 to 64. In general population terms, the trend is less pronounced: in 2006, elderly drivers had fatality rates of 10.7 deaths per 100,000 population, compared to 16.9 for youth aged 15 to 24, and 9 for adults aged 25 to 64. Thus, seniors have road death rates that are elevated relative to their representation in the general population and the population of licensed drivers.

Seniors have the second-highest motor vehicle death rate, behind drivers aged 15 to 24.

There are several factors that are relevant to the interpretation of these statistics. One factor is physical frailty. In a collision of equal severity, the elderly are more likely to die than younger drivers because of their fragile physical condition (Evans 2000, 2006; Fontaine 2003; Hakamies-Blomqvist et al. 2004; Li et al. 2003). As evidence of this, seniors had the second-highest motor vehicle *death* rates in 2006 but the lowest motor vehicle *injury* rates (7.8%). This has been substantiated in numerous studies and review articles (e.g., Fontaine 2003; Hakamies-Blomqvist et al. 2004; Langford et al. 2006; Li et al. 2003). As such, Evans (2000, 2006) contends that, while young drivers pose a considerable threat to themselves and to other road users, senior drivers primarily pose a threat to themselves.

A second issue relevant to the interpretation of the collision statistics of elderly drivers is the fact that they tend to drive less (Evans 2000, 2006; Fontaine 2003; Langford et al. 2006) and, as a result, have increased crash risks. In general, all drivers with a lower mileage typically have such an increased crash risk (Alvarez and Fierro 2008; Hakamies-Blomqvist et al. 2004; Langford et al. 2006) because most of their driving occurs on high-risk congested streets, rather than on lower-risk roads such as highways and freeways (Janke 1991).

Consistent wit this, Williams (2003) analyzed distance-based crash data from the United States and found that involvement in fatal crashes per mile driven is substantially higher among drivers aged 80 and older. For example, seniors aged 80 and older were found to have a fatality rate that is more than 1.5 times that of teens, while the rates of drivers 85 and older are more than double those of teens. The fact that elderly individuals are more physically vulnerable clearly plays a role but does not entirely explain these increased risks. Other research that has controlled for driving distance confirms the importance of mileage and found that elderly drivers have crash rates comparable to those of middle-aged drivers, provided that they drive more than 3000 km per year (Alvarez and Fierro 2008; Langford et al. 2006).

In sum, the literature suggests that elderly drivers do pose an elevated road safety risk and are overrepresented in fatal and severe crashes – this is a reason for concern. The elevated risk can partly be explained by their physical frailty, which means elderly drivers are more likely to die in a crash and, as such, pose a risk, especially albeit not exclusively, to themselves. In addition to this, there is an increased risk due to their lower mileage and a disproportionally high volume of travel on high-risk roads. The elevated risk appears to be more pronounced after the age of 80.

Characteristics of the crashes of elderly drivers

Certain types of crashes are more common among elderly drivers. The literature indicates that elderly drivers are more likely than other drivers to be involved in intersection crashes (Fontaine 2003; Mayhew et al. 2006), side-impact crashes (Evans 2006), angle crashes (Mayhew et al. 2006), and when turning, particularly when turning left, across traffic flow. Elderly drivers are also more likely than other drivers to be involved in collisions because of a traffic violation, such as failure to yield right-of-way or disregarding the traffic signal (Mayhew et al. 2006). These types of crashes tend to increase with age, especially after the age of 80 (Mayhew et al. 2006).

Conclusions

Over 4 million Canadians were 65 or older in 2006, corresponding to about 14% of the population. Almost 3 million of them were licensed drivers, accounting for about 13% of the driving population. As the population continues to age, these numbers are expected to increase. Assuming medium population growth, over 9 million Canadians (approximately 24%) will be 65 or older by 2031, and based on today's licensing rates, over 6 million seniors will likely maintain their driving privileges in 2031. This means about 23% of the population of licensed drivers is expected to be 65 or older in 2031.

A number of age-, disease-, and medication-related factors that are common among seniors have been shown to adversely affect driving ability. Consequently, as the population continues to age, issues related to elderly drivers will likely become more prevalent.

Of considerable concern, elderly drivers have casualty rates that are elevated relative to other age categories, but are generally lower than those of young drivers aged 15 to 24, at least until the age of 80. This can partly be explained by their physical frailty, which means they are more likely to die in a crash and, as such, pose a risk, especially albeit not exclusively, to themselves. Also, elderly drivers tend to drive less but when they drive, they do so primarily on high-risk roads. The elevated risk appears to be most pronounced after the age of 80, especially among those who drive infrequently.

The crashes of elderly drivers, particularly those over the age of 80, are more likely to be angle crashes or side-impact crashes, and to occur at intersections, when turning (particularly turning left), and are more likely to involve some form of traffic violation.

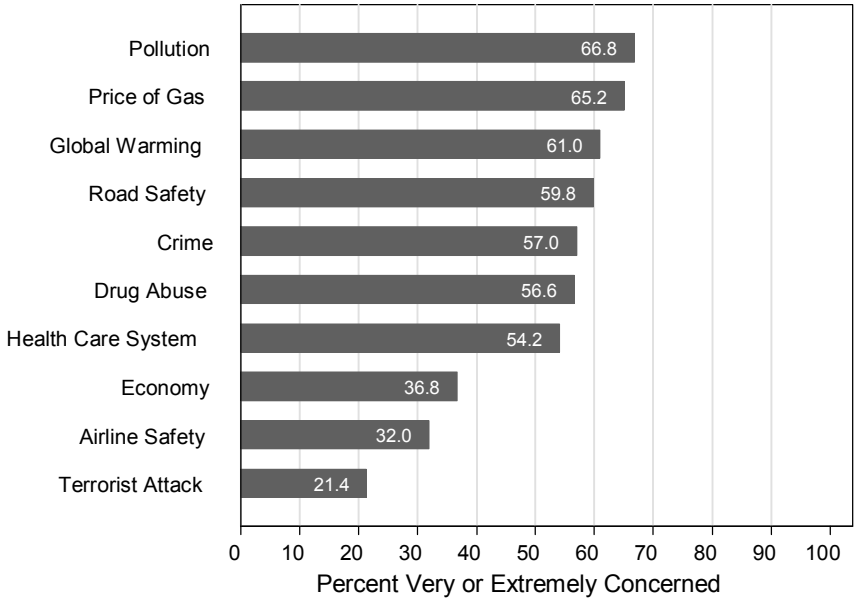
Concern About the Problem of Elderly Drivers

Where does the issue of general road safety sit on the public agenda?

In order to gauge Canadians' general attitudes towards elderly drivers, and to place this issue in a broader social and road safety context, the *RSM* polled Canadians on how concerned they are about a variety of societal issues. Figure 2 shows the percentage of respondents who said they were concerned about these various issues, rated on a scale from 1 (not at all concerned) to 6 (extremely concerned); for scoring purposes, respondents were coded as being concerned about an issue if he or she chose a 5 or 6. A clear majority of Canadians (59.8%) were very or extremely concerned about road safety, behind pollution (66.8%), the price of gas at the pumps (65.2%), and global warming (61%). Respondents were more concerned about road safety than about crime (57%), drug abuse (56.6%), the state of the health care system (54.2%), the economy (36.8%), airline safety (32%), or the threat of a terrorist attack (21.4%).

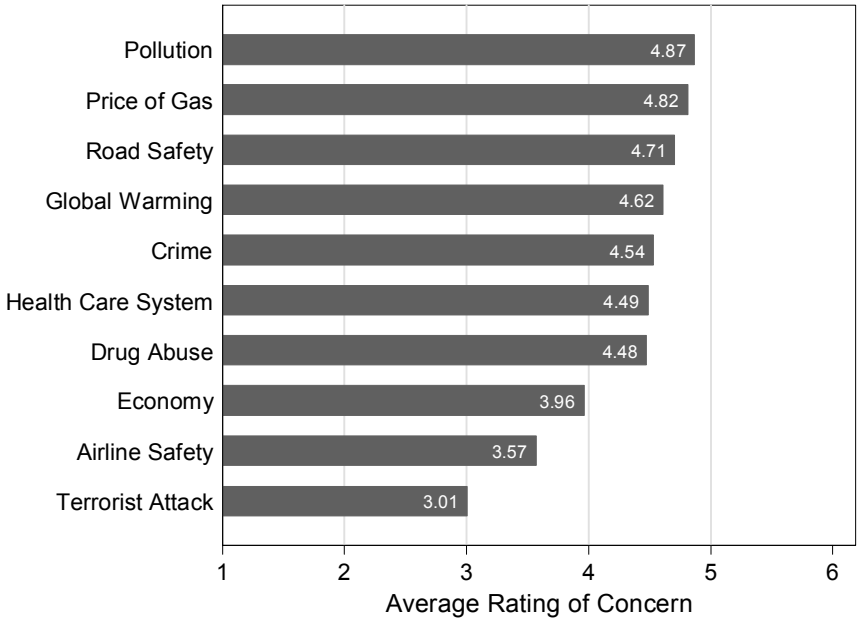
It warrants mentioning that not all the differences between these social issues are significant. Further analysis revealed that a distinction can be made between three groups of issues. First, the percentage of Canadians who are very or extremely concerned about pollution is significantly higher than for road safety; this forms the first group. The second group comprises the following issues: the price of gas at the pumps, global warming, road safety, crime, drug abuse, and the state of the health care system. The percentage of Canadians who are very or extremely concerned about each of these issues is more or less the same. Finally, significantly fewer Canadians are concerned about the economy, airline safety, and terrorist attacks – together, they comprise the third and final group. Another recent study revealed a comparable pattern and concluded that "the safety of road travel is seen [by the public] as a mid-level priority, with 54 percent expressing concern about this issue (EKOS Research Associates Inc. 2007: p. iii).

Figure 2. Percentage Very or Extremely Concerned About Various Social Issues



Looking at the average rating of concern for the various social issues, the general pattern of results is only slightly different (see Figure 3). On average, road safety was ranked third in terms of concern instead of fourth, but the overall pattern remains the same.

Figure 3. Average Ratings of Concern for Various Social Issues

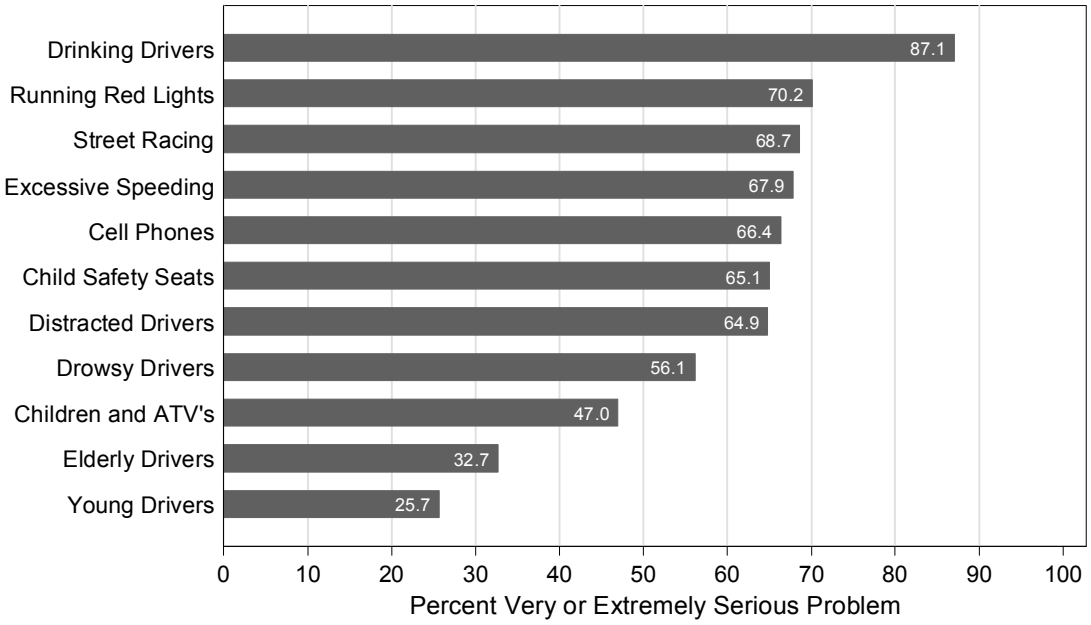


A logistic regression analysis was performed in order to determine the relationship between respondent age, gender, and general road safety concern. Gender was not associated with ratings of general road safety concern; however, respondents aged 35 and older were more likely to report higher levels of concern about road safety.

Are elderly drivers a major road safety concern for Canadians?

Canadians were also polled about a series of specific road safety concerns and asked how serious they perceive those problems to be, ranging from 1 (not a problem at all) to 6 (an extremely serious problem). The issue of elderly drivers was not seen as a particularly serious problem, relative to the other issues, and received an average rating of seriousness of 3.8. As can be seen in Figure 4, elderly drivers were considered a very or extremely serious problem (i.e., respondents selected a 5 or 6) by 32.7% of participants; this issue received the second lowest rating of perceived seriousness, followed only by young drivers (25.7%). Conversely, drinking drivers were rated as a very or extremely serious problem by 87.1% of respondents – significantly higher than any other road safety issue. The remaining road safety issues rated as very or extremely serious problems were as follows: 70.2% for running red lights, 68.7% for street racing, 67.9% for excessive speeding, 66.4% for the use of (hand-held or hands-free) cellular telephones while driving, 65.1% for children being improperly secured in safety seats, 64.9% for distracted drivers, 56.1% for drowsy or fatigued drivers, and 47% for children and all-terrain vehicles (ATV's).

Figure 4. Percentage Very or Extremely Concerned About Various Road Safety Issues



Of interest, but perhaps not surprising, further analysis revealed that respondents aged 65 and older were less concerned about the issue of elderly drivers, while females were more concerned about elderly drivers.

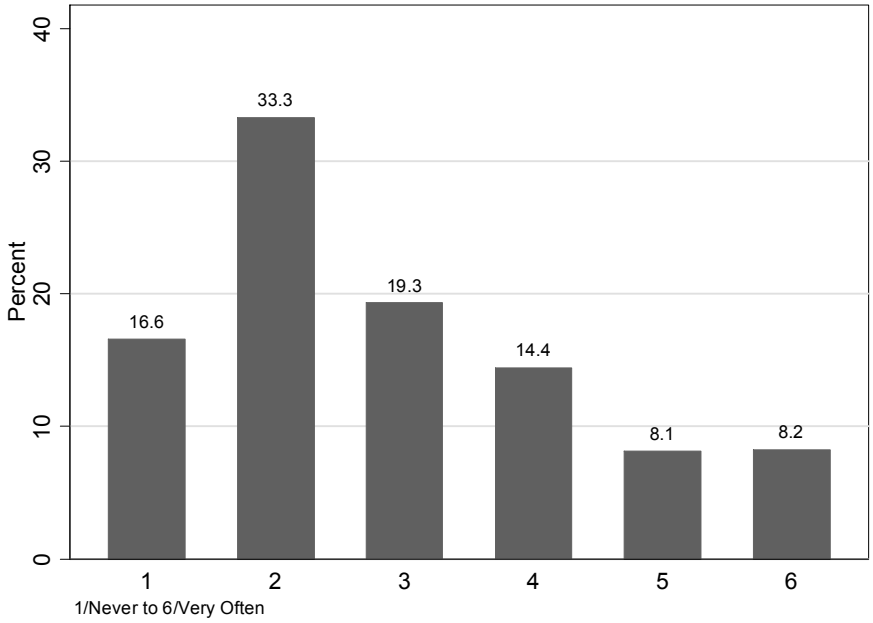
Extent of the Problem of Elderly Drivers

Opinions about the extent of the problem of elderly drivers

Canadians were asked how often, on a scale from 1 (never) to 6 (very often), they see elderly drivers who are driving unsafely on the road. Respondents indicated that, on average, they do not see this very often and gave an average rating of 2.9. Almost one-third (30.7%) chose a score of 4, 5, or 6, indicating they believe the problem of elderly drivers who are driving unsafely is a prevalent issue (see Figure 5). In fact, the proportion of respondents who saw elderly drivers driving unsafely differed significantly from the proportion that did not (30.7% versus 69.3%, respectively).

Almost 1/3 of Canadians report that they often see elderly drivers who are driving unsafely on the road.

Figure 5. How Often Do Canadians View Elderly Drivers Driving Unsafely?



Not surprisingly, age was found to be a significant predictor of the perceived frequency of elderly drivers who are driving unsafely, with individuals aged 35 and older reporting lower frequencies (i.e., they saw unsafe driving by seniors less often).

Respondents were also asked to estimate, out of all the drivers on the road, what percentage are elderly drivers who should not be driving anymore. On average, Canadians think 21.6% of all drivers are elderly drivers who should not be driving any more. This is clearly an over-estimation of the magnitude of the problem, given that drivers over the age of 65 represent only about 13% of licensed drivers. Further analysis revealed that responses on this item were inversely associated with being aged 25 or older, i.e., respondents 25 and older provided significantly lower estimates of the percentage of elderly drivers who should not be driving any more.

Do Canadians think elderly drivers cause crashes more often than other drivers?

Participants were asked to rate to what extent they agreed that elderly drivers cause crashes more often than most other drivers, on a scale from 1 (strongly disagree) to 6 (strongly agree). The average score was 2.65; a majority disagreed with this statement, with 74.3% selecting 1, 2, or 3 out of 6 (see Figure 6). Respondents aged 25 and older were significantly less likely to agree that elderly drivers cause crashes more often than most other drivers.

About ¼ of all Canadians think elderly drivers cause crashes more often than most other drivers.

Using the same scale, respondents were also asked to what extent they agreed with the statement: elderly drivers cause crashes more often than young drivers (see Figure 7). A clear majority of respondents (79.6%) disagreed with this statement, selecting 1, 2, or 3 out of 6. Participants gave this an average rating of 2.4. Respondents aged 35 and older were more likely to disagree with this statement.

Figure 6. Do Canadians Think Elderly Drivers Cause Crashes More Often Than Most Other Drivers?

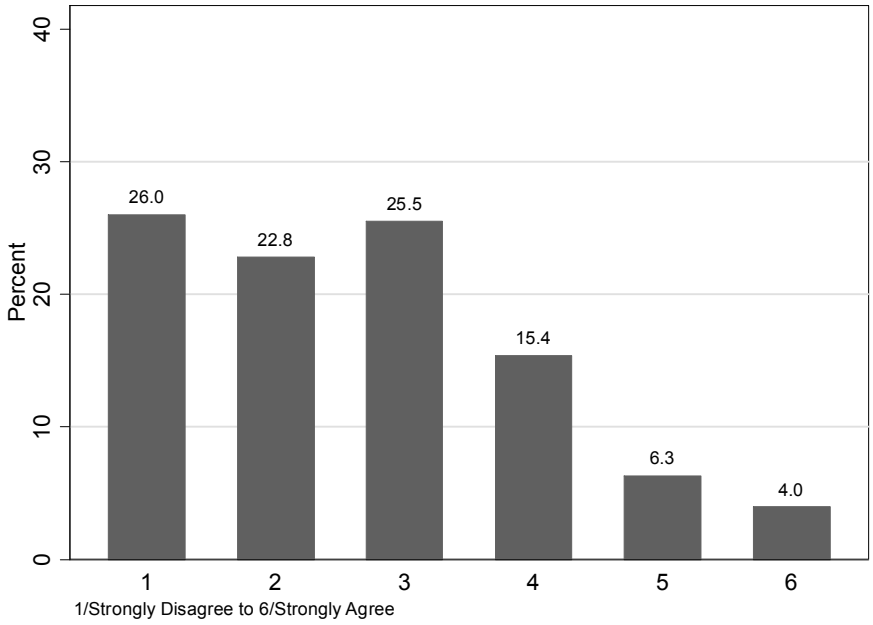
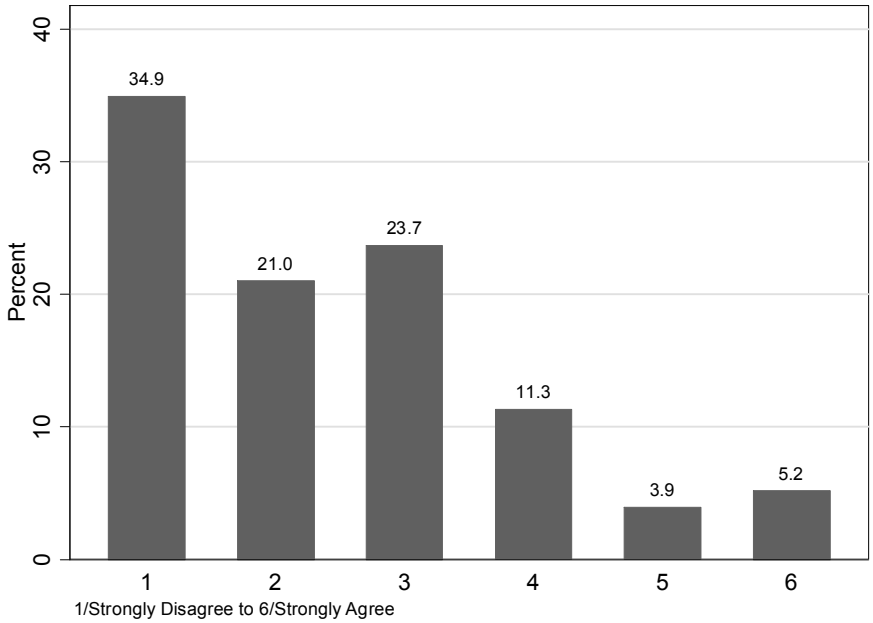


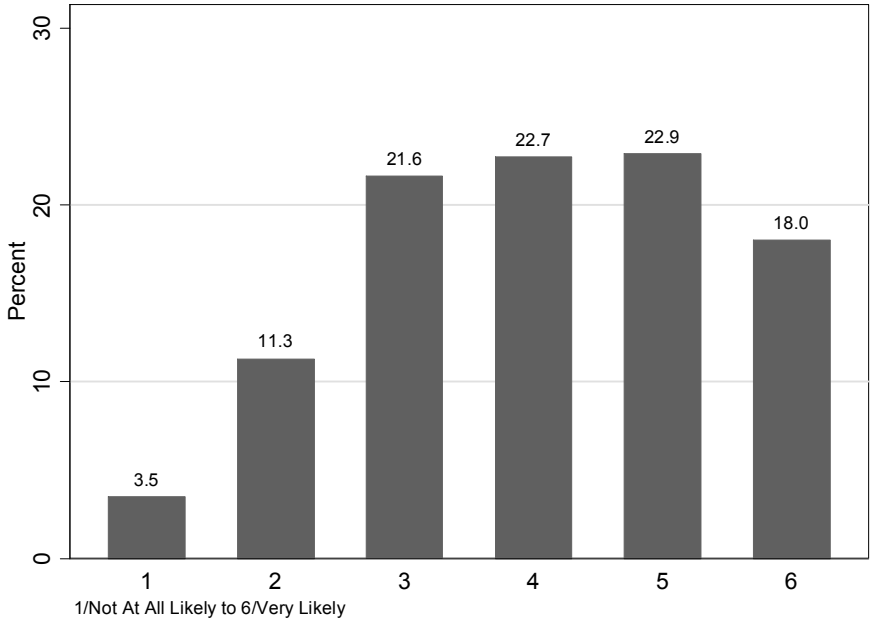
Figure 7. Do Canadians Think Elderly Drivers Cause Crashes More Often Than Young Drivers?



How likely do Canadians think elderly drivers are to cause a crash?

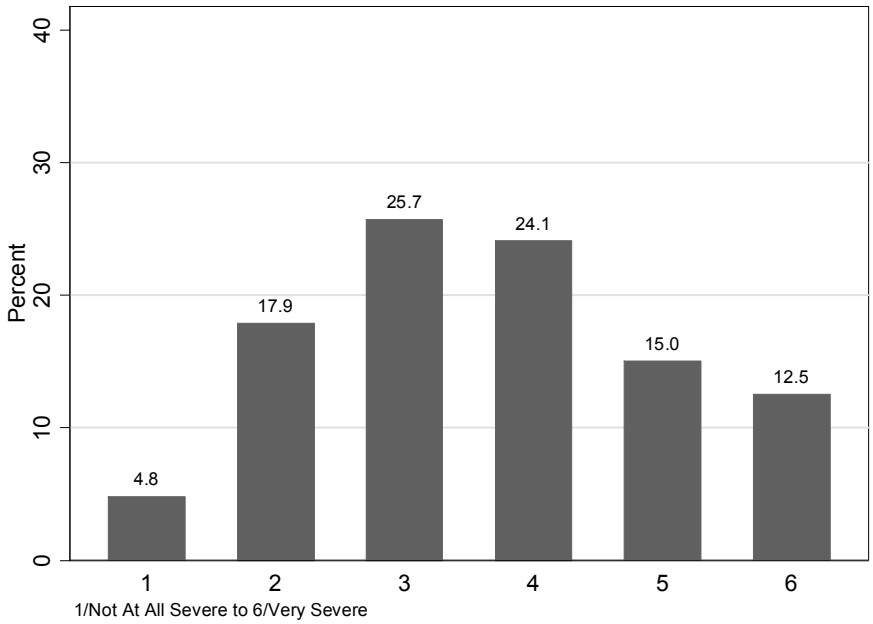
Canadians were polled regarding how likely they felt elderly drivers who should not be driving anymore are to cause a crash (see Figure 8), on a scale from 1 (not at all likely) to 6 (very likely). They have moderately strong beliefs that such drivers are likely to cause crashes (an average rating of 4 out of 6). Nearly 2/3 (63.6%) gave ratings of 4 to 6, indicating they believe elderly drivers who should not be driving anymore are likely to cause a crash. Women were more likely to think such drivers have a higher chance of causing a crash and respondents over the age of 55 were less likely to think so.

Figure 8. Elderly Drivers Who Should Not Be Driving Anymore: How Likely to Cause a Crash?



Participants were also asked to estimate the severity of crashes caused by elderly drivers who should not be driving anymore. Using a scale from 1 (not at all severe) to 6 (very severe), participants gave an average rating of 3.6, indicating a moderate level of perceived crash severity. Over half (51.6%) gave ratings of 4, 5, or 6, indicating they believe crashes caused by elderly drivers would be more severe (see Figure 9). Age was not significantly related to scores on this item; however, gender was a significant predictor, with females more likely to rate crashes caused by elderly drivers as more severe.

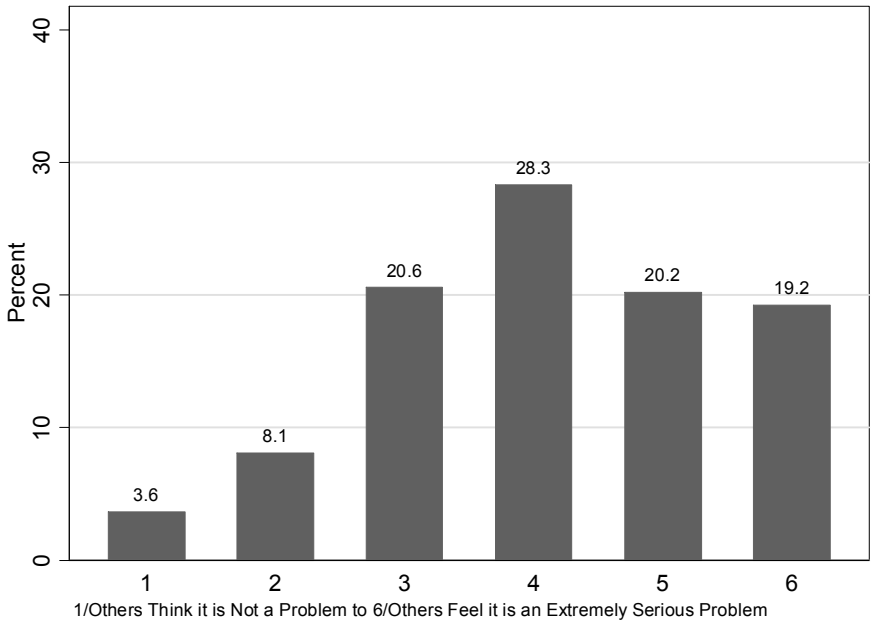
Figure 9. Elderly Drivers Who Should Not Be Driving Anymore: How Severe a Crash?



How concerned do Canadians think others are about elderly drivers?

In addition to gauging their own views on elderly drivers, respondents were asked to rate how concerned they perceived *others* to be about the problem of elderly drivers who should not be driving any more, using a scale from 1 (others do not think it is a problem at all) to 6 (others think it is an extremely serious problem). Respondents estimated that others were moderately to strongly concerned about the issue of elderly drivers who should not be driving anymore, giving it an average rating of 4.1 – slightly higher than the average rating of 3.8 for their own perceived seriousness of the problem, as discussed earlier (see page 13). As shown in Figure 10, 32.3% of respondents gave ratings of 1 to 3, indicating they believe that others have lower levels of concern about elderly drivers who should no longer be driving. The remaining 67.7% selected a score of 4 to 6, indicating higher perceived concern of others about the issue.

Figure 10. Perceived Concern of Others Regarding Elderly Drivers



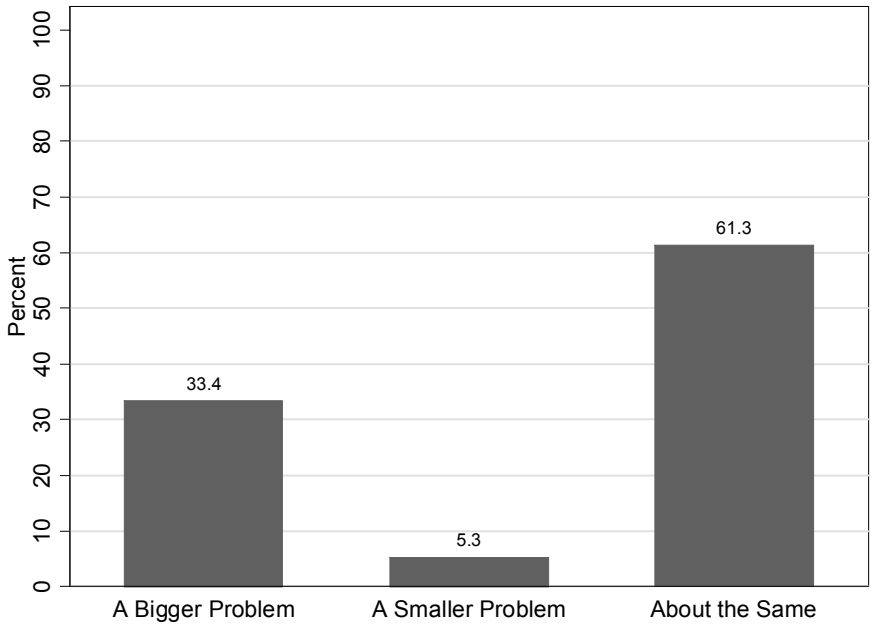
Increased ratings of others' concern about elderly drivers was associated with being female, and was negatively related to being aged 35 or older, i.e., respondents aged 35 and older provided lower estimates of others' concern.

Do Canadians think the issue of elderly drivers who should not be driving anymore is increasing or decreasing?

As presented in Figure 11, the majority of Canadians (61.3%) feel that the extent of the problem of elderly drivers who should not be driving anymore is about the same as it was 5 years ago. A substantially smaller portion (5.3%) believe that the problem is smaller today, while 33.4% report that it is a larger problem now than it was 5 years ago. No relationship was found between this item and age or gender.

Over 60% of Canadians think the issue of elderly drivers is of the same size as it was 5 years ago.

Figure 11. Elderly Drivers Who Should Not Be Driving Anymore: A Bigger Problem Today Than 5 Years Ago?



Conclusions

Canadians appear to view elderly drivers as a moderately important road safety issue in terms of the perceived frequency of elderly drivers who are driving unsafely and the relative crash risk of elderly drivers compared to other drivers. However, when they were specifically asked about the percent of drivers on the road who are elderly drivers who should not be driving anymore, they overestimate the problem.

The majority believes that this particular problem of elderly drivers who should not be driving anymore is about the same size as it was five years ago. However, as indicated in the background to this report, as the population of elderly drivers grows, the issue may become more prevalent, unless measures are taken.

Public Support for Actions to Address Elderly Drivers

Canadians were polled about the extent to which they agree with the use of various measures for dealing with the issue of elderly drivers, on a scale from 1 (strongly disagree) to 6 (strongly agree). Responses from 1 to 3 were coded as not supportive, while responses from 4 to 6 were coded as supportive of the measure in question. It was also possible to determine whether levels of support differ according to subgroups of drivers; in particular, those who are very concerned about the problem compared to those who are not.

Level of support for various measures

Figure 12 shows the level of support for a variety of actions proposed for elderly drivers. These actions include:

- Elderly drivers should be required to complete training to maintain their driving privileges after a certain age (and, if so, from what age);
- Elderly drivers who are having difficulties driving because of their impairment should be given restricted driving privileges such as no driving after dark and only driving within a 25 km radius of their home.
- Programs are needed to improve the skills of elderly drivers; and
- Elderly drivers should lose their driving privileges if they cause a crash.

As evident in Figure 12, the survey results indicated that:

Most Canadians agree that training, restricted driving privileges and programs are needed for elderly drivers.

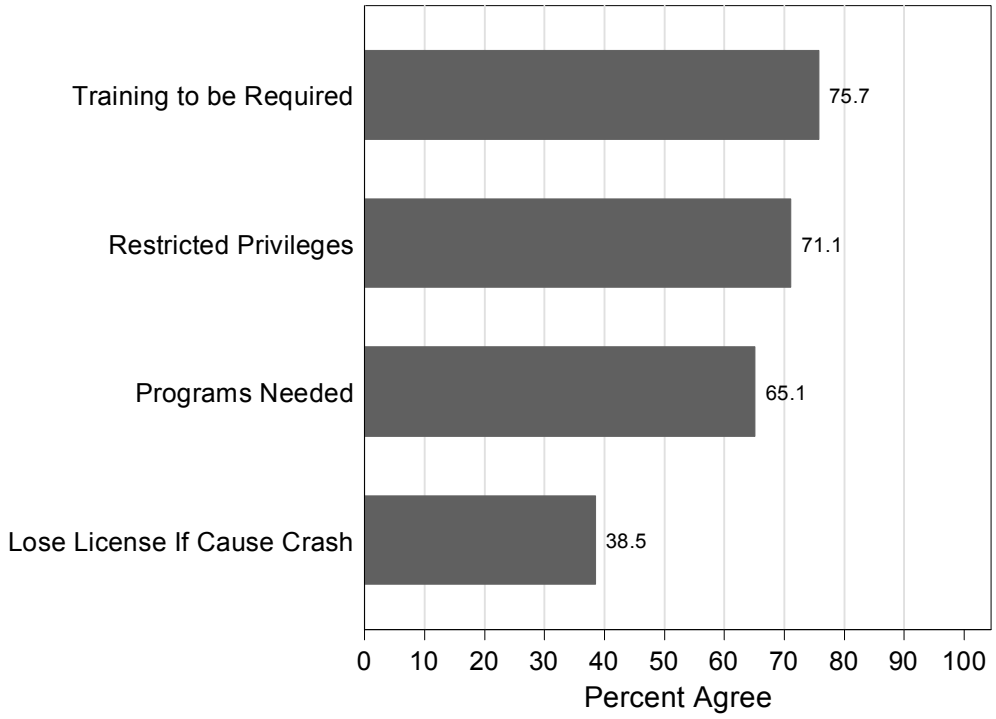
- 75.7% agree that, after a certain age, elderly drivers should be required to complete training to maintain their driving privileges.
    - These respondents suggested an average age of 70 for such training.
    - A closer examination revealed that 13.5% feel that such programs should be mandatory for ages 55 to 64, while 19.7% believe such programs

should be applied to ages 65 to 69. Almost one-third (33.7%) agree that such programs should be required between the ages of 70 and 74, 17.2% said ages 75 to 79, and 15.9% feel that these programs should be mandatory after age 80.

- 71.1% agree that elderly drivers who are having difficulties driving because of their impairment should be given restricted driving privileges such as no driving after dark and only driving within a 25 km radius of their home.
- 65.1% agree that programs are needed to improve the skills of elderly drivers.
- 38.5% agree that elderly drivers should lose their driving privileges if they cause a crash.

Most Canadians disagree that elderly drivers should lose their license if they cause a crash.

Figure 12. Percentage Who Agree with Various Methods for Dealing with Elderly Drivers



What factors are associated with support for measures to address the problem of elderly drivers?

Support for the first measure (complete training to maintain driving privileges) was significantly associated with increased concern about elderly drivers in general, and an increased belief in the crash likelihood of elderly drivers who should not be driving anymore. Support for this measure was also related to age; participants aged 45 and over were less likely to support this measure. Finally, failure to support this measure was related to the belief that the problem of elderly drivers is of the same size or smaller than it was five years ago.

Support for the second measure (restricted driving privileges) was associated with higher perceptions of the crash likelihood of elderly drivers who should not be driving anymore.

Support for the third measure (programs to improve skills) was associated with higher levels of concern about elderly drivers in general, with increased prevalence estimates of elderly drivers who should not be driving anymore, and increased estimates of the severity of crashes caused by elderly drivers who should not be driving anymore.

Finally, participants were also asked to what extent they agree with the statement "elderly drivers should lose their driving privileges if they cause a crash". It was found that support for this measure was associated with higher estimates of the crash likelihood and crash severity of elderly drivers who should not be driving anymore.

Summary and Conclusions

Over 4 million Canadians were 65 or older in 2006, corresponding to about 14% of the population. Almost 3 million of them were licensed drivers, accounting for about 13% of the driving population. As the population continues to age, these numbers are expected to increase. Assuming medium population growth, over 9 million Canadians (approximately 24%) will be 65 or older by 2031, and based on today's licensing rates, over 6 million seniors will likely maintain their driving privileges in 2031. This means about 23% of the population of licensed drivers is expected to be 65 or older in 2031.

In addition to normal, age-related declines in abilities, elderly drivers can be affected by such conditions as visual impairment, heart disease, stroke, arthritis, and dementia and by impairment due to medications related to those conditions. Consequently, as the population continues to age, issues related to elderly drivers will likely become more prevalent.

Of considerable concern, elderly drivers have casualty rates that are elevated relative to other age categories, but that are generally lower than those of young drivers aged 15 to 24, at least until the age of 80. The elevated risk can partly be explained by their physical frailty, which means elderly drivers are more likely to die in a crash and, as such, pose a risk, especially albeit not exclusively, to themselves. In addition, some elderly drivers drive less but when they do drive, they do so primarily on high-risk roads. The elevated risk among this group of drivers appears to be more pronounced after the age of 80, especially among those who drive infrequently.

In general, Canadians are moderately concerned about the issue of elderly drivers. About 33% of Canadians view elderly drivers as a very important road safety concern; only young drivers were viewed as a less important road safety issue. Of interest, this is somewhat perplexing, given that, overall, young drivers under the age of 25 pose a greater road safety risk. Females were more likely to report high levels of concern about elderly drivers, whereas respondents aged 65 and older were less likely to report high levels of concern about elderly drivers.

Canadians also appear to view elderly drivers as a moderately important road safety issue in terms of the perceived frequency with which elderly drivers are driving unsafely and the relative crash risk of elderly drivers compared to other drivers. However, when they were specifically asked about the percent of drivers on the road who are elderly drivers who should not be driving anymore, Canadians overestimate the problem: they think that, on average, about 20% of all drivers on the road are elderly drivers who should not be driving anymore, while the entire population of elderly drivers only makes up about 13% of the driving population.

Given the crash risk of elderly drivers after accounting for their frailty and lower mileage, it appears that Canadians have a fairly accurate grasp of the issue of elderly drivers, with the exception that they tend to over-estimate its magnitude in terms of the perceived frequency of elderly drivers who should not be driving anymore. However, it is not clear whether Canadians recognize that the problem is likely to become more prevalent as the population continues to age, and that there may be even more cause for concern in the future as a consequence.

A majority of Canadians support the following measures proposed to address the issue of elderly drivers: (1) Elderly drivers should be required to complete training after a certain age in order to maintain their driving privileges (75.7% in agreement); (2) elderly drivers who are having difficulty driving because of their impairment should be given restricted driving privileges such as not driving after dark and only driving within a 25 km radius of their home (71.1% in agreement); (3) programs are needed to improve the skills of elderly drivers (65.1% in agreement).

The majority (61.5%), however, disagrees that elderly drivers should lose their driving privileges if they cause a crash. It is likely that this measure was viewed by respondents as overly punitive, perhaps because most Canadians do not think elderly drivers are more likely to cause a crash or because they do not frequently see them drive unsafely.

Age was significantly associated with the belief that training should be required after a certain age to maintain elderly drivers' driving privileges: respondents aged 45 and older were less likely to agree with this item. Older participants provided lower estimates of the frequency of elderly drivers who are driving unsafely, lower estimates of their perceived

crash likelihood, and were less likely to support the belief that training should be required in order for elderly drivers to maintain their driving privileges after a certain age.

Given that older drivers are less concerned about the issue of elderly drivers and less supportive of a variety of counter-measures, policymakers and stakeholders may find it challenging to effectively and efficiently change attitudes and behaviours of elderly drivers. Any strategy to overcome issues related to this group of drivers will have to be sensitive to this.

Bibliography

Adler, G., Rottunda, S., Christensen, K., Kuskowski, M., and Thuras, P. (2006) Driving SAFE: Development of a knowledge test for drivers with dementia. *Dementia, 5*(2), 213-222.

Alvarez, F.J., and Fierro, I. (2008) Older drivers, medical condition, medical impairment and crash risk. *Accident Analysis and Prevention, 40,* 55-60.

Carr, D.B., Duchek, J.M., Meuser, T.M., and Morris, J.C. (2006) Older adult drivers with cognitive impairment. *American Family Physician, 73*(6), 1029-1034.

Charlton, J., Koppel, S., O'Hare, M., Andrea, D., Smith, G., Khodr, B., Langford, J., Odell, M., and Fildes, B. (2004) *Influence of chronic illness on crash involvement of motor vehicle drivers.* Victoria, Australia: Monash University Accident Research Centre.

Dobbs, B.M. (2005) *Medical conditions and driving: A review of the literature (1960-2000).* Washington, DC: National Highway Traffic Safety Administration.

EKOS Research Associates Inc. (2007) *Impaired driving survey for Transport Canada/MADD Canada. Final report.* Ottawa, Ontario: Transport Canada (TP14760E).

Evans, L. (2000) Risks older drivers face themselves and threats they pose to other road users. *International Journal of Epidemiology, 29,* 315-322.

Evans, L. (2006) *Traffic safety* (2nd ed.). Bloomfield Hills, MI: Science Serving Society.

Fontaine, H. (2003) Age des conducteurs de voiture et accidents de la route: Quel risque pour les seniors? Driver age and road traffic accidents: What is the risk for seniors? *Recherche-Transports-Securite, 79-80,* 107-120.

Hakamies-Blomqvist, L., Siren, A., and Davidse, R. (2004) *Older drivers – A review.* VTI rapport 497A. Linkoping, Sweden: Swedish National Road and Transport Institute.

Janke, M.K. (1991) Accidents, mileage, and the exaggeration of risk. *Accident Analysis and Prevention, 23*(2/3), 183-188.

Langford, J., Methorst, R., and Hakamies-Blomqvist, L. (2006) Older drivers do not have a high crash risk – A replication of low mileage bias. *Accident Analysis and Prevention, 38*(3)*,* 574-578.

Li, G., Braver, E.R., and Chen, L.-H. (2003) Fragility versus excessive crash involvement as determinants of high death rates per vehicle-mile of travel among older drivers. *Accident Analysis and Prevention, 35,* 227-235.

Lundberg, C., and Hakamies-Blomqvist, L. (2003) Driving tests with older patients: Effect of unfamiliar versus familiar vehicle. *Transportation Research Part F: Traffic Psychology and Behaviour, 6*(3), 163-173.

Lyman, J.M., McGwin, G., and Sims, R.V. (2001) Factors related to driving difficulty and habits in older drivers. *Accident Analysis and Prevention, 33,* 413-421.

Mayhew, D.R., Simpson, H.M., and Ferguson, S.A. (2006) Collisions involving senior drivers: High-risk conditions and locations. *Traffic Injury Prevention, 7,* 117-124.

McGwin, G., Sims, R.V., Pulley, L., and Roseman, J.M. (2000) Relations among chronic medical conditions, medications, and automobile crashes in the elderly: A population-based case-control study. *American Journal of Epidemiology, 152*(5), 424-431.

Owsley, C., McGwin, G., Jr., Sloane, M., Wells, J., Stalvey, B.T., and Gauthreaux, S. (2002) Impact of cataract surgery on motor vehicle crash involvement by older adults. *Journal of the American Medical Association, 288,* 841-849.

StataCorp. (2007) *Stata Statistical Software.* Release 10. College Station, Texas: StataCorp LP.

Statistics Canada (2008) *Age groups and sex for the population of Canada, provinces, territories, census divisions and census subdivisions, 2006 Census.* www.statcan.ca.

Transport Canada (2007) *Canadian motor vehicle traffic statistics: 2006.* TP3322. Ottawa, ON: Transport Canada.

Williams, A.F. (2003) Teenage drivers: Patterns of risk. *Journal of Safety Research, 34*(1), 5-15.