

**Results** Although inequalities in a healthy lifestyle were found among men and women for both indicators, variations in their direction and magnitude for incident disease risks occurred. Diabetes incidence was inversely associated with both indicators in multivariate models, but adjustment for Body mass index substantially attenuated the associations. Middle-educated women had a lower risk for myocardial infarction (HR 0.39, 0.18–0.84), but a higher risk for stroke (HR 2.03, 1.07–3.83), in fully-adjusted models. Protective effects against cancer were shown for semiprofessional men and unskilled women, but not for education. Also the results of the literature search showed that different socioeconomic indicators appeared to vary in their associations to chronic disease risk.

**Conclusions** Educational level and occupational social class varied in their influence on incident chronic diseases, but are less important predictors for disease risk in the EPIC-Potsdam study.

### P2-517 SOCIOECONOMIC STATUS (SES) RELATED TO BONE PROPERTIES IN CANADIAN ADOLESCENT FEMALES?

doi:10.1136/jech.2011.142976m.44

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**Introduction** Osteoporosis is a bone condition characterised by low bone mass and increased susceptibility to fractures in older adults, particularly females. Peak bone mass (PBM) is accrued by age twenty in females. It is imperative adequate PBM be acquired in adolescent females to minimise future risk for osteoporosis. There is limited literature on the relationship between SES as a risk factor and bone properties in adolescent females.

**Methods** In a cross-sectional study of Canadian adolescent females (n=412) from six randomly selected schools in Southern Ontario, multivariable regression analyses were used to assess the association between aggregate SES indices and bone speed of sound (SOS) in a multilevel model, participants nested in schools. Bone SOS was measured by transaxial quantitative ultrasound at the distal radius and mid-tibia. SES was determined by matching residential address for each participant with Statistics Canada 2006 Census data for their dissemination area.

**Results** Mean age was 15.7±1.1 years. Multilevel analysis found a significant difference in SOS among schools at both radial and tibial sites (p<0.001). Multivariable regression analysis indicated significant positive relationships for median family income (p=0.036) and median household income (p=0.017) with tibial SOS adjusted for grade, weight, body mass index, smoking and alcohol use. Further analysis of average family income (p=0.035) and average household income (p=0.017) also indicated significant positive relationships with tibial SOS.

**Conclusion** These data suggest school and SES at census aggregate variable level are important predictors for bone SOS in female adolescents, school appearing to dominate SES variables.

### P2-518 SORGHUM CONSUMPTION MODIFIES THE EFFECT OF FLUORIDE ON DENTAL FLUOROSIS IN INDIA

doi:10.1136/jech.2011.142976m.45

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**Background** Dental fluorosis is a major public health problem in 17 states of India. Earlier studies reported that sorghum {a type of millet, (jowar)} consumption interacts with fluoride in the body and enhances fluorosis.

**Objectives** This study was carried out to explore the potential association between sorghum consumption and severity of dental fluorosis.

**Methods** A community based case control study was carried out in villages having different fluoride levels (high, medium and low) in drinking water in Davangere, India. 352 school Children (12–15 years, male 58 %) with severe grades of dental fluorosis classified by Thylstrup & Fejerskov Index (scores 4–9) were selected as cases. 428 school children (12–15 years, male 48.8%) with no dental fluorosis were selected randomly from the same area as controls. Exposure ascertainment of jowar consumption was done by 24-h diet recall and food frequency questionnaire. Logistic regression analysis was done using SPSS version 17.

**Results** Children who consumed jowar had 2.67 times more chance of getting severe dental fluorosis compared to those who did not (OR 2.67, CI 1.98 to 3.62). The ORs for jowar consumption and dental fluorosis were 1.59, 3.18 and 3.76 at each stratum, for low, medium and high fluoride villages respectively. The Mantel-Haenszel OR was 2.58 (p value=0.001) which was similar to crude OR. The test of homogeneity (Breslow test) showed p value=0.05.

**Conclusions** Sorghum consumption modifies the effect of fluoride in occurrence of severity of dental fluorosis in this population.

### P2-519 EPIDEMIOLOGY OF INJURY IN RURAL PONDICHERRY, INDIA

doi:10.1136/jech.2011.142976m.46

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**Objective** To find out the prevalence of “all” injuries, its nature, outcome and sources of treatment among rural population of Pondicherry.

**Methods** It was a triangulated study of quantitative (survey) and qualitative (Focus Group Discussion, FGD) methods. The trained second year medical undergraduate students paid house visits to all houses in five feasibly selected villages of our field practice area. The students interviewed the housewife and obtained information for all injuries for each family member in last one year and its sources of treatment. We could obtain information for 1613 (96.7%) households. Post-survey, FGDs were undertaken to explore the various traditional treatments for the common injuries. The data were entered and analysed using Epi\_info 6.04d software package.

**Results** Overall, the prevalence of all injury among all age groups was 30.6% in last one year. Injuries were significantly more after 18 years of age and among men (p<0.001). About 99.2% injuries reported were accidental and majority (58.2%) went to government doctor for treatment. Most common causes of injuries were fall on the ground from height or due to slip (7.4%), road traffic accidents (5.6%), agriculture related injuries (5%) and bites by scorpion/insects/snakes/dogs (4.1%). FGDs explored some potentially harmful traditional remedial measures at village level.

**Conclusions** Considering the high prevalence of all injuries related to road traffic accidents, fall from height and agriculture work related injuries across all age groups, especially among men and some potentially harmful traditional treatments, an intervention in the form of targeted injury prevention program is required.

### P2-520 INJURY- RELATED MORTALITY AMONG WOMEN AGED 12–49 YEARS: DEMOGRAPHIC AND HEALTH SURVEY (DHS) PAKISTAN

doi:10.1136/jech.2011.142976m.47

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**Introduction** Beyond maternal health, there are other issues of women health like injury prevention that adequately need to be

recognised. The objective is to look at the causes of injury mortality among Pakistani women.

**Methods** DHS in Pakistan was conducted from September 2006 till February 2007. The survey adopted a two-stage, stratified, random sample design. It included 95 000 households out of which a total of 1125 female deaths (12–49 years) were identified since January 2003. Verbal Autopsy questionnaires were successfully completed for 1062 females. All of the causes of death were coded according to the International Classification of Diseases, 10th version (ICD-10).

**Result** There were 66 (6%) deaths reported in PDHS 2006–2007 due to injuries. Of the 65 females, 47 had died due to RTIs, 9 due to burns/corrosions and 9 due to violence. These injuries were more common in younger women than older women affecting women between 12 and 35 years old (75%). Injury mortality was found to be almost twice as common in rural women compared to urban women (65% vs 35%) especially in case of RTI (68% in rural vs 32% in urban). Women with burns and violence were mostly home bound (burns=100% and violence=89%) while nearly 38% of women died due to RTI were working. Most women with injuries were married (61%) and majority of their husbands had attended school as well (RTI=56.7%, burns=80% and violence=66.7%).

**Conclusion** Injuries are common cause of deaths in younger Pakistani women.

#### P2-521 ASSESSMENT OF AVAILABLE INFRASTRUCTURE FOR MAINTENANCE OF HYGIENE IN POULTRY BUTCHERS' SHOPS FOR HEALTHY MEAT PRODUCTION IN BIHAR, INDIA

doi:10.1136/jech.2011.142976m.48

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**Introduction** Infrastructure of a butcher shop is important in maintaining meat hygiene and preventing the meat as vehicle for zoonotic and infectious diseases. The objective of the study was to assess the infrastructure available to poultry butchers for maintenance of meat hygiene.

**Methods** Two poultry meat shops were randomly selected from each of the 57 wards of Patna city. Their infrastructural details were obtained by observing the shop and activities involved for one hour by principal investigator.

**Results** Among total 113 shops studied (One is missing), 35 (31%) shops were in open space. 106 (93.8%) shops were located in market areas. Only 30 (26.5%) shops have availability of adequate quantity of potable water supply. Only one shop have hot water supply. 9 (8%) facilities have disinfectant and 20 (17.7%) of them have soaps in the shop at the time of study. 71 (68%) of shops have adequate light supply and detergent been presented in their shops. Only 61 (54%) and 26 (23%) of butchers have given opinion to be cleanliness of setting and equipments for hygienic meat production respectively.

**Conclusion** Infrastructure available for poultry butchering was very much inadequate in most of the shops. There is imminent need of provision of strict regulation for maintaining good infrastructure and education to butchers about hygienic meat production to protect all meat borne diseases and associated occupational hazards.

#### P2-522 SOIL TRANSMITTED HELMINTH INFECTIONS IN PRESCHOOL AND SCHOOL AGED CHILDREN IN EKITI AND ILE-IFE, SOUTHWEST NIGERIA

doi:10.1136/jech.2011.142976m.49

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**Introduction** Soil transmitted helminths are among the neglected tropical diseases prevalent in developing countries, and children are

the most vulnerable. The objective of the cross-sectional study was to determine the prevalence and intensity of soil-transmitted helminths (STHs) in preschool and school aged children in Ile-Ife and Ekiti.

**Methods** Faecal samples (511) were collected between May and July 2010 and processed using modified Kato - katz technique.

**Results** The overall prevalence of STH infection was 29.2%. *Ascaris lumbricoides* (28.4%) was the most prevalent, and were observed; 136 (26.6%) either alone or together with *Trichuris trichiura* and/or hookworm infections. Prevalences of *A lumbricoides* ranged from 6.7% to 47.5%, *T trichiura* from 1.3 to 4.9% and hookworms from 0.5 to 4.9% in the four schools. The prevalences of *A lumbricoides*, *T trichiura* and hookworms were 28.4, 3.1 and 1.8% respectively. Intensity determined by egg count per gram of faeces (epg)  $\pm$  SEM were  $939.84 \pm 122.62$  for *A lumbricoides*,  $0.03 \pm 0.01$  for *T trichiura* and  $0.02 \pm 0.01$  for hookworm. There was no significant difference between sex and prevalence of *A lumbricoides*. The prevalence of *A lumbricoides* rose from 8.1% in children aged 2–3 years and reached the peak (75.0%) in children 12 years and above.

**Conclusion** The findings from this study showed that STH infections are endemic in the schools investigated and urgent interventions involving both preschool and school children such as deworming and health education are recommended.

#### P2-523 RESIDENTIAL SEGREGATION AND MENTAL HEALTH IN A POST CONFLICT SOCIETY

doi:10.1136/jech.2011.142976m.50

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**Introduction** Research shows conflict and racial/ethnic segregation leads to poor health. Northern Ireland emerging from over 30 years of civil disturbance but remains a society markedly segregated along religious lines with >70% population living in areas comprising >70% one religion. This study aims to determine if segregation is an independent predictor of psychological morbidity.

**Methods** A geographical information system was used to produce a dissimilarity index for the 890 super-output areas (SOA) in Northern Ireland (average pop. 1900), modelling residential segregation by measuring dissimilarity within a SOA compared to its surrounding SOAs. Population was divided into equally proportioned segregation deciles. Psychological morbidity was assessed using uptake of antidepressant and anxiolytic medication data from a population-wide electronic prescribing system over 14 months (2009/10). Multiple logistic regression of ~1.2 million non-institutionalised patients aged 18–74 was executed, with adjustment for demographic factors, residential social fragmentation, deprivation, and multi-level modelling to adjust for variations in prescribing at general practice level.

**Results** Almost 20% patients were prescribed antidepressant and/or anxiolytic medication. Likelihood of antidepressant and anxiolytic use was higher in segregated than non-segregated areas (OR=1.45 95% CI 1.35 to 1.56 and OR=1.49 95% CI 1.32 to 1.68 respectively) after adjusting for age and gender. Further adjustment for fragmentation and income deprivation eliminated the relationship (OR=1.02 95% CI 0.96 to 1.08 and OR=1.00 95% CI 0.90 to 1.10 respectively).

**Conclusion** Segregation is related to poor mental health but only because the people living in the more segregated areas are economically disadvantaged. Further analysis is being undertaken to determine if this holds true for other measures of residential polarisation.