

**P1-439 EFFECT OF REGULAR EXERCISE ON THE NITRIC OXIDE LEVELS IN SALIVA**

doi:10.1136/jech.2011.142976g.29

<sup>1</sup>D H Han,\* <sup>1</sup>H S Shin, <sup>1</sup>M S Kim, <sup>2</sup>W Kim, <sup>1</sup>H M Kim, <sup>1</sup>H D Kim. <sup>1</sup>School of Dentistry, Seoul National University, Seoul, Republic of Korea; <sup>2</sup>Health Care System, Gangnam Center, Seoul National University Hospital, Seoul, Republic of Korea

**Introduction** Nitric oxide (NO) regulates blood flow and both muscle contraction and metabolism during exercise. The plasma levels of NO increase after exercise. However, studies that determined the association between the levels of salivary NO and regular exercise are also lacking. The aim of this study was to assess the relationship of the levels of salivary NO with physical activity among Korean elderly.

**Methods** 176 subjects aged 48–84 years old were cross-sectionally surveyed. All participants underwent oral and general examination. Age, gender, education level, regular exercise, smoking were evaluated through interview. Periodontal health status was evaluated by clinical attachment loss over 6 mm (CAL6 mm) for six points of 12 index teeth (total 72 sites). The number of CAL6 mm sites and the number of teeth were counted. Fasting plasma glucose level and blood pressure were measured. Unstimulated saliva was collected for 10 min. Salivary NO was determined by the Griess reagent. ANCOVA and Multiple linear regression analyses were applied.

**Results** After correcting for differences in for age, gender, the number of CAL6 mm sites, the number of teeth, pH in saliva, salivary flow rate, fasting plasma glucose level, systolic blood pressure and diastolic blood pressure, those who exercise everyday had the lowest salivary NO level (66.9 umol/l vs 104.3 umol/l and 121.3 umol/l,  $p=0.082$ ), which is not significant. Salivary NO levels had a dose-effect relationship with the frequency of regular exercise ( $\beta=-13.5$ ,  $p=0.022$ ).

**Conclusion** The results of the present study suggest that regular exercise may induce lower levels of NO.

**P1-440 LATENT CLASS ANALYSIS OF STUDENT SUBSTANCE USE**

doi:10.1136/jech.2011.142976g.30

<sup>1</sup>W J Harrison,\* <sup>2</sup>C Montana, <sup>2</sup>B M Bewick, <sup>1</sup>M S Gilthorpe, <sup>1,2</sup>R M West. <sup>1</sup>Centre for Epidemiology & Biostatistics, University of Leeds, Leeds, UK; <sup>2</sup>Leeds Institute of Health Sciences, University of Leeds, Leeds, UK

**Introduction** Data were collected from a student population to investigate how substance use is related to perceived substance use of friends and the wider University population, during the period February to May 2009. The outcome measure was use of any of nine substances in the previous 3 months, giving differing patterns of use (trajectories) for each student. 4309 students were available for analysis.

**Methods** We used latent class analysis (LCA) to classify the students into trajectory subgroups and investigated how these trajectories were associated with covariates of interest. The emerging classes contained types of students rather than all individuals. Model fit was explored comparing log-likelihood statistics with consideration of model parsimony.

**Results** The model with two latent classes was preferred, containing one “low risk” class (3313, 90.6%) and one “high risk” class (344, 9.4%). Students in the “high risk” class perceived a higher proportion of others to be using more than the median amount of each substance, and had a higher mean knowledge score on a substance use quiz.

**Conclusion** The latent class structure was informative, with students well differentiated into the two substance use classes. We have thus identified factors that are associated with heavier

substance use. While educational campaigns that employ “scare tactics” are unlikely to be successful, a campaign highlighting the disparity between perceived and measured levels of risk could be developed and be targeted towards the different classes of substance use seen here.

**P1-441 ESTIMATING THE FINANCIAL COST OF MURDER IN GLASGOW: THE MURDER CAPITAL OF WESTERN EUROPE**

doi:10.1136/jech.2011.142976g.31

<sup>1</sup>M Harvey,\* <sup>2</sup>D Williams, <sup>2</sup>P Donnelly. <sup>1</sup>University of Minnesota, Minnesota, USA; <sup>2</sup>University of St Andrews, St Andrews, Fife, UK

**Introduction** Compared to the rest of the UK, Scotland faces elevated levels of interpersonal violence. A large proportion of the violence is focused in Glasgow, which has acquired the label, Murder Capital of Western Europe. While violence is a leading burden on health, it also has a considerable financial impact. Until now, the cost of violence was based on dated estimates from England to Wales. This study estimates the financial cost of murder in Glasgow.

**Method** Data were supplied by the Scottish Violence Reduction Unit, on all murders in Glasgow between 2002 and 2009. The costing analysis considered four gross cost categories: lost output due to homicide (human capital), incarceration costs, investigation costs, and costs of physical and emotional impact.

**Results** Findings highlight a general reduction in the number of homicides between 2002 (50) and 2009 (29) with a peak in 2004 (62). Moreover, while overall costs have generally declined, the average cost of murder has increased between 2002 (£69.9M average £1.39M) and 2009 (£46.39M, average £1.60M). The estimated total financial burden for murders committed in the 8-year period was in excess of £523 Million.

**Conclusion** The study suggests that previous figures have grossly underestimated the financial cost of murder in Glasgow and that the new estimates provide a more representative indication of the financial burden in Scotland. Moreover, the reducing murder rate coincides with the implementation of major violence reduction initiatives in the City. The findings therefore offer additional support for continued investment in Public Health initiatives to reduce violence in Scotland.

**P1-442 ANTENATAL MATERNAL FACTORS AND MILD COGNITIVE LIMITATIONS IN THE OFFSPRING**

doi:10.1136/jech.2011.142976g.32

<sup>1,2</sup>U Heikura,\* <sup>3</sup>A L Hartikainen, <sup>1</sup>T Norström, <sup>4,5</sup>A Pouta, <sup>1,6</sup>A Taanila, <sup>1,7</sup>M R Järvelin. <sup>1</sup>Institute of Health Sciences, University of Oulu, Oulu, Finland; <sup>2</sup>Verve, Oulu, Finland; <sup>3</sup>Department of Clinical Sciences, Obstetrics and Gynecology, University of Oulu, Oulu, Finland; <sup>4</sup>National Institute for Health and Welfare, Oulu, Finland; <sup>5</sup>Department of Obstetrics and Gynecology, University Hospital, Oulu, Finland; <sup>6</sup>Unit of General Practice, University Hospital, Oulu, Finland; <sup>7</sup>Department of Epidemiology and Biostatistics, Imperial College London, School of Public Health, London, UK

**Introduction** There is a lack of epidemiological studies on early social and biological environmental factors, which may have an effect on development during childhood. The aim of this life-course cohort study is to explore the association between maternal gestational factors, by focusing on hypertensive disorders, and mild cognitive limitations (MCL, intelligence quotient, IQ 50–85) in the offspring. **Study population and Methods** An 11.5 year follow-up study of the Northern Finland Birth Cohort 1986 (NFBC 1986). The study included 8847 singleton children, whose IQ was not below 50. 198 children had MCL. Maternal gestational hypertension (GH) was defined as de novo hypertension arising after mid-pregnancy in

previously normotensive mother (systolic blood pressure of  $\geq 140$  mm Hg, diastolic of  $\geq 90$  mm Hg). Data were collected from maternal healthcare centers to antenatal clinic records. Assessment of the child's intellectual level was based on psychometric test results collected from multiple sources.

**Results** In multivariate analyses, maternal GH (OR 2.37, 95% CI 1.44 to 3.89) and pre-pregnancy obesity (OR 2.20, 95% CI 1.24 to 3.89) were independent risk factors associated with MCL in addition to high parity, familial socio-economic status lower than professional and small birth weight for gestational age of the newborn.

**Conclusions** Besides factors indicating adverse maternal health and socio-economic status during pregnancy, also maternal GH should be considered as one of the early risk factors, which may predispose to impaired cognitive development in childhood. However, replication study is needed for delineating the association between maternal GH and MCL in the offspring.

**P1-443** **REPRODUCTIVE TRACT INFECTIONS (RTI) AMONG LOW SOCIOECONOMIC COMMUNITY WOMEN IN COLOMBO, SRI LANKA**

doi:10.1136/jech.2011.142976g.33

<sup>1</sup>S Herath,\* <sup>2</sup>P Fonseka, <sup>1</sup>S Samarakoon. <sup>1</sup>National STD/AIDS Control Programme, Colombo, Sri Lanka; <sup>2</sup>Dept of Community Medicine, Medical Faculty, University of Sri Jayawardenapura, Colombo, Sri Lanka

**Introduction** Community prevalence data on RTI are sparse and it is believed to be high among low socio economic communities. This study was carried out to describe the epidemiological characteristics of selected RTI among the reproductive age women living in low socioeconomic communities within the Colombo Municipal Council (CMC).

**Methodology** A representative sample of seven hundred and seventy women was selected using a multistage sampling procedure from fifteen randomly selected Public Health Midwives (PHMM) areas from five Municipal Districts. An interviewer administered questionnaire was used to obtain data on sociodemographic factors, economic factors, and behavioural correlates. Clinical examination of women was carried out at the Primary HealthCare clinics (PHC) of the CMC. Biological specimens were collected for laboratory diagnosis.

**Results** Ninety-six per cent (96%) of women participated in the study. Endogenous infections and candidiasis were relatively common being (BV 8.6%, 95% CI 6.6 to 10.6, and 6.8 % 95% CI 5 to 8.6) respectively. Sexually Transmitted Infections (STI) were infrequent. GC -0%, CT 0.6% (95% CI 0.04 to 1.16), and TV 0.6% (95% CI 0.04 to 1.16). Of the symptom related correlates investigated, women's complaints of itching of vulva ( $p=0.014$ , OR=3.198, 95% CI 1.260 to 8.114) and vaginal discharge ( $p=0.026$ , OR=2.611, 95% CI 1.121 to 6.083) were statistically significantly associated with candidiasis in univariate analysis. However, this finding was not statistically significant in the multivariate analysis.

**Conclusion** Unlike the common believe, this community based study demonstrated a low prevalence of RTI, among the urban slum dwellers in CMC.

**P1-444** **LIVING ARRANGEMENTS ARE A FACTOR OF JAPANESE LONGEVITY? AGES COHORT STUDY**

doi:10.1136/jech.2011.142976g.34

<sup>1</sup>H Hirai,\* <sup>1</sup>K Kondo, <sup>2</sup>T Ojima, <sup>3</sup>A Hata. <sup>1</sup>Nihon Fukushi University, Nagoya, Japan; <sup>2</sup>Hamamatsu University school of medicine, Hamamatsu, Japan; <sup>3</sup>Chiba University, Chiba, Japan

**Introduction** The average life expectancy of the Japanese is the highest in the world. What makes Japan different from other

countries? According to International Comparison Survey in 2005, one of characteristics of Japanese elderly was low proportion of those who live alone (11.0% in Japan, 35.4% in USA, 38.6% in France). This study aims to examine relationship between living arrangement and healthy life expectancy among the elderly in Japan.

**Methods** This study is based on data from the Aichi Gerontological Evaluation Study (AGES) Project. We analysed 13 295 persons aged 65 or older who were functionally independent at baseline. The endpoint was loss of health (death or functional decline) during follow-up period of 48 months. Independent variables were living arrangements, age, years of current address, income, diseases, body mass index, smoking, drinking, walking, and depression. Cox regression was used to calculate the HR. Analyses were stratified by gender.

**Result** Cox regression showed significant higher HR of loss of health for living alone (HR=1.54 for men, HR=1.41 for women) compared to those who living with spouse and children after controlling for age. After controlling for other variables, significant HR were shown for living alone (HR=1.32 for men, HR=1.31 for women).

**Conclusions** Living arrangements were significantly related to loss of health. The norm of parent-child co-residence possibly has contributed to Japanese longevity up to the present. These results suggest that the recent increasing trend in number of the elderly living alone can result ruin health of Japanese in the future.

**P1-445** **CONNECTING SPACES: THE FUNCTION OF PLACE FOR NEIGHBOURHOOD PHYSICAL ACTIVITY**

doi:10.1136/jech.2011.142976g.35

V Ivory, C Woodham, T Blakely.\* University of Otago, Wellington, New Zealand

**Introduction** This study examined the relationship between neighbourhoods and physical activity in New Zealand. We investigated the role of local public places in the lives of residents and how they impact on physical activity.

**Methods** Four case study neighbourhoods were selected varying by deprivation and the level of physical activity resources. Key informant interviews with 21 local government and health promotion practitioners and fourteen focus groups were conducted across the four neighbourhoods with adult residents, varying by exposure to the neighbourhood, gender and ethnicity (Māori and non-Māori).

**Results** A consistent theme across neighbourhoods was that local destinations and public places were seen as opportunities to be social—to connect, interact and meet people. While not everyone wanted to be active with or around others, many of the participants that enjoyed being active within their neighbourhood were more motivated to do so as part of group, or as family/whanāu, and valued being active in places where other people were present, as opposed to being alone. Having quality, multi-use, public places nearby made it easier for residents to physically active.

**Conclusion** The results of this study highlight the perceived importance of social connection and social interaction for physical activity levels, rather than health reasons. Whether people use public places for physical activity may be dependent on how well those places allow for interaction and collective activity. These findings are important for urban planners, local government and health practitioners who wish to design spaces that facilitate and promote physical activity.

**P1-446** **COMPARISON OF POSTMENOPAUSAL ENDOGENOUS SEX HORMONES AMONG JAPANESE, JAPANESE BRAZILIANS, AND NON-JAPANESE BRAZILIANS**

doi:10.1136/jech.2011.142976g.36

<sup>1</sup>M Iwasaki,\* <sup>2</sup>Y Kasuga, <sup>3</sup>G Hamada, <sup>1</sup>S Tsugane. <sup>1</sup>Epidemiology and Prevention Division, Research Center for Cancer Prevention and Screening, National Cancer