ten or more medications, even after exclusion of IDU indicators from the total number of medications prescribed.

Conclusions The total number of medications and IDU indicators are associated with ADE among older people. Although IDU indicators were positively associated with ADE, they lacked to fully explain the graded association with increasing numbers of medications prescribed. Physicians, but also patients need to be aware of this increased likelihood of serious ADE by low and increasing numbers of medications prescribed.

558 EDUCATIONAL INTERVENTIONS DESIGNED TO IMPROVE MEDICATION ADMINISTRATION SAFETY

[1]Marja Härkänen, [1]Ari Voutilainen, [2]Elina Turunen, [1,2]Katri Vehviläinen-Julkunen. [1]University of Eastern Finland, Finland; [2]Kuopio University Hospital, Finland

Background Increasing the medication administration safety is vital to improving patient safety. The aim of this study is to analyse educational interventions designed to increase the medication administration skills and safety of registered nurses.

Methods A systematic review of the literature using six databases was conducted to identify intervention studies published between January 2000 and April 2015. The quality of studies was assessed using the Effective Public Health Practice Project (EPHPP) Quality Assessment Tool. The efficacy of the interventions was determined by calculating the effect sizes and conducting a meta-analysis.

Results Fourteen intervention studies were included in this systematic review. Quality was strong only in one study and moderate in another four. The interventions differed significantly from one study to the next, and the original investigators reported significant improvement in the skills and medication safety owing to the interventions. The meta-analyses, however, revealed that the effect of the intervention was strong in only four of the studies. Those interventions were the 60-minute educational intervention (PowerPoint presentation), a blended learning programme inclusive of e-learning, wall poster and informative pamphlets, and a combination of three different interventions (classroom or self-study methods). In two out of four cases, the quality of the study was weak and moderate in two cases, and only one of the effective interventions was a randomised controlled trial.

Conclusions Based on the original analysis, all the interventions reviewed had a positive impact on medication administration safety. Nonetheless, these positive outcomes do not necessarily indicate effective interventions. The most effective interventions in this review were methodologically dissimilar. Studies should be assessed for their quality and a meta-analysis performed when searching for the best, effective and highest quality educational interventions.

559 EXAMINING THE RELATIONSHIP BETWEEN EDUCATION AND ALCOHOL-ATTRIBUTABLE NON-FATAL INJURY RISK IN BRAZIL

[1]Deena El-Gabri, [1]Nicole Toomey, [1,2]João Ricardo Vissoci, [1,3]Catherine Staton. [1]Duke Global Health Institute; [2]Faculdade Ingá; [3]Duke University Medical Centre

Background In Brazil, alcohol use is a leading risk factor for injury contributing to over 8% of DALYs lost. While alcohol consumption increases with income, there is an inverse risk of alcohol-attributable mortality with socioeconomic status (SES). Education is an important measure of SES; yet its effect on risk for non-fatal injury is unclear. This project investigates education level most at risk for alcohol positive injury in Maringá, Brazil.

Methods Self-reported alcohol usage two hours prior to injury was collected during a survey on treatment-seeking behaviour following injury in Maringá, Brazil between May and September 2015. Households provided demographics, and one randomly selected household member supplied injury history. Alcohol usage prior to injury and demographics were analysed using frequencies and logistic regression. Risk ratios were calculated using primary school incomplete, the lowest risk group, as reference.

Results Of 2678 people surveyed, 797 reported injury. Only 56 (7.02%) reported alcohol use of which 85.7% were male. Of all alcohol-attributable injured patients, 3 (5.4%) did not complete primary school, 8 (14.3%) completed primary school, 12 (21.4%) completed secondary school, and 15 (26.8%) completed professional school. Those who completed primary education and professional education were at similar risk for alcohol-attributable injuries. Completing primary school (RR = 4.14, p = 0.032) and professional school (RR = 3.43, p = 0.047) had the highest risk of alcohol-induced non-fatal injury.

Conclusions Alcohol use is a major risk factor for injury and is influenced by education. While our sample size is small and only includes non-fatal injuries, it mirrors the general pattern of alcohol usage seen in Brazil. We found low and high levels of education were at highest risk for alcohol-related injury. Our data suggests an indirect dependence of education on alcohol-induced injury however this relationship requires more in depth research.

560 ALCOHOL LEVELS AND INJURY RELATED MORTALITY

Ms Aine O'Brien, Michal Molcho. School of Health Sciences, NUI Galway, Ireland

Background Limited data on injury mortality were traditionally collected using death certificates. Coroners' inquest reports offer a richer source of injury mortality data; collating information from multiple sources (including police reports, witness statements, coronial autopsy and forensic pathologist post-mortem and toxicology examinations). These reports provide information on the manner and mechanism of injury, the presence of alcohol and drugs, a detailed description of injuries sustained and a narrative of the circumstances resulting in death.

Methods This study reviewed 722 coroners' inquest investigation reports of injury related death between 2006 and 2010 in the West of Ireland, including coronial and forensic pathologist post-mortem and toxicology examination results. Alcohol levels were measured in blood and urine and included in toxicology results. This paper focuses on the presence of alcohol in various injury related fatalities.

Results Alcohol was detected in 54.2% of cases (78% male and 22% female), most commonly among 0–44 year-olds (49%). Where alcohol was present, it was most frequently at a level greater than 200 mg/100 ml. Alcohol was present in 41% of unintentional fatalities, 19% of intentional fatalities, and 40% of undetermined intent fatalities. Alcohol was detected in 40% of asphyxiated fatalities, consisting of 49.7% hanging and 41.4% of drowning fatalities. Blood alcohol levels >200 mg/100 ml were found in 39% of the drowning fatalities, while levels <20mg/100 ml were detected in 30% of the hanging fatalities.

Conclusions Alcohol is a major contributor to injury related mortality in the West of Ireland, particularly among young people, with young men especially vulnerable. It is evident that injury fatalities resulting from asphyxiation are commonly associated with alcohol, where the level of alcohol detected varies across types of injury fatality.

Suicide prevention

Post Mon 1.14

561 KEEP HIM HERE: A PROVINCIAL SUICIDE PREVENTION AWARENESS CAMPAIGN

Kathy Belton, Patti Stark, Stacy Rogan. *University of Alberta, Injury Prevention Centre (IPC), Canada*

Background Communities across Alberta recognise World Suicide Prevention Day (WSPD) with a variety of awareness and prevention activities. However, Alberta lacks a coordinated provincial approach to promote both WSPD and suicide prevention. The Injury Prevention Centre and the Alberta Suicide Prevention Network have developed a suicide prevention campaign that was implemented for its second year in 2015.
Problem In 2010, Alberta data shows that 75% of suicide deaths were men. Of these, 68% were between the ages of 30–69 years. Men are among the least likely to seek help when struggling with mental health issues and often have limited support networks. Coupled together with the negative societal perceptions about mental health and suicide, the campaign focused on the social networks of middle age men (significant others, families, friends). Key messages for the campaign are: know the signs, start the conversation and reach out. Along with the key messages, a tagline meant to emphasise the role every individual can play to support and help a man who is struggling was developed – "Keep Him Here." A series of themed printed posters and post cards, coffee sleeves, a website, infographic and a video PSA were developed.
Results For the 2015 campaign, 58 community partners requested resources (81% increase compared to 2014) and used them at pop-up coffee booths, gas stations, suicide awareness walks, restaurants, businesses, resource fairs, and interagency meetings to raise awareness and create opportunities to start conversations about suicide. The provincial launch connected with 412 commuters on their way to work.
Conclusions The Keep Him Here campaign, coordinated by IPC, has provided a mechanism to initiate a fledgling coordinated provincial effort to highlight suicide prevention and awareness to Albertans. By providing high quality, free resources and supports to partners who were able to creatively disseminate suicide prevention messages to engage communities.

562 ASSOCIATIONS OF SLEEP DISTURBANCE, DEPRESSION, PROBLEMATIC INTERNET USE WITH SUICIDE IDEATION IN YOUNG ADOLESCENTS: A FOLLOW-UP SURVEY

Yafei Tan, Liping Li. *Centre for Injury Prevention Research, Shantou University Medical College, Shantou 515041, China*

Background Suicide is a leading cause of death among adolescents. A number of studies indicate that sleep quality, mental health status and excessive Internet use are associated with suicide risk in this population, but less Longitudinal study is known to explore the associations of sleep disturbance, depression and problematic Internet use with subsequent suicide ideation among school adolescents in China. The aim of this study was to examine the associations between suicidal ideation and sleep disturbance, depression and problematic Internet use.
Methods 1700 individuals which covered the school-aged adolescents from southeastern Chinese areas with self-administered questionnaires were screened in 2012, and a follow-up survey was conducted in June 2015. Information was collected on sociodemographics and suicide ideation, planning and attempts in the past year, sleep quality, mental health status and problematic Internet use were separately assessed with PSQI, CESD-10 and IAT. Multivariate logistic regression analyses, controlling for confounding factors, were conducted to explore the associations of sleep quality, depression, problematic Internet use with suicide ideation.
Results Among the participants, 15.5% of adolescents had the suicide ideation in past year. After controlling for baseline suicide and other confounding factors, adolescents with sleep disturbance in 2012 had a higher tendency to subsequent suicide ideation in 2015 compared with those who had no sleep disturbance (OR: 5.11; 95% CI: 2.46–10.64). Suicidal ideation was highly associated with psychiatric disorders such as depression (OR: 3.57; 95% CI: 1.45–8.22), problematic Internet use also significantly predicted suicide ideation in 2015 (OR: 2.62; 95% CI: 1.26–5.45).
Conclusions Preventing and mitigating adolescents' sleep disturbance, depression and controlling Internet use reasonably have the potentials to reduce suicide occurrence. Among adolescents already exposed to adversities, effective psychological intervening services which may be against future suicide behaviours, should be formulated according to the different needs of each individual. We also suggest that more consideration from parents and teachers should be given to young adolescents to support their sleep quality and good mental health status to reduce the potential risk factors of increased suicide rates.

563 MORTALITY TREND BY SUICIDE IN MEXICO, 1979–2012

Berenice Martínez Melendres, Ana Cecilia Méndez Magaña, Ma del Carmen Rodríguez Vega. *University of Guadalajara*

Background Suicide at any age is a Public Health problem. The last 50 years, the frequency of this problem has increased worldwide, especially among adolescents. In 2005, WHO developed a list of suicide mortality rate from 101 countries, among which Mexico has the 79th position (4.0/100,000). The objective of this study was to analyse the mortality trend by suicide in Mexico from 1979 to 2012.
Methods This study was conducted from national databases of 1979–2012, from which analysed only the codes E950 to E959 and X60 to X84 of the 9th and 10th International Classification of Diseases. From these codes, the variables analysed were age, sex, year of register and place of residence. In the statistical analysis, we calculated mortality rates and standardised mortality rates. The standardised mortality rate was estimated from the