

Conclusions Because many of the intra-siblings correlations observed were relatively strong, the failure to take this cluster dependency into account had a substantial effect on the statistical analyses. Methods taking into account the cluster dependency are widely available in statistical software and strongly recommended.

Epidemiology

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473 IRANIAN ROAD TRAFFIC INJURY PROJECT: ASSESSMENT OF ROAD TRAFFIC INJURIES IN IRAN IN 2012

¹Ali Khorshidi, ¹Elaheh Ainy, ¹Hamid Soori*. ¹Safety Promotion and Injury Prevention Research Centre of Shahid Beheshti University of Medical Sciences; ²Ilam University of Medical Sciences

10.1136/injuryprev-2016-042156.473

Background Road traffic injuries (RTIs) are the second leading cause of mortality and the first cause of disability adjusted life years (DALYs) in Iran. This study investigated the status of RTIs in Iran.

Methods All traffic accident data for the one-year period from March 2011 to March 2012 recorded in the national traffic accident database was investigated. The information included demographic data specific to road traffic accidents (RTAs) and injuries. The data was summarised and presented using the distributions of all components.

Results There were a total of 452192 RTAs with 252246 victims in the one-year period. The highest percentage (47%) of these was in the 15–30 year age group. Men constituted 78.4% of those involved in RTAs. Most RTAs (73.2%) took place between 6 am and 6 pm. The province of Semnan had the highest annual incidence rate of RTIs and Alborz had the lowest. The majority of RTAs (66.7%) occurred within the city roads. Although the levels of non-fatal injury were similar within the city roads and outer them, mortality was 3.1 times higher outer the city roads.

Conclusions This study confirms that the number of RTIs places a heavy burden on the Iranian population, especially on young men. Comprehensive strategies and policies must be implemented for effective prevention of road accidents in Iran.

474 ROAD TRAFFIC INJURIES AND DEATHS AND THEIR RISK FACTORS IN MONGOLIA

¹J. Demberelasuren, ¹J. Oyunbileg, ²D. Uranchimeg, ³Matti Roine. ¹Public Health Institute, Mongolia; ²National Health Science University; ³MH Roine Consulting

10.1136/injuryprev-2016-042156.474

Background Worldwide, the number of people killed in road traffic accidents (RTA) each year is estimated at over 1.2 million, while the number of injuries reaches as high as 50 million. Low- and middle-income countries account for 91 percent of the total RTA fatalities. In Mongolia the number of road accidents, crimes and road safety violations is on the increase and it is forecasted that this trend will continue in the future.

Methods To identify the risk factors of road accidents and the characteristics of victims involved in road traffic accident and crimes (RTA&Cs), 25 percent (4000) of the investigation forms collected by the Police Department on RTA&C were randomly

selected and analysed using descriptive and advanced statistics methods.

Results The victims classified as passengers were more likely to be in urban areas and the rate of road crashes caused by alcohol is significantly different in rural and urban areas. In rural accidents, drunk driving was twice as common and seat belts were 50 percent less likely to be worn. Over 50 percent of deaths and injuries from accidents are among young adults in the age range of 19–39 years. The gender ratio of victims is 6:4, with males in higher numbers. Males in rural areas have higher percentages of moderate and serious injuries occurring than in urban.

The logistic regression analysis showed that the statistically significant risk factors of injuries were alcohol consumption and failure to stop the vehicle. The main causes of death were alcohol consumption, excess speed, vehicle defects, driver's negligence, failure to keep distance and excess loading.

Conclusions The age, sex, drunk driving, seatbelt use and type of participation in traffic were significantly different among victims by location. The statistically significant risk factors of injuries in RTA&Cs were; the fault of pedestrians, alcohol consumption and failure to stop the vehicle and risk factors associated with death were; alcohol consumption, excess speed, vehicle defects, driver's negligence, failure to keep distance and excess loading.

475 FATAL OCCUPATIONAL INJURIES IN NORWAY: SURVEILLANCE DATA ARE BIASED AND UNDERESTIMATED RISK

¹Ebba Wergeland, ²Finn Gjertsen, ³Johan Lund. ¹Labour Inspection Authority, Oslo; ²Norwegian Institute of Public Health, Oslo; ³Norwegian Directorate of Health, Oslo

10.1136/injuryprev-2016-042156.475

Background The Norwegian Labour Inspection Authority (NLIA) compiles and publishes statistics on fatal occupational injuries. Other institutions also register such information on a national level: Statistics Norway (SN) (from Cause of Death Registry (CDR), recently transferred to the Norwegian Institute of Public Health), the National Insurance Administration (NIA) and Finance Norway (FN) (from private insurance companies). The aim of this study was to examine completeness and quality of NLIA statistics, and see if use of additional sources could improve surveillance of risk.

Methods Residents in Norway have a unique personal identification numbers. This was used to compare cases of death from occupational injuries 2000–2003 registered in NLIA, NIA and FN – with information in CDR.

Results NLIA had registered 171 deaths from occupational injuries 2000–2003. 75 more deaths were identified from the three other sources. Of all the 246 deaths, NLIA had information on 171 (70%), NIA 158 (64%), SN 141 (57%) and FN 50 (20%). NLIA was most complete, but completeness varied between industries, from 24% for Public administration and defence, compulsory social security to 81% for Construction (Standard Industrial Classification (SIC2002)). Completeness also varied according to external cause of death, and was particularly low (32%) for transport accidents with car (ICD-10 V4). All 246 deaths were found in CDR, but due to incomplete information in death certificates, only 57% were identified as occupational injuries.

Conclusions The NLIA registry was most complete, but biased, and grossly underestimated risk in some subgroups.

Administrative changes could improve completeness and quality and make it a better tool for surveillance of risk. The CDR is potentially the most complete source of information. If death certificates for accidental deaths have incomplete data, the certifier could more often be asked to provide missing information. Validation by casewise comparison between NLIA and CDR with regular intervals is recommended.

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INCIDENCE, IMPACT, MEDICAL CONSEQUENCES OF UNINTENTIONAL CHILDHOOD INJURIES IN A RURAL BLOCK IN SOUTH INDIA

¹Leeberk Raja Inbaraj, ²Anuradha Rose, ²Kuryan George, ²Anuradha Bose. ¹Bangalore Baptist Hospital, Bangalore, India; ²Christian Medical College, Vellore, India

10.1136/injuryprev-2016-042156.476

Background Unintentional childhood injury is a major cause of mortality and morbidity among children (upto 18 years) across the globe and contributes to over 875,000 deaths annually worldwide. Global Childhood Unintentional Injury Surveillance estimates that nearly 50% of children under 12 years suffered severe unintentional injuries leading to some form of disability. Unintentional childhood injury is an under-reported public health problem in India. This study was undertaken to estimate the incidence and assess economic impact and medical consequences of unintentional childhood injuries among children between 0–14 years.

Methods This is a non-concurrent cohort study, conducted in 13 clusters of a rural block in Vellore. Double stage cluster sampling method was used to screen 1600 children with injury. Information regarding the impact and consequences of injury was obtained.

Results Childhood injury related morbidity was 292.5/1000/year. Children between 10–14 years (4.6%) and boys (4.5%) had a higher rate of injury. Majority of injuries occurred at home (44.8%) and most commonly on the lower extremity (51.7%). Falls (43.1%) was the most common cause of injury followed by RTIs (27.6%). The direct medical and non medical cost of treatment ranged from \$US0.14 to \$US74. The wages lost by the primary caregiver ranged from \$US1.4 to \$US90 and absenteeism from work ranged from 1–60 days. Sick absenteeism ranged from 0–45 days with a mean of 5.17 days. 50% of children missed school after an injury. The days spent with temporary disability ranged from 1–60 days with a mean of 4.08 days and 7.73% had permanent disability.

Conclusion Unintentional childhood injuries is an emerging public health problem which leads to significant injury related sickness absenteeism and disability. Boys and older children are the most common victims of injury. Prospective trials on the economic impact and medical consequences will help to gain a clear understanding of DALY and loss of productivity.

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INJURY RISK IN FINNISH YOUTH FLOORBALL: A ONE-YEAR PROSPECTIVE FOLLOW-UP STUDY

¹Kati Pasanen, ¹Jussi Hietamo, ¹Pekka Kannus, ¹Tommi Vasankari, ²Urho Kujala, ²Ari Heinonen, ¹Jari Parkkari. ¹UKK Institute for Health Promotion Research, Finland; ²University of Jyväskylä, Finland

10.1136/injuryprev-2016-042156.477

Background Floorball is a popular team sport in Finland. Previous studies have revealed that injuries are a significant problem in adult floorball. However, epidemiological studies of injuries in

youth floorball are lacking. The aim of this study was to investigate the incidence, type, and severity of injuries in young floorball players.

Methods One-hundred-fifty-six female (n = 57) and male players (n = 99) (mean age 17.1 ± 1.6 years) from nine floorball teams participated in the study. Injury data as well as practice and game exposures were collected over the 12-months period (from May 2013 to April 2014). An injury was defined as having occurred in an organised floorball practice or game, and having resulted in the inability to participate in floorball training or playing for one or more days. Severity of injury was measured by number of days lost from floorball training and playing.

Results The players reported a total of 136 injuries, of which 63% were traumatic and 37% were from overuse. The overall incidence of injuries in female and male players per 1000 practice and game hours was 4.5 (95% CI: 3.48 to 5.79) and 3.0 (95% CI: 2.41 to 3.76), respectively. Incidence of traumatic game-related injuries in females was 45.1 per 1000 game hours (95% CI: 30.98 to 65.67), and 19.9 (95% CI: 12.87 to 30.65) in males. The majority (76%) of injuries occurred in the lower extremity, and the most commonly injured body part was the ankle (24%), followed by the knee (23%) and the lower back (13%). Thirty-three percentages of all injuries resulted in less than 1 week time-loss, 30% in 1 to 4 weeks time-loss, and 37% in more than 4 weeks time-loss from sports. Thirty-one players had over 8-week absence from training due to a severe injury.

Conclusions The injury risk in youth floorball is high. The lower limb is the most commonly injured body area. Rather many of the injuries are severe resulting in long-term absence from sports.

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INJURIES IN CHILDREN WITH AUTISM SPECTRUM DISORDER: STUDY TO EXPLORE EARLY DEVELOPMENT (SEED)

¹Carolyn DiGiuseppi, ²Susan Levy, ³Gnakub N Soke, ¹Steven Rosenberg, ¹Katherine R Sabourin, ⁴Li-Ching Lee, ¹Eric Moody, ³Laura Schieve. ¹University of Colorado Anschutz Medical Campus, USA; ²University of Pennsylvania, USA; ³Centers for Disease Control and Prevention, USA; ⁴Johns Hopkins University, USA

10.1136/injuryprev-2016-042156.478

Background Studies of injury risk in children with autism spectrum disorder (ASD) have shown conflicting results. We examined medically-treated injuries in children with ASD vs. population (POP) controls.

Methods The Study to Explore Early Development (SEED) is a multi-site ASD case-control study of children aged 30–68 months. ASD cases (n = 693) were determined using established ASD-specific diagnostic instruments. POP controls (n = 882) were ascertained from birth certificates. Each child's primary caregiver reported if the child ever had a medically-treated injury and described each such injury. Injuries resulting in emergency department visit or hospitalisation were defined as "serious." We describe the nature and cause of each child's first reported injury. Associations between ASD and having at least one medically-treated injury and serious injury were examined using logistic regression, adjusted for child sex, age, and IQ; maternal race/ethnicity and education; and family income.

Results Among children with ASD, 33% ever had a medically-treated injury and 25% ever had a serious injury; the most commonly specified injuries were laceration (41%), fracture (22%) and abrasion/contusion (12%). Among POP children, 30% had a medically-treated injury and 22% a serious injury; the most commonly specified injuries were laceration (46%), fracture (23%)