Work-related injury and illness among older truck drivers in Australia: A population based, retrospective cohort study

Associate Professor Sharon Newnam
Older drivers in truck crashes

- In 2014, 3,903 people were killed and approx. 111,000 injured in truck crashes (National Highway Traffic Safety Administration, 2016)

- One group over-represented in fatal crashes is drivers aged 60 years and older (Duke et al., 2010)

- Drivers aged 65 years and older are at 4.3 times greater risk of being killed in crash compared with drivers aged 15-19 years (Chen et al., 2014).
Background

▪ The epidemiology of injury and illness in the transportation industry has received limited attention.

▪ Important to ensure the appropriate allocation of resources to prevention and rehabilitation efforts.
Aim of the research

- This study will explore the landscape of work-related injury and disease in the Australian transportation industry
  
  - Measuring injury and illness resulting in time loss in truck drivers by age group.
Methods

- Categorised the data by distribution of:
  - Injury types;
  - Mechanism of injury;
  - Body part sustained following the injury

- Calculate the relative risk for older drivers (i.e., 60+) compared to their younger counterparts.
Methods

- Population based, retrospective cohort study
- Compensation claim data collected from the National Dataset for Compensation-based Statistics (NDS)
  - Workers’ compensation claims data from all nine of the state, territory and Commonwealth workers’ compensation systems.
  - Injured worker, their employer, job characteristics, injury or disease details, and claims outcomes.
- Australian workers’ compensation schemes do not generally provide coverage for self-employed workers
Claims accepted for payment) lodged by working age adults (≥15 years) between 2004 and 2015 finance year

Descriptive analysis was performed to characterise the distribution of workers’ compensation claims by four time periods (2004-2006, 2007-2009, 2010-2012, and 2013-2015), age groups, and jurisdictions.

Negative binomial regression was used to determine relative risks (RRs) and 95% confidence intervals (95% CI) for the comparison of claim rates across age groups.

The 35-44 years age group was set as reference group.

Older truck drivers were defined as those aged 65 years and over.
Results: Descriptive data

- 120,742 accepted

- The mean age of truck drivers was 44.5 years.

- The largest group of claims were from the 35-54 years age group, accounting for nearly 60% of total claims.

- 65+ years had the smallest percentage of total claims (2.66%), followed by the youngest age group (i.e., aged ≤ 24 years, 4.04%).
Results: Relative risk

- The relative risk of workers’ compensation claims increased with age.
  - Highest rates observed in the older truck driver group (79.53 per 1000 workers per year), with a 26% increased risk compared to the 35-44 years old group (adjusted RR: 1.26, 95% CI: 1.10 to 1.44).

- The median duration of time loss due to work-related injury and illness increased steadily with age.
  - Older truck drivers had a significantly longer median duration of time loss, reaching 6.6 weeks (IQR: 2.0-19.9, Coef: 3.40, 95%CI: 2.86 to 3.94).
- **Fracture injury**: not significant for older vs middle age group (adjusted RR: 1.03, 95% CI: 0.89-1.20),

- **MSK injury**: the rate was 18% lower (adjusted RR: 0.82, 95% CI: 0.72-0.95; adjusted RR: 0.68, 95% CI: 0.60-0.77).

- **Psychological injury**: the rate was 60% lower (adjusted RR: 0.41, 95% CI: 0.26-0.65; adjusted RR: 0.30, 95% CI: 0.21-0.43).

- **Neurological injury**: the rate reached 19.11 among older truck drivers, which was nearly 15 times higher compared to the 35-44 year old age group (adjusted RR: 15.2, 95% CI: 12.31-18.80).

  - Sound and pressure as mechanism of injury
Discussion

- Older drivers contributed the smallest proportion of total claims.
- The relative risk of workers’ compensation claims increased with age.
  - Older truck drivers had the greatest risk when compared to the 35-44 year old age group.
- Older truck drivers were not found to have significantly higher rates of MSK or fracture injuries.
  - Self-regulation: adapting behaviour to minimise crash risk.
- Claims due to ‘sound and pressure’ were 15 times greater in older age drivers.
  - Noise-induced hearing loss (vehicle, road conditions, policies & procedures).
Practical implications

▪ Managing decline in functional and/or cognitive performance
  – Self-screening within workplace health and safety programs

▪ Modifications to work environment
  – Selecting vehicles with superior noise controlling measures;
  – Introducing journey planning practices (i.e., quality road surfaces)

▪ Review and revision of noise related risk controls
  – Workplace health and safety regulation