

targets for the reduction of serious road traffic injury using a comparable definition.

188 LESSONS FROM TRAGEDY: AN IN-DEPTH MEDICO-LEGAL EXAMINATION OF FATAL ROAD TRANSPORT CRASHES

^{1,2}Marilyn Johnson, ^{1,3,4}Lyndal Bugeja, ¹Sjaan Koppel. ¹Monash University, Australia; ²Amy Gillett Foundation, Australia; ³Coroners Court of Victoria, Australia; ⁴Department of Forensic Medicine, Australia

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Background Every death on the road impacts the family, friends and relatives of the deceased as well as those people who were involved or witnessed the crash. In addition, there is a substantial economic cost of human loss. In Australia, the cost of road deaths from 2000 to 2014 is estimated at A\$458.4 million. Coronial investigations generate the most comprehensive reports of the circumstances of a fatality and while internationally coronial data has been successfully used to understand fatal road transport crashes, this data has not been used for this purpose in Australia.

Methods This study is the first Australian systematic review of coronial reports for all fatal road crashes. The data is from the Australian Capital Territory for the period from 2000 to 2014. The data will be examined to determine the frequency, nature and determinants of fatal injury involving transport across all modes (e.g. cars, trucks, bikes, walking, public transport) and to understand the contributing factors, patterns and trends.

Results In total, 191 fatal road crashes occurred in the period. Analysis of the data is underway and includes identifying patterns in the factors that contribute to these crashes including: road user types involved, impaired driving (i.e. detection of alcohol and drugs), speeding, lack of care and driver distraction, single vehicle crashes, rear end crashes and right angle crashes, and vulnerable road users particularly motorcyclists, cyclists and novice drivers. The analysis will also include a review of the coronial recommendations made and the implications for road safety.

Conclusions It is anticipated that the findings from this study will provide insights into how the road transport system can be improved to achieve safety outcomes for all road user types.

189 EXPOSURE-BASED ROAD TRAFFIC FATALITY RATES BY MODE OF TRAVEL IN FRANCE

^{1,2,3}Mohamed Mouloud Haddak. ¹University of Lyon, France; ²Ifsttar-Umrestte, France; ³University of Lyon, France

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Background Travel practices are changing. Active transport modes such as walking and cycling are encouraged because they are beneficial to health and reduce pollution.

Methods We estimated the exposure-based fatality rates for road traffic crashes in France, on the basis of the ratio between the number of fatalities and exposure to road accident risk. Fatality data were obtained from the French national police database of road traffic casualties in the period 2007–2008. Exposure data was estimated from the latest national household travel survey (ENTD) which was conducted from April 2007 to April 2008. Three quantities of travel were computed for each mode of transport: (1) the number of trips, (2) the distance travelled and (3) the time spent travelling. Annual fatality rates were assessed by road user type, age and sex.

Results The fatality rates differed according to road user type, age and sex. The risk of being killed was 20 to 32 times higher for motorised two-wheeler users than for car occupants. For cyclists, the risk of being killed, both on the basis of time spent travelling and the number of trips was about 1.5 times higher than for car occupants. Risk for pedestrians compared to car occupants was similar according to time spent travelling, lower according to the number of trips and higher according to the distance travelled. People from the 17–20 and 21–29 age groups and those aged 70 and over had the highest rates. Males had higher rates than females, by a factor of between 2 and 3.

Conclusions When exposure is taken into account, the risks for motorised two-wheeler users are extremely high compared to other types of road user. The difference between the fatality risk of cyclists and of car occupants is much smaller (1.5 times higher); besides, there is much room for improvements in cyclist safety, for instance by increasing the use of helmets and conspicuity equipment. Traffic calming could also benefit cyclists, pedestrians and perhaps moped users.

190 BEHIND THE WHEEL: DRIVING EXPOSURE AND PARTICIPATION FROM A RANDOMISED CONTROLLED TRIAL PROGRAM FOR OLDER DRIVERS

^{1,2}Kristy Coxon, ¹Anna Chevalier, ^{1,3}Kate Hunter, ⁴Julie Brown, ⁵Elizabeth Clarke, ¹Kris Rogers, ⁶Soufiane Boufous, ¹Rebecca Ivers, ¹Lisa Keay. ¹The George Institute for Global Health, The University of Sydney, Sydney, NSW, Australia; ²Western Sydney University, School of Science and Health; ³The Poche Centre for Indigenous Health, Australia; ⁴Neuroscience Research Australia, The University of New South Wales, Sydney, NSW, Australia; ⁵Kolling Institute, The University of Sydney, Sydney, NSW, Australia; ⁶Transport and Road Safety, The University of New South Wales, Sydney, NSW, Australia

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Background We used a randomised controlled trial, with nested process evaluation, to measure the impact of the Behind the Wheel program on driving and community participation of drivers aged 75 years and older in northwest Sydney.

Methods Driving exposure/week was measured by continuous in-vehicle monitoring for 12 months. The Keele Assessment of Participation (KAP), self-regulation behaviour profile and depressive symptoms were assessed at 12 months. Using intention-to-treat, generalised estimating equations modelled driving exposure, adjusting for weekly measures and ordinal regression for behaviour profiles. A logic model was built to explain program inputs, outputs and outcomes, based on relationships between process measures (program fidelity, acceptability, dose delivered and received) and program outcomes.

Results 380 drivers enrolled (mean age: 80 ± 4 years), 366/380 completed the study. There was no between group difference in distance driven/week over 12-months (−5.5 km, 95% CI: −24.5,13.5 km), or KAP (−0.1, 95% CI: −0.6,0.3). The intervention group were more engaged in self-regulation (OR: 1.6, 95% CI: 1.1,2.3). Older drivers with low-function in the intervention group were three times more likely to report depressive symptoms (OR 3.1, 95% CI: 1.04,9.2). Intervention participants who developed a retirement from driving plan, on average, reduced their total distance driven per week (38 km, 95% CI: −7.5,−68.7 km) and kilometres driven outside of daylight hours per week (7 km, 95% CI: −3.5,−10.4 km). Both understanding of program content ($\beta = 2.1$, $p = 0.03$, 95% CI: 0.2–4.1) and achieving a safe mobility plan ($\beta = 3.3$, $p = 0.003$, 95% CI: 1.2–5.5) were important to engagement in self-regulation. Females

were 2.7 times more likely to develop safe mobility plans than men (OR 2.7, 95% CI: 1.1–6.9).

Conclusions The program engaged older drivers in self-regulation but this did not translate to reduced mileage. The logic model informs decision making to channel resources to those who will benefit most.

Occupational Safety

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OCCUPATIONAL SAFETY BEHAVIOUR OF ONTARIO ELECTRICIANS: A MENTAL MODELS APPROACH TO INJURY PREVENTION

¹Laurel C Austin, ²Dan Kovacs, ²Sarah Thorne, ³Nancy Evans, ³Joel Moody. ¹Copenhagen Business School, Denmark; ²Decision Partners, LLC., Ontario, Canada; ³Electrical Safety Authority, Ontario, Canada

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Background Electric current is a leading cause of occupational fatality in North America. For each fatal electrical occupational injury in Ontario there are about five critical and 18 non-critical injuries. Analyses show that unsafe work practices and human error play a role in about 70% of fatal electrical occupational injuries. Electric workers are at especially high risk. To understand the cause of unsafe work practices, one must first understand the influences on electric workers' real-time decisions and behaviours.

Methods We used a mental models research approach to identify and gain insight into those influences. First, we developed an "expert model" of influences on electricians' judgments and decision making regarding safe work practices based upon a literature review and a workshop with electricians and representatives from electrical associations, unions, NGOs and government. The expert model informed development of a semi-structured interview protocol to elicit electricians' "mental models" – their complex webs of beliefs about safe work behaviours. In-depth interviews were then conducted with 60 Ontario electricians in Fall 2015 to discuss work experiences and influences on safe work practices. Responses were coded against the expert model.

Results We will present the results of the mental models research with electricians using the expert model as a framework. The expert model itself is an important research product, providing a structured representation of experts' perceptions of influences on electric workers' behaviour. It can be used as a framework for further research and for development of risk communications and other safety initiatives.

Conclusions This study is the first to use a decision analytic mental models approach to understand influences on electricians' decision making and safety behaviours. Resulting insights will inform development of behaviour-focused interventions to reduce injury and death.

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IS BURNOUT AMONG COMMUNITY MIDWIVES JUST A PROBLEM OF HIGH-INCOME COUNTRIES? CROSS-SECTIONAL STUDY FROM SRI LANKA

¹Indika Pathiraja, ²Pushpa Fonseka, ³David Mant. ¹Provincial Department of Health, North Western Province, Sri Lanka; ²Faculty of Medical Sciences, University of Sri Jayawardenapura Sri Lanka; ³Department of Primary Care Health, University of Oxford, UK

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Background Burnout is a state of physical and psychological fatigue and exhaustion, which is attributed to personal, work and client related spheres in a person's life. It has major behavioural and health implications. Being a grass root level health care worker, Community Midwives (Public Health Midwives) are at risk of burnout due to their responsibilities with community and their commitment to services. This study was carried out to establish whether community midwives (Public Health Midwives) in Sri Lanka suffer from the problem of occupational burnout described in high-income countries.

Methods A cross sectional descriptive study was conducted in a sample of 556 PHMs in Western Province of Sri Lanka selected by stratified random sampling. A self administered questionnaire was used including validated Sinhala version of Copenhagen Burnout Inventory (CBI-S).

Results Burnout was a much bigger problem in younger than older midwives. In those with 5–9 years service, 26.1% (95% CI: 14.3 to 41.1%) scored >50 (the threshold which have suggested indicates a significant problem). Personal burnout (mean score in all age groups 44.5, 95% CI: 43.0 to 46.1) was a significantly bigger problem than client or work related burnout (mean scores 21.2 and 26.4 respectively). As in Europe, high workload was a risk factor but lack of a supportive work environment was equally important. The most important personal factor was housework burden.

Conclusions Burnout among community midwives, particularly junior midwives, is not a problem restricted to high-income countries. It undermines care quality and threatens the sustainability of the service. Despite country-specific cultural differences, the underlying causes and solutions are almost certainly the same. Resource constraints make it difficult to reduce workload but providing better recognition and professional support for younger midwives working in isolated community settings is not resource-intensive and likely to impact substantially on sustainability and future service quality.

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INJURY AMONG OLDER WORKERS IN AN AGEING NEW ZEALAND WORKFORCE

Rebecca Lilley, Chrystal Jaye, Gabrielle Davie, and the Collaboration for Ageing Research Excellence (CARE). University of Otago, New Zealand

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Background The New Zealand (NZ) workforce is experiencing rapid demographic ageing and older workers (aged 55+ years) are a fast growing segment of the working population. Few analyses have examined the nature and cause of injury for older workers in any depth despite older workers having high rates of work-related injury. This study aims to describe the nature and cause of work-related injuries in older NZ workers for the period 2008–2014.

Methods Retrospective descriptive cohort data for older workers were extracted from national work-related injury accepted claims data (2008–14) and analysed by gender, employment status, industry, injury type and external cause. Comparisons by age groups (55–59, 60–64, and 65+) were also undertaken.

Results Of 44,061 unintentional work-related injury entitlement claims 2008–14 in workers aged 55 years or older; 17,098 were 55–59; 14,160 were 60–64 and 12,803 were 65+ years. Fatal injuries were sustained by 307 workers with 171 deaths in workers aged 65+. Preliminary analyses reveal patterns of injury differ by age, particularly for the oldest 65+ group. Overall, males