

COLLISIONS AMONG FATALLY INJURED DRIVERS OF DIFFERENT AGE GROUPS, 2000-2014

Traffic Injury Research Foundation, August 2018

Introduction

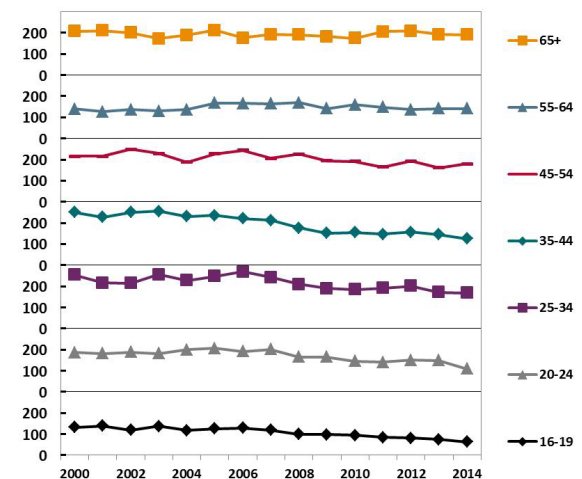
Research has shown that age can have an important impact on crash risk and injury severity. This fact sheet, sponsored by Desjardins Insurance, compares the magnitude of motor vehicle fatalities among drivers by age, and trends over time. Data from 2000 to 2014 from TIRF's National Fatality Database were used to study the number of fatalities, rate of fatalities per 100,000 population, and rate of fatalities per 100,000 licensed drivers as well as trends in these areas. The age groups used in this fact sheet are 16-19, 20-24, 25-34, 35-44, 45-54, 55-64, and 65 and older. Contributing factors including alcohol use, drug use, distraction, speed, fatigue, and the use of safety equipment (seatbelts or helmets) were also investigated by age, and over time.

Overall trends

The number of fatally injured drivers in each age group is shown in Figure 1. Between 2000 and 2014, drivers aged 16-19 comprised the lowest number of fatally injured drivers for 13 of the 15 years in that period. Between 2000 and 2014, there was a substantial decrease in the number of fatally injured drivers in this age group (from 133 to 63). During this same period, there were more modest, albeit still considerable, decreases in the number of

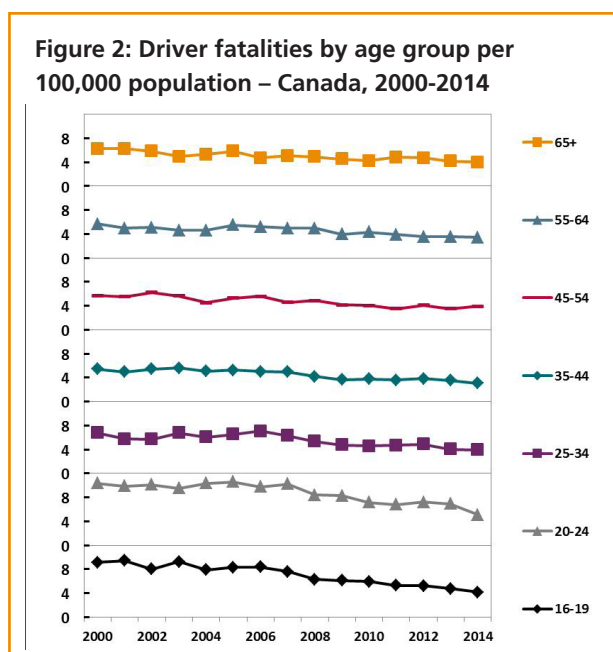
fatally injured drivers aged 20-24 (from 187 to 109) and 25-34 (from 254 to 169). The number of fatally injured drivers aged 35-44 also decreased quite substantially between 2000 (251) and 2014 (126). The only age group that showed an increase in the number of fatally injured drivers was the 55-64 age group (from 139 to 141). Among drivers aged 65 and older, there was a smaller decrease from 2000 to 2014 (from 207 to 191).

Figure 1: Number of fatally injured drivers by age group – Canada, 2000-2014



While these absolute numbers are informative, they do not account for the proportion of drivers in each age category out of all licensed drivers. To illustrate, fatally injured drivers aged 16-19 accounted for 8.7% of driver fatalities during this period but only 4.8% of licensed drivers. Similarly, 13.8% of fatally injured drivers were aged 20-24 while this group represented only 8.1% of licensed drivers. Drivers aged 25-34 accounted for 17.4% of driver fatalities and 17.6% of licensed drivers. There were also smaller percentages of drivers killed than there were licensed drivers for 35-44 year olds (15.9% versus 20.1%), 45-54 year olds (16.6% versus 20.4%), and 55-64 year olds (11.9% versus 15.0%). Among drivers aged 65 and older, they represented 15.7% of fatally injured drivers but only 13.8% of licensed drivers.

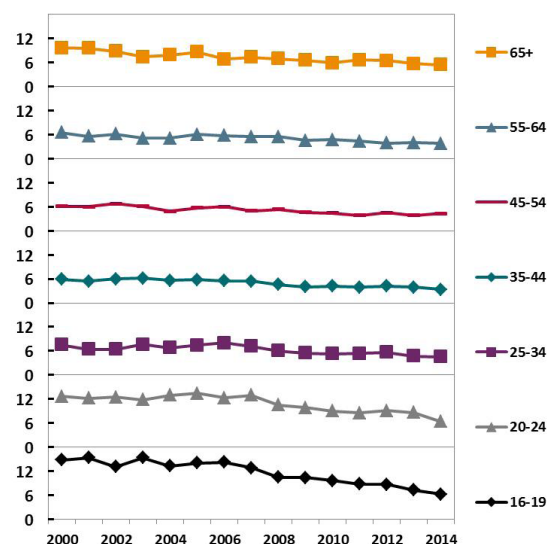
To better account for each age category's representation in the population, fatality rates can be used. The fatality rate per 100,000 population is shown for each age group in Figure 2. It reveals that drivers aged 20-24 and 16-19 were the most likely to be killed in motor vehicle collisions. For drivers aged 16-19, there were 9.1 driver fatalities per 100,000 population in 2000. This rate dropped to 4.2 in 2014. Similarly, the fatality rate for drivers aged 20-24 dropped from 10.4 to 5.1 between 2000 and 2014. The lowest fatality rate was for drivers aged 35-44 (5.5 in 2000 compared to 3.1 in 2014).



Another means to compare the prevalence of driver fatalities among different age groups is to examine

the number of driver fatalities per 100,000 licensed drivers. Figure 3 shows the rates of fatally injured drivers by age group per 100,000 licensed drivers from 2000 to 2014. Similar to Figure 2, drivers in the two youngest age groups (16-19 and 20-24) accounted for the highest rates of driver fatalities during this 15-year period. In 2000, there were 14.8 fatalities per 100,000 licensed drivers among 16-19 year olds. This rate decreased to 6.2 in 2014. Among 20-24 year old drivers, the rate decreased from 12.7 to 6.3 between 2000 and 2014. Among the other five age groups, there were also decreases in the rate of fatalities per licensed drivers from 2000 to 2014.

Figure 3: Driver fatalities by age group per 100,000 licensed drivers – Canada, 2000-2014



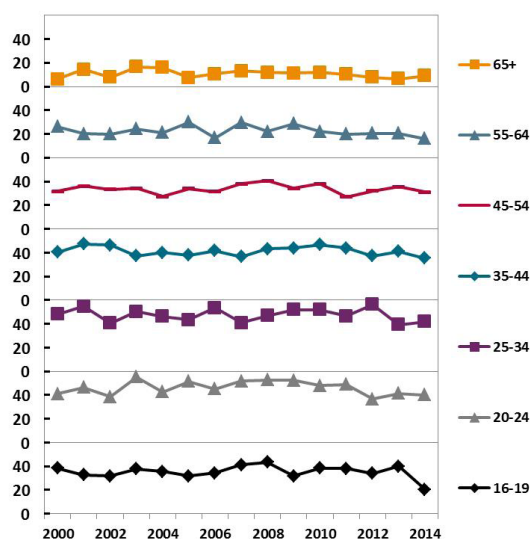
Contributing factors in collisions involving fatally injured drivers by age group

This section compares the magnitude and characteristics of collisions involving drivers of different age groups according to key contributing factors such as alcohol use, drug use, distraction, speed, fatigue, and the use of safety equipment (seatbelts or helmets). Trends from 2000 to 2014 are shown for each of these contributing factors.

The percentage of fatally injured drivers in each age group who had been drinking is shown in Figure 4. Throughout this 15-year period, an average of 85.8% of fatally injured drivers were tested for alcohol, ranging from 73.6% among drivers aged 65 and older to 90.3% for drivers aged 20-24. The testing rate for each year has been very consistent.

Drivers aged 20-24 and 25-34 each accounted for the highest percentage of fatally injured drinking drivers in seven different years during the period from 2000 to 2014. For six of the seven age groups, the percentage of fatally injured drivers who had been drinking was lower in 2014 than in 2000; this was most pronounced for 16-19 year old drivers. The exception was drivers aged 65 and older. In this age category, the percentage of fatally injured drivers who had been drinking rose from 6.4% in 2000 to 8.9% in 2014. However, despite this increase, it must be acknowledged that during the entire 15-year period, fatally injured drivers aged 65 and older were nevertheless the least likely to have been drinking. Fatally injured drivers aged 55-64 years old were consistently the second least likely to have been drinking.

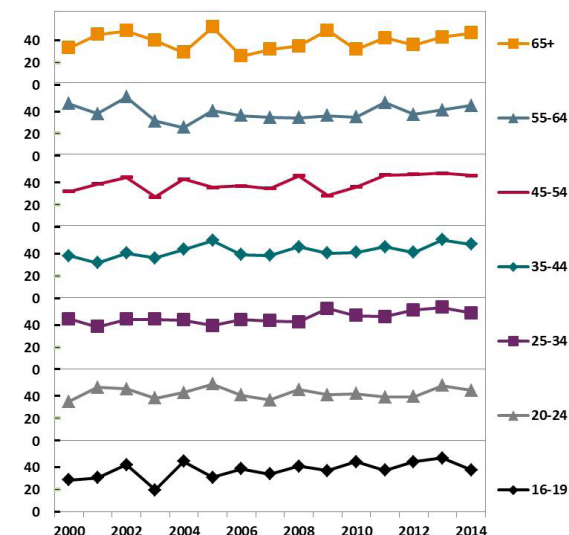
Figure 4: Percentage of fatally injured drinking drivers by age group – Canada, 2000-2014



The percentage of fatally injured drivers in each age group who tested positive for drugs between 2000 and 2014 is presented in Figure 5. Those drugs include not only illicit drugs, but also prescription drugs and over-the-counter drugs. Throughout this 15-year period, an average of 55.8% of fatally injured drivers were tested for drugs, ranging from 43.0% among drivers aged 65 and older to 63.2% for drivers aged 20-24. There has been substantial variability in the annual percentage of fatally injured drivers who were tested for the presence of drugs, ranging from 37.1% in 2000 to 82.8% in 2013. As can be seen, there is considerable fluctuation among all age groups in the percentage

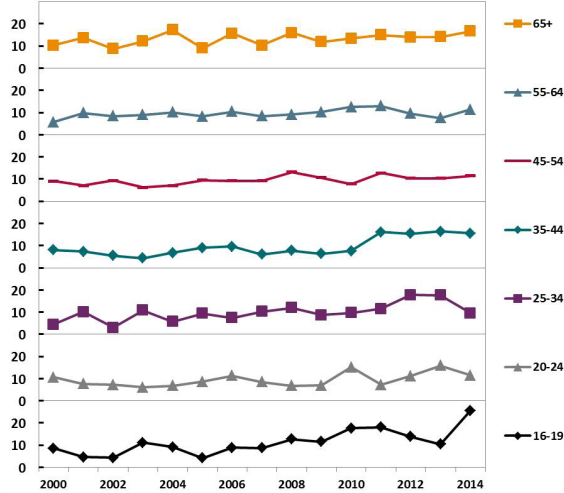
of drivers who tested positive for drugs. Regardless of this volatility, an increasing trend is visible for all age groups, except one. Among drivers aged 55-64, a greater percentage tested positive for drugs in 2000 (42.3%) than in 2014 (40.9%). It should be noted that between 2009 and 2014, the age group with the largest percentage of fatally injured drivers who tested positive for drugs was the 25-34 age group. Most recently, in 2014, 46.8% of these fatally injured drivers tested positive for drugs. Of interest, while not immediately apparent from Figure 5, the data about drugs among fatally injured drivers reveal that different age groups are more likely to use different types of drugs. In particular, younger drivers are more likely to test positive for marijuana, whereas older drivers are more likely to test positive for narcotic analgesics or central nervous system depressants (see accompanying fact sheet on marijuana use among drivers in Canada, released by TIRF in 2017).

Figure 5: Percentage of fatally injured drivers who tested positive for drugs by age group – Canada, 2000-2014



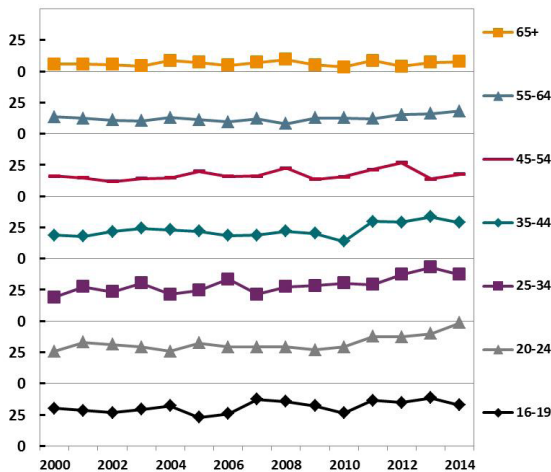
In Figure 6, the prevalence of distraction among fatally injured drivers by age group is presented. Between 2000 and 2014, there was a sharp increase in the percentage of fatally injured drivers aged 16-19 who were distracted (from 8.6% to 25.6%), largely due to an increase between 2013 and 2014. In all seven age groups, a larger percentage of fatally injured drivers were distracted in 2014 compared to 2000.

Figure 6: Percentage of fatally injured distracted drivers by age group – Canada, 2000-2014



The role of speed in fatal collisions among drivers of different age groups is shown in Figure 7. A speeding driver is identified in police reports as “speeding” or “driving too fast for conditions”. Between 2000 and 2014, the two youngest age groups were generally those most likely to have been speeding. The percentage of 16-19 year old drivers who had been speeding rose between 2000 (30.2%) and 2014 (32.6%). Among drivers aged 20-24, the percentage who had been speeding generally rose more sharply from 25.9% in 2000 to 48.6% in 2014. There was a rather modest increase between 2000 and 2014 among drivers aged 55-64 (from 13.5% to 18.1%)

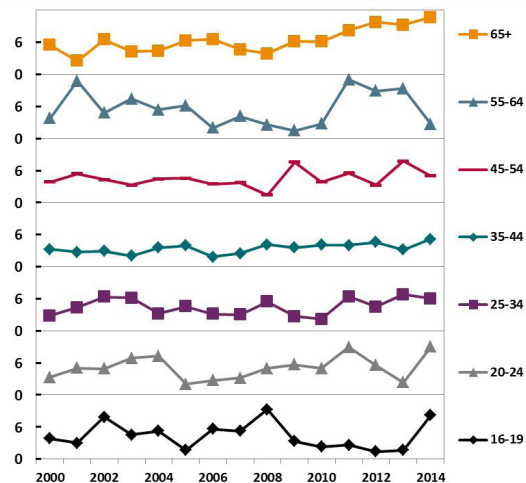
Figure 7: Percentage of fatally injured speeding drivers by age group – Canada, 2000-2014



and 65 years and older (from 5.8% to 7.8%) who had been speeding. Nevertheless, these age groups represented smaller percentages of fatally injured drivers who had been speeding than was evident among the other age groups.

Trends in the role of fatigue among fatally injured drivers for each age group are shown in Figure 8. It is noted that data on fatigue are more volatile due to the lower absolute number of cases. Therefore, caution is warranted when looking at these data. The percentage of fatally injured 16-19 year old drivers who were fatigued was 3.8% in 2000 compared to 8.2% in 2014. Similarly, among drivers aged 20-24, 3.3% were fatigued in 2000 while 9.0% were fatigued in 2014. Especially among 55-64 year old drivers there has been volatility in the percentage, ranging from 1.5% in 2009 to 11.0% in 2011. Among drivers aged 65 and older, a general increase can be discerned in the percentage who were fatigued from 5.5% in 2000 to 10.6% in 2014.

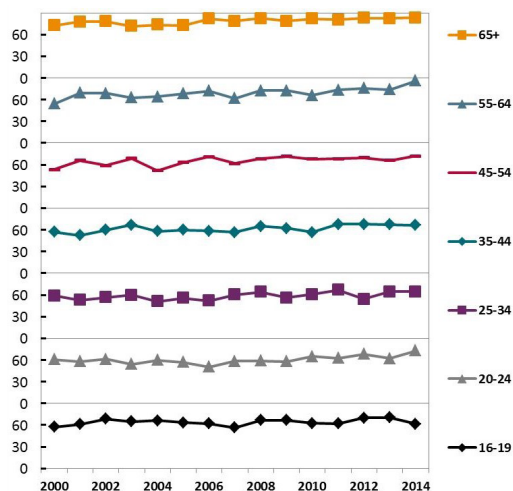
Figure 8: Percentage of fatally injured fatigued drivers by age group – Canada, 2000-2014



Finally, the prevalence of the use of safety equipment by fatally injured drivers in each age group is shown in Figure 9. Use of safety equipment is defined as the use of seatbelts/lap belts for drivers of automobiles, trucks/vans, tractor trailers and buses and the use of helmets for motorcyclists. Between 2000 and 2014, 80.1% of fatally injured motorcyclists were wearing helmets while 63.1% of fatally injured drivers of automobiles, trucks/vans, tractor trailers and buses were using seatbelts. In 2000, drivers

aged 55-64 represented the age group with the lowest percentage of fatally injured drivers who used safety equipment (54.3%) but by 2014, they accounted for the age group with the highest percentage of safety equipment use (86.2%). Lastly, drivers aged 65 and older had the largest percentage of those using safety equipment in 14 of the 15 years examined, ranging from 72.7% in 2000 to 83.2% in 2014.

Figure 9: Use of safety equipment by fatally injured drivers by age group – Canada, 2000-2014



Conclusions

This fact sheet compared the magnitude of motor vehicle fatalities among drivers by age and trends over time. Data from TIRF's National Fatality Database from 2000 to 2014 were used. The age groups explored in this fact sheet were 16-19, 20-24, 25-34, 35-44, 45-54, 55-64, and 65 years and older. Contributing factors including alcohol use, drug use, distraction, speed, fatigue, and the use of safety equipment (seatbelts or helmets) were investigated.

In terms of driver fatalities per population and number of licensed drivers, the data showed declines among all age groups between 2000 and 2014. The greatest decreases have been among 16-19 year old and 20-24 year old drivers. Despite these gains, these groups are still over-represented in the rate of driver fatalities according to both measures.

Among all age groups, except drivers aged 65 and older, there has been a decrease in the percentage of fatally injured drivers who had been drinking

between 2000 and 2014. Note that despite an increase among the oldest drivers, it must be acknowledged that during the entire 15-year period, fatally injured drivers aged 65 and older were nevertheless the least likely to have been drinking. For most of the monitoring period, drivers aged 20-24 and 25-34 were the most likely to have been drinking.

There is considerable volatility among all age groups in the percentage of fatally injured drivers testing positive for drugs year-to-year. Regardless of this volatility, an increasing trend is visible across all age groups, except for drivers aged 55-64, for whom a slight decrease was noted in the last year of the monitoring period compared to the first year. It appears that between 2009 and 2014, the age group with the largest percentage of fatally injured drivers who tested positive for drugs were 25-34 year olds. Furthermore, while there is an increase in almost all age categories, the increase is not the same in terms of drug type. In particular, younger drivers are more likely to test positive for marijuana, whereas older drivers are more likely to test positive for narcotic analgesics or CNS depressants (see accompanying fact sheet on marijuana use among drivers in Canada, released by TIRF in 2017).

Drivers in all seven age groups were more likely to have been distracted in 2014 than in 2000. This may reflect an overall increase in the percentage of distracted drivers. However, it may also result from more investigating officers citing driver distraction as a contributing factor in fatal collisions. Given the increased attention to this crash contributor in recent years, as well as the ubiquitous use of smart phones, both hypotheses are viable. Without additional data it is not possible to draw definitive conclusions in this regard.

Regarding fatally injured drivers who were speeding, it was found that those drivers aged 16-19 and 20-24 were more likely to have been speeding than those aged 55-64 and 65 and older. On the other hand, fatigue has usually been more prevalent among drivers aged 65 and older.

Finally, older drivers (those aged 55-64 and 65 and over) accounted for a higher percentage of fatally injured drivers using seatbelts or helmets. This is probably not surprising given the increasing overall vulnerability that comes with age despite their use of safety devices.

In conclusion, data from TIRF's National Fatality Database demonstrated the importance of age as a risk factor for fatalities among road users. The data provided insight into vulnerabilities by age, which can be used to inform policy.

References

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¹ Fatality data from British Columbia from 2011 to 2014 were not available at the time that this fact sheet was prepared. As a result, Canadian data presented have been re-calculated to exclude this jurisdiction and make equitable comparisons.

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Traffic Injury Research Foundation

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