Sports and Exercise Safety, Safety Culture, Older People Safety, Traffic Safety

Post Mon 1.2

406 EPIDEMIOLOGY OF KNEE SPRAINS IN US HIGH SCHOOL AND COLLEGIATE ATHLETICS

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Background Over two million sports-related knee injuries present to US emergency departments annually. Knee injuries frequently require costly surgical repair, and knee sprains are one of the most common injuries in athletes. Thus, understanding injury patterns across the age spectrum is important to identify areas for prevention.
Methods Knee sprain and athlete exposure (AE) data were collected for 20 sports using the High School Reporting Information Online database for high school athletes and the National Collegiate Athletic Association Injury Surveillance Program for college athletes during the 2009/10–2014/15 acdemic years. We report knee sprain rates per 10,000 AEs and rate ratios with 95% confidence intervals (RR; CI).
Results The knee sprain rate was higher in college (1.03) than high school (0.35; RR = 2.46, 95% CI: = 2.31–2.61). Sports with the highest rates in college were men's wrestling (1.21), men's football (0.66), and women's soccer (0.61); the highest in high school were boys' football (0.35), girls' soccer (0.26), and girls' gymnastics (0.23). In gender-comparable sports, females had higher rates than males (college RR = 1.70, 95% CI: = 1.40–2.07; high school RR = 2.21, 95% CI: = 1.97–2.48); college men had higher rates of torn cartilage (RR = 4.19, 95% CI: = 3.19–5.51) and PCL injuries (RR = 29.51, 95% CI: = 19.64–44.34) than high school boys; and college women had higher rates of ACL (RR = 2.30, 95% CI: = 1.86–2.85) and PCL (RR = 2.99, 95% CI: = 1.52–5.88) injuries than high school girls. A larger percentage of females in college required surgery (43.0%) vs. high school (34.9%). Player contact was the most common injury mechanism across age groups (55.0% each).
Conclusions In gender-comparable sports, females at both age levels had higher knee injury rates than males. College athletes had higher knee injury rates than high school athletes, perhaps due to level of play or biological differences. Both sex and age should be considered when developing targeted injury prevention efforts.

407 HOW TO SPEAK SO TODAY'S PARENTS WILL LISTEN

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Background To help families protect children from injury, we have to reach them in channels they are tuning into using messages that resonate. Today's parents are getting much of their information through channels that didn't exist ten years ago. Safe Kids has undergone a messaging transformation, changing our tone, simplifying our messaging for low-literacy audiences and building new media channels to connect with parents.

We conducted a series of focus groups among mothers and grandmothers. We recruited from two populations: low literacy and average literacy. The topic was medication safety.

We also tested several types of posts on Facebook, tracking engagement.
Objective The objective of this session is to educate injury professionals on strategies for connecting with today's families.

The culture of communications has changed dramatically in the last ten years. As safety experts, we need to evolve how we reach today's families.
Results We learned the best way to present messages to parents so they are intrigued to learn more. We also learned when it helps to include statistics and when parents tune statistics out.

To address channels, we tested several social media strategies to determine which ones deliver the best results. Our success is evident in our growth. In just four years, our Facebook page has grown from 35,000 likes to more than 1,000,000 likes.
Conclusions To impact the culture of safety, we need to understand the culture of communicating to today's parents so we can meet parents where they are. Safe Kids Worldwide is eager to share what we have learned about tone, messaging and communications channels. In conversations at past conferences with injury professionals around the world, we believe this is a topic of universal interest and essential for connecting with families to reduce injuries in children in the future.

408 IMPLEMENTATION PROJECT ON PREVENTION OF HOME AND LEISURE INJURIES

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Background The campaign for the Prevention of Home Injuries started in 1993. As of 2015 the campaign was granted a project funding from Finland's Slot Machine Association. Finnish Red Cross coordinates the project. Partner organisations include The Ministry of Social Affairs and Health, Ministry of the Interior, The Finnish National Rescue Association, Federation of Finnish Financial Services, The Association of Finnish Local and Regional Authorities, The Finnish Swimming Teaching and Lifesaving Federation, National Institute of Health and Welfare, The National Defence Training Association of Finland, SOSTE Finnish Federation for Social Affairs and Health and Finnish Association for Substance Abuse Prevention.
Description of the problem The amount of home and leisure accidents in Finland is high. During the year 2013, 2548 people (out of 5.4 million inhabitants) died in injuries. 2268 victims died in home and leisure injuries, 259 in traffic accidents and 22 in work place accidents. The most common type of accident is falling or tumbling. Home and leisure accident prevention is challenging because it extends to the area of private life and it is not clearly legislated.
Results Collaboration between stakeholders in accident prevention is ensured by the project. The project's campaigns are implemented together with traffic and occupational accident injuries prevention stakeholders to strengthen the link between the safety cultures in different environments. The project delivers information to citizens through campaigns, media and the web and by people who are employed or volunteer in the social, health, educational or rescue sector. Non-governmental organisations are

essential operators in implementing strategic action plans to practice.

Conclusions Strong collaboration and communication is needed in order to decrease the home and leisure injuries. The aim is to increase the discussion about the possibilities in preventing the injuries.

409 USING RAI-HC ASSESSMENT INSTRUMENT TO CLASSIFY HOME CARE CLIENTS IN FINLAND BASED ON FIRE EMERGENCY EVACUATION CAPACITY

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Background When an uncontrollable fire is detected in a building there may be a 2–3 minutes window for the occupants to move to safety. Poor physical function and cognition may become critical factors in an evacuation situation. In this study a novel functional scale measuring emergency evacuation capacity of home care clients is presented.

Methods A fire security expert visited about 250 home care clients assessing their evacuation capacities. For the evacuation capacity three categories were used: 1) is able to evacuate; 2) may be able; 3) unable to evacuate. This data was linked to comprehensive assessments of clients functional and health status performed by home care nurses using the interRAI Home Care Assessment Instrument (RAI-HC). The goal was to investigate whether the evacuation capacity classification can be explained in terms of RAI-HC variables. As the mathematical method we have employed "classification and regression trees" (CART).

Results A fire evacuation capacity scale "EVAC" was developed using four levels of cognitive function as major categories. These categories were split into final groups based on performance in physical function. For each group we calculated the average capacity score ranging from 0 to 1 based on the dependent variable.

Conclusions The evacuation scale gives an estimate of a client's ability to get out in case of a fire. The scale can be used to single out high risk persons for which compensatory safety technology may be required. The scale could reduce costs in assessing evacuation capacity of home care clients.

410 MOTORCYCLE TYPE, FAMILARITY AND RIDER AGE: A CONDITINAL PROCESS ANALYSIS

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Background Motorcyclists are vulnerable road users and with increasing registrations, the number of motorcyclists killed and injured continues to rise. Commonly reported risk factors for crash involvement include the type of motorcycle, the rider's familiarity with the motorcycle and rider age. However, identifying potential risk factors is only the first step. To develop effective interventions, there is a need to understand how risk factors work together. This paper aims to examine the relationship between the type of motorcycle, the rider's familiarity with the

motorcycle and rider age as risk factors for crash involvement using a case control sample and conditional process analysis.

Methods A case control sample consisting of 100 seriously injured motorcyclists and 500 controls was collected in NSW, Australia between 2012 and 2014 using in-depth crash investigation and survey. Condiitonal process analysis was used to test a moderated mediation effect of key risk factors; motorcycle type (sports motorcycle versus other), rider familiarity with the motorcycle (km ridden on the motorcycle) and rider age (years) on crash involvement while controlling for gender and most common type of riding (recreation versus other). This was acheived using the PROCESS macro in SAS that implements a series of regression analyses to estimate direct and indirect effects of the risk factors and interactions, as well as testing the significance of these effects.

Results Riders of sports motorcycles were more likely to be in the crash sample than those riding other types of motorcycles, however this effect is mediated by the rider's familiarity with motorcycle. Furthermore, this indirect effect is moderated by rider age, with the effect being more pronounced in older riders.

Conclusions This analysis provides the first insight into how commonly reported risk factors related to motorcycle type, familiarity with a motorcycle and rider age work together. Specifically, this analysis identifies high priority targets for interventions aimed at mitigating crash risk through these risk factors.

Fire Safety and Burn Injuries

Post Mon 1.3

411 BURDEN OF FIRE-RELATED INJURIES IN FINLAND

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Background The aim of this research was to examine the burden of (severe) fire-related injuries in Finland.

Methods All together twelve separate data sets were gathered for conducting the study. Finnish Hospital Discharge register (FHDR) was the core data in which the injured persons could be identified. The Causes of Death register was the data to identify fire-related deaths. Criteria of inclusion for further study were that a person had been to inpatient care or died. Data on sickness allowances, different kinds of rehabilitation funding, (disability) pensions were obtained from the Social Insurance Institution of Finland. Other types of disability allowances or pensions were obtained from the Finnish Centre for Pensions. Causes of Death data supplemented with socioeconomic data were obtained from Statistics Finland. A data from Statutory Accident Insurance was obtained to cover work-related accidents. A five-year sample of patients with fire-related burn was obtained from the Helsinki Burn Centre. The Finnish Hospital Discharge Register was available at the National Institute for Health and Welfare, Finland. The whole study consisted of five sub-studies published in scientific journals.

Results Quality, usability and some methodological issues of using the FHDR were resolved. A descriptive epidemiological study on the injuries nationwide was conducted. Inpatient care costs were approximated nationwide. Indirect burden of fire-related deaths