in Poland, resulting in a systematic increase in the level of road traffic security.

897 FMI'S WARNING SERVICE – WARNINGS ABOUT SLIPPERY WALKWAYS

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10.1136/injuryprev-2016-042156.897

Background Finnish Meteorological Institute (FMI) has developed a numerical weather model that simulates the level of slipperiness on the walkways. The model classifies the walkway slipperiness into three classes; normal, slippery and very slippery. Normal means that there is not ice or snow on the surface. Slippery condition means that snow and ice may exist, but the surface has relatively good grip and normal walking is possible. Very slippery walkway condition is expected if walkway is covered by ice and there is water or light snow above the ice layer. Sometimes packed snow can be very slippery, too. FMI is giving warnings if very slippery walkway condition is expected.
Description of the problem Icy and snowy walkways are very typical in Finland during winter. Slipperiness due to ice and snow on walkways increases the risk of pedestrians' slipping injuries. Almost every second person slips annually in Finland and around 50 000 persons are injured needing medical attention. Big part of the injuries happen outside on winter time when ground is covered by ice or snow. Emergency departments are crowded during the most slippery days. Economic losses due to slip injuries are around 420 million euros yearly, that sum includes costs in health care, lost workdays and general welfare.
Results (effects/changes) There should be lots of possibilities to reduce the number of slipping injuries and costs related to injuries. FMI's warnings about slippery pedestrian pavement condition is one way to improve the safety among the pedestrians. Pedestrians may reserve more time for travelling, choose the way of travelling or use anti-slip devices if very slippery pavement condition is forecasted.
Conclusions Slip injuries are a big problem causing economic losses and long sick leaves. FMI's warnings about slippery walkway condition is one way to inform the predicted slipperiness and increase awareness of slipperiness among the citizens.

898 ACCURACY OF NOVICES' PERCEPTIONS OF CAR SEAT INSTALLATION MASTERY: A PROBLEM OF OVERCONFIDENCE

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10.1136/injuryprev-2016-042156.898

Background Motor vehicle crashes are the 2nd most common fatal unintentional injury in young children in the USA. Proper use of car seats reduces risk of death and serious injury by 78%, but 94% of parents instal car seats improperly. Parents must recognise when they instal car seats improperly in order to take corrective actions, but such recognition may be lacking. The objectives of this study were: 1) assess the accuracy of perceived mastery among novice car seat users, and 2) identify predictors of overconfidence among users who instal car seats improperly.
Methods Novice users ages 18–29 (M = 25; SD = 2.4) were randomly assigned to receive installation instructions from the manufacturers' guide or an expert technician via phone or merged reality app. Participants installed a car seat and strapped a life-like infant doll, then reported perceived mastery and quality of instructions. Trained assessors rated mastery using a structured coding sheet.
Results 4 of 39 total participants (10%) installed the seat and strapped the doll with no errors. 27 (70%) made 2 or more errors with either the seat or straps and were judged to have failed, of whom 17 (63%) were overconfident (OC). 19 (49%) failed the seat, with 13 (68%) OC. 21 (49%) failed the straps, with 14 (67%) OC. Total errors were significantly lower in OC vs. non-OC participants among those who failed the seat and those who failed the straps ($t = 3.71$, $p = 0.002$ and $t = 2.41$, $p = 0.03$, respectively). Among those who failed the straps, perceived quality of instructions was significantly higher in OC vs. non-OC participants ($t = 2.09$, $p = 0.05$).
Conclusions Expert instruction reduces car seat installation errors, but novices continue to unknowingly make life-threatening errors. Overconfidence may be more likely with fewer total errors and higher perceived quality of instructions. Among other strategies, merged reality apps may reduce overconfidence and errors.

899 EXPLORING THE DIFFERENCE OF TRAFFIC PARAMETERS BY SEVERITY LEVEL AND ACCIDENT TYPE IN URBAN AREAS

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10.1136/injuryprev-2016-042156.899

Background The effect of traffic parameters on road safety has gained considerable attention from researchers. High resolution traffic data extracted from motorways are used widely nowadays to study traffic safety. However, there are no studies exploiting high resolution traffic data in urban areas.
Methods This study uses accident and traffic data from two major arterials of Athens for the period 2006–2011. Traffic data were extracted from the closest upstream as well as the closest downstream detector to the accident location. Five-minute raw traffic data were aggregated hourly to obtain the mean values so that a more mesoscopic approach is achieved. Analysis of variance (ANOVA) was applied in order to highlight potential statistical differences in speed and statistical differences in occupancy by severity level and by accident type, one hour prior to accident occurrence.
Results Overall, several significant statistical differences are observed, either when accident severity or the type of accident is explored. This implies that traffic parameters can significantly influence the severity or the type of the accident.
Conclusions The findings of the study justify the need to further explore the effect of traffic parameters on traffic safety.

900 WILLINGNESS TO PAY FOR INNOVATIVE VEHICLE INSURANCE SCHEMES

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10.1136/injuryprev-2016-042156.900

Background The objective of this research is to investigate Greek drivers willingness to pay for innovative vehicle insurance schemes such as Pay-as-you-drive (PAYD) and Pay-how-you-drive (PHYD) schemes. Current technological advances, enable to collect high resolution driver behaviour data easier and more accurately using technologies such as smartphones, On-Board Diagnostics (OBD) systems etc. and use them to monitor, analyse and evaluate each individual driver's behaviour. PAYD scheme is based on assessing driver's level of exposure to traffic risk while PHYD is based on driver behaviour indicators such as speeding, acceleration etc. The implementation of this policy has shown a significant impact on driver's behaviour and as a result, this measurement is a matter of great importance for traffic safety.
Methods Within this research, a stated-preference survey is designed and administered in a questionnaire form both paper-based and online. The questionnaire is comprised of four sections including a general driving information, a driving behaviour information, a new innovative insurance policy scenario and a demographic characteristics section. At the third section, respondents are given several scenarios to choose between the standard and the new insurance policy in order to measure the sensitivity of their choice based on some factors such as the variation of mileage, the average speed and the annual insurance cost. Subsequently, a discrete choice model was developed to analyse data collected during this experiment.
Results indicate a strong correlation between policy choice and annual cost variation.
Conclusions Willingness to switch to a new innovative policy was found statistically significant especially for a cost reduction of 20%. Finally, mileage and average speed variation was found to affect people's choice less than the innovative policy's cost but still statistically significant.

901 RISK FACTORS FOR BICYCLING INJURIES IN CHILDREN AND ADOLESCENTS: A SYSTEMATIC REVIEW

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10.1136/injuryprev-2016-042156.901

Background Bicycling injuries in young people represent a substantial cost to health care systems. The objective of this review was to examine the individual and environmental factors associated with bicycling-related injury risk in children and youth.
Methods Fourteen electronic databases were searched using exploded subject headings and keywords. Two authors independently screened article titles and abstracts for inclusion. The full-text of the potential articles was assessed to determine eligibility. The inclusion criteria were bicyclists less than 18 years old; individual and environmental characteristics of bicycling outcomes; comparisons between injured and uninjured bicyclists, injury type or severity level; study designs with a pre-determined comparison group; and publications in English from 1990 to May 2015. The exclusion criteria were injury outcomes related to helmet use, helmet legislation or mountain biking; comparisons of census-based injury rates; cross-sectional studies; and letters to the editor. A modified version of the Newcastle-Ottawa Scale was used to assess study quality.
Results Fifteen articles met the inclusion and exclusion criteria. Overall, 46 different risk factors were examined. The most commonly reported risk factors were age (N = 10 studies), sex (N = 7), equipment related factors (N = 6), bicycling exposure (N = 5), bicycling purpose (N = 5), and motor vehicle (MV) collision (N = 4). The reviewed studies varied in quality; the main weaknesses were inadequate definitions of study groups, lack of control for potential confounders, and the use of self-reported data.
Conclusions While many of the studies had significant limitations, one recurring theme was that young bicyclists received more severe injuries when exposed to MV collisions. To reduce injuries in children and adolescents, we recommend separating bicyclists from MVs on the road and implementing strategies to reduce traffic speed and volume.

902 PREVALENCE AND FACTORS ASSOCIATED WITH ROAD TRAFFIC CRASH AMONG TAXI DRIVERS IN MEKELLE TOWN, NORTHERN ETHIOPIA, 2014: A CROSS SECTIONAL STUDY

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10.1136/injuryprev-2016-042156.902

Objectives The 2013 World Health Organisation Status Report on Road Safety estimated that approximately 1.24 million deaths occur annually due to road traffic crashes with most of the burden falling on low- and middle-income countries. The objective of this research is to study the prevalence of road traffic crashes in Mekelle, Tigray, Northern Ethiopia and to identify risk factors with the ultimate goal of informing prevention activities and policies.
Methods This study used a cross-sectional design to measure the prevalence and factors associated with road traffic crashes among 4-wheeled minibus (n = 130) and 3-wheeled Bajaj (n = 582) taxi drivers in Mekelle, Ethiopia. Bivariate and multivariate logistic regression were used to evaluate the association between risk factors and drivers' involvement in a road traffic crash within the 3 years prior to the survey.
Results Among the 712 taxi drivers, 26.4% (n = 188) of them reported involvement in a road traffic crash within the past 3 years. Drivers who listened to mass media had decreased likelihood of road traffic crash involvement (Adjusted odds ratio, AOR: = 0.51, 0.33–0.78), while speedy driving (AOR: = 4.57, 3.05–7.44), receipt of a prior traffic punishment (AOR: = 4.57, 2.67–7.85), and driving a mechanically faulty taxi (AOR: = 4.91, 2.81–8.61) were strongly associated with road traffic crash involvement. Receiving mobile phone calls while driving (AOR: = 1.91, 1.24–2.92) and history of alcohol use (AOR: = 1.51, 1.00–2.28) were also associated with higher odds of road traffic crash involvement.
Conclusion The results of this study show that taxi drivers in Mekelle habitually place themselves at increased risk of road traffic crashes by violating traffic laws, especially related to speedy driving, mobile phone use, and taxi maintenance. This research can be used to support reevaluation of the type, severity, and enforcement of traffic violation penalties.