

741 AN ANALYSIS OF AUTOPSY REPORTS OF INJURY AND VIOLENCE DEATHS IN SRI LANKA

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Background Deaths due to injuries and violence are on the rise in Sri Lanka. However, only few statistical analysis have been carried out so far to understand the causes for those deaths. This lacuna is a major setback for prevention of violence and injury deaths in Sri Lanka. Therefore, we conducted this study to identify the reasons that contributed to the injuries and violence related deaths in Colombo, Sri Lanka in 2014, using the autopsy reports of the Institute of Forensic Medicine and Toxicology (IFMT), Colombo.

Methods We extracted data of the injury and violence deaths from the autopsy register of the IFMT for the year 2014. Circumstances and external causes of deaths, age and sex were recorded. We analysed the extracted data using Microsoft Excel.

Results In year 2014, 1122 autopsies were carried out in the IFMT and 55.3% of the deaths were due to injuries and violence (N = 621). Majority of the injury and violence death were due to unintentional injuries (80.5%). Out of those 500 deaths due to unintentional injuries and majority (68.2%) of them were due to road traffic crashes (RTC) excluding railway crashes (n = 24). Of all those 346 road traffic deaths, 83.8% were male; majority (22.8%) were between 50–59 years old. Almost half of the RTC victims were pedestrians, while another one third were motorcyclists. The other common causes of unintentional injuries that led to deaths were falls (12.0%), and drowning (6.0%). Among injury and violence deaths suicides were 12.4% and assaults were 7.1%. Main mode of committing suicides was hanging. For homicides, it was, assaults with sharp weapons.

Conclusions Injuries and violence are major reasons for deaths that are reported for medico-legal examination in Colombo, Sri Lanka. RTCs contribute to a significant number of injury deaths. Because injuries and violence are preventable with appropriate measures such as strict legal provisions, community awareness, etc. policy makers should introduce appropriate policies to prevent these deaths.

742 TRENDS IN MORTALITY, HOSPITALIZATIONS AND OUT-PATIENT VISITS DUE TO EXTERNAL CAUSES FROM 1984 TO 2011 IN JAPAN

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Background The purpose of this study is to analyse the trends in deaths, hospitalizations and out-patient visits due to external causes in Japan and to explore strategies for injury prevention.

Methods The WHO standard population data and data on mortality caused by external causes made available by the Vital Statistics of Japan were used. Also, the rates of hospitalizations and outpatient visits due to unintentional injuries were calculated using the Patient Survey of Japan.

The deaths caused by the Great East Japan Earthquake in 2011 were removed from the analysis to avoid confounding.

Results Among 0–14 year olds, the mortality due to external causes reduced from 13.2 per 100,000 populations in 1984 to 3.9 in 2011. Rate of hospitalizations reduced from 610 per 100,000 in 1984 to 478 in 2011. Rate of out-patient visits increased from 35,712 per 100,000 in 1984 to 37,118 in 2011.

Among 15–44 year olds, the mortality due to external causes reduced from 36.7 to 30.5. Rate of hospitalizations reduced from 1,028 to 630. Rate of out-patient visits reduced from 20,404 to 16,320.

Among 45–64 year olds, the mortality due to external causes reduced from 63.7 to 50.0. Rate of hospitalizations reduced from 1,071 to 722. Rate of out-patient visits reduced from 18,713 to 11,998.

Among those 65 years or older, the mortality due to external causes reduced from 135.3 to 117.3. Rate of hospitalizations increased from 1,620 to 2,094. Rate of out-patient visits increased from 15,332 to 15,537.

Conclusions Among 0–14 olds, the mortality due to external causes decreased significantly from 1984 to 2011, but the out-patient visit rate remained almost the same.

Among those 65 or older, the mortality due to external causes decreased from 1984 to 2011, but rate of hospitalizations and out-patient visits increased.

Sports and exercise safety

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743 HEALTHY ATHLETE NATIONWIDE SPORT SAFETY IMPLEMENTATION CASE TO SPORT CLUBS

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Background The Sports and Exercise Safety (LiVE) program (2006–) aims to reduce sport injuries in Finland. The program is coordinated by the Tampere Research Centre of Sports Medicine at the UKK Institute. Every year over 350,000 sports injuries occur in Finland and the trend is increasing. Athletes are in high risk to be injured. Up to 50% of the injuries could be prevented.

Methods Healthy Athlete (HA) aims to foster coaching and training culture that promotes good health and safety in sports. Target groups are young athletes and their coaches, instructors, team managers and families. National and international study findings are delivered to the field by communication and education. Program focuses on 10 segments in Ten-point Circle. Main communication channels are website www.terveurheilija.fi, Facebook, Twitter, and YouTube channel. Website offers information packages, exercise videos, campaign materials, tutor network information etc. All materials are free of charge. Website attracts over 10000 visits per month and YouTube videos have been watched over 270 000 times. HA also arranges several seminars and tutor meetings with national partners.

Results Program has educated over 80 HA-instructors (1-year education) and created the national Sport Nutrition Society (50 sport nutritionists). Purposes of the networks are to implement preventive strategies against sport injuries among target groups by offering education and counselling for coaches and athletes at their local environments. Tutors share the same education materials and injury prevention strategies and they meet annually for re-education.

Conclusions Successful development and implementation of preventive strategies against sports injuries in sport club settings continues. HA is currently planning new, modern strategies for implementation e.g. developing technological solutions (mobile and web applications) and webinars. Project is funded by Finnish Ministry of Education and Culture.

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THE INCIDENCE OF PHYSICAL CONTACTS IN YOUTH ICE HOCKEY ASSOCIATED WITH BODY CHECKING EXPERIENCE

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Background Hockey Canada's 2013 body checking (BC) policy change was informed by evidence that BC leads to a >3-fold increased risk of injury compared with non-BC leagues. Video analyses found a reduction in high intensity physical contacts (PC) following this policy change. The association between BC experience and incidence of PCs has not been examined. As such, the incidence of intensity and types of PC were examined following the policy change in Pee Wee (PW) leagues (ages 11–12) with (Calgary) and without (Québec) BC experience.

Methods PW games were videotaped in Calgary (N = 21, with BC experience) and Québec City (N = 20, without BC experience), both non-BC leagues. Games were analysed using Dartfish with a validated observation system to quantify incidence of PC. Five levels of intensity (trunk contacts coded Level 1–5 intensity) and other types of PC (limb/head/stick). PC incidence rates per team-game and incidence rate ratios (IRR) (95% CI) were estimated to compare games between two cohorts.

Results In total 4433 trunk contacts in Calgary and 2667 in Québec were recorded. Of the trunk contacts, 97.5% (Calgary) and 95.7% (Québec) were classified as low level PC. The incidence of total trunk contacts (number of contacts per team-game) was higher in Calgary than Québec (IRR = 1.58, 95% CI: 1.40–1.79). There was no difference in high intensity contacts (Level 4 [IRR = 0.72 95% CI: 0.48–1.07], Level 5 [IRR = 1.21, 95% CI: 0.57–2.56]). The incidence of other PCs was lower in Calgary than Québec (IRR = 0.71, 95% CI: 0.53–0.96).

Conclusion Following a policy change disallowing BC, PW players with experience BC had a greater incidence of total trunk contacts but not greater high intensity contacts than players without BC experience. Players with no experience had a higher incidence of other PCs. These results inform a greater understanding of mechanisms of contact in youth ice hockey that will in turn inform injury prevention and player development.

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AN ANALYSIS OF DENTAL TRAUMA AMONG YOUTH BASEBALL ATHLETES UTILISING SCHOOL INSURANCE BIG DATA IN JAPAN

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Background Japan Sport Council (JSC) collects more than 1,000,000 injury data per year and provides medical benefits for injured students who got hurt under the supervision of school. From 2005 to 2014, JSC provided disability compensation for a total of 1,520 sports-related injuries. Baseball was the most common cause of injuries in youth sports, and 474 injuries occurred in extracurricular activities during the period. Kusumoto *et al.*¹ found that eye trauma in baseball was the most common and that 196 cases occurred (¹ K. Kusumoto, Y. Nishida, K. Kitamura, M. Oono, T. Yamanaka, and Y. Sugimoto, "An analysis of ocular injuries among youth baseball athletes utilising school insurance big data in Japan," Safe Communities 2015 in Thailand, 2015). Kusumoto *et al.* also found that dental trauma was the second most common injuries in baseball. Therefore, in this study, we investigated dental injury among youth baseball athletes in Japan as a consecutive research.

Methods One hundred eighty-five injury cases were used for this research. First, we categorised these injuries by utilising JSC's injury severity grading chart defined by the Ministry of Health, Labour and Welfare in Japan. Next, types of injuries in each severity category were clarified based on dentists' diagnosis/evaluation.

Results These injuries consisted of four groups by the injury grading chart. The groups range from severe to minor condition as follows; 1) 1 case (severity), 2) 7 cases, 3) 29 cases, 4) 188 cases (minor). The types of injuries were as follows; 93 teeth fracture, 54 dislocation/subluxation of teeth, 15 pulpitis, 13 alveolar bone fracture, 12 periodontitis and so on. Additionally, the most dental trauma occurred at the central incisors of upper teeth, more than 110 cases.

Conclusion Baseball-related dental trauma is the second highest common injuries among youth athletes in Japan. Based on the results, we propose some preventive methods; 1) wearing a helmet attached a full face guard, 2) managing their practice fields where usually multi-groups practice at the same schedule, and 3) educating coaches, athletes, and parents with potential risks of broken teeth in baseball.

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THE INCIDENCE OF BEHAVIOURS ASSOCIATED WITH BODY CHECKING EXPERIENCE AMONG YOUTH ICE HOCKEY PLAYERS

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Background Participation and injury rates in youth ice hockey are high. Results of recent studies show that for 11 and 12 years old players the risk of injury is significantly higher in leagues where body checking (BC) is permitted compared to leagues where it is not. The objective of this research was to determine whether the incidence and types of body contact differ for 13 and 14 years old players in leagues where BC commenced at age 11 (Calgary) versus 13 and 14 years old players in leagues where BC was delayed until age 13 (Québec City).

Methods A cohort study was conducted in Québec City and Calgary. Sixteen games for Calgary and fifteen for Québec City were randomly selected and retrospectively analysed. Games were