

Older drivers may not have a greater risk of intersection crashes than drivers in younger age groups

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Abstract

Crash patterns for older drivers/riders were examined using ten years of crash data from New Zealand and every jurisdiction in Australia. Consistent with the literature, older drivers/riders had a higher proportional rate of intersection-type crashes. However, once population numbers and numbers of licensed drivers were controlled for, older drivers/riders were not found to have a higher rate of intersection crashes than those in younger age groups. Intersections do not pose any greater risk of a crash to older adults. Nonetheless, given their frailty, intersection safety measures are still needed to improve safety for older drivers/riders.

Background

It has been argued previously in the literature that older drivers are over-represented in multiple vehicle collisions at both uncontrolled and sign-controlled intersections and in crashes in which they are undertaking turning manoeuvres, especially when turning across oncoming traffic (e.g. Daigneault, Joly & Frigon 2002; Ryan, Legge & Rosman 1998).

However, it is also known older drivers do not make a large contribution to the road toll, largely due to lower exposure than younger people. Even when population numbers and the number of licensed drivers in different age groups are controlled, the crash rates of older drivers tend to be lower than those for drivers in younger age groups (e.g. Thompson et al. 2010).

This study was designed to assess whether the purported increase in the risk of intersection crashes among older drivers is real, or whether the incidence of such crashes is merely proportionally higher among the older age group but still occurring at a low rate compared to that for younger drivers. This was assessed by comparing older drivers with those in younger age groups for the rate of intersection crashes per head of population and per licensed driver, using data from a number of Australian jurisdictions.

Method

Data were collected from the relevant road agencies in New Zealand and every Australian jurisdiction for all road crashes that resulted in an injury or fatality to any crash participant, and that occurred in the years 2003 to 2012. Population data for each jurisdiction were obtained for the relevant years, while the numbers of licensed drivers and motorcyclists were obtained from two jurisdictions: Victoria and South Australia. Crash type was based on the Definitions for Coding Accidents (DCA) codes or Road User Movements (RUM) codes contained in the jurisdictional crash databases.

Results

There was a total of 16,618 fatal crashes and 734,196 injury crashes, involving 1,149,075 active crash participants who were aged under 60 (87.9%), 113,646 aged 60 to 74 (8.7%), and 43,950 aged 75 or more (3.4%).

Table 1 shows the percentage of crash types for drivers/riders in different age groups. It can be seen that older drivers/riders are over-represented in 'Vehicles adjacent' and 'manoeuvring' crashes.

Table 1. DCA Groups for crash-involved participants in Australia, excluding South Australia*, 2003 to 2012, excluding pedestrians and bicyclists, by active participant age (%)

DCA group	0-59	60-74	75+
Pedestrian	5.32	6.08	5.93
Vehicles Adjacent	16.40	21.92	27.96
Vehicles Opposite	16.53	18.50	19.69
Vehicles Same Direction	37.04	32.73	21.79
Manoeuvring	4.03	5.25	8.52
Overtaking	1.14	1.09	0.61
On Path	2.39	2.06	2.36
Off Path - Straight	10.69	8.10	9.13
Off Path - Curve	6.08	3.85	3.72
Passengers and Misc	0.38	0.41	0.29
Total	100.00	100.00	100.00

*no DCA codes available for SA

Table 2 shows the crash rates for ‘vehicles adjacent’ and ‘manoeuvring’ crashes in Victoria after adjusting for the number of licensed drivers/riders. It can be seen that, after adjustment, the over-representation is no longer evident.

Table 2. DCA Groups that increase among those aged 75 or more, expressed as rates per 1,000 licence holders for Victoria, 2003-2012, by age group

DCA group		0-59	60-74	75+
Vehicles Adjacent	Proportion (%) of age group crashes	17.23	22.95	27.86
	Crashes 2003 to 2012	34,457	4,628	2,126
	Average crashes per year	3,445.7	462.8	212.6
	Average annual licence holders	2,798,100	554,390	209,320
	Annual crash rate per 1,000 licence holders	1.23	0.83	1.02
Manoeuvring	Proportion (%) of age group crashes	3.75	4.92	6.87
	Crashes 2003 to 2012	7500	993	524
	Average crashes per year	750.0	99.3	52.4
	Average annual licence holders	2,798,100	554,390	209,320
	Annual crash rate per 1,000 licence holders	0.27	0.18	0.25

A similar analysis was undertaken using population data. For both vehicles adjacent and manoeuvring crashes, those aged 75 or more have a lower crash rate per head of population than those aged under 60 in five of the seven jurisdictions.

Conclusions

Older drivers do not have a higher rate of intersection-type crashes than younger drivers. Nonetheless, when they do crash, their likelihood of injury is high, so infrastructure treatments to make intersections safer for older drivers are still important. Some of these will be described in the full paper.

References

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