IDENTIFYING MOTORIST RISK FACTORS IN YOUTH BICYCLE-MOTOR VEHICLE COLLISIONS

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Tona Pitt

Background

- Bicycling is a healthy form of PA that can be integrated to daily life
- Overrepresentation of bicyclist road fatalities and severe injuries
- Youth cyclists may be at particular risk given they may not have the same motor skills, cognitive skills and situational awareness as adults
- Relative paucity of research on motorists involved in youth BMVCs compared to the cyclists

Aim

- To undertake a case-control study design that will determine the driver characteristics contributing to youth BMVCs.

Methods

- Edmonton and Calgary police collision report data from the years 2010-2014
- Cases: 423 drivers involved in BMVCs
- Controls: Drivers involved in collision but deemed not-at-fault

Methods

- Fault in collisions based on culpability analysis tool
- Assumed that drivers who are not-at-fault are sample of drivers representative of driving population
- Purposeful selection of variables in developing multivariable LR model

Methods

- Compared cases vs. controls on: Sex, Age, Passengers, Time, Alcohol Impairment, Seatbelt, Weekend and Vehicle Type
- Note: culpability tool restricts some environmental variables that could have been included

Results

		n (%)
Month of Collision		
	January	3 (0.71)
	February	3 (0.71)
	March	8 (1.90)
	April	26 (6.16)
	May	66 (15.64)
	June	84 (19.91)
	July	75 (17.77)
	August	58 (13.74)
	September	54 (12.80)
	October	38 (9.00)
	November	5 (1.18)
	December	2 (0.47)
Light Condition		
	Daylight	379 (90.89)
	Darkness	14 (3.36)
	Sun glare	24 (5.76)
Surface Condition		
	Dry	386 (94.61)
	Wet	17 (4.17)
	Slush/Snow/Ice	4 (0.98)
	Loose Surface Material	1 (0.25)
Environmental Condition		
	Clear	388 (95.80)
	Raining	15 (3.70)
	Snow	2 (0.49)
Hit and Run Status		
	Yes	55 (13.00)
	No	368 (87.00)
Motorist Age (Years)		
	Mean age	43.08
	Median age	42
	Age Interquartile Range	23

Results

- Light Trucks/Vans had lower odds of BMVC than passenger cars; OR: **0.67 (0.47-0.94)**
- Drivers over 55 years had highest odds of BMVC **1.32 (1.00-1.77)**
- Driving between 6pm and 12am had highest odds of BMVC **1.44(1.11-1.88)**

- Having adult passenger on board may have reduced odds 0.69 (0.46-1.02)
- Impaired by alcohol may have increased odds 5.02 (0.70-36.05)

Conclusions

- Majority of youth BMVCs during clear conditions, during spring/summer
- Able to apply culpability tool to identify a relevant control group for vulnerable road users
- Identified older age as a risk factor for youth BMVCs as well as later evening driving
- Identified light trucks (<4500kg)/vans to have reduced odds of youth BMVCs

Thank you!