

Circumstances of on-road single-vehicle cyclist crashes in the Australian Capital Territory

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Background

- Research based on health care services data: 60% of injurious cyclist crashes are single-vehicle bicycle crashes.
- Burden of single-vehicle bicycle crashes is significant and is on the rise.
- Limited research/available data.

Methods

- Survey of cyclist presenting to ED for crashes between November 2009 and May 2010 in the ACT (Canberra + rural area, a population of 345,900).
- Cyclists were excluded if they had severe head (AIS3+) or spinal injuries (AIS4+); had post traumatic amnesia for 24 hours or more; > 13 on the Glasgow Coma Scale or considered to be medically unfit or unable to provide informed consent.
- The structured survey questionnaire contained questions related to the crash circumstances, specific location, type of bicycle, the injury outcomes and cycling experience.


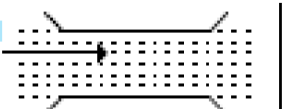

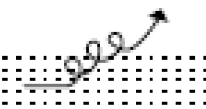
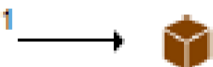
Canberra, Australian Capital Territory



Results: Individual characteristics and outcomes of on-road single-vehicle cyclist crashes

	N	%
Gender		
male	70	66.7
female	35	33.3
Age		
17-24	17	16.2
25-34	25	23.8
35-44	21	20
45-54	23	21.9
55+	19	18.1
Age when first learned to ride		
Younger than five	24	22.9
5 to 9	70	66.7
10 and older	11	10.5
Average riding distance per week (in km)		
Less than 10	6	5.7
10-30	6	5.7
31-100	40	38.1
101-200	37	35.2
Over 200	16	15.2
Previous riding skills training		
Yes	20	19.
No	80	76.2
Unknown	5	4.8
Purpose of journey on crash day		
Recreational	31	29.5
Commuting	51	48.6
Competition	4	3.8
Other (shopping, social, etc.)	19	18.1
Helmet use at time of the crash		
Yes	87	82.9
No	18	17.1
Assistance required immediately after the crash		
None- injuries but rode home	38	36.2
Left the scene by car/taxi	15	14.3
Treated at the scene	2	1.9
Hospital and not admitted	41	39
Hospital and admitted	9	8.6
Reported to the police		
Yes	3	2.9
No	102	97.1
Total	105	100

Results- Types of on-road single-vehicle cyclist crashes

		<i>N</i>	%
Out of control on straight		55	52.4
Struck permanent obstruction on road		18	17.1
Out of control on curved road or turning		15	14.3
Off straight path to left		3	2.9
Struck object		3	2.9
Other		11	10.5
Total		105	100

Results- Contributing factors to single-vehicle cyclist crashes

	<i>N</i>	<i>%</i>
Surface contributing factor		
Irregular surface (lip/indent/ cracked surface/ pot holes)	10	9.5
Wet & slippery surface	9	8.6
Loose gravel /sand/debris	7	6.7
Total road surface	26	24.8
Bike failure		
Brake failure	4	3.8
Tyre/wheel defect	8	7.6
Chain problems	3	2.9
Foot caught in cleats	5	4.7
Total Bike failure	20	19.1
Other contributing factors		
Carrying extra weight that might have affected balance	50	47.6
Speeding	17	16.2
Inattentive/Distracted	22	20.9
Tired	1	1
Affected by alcohol	6	5.7
Total	105	100

Limitations

- Cyclists with minor injuries or sought treatment from other medical services not included.
- Crashes resulting in “severe” injury not included.
- Reliance on self-report: recall bias and under reporting of ‘sensitive’ information such as alcohol use.

Conclusions

- Most crashes resulted from the cyclist losing control of the bicycle: more research into the role of riding and bicycle handling skills training in preventing this type of crashes.
- Road condition as an important contributor to this type of crashes: the need for improving maintenance of bicycle lane, paths and roads frequently used by cyclists.
- Further investigation of the impact of carrying extra weight, speeding and distraction among cyclists.