

**SP4-29 NEIGHBOURHOOD-BASED DIFFERENCES IN PHYSICAL ACTIVITY: A DEPRIVED URBAN NEIGHBOURHOOD PROGRAM APPROACH (FITNESS CENTERS—FCS) FOR REDUCING SOCIAL INEQUALITIES IN CHRONIC DISEASES: PRELIMINARY COMPARISONS**

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**Introduction** Intervention in vulnerable groups might produce risk factors modification. This study is the baseline description of a health impact study of the implementation of FCs, a community citywide intervention.

**Methods** A natural step-wedge design compared areas where the intervention were implemented. FCs are community centers located in vulnerable areas of the city, built for fitness classes, staffed by municipality instructors. Individual indicators came from a multi-stage (census tracts-CT, households, and residents) survey, stratified by distance street buffers created around the planned point interventions, intersected with the CT, giving probabilistic ranging from 0.1 to 0.012 as the distance increase from the site intervention. Demographics, social determinants, health and lifestyles (including Physical activity-PA: >150 min/week), social support for PA (PASS) were collected. PA and co-variables were compared across one area that received earlier intervention with all others surveyed, using multiple Poisson regression models.

**Results** Of the 4048 adults, 54.1% were female; mean age 41.2 years; 16.1% reported PA. Comparing estimates across areas with and without FC, age, female gender, smoking and good self-perception of health were inversely related to PA while PASS, schooling and income were directly associated to PA in areas without FC. For those 17.6% living in the FC catchment area the only associated factor with PA was report of eating fruits 5 times/week; all other factors were no longer associated with PA.

**Conclusion** Tailored to address health disparities for chronic diseases, interventions in high risk urban environment might narrow health inequality for some indicators of physical activity.

**SP4-30 GLOBAL NUTRITIONAL BURDEN: A MAJOR METHODOLOGICAL CHALLENGE FOR NUTRITIONAL EPIDEMIOLOGICAL RESEARCH**

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Since the last 20–30 years we observe a massive increase in the consumption of industrial foods. This rapid nutritional transition observed first in Western countries is now affecting medium and low income countries and vulnerable groups (eg, children), with an accelerated phenomena. Although the consumption of processed foods (incl. the Western-type diet) is hypothesised to be associated with the rapid increase of chronic diseases worldwide, the lack of specifically designed epidemiological studies is the main reason given by the WCRF for its non-conclusive report. A series of methodological issues related to the traditional dietary methodologies used in epidemiology, and the difficulty to estimate and monitor the consumption of processed foods are possible underlying explanations will be presented.

**Results** From recent studies on the contribution of (highly) industrially processed foods to the diet of a large population sample of the EPIC study (27 centres, 35–75 years, N=~37 000), using a unique set of detailed and standardised 24-h dietary recalls (EPIC-soft program) and biomarkers of processed foods (trans fatty acid,

acrylamide) will be used to illustrate our talk. In addition, the EPIC-soft web-based Methodological Platform—centralised platform at IARC developed to use, maintain and disseminate the standardised and validated EPIC-Soft Methodology for international epidemiological and monitoring surveys—will be used as an example of a longstanding international effort (EPIC, EFCOSUM, EFCOVAL, IDAMES, PANCAKE, EFSA) to improve dietary methodologies and contribute to a better estimation and monitoring of dietary exposure during this major nutritional transition phase and formulate targeted recommendations.

**SP4-31 EFFECT OF FIRST AID EDUCATION ON FIRST AID KNOWLEDGE AND SKILLS OF COMMERCIAL DRIVERS IN NIGERIA**

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**Introduction** The study was conducted to determine the effect of first aid education on the capacity of commercial drivers in Ibadan, Nigeria to provide first aid for accident victims.

**Methods** A before-and-after study was conducted among 128 drivers- 62 intervention and 66 controls selected by multi-stage sampling. The drivers' first aid knowledge and skills were assessed at baseline, immediately and 3 months post- intervention. The intervention consisted of a 2-day training on first aid while controls were given health education on HIV/AIDS. First aid knowledge scores were generated giving a maximum aggregate score of 24 for each respondent while minimum and maximum obtainable scores for first aid skills were 0 and 25 respectively.

**Results** Mean first aid knowledge scores for intervention drivers were 11.8 (±2.9), 13.9 (±2.7) and 14.4 (±2.2) at baseline, immediate and 3-month post intervention. Corresponding scores for the control group were 11.6 (±3.1), 9.4 (±3.7) and 11.2 (±3.7). Mean first aid skill scores for intervention drivers were 4.4 (±0.9), 20.2 (±2.1) and 18.1 (±4.2). Scores for control drivers were 4.1 (±1.1), 4.1 (±1.2) and 5.1 (±2.3) respectively. Repeated measure analysis of variance showed significant differences in first aid knowledge and skills within the intervention group over the three phases of the study (p<0.001). Scores for controls remained about the same.

**Conclusion** The first aid education led to significant improvement in first aid knowledge and skills of intervention drivers confirming that drivers can be trained as lay first responders in settings where formal emergency medical services for crash victims are poorly developed.

**SP4-32 HEALTH AND SUSTAINABILITY: INTERNATIONAL ECOLOGICAL STUDY OF CARBON DIOXIDE EMISSIONS AND LIFE EXPECTANCY**

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**Introduction** The nature of the relationship between country-level energy consumption and life expectancy has not been examined systematically.

**Methods** Ecological study of carbon dioxide (CO<sub>2</sub>) emissions per capita and life expectancy at birth using the maximum available sample of countries.

**Results** Among 155 countries CO<sub>2</sub> emissions per capita were in the range 0–30 metric tons per year. Life expectancy at birth rose sharply between 0 and 5 t of emissions from 42 (Afghanistan) to 78 (Costa Rica, Chile). Spearman's rank correlation was 0.78,

$p < 0.0001$ . At higher levels of CO<sub>2</sub> emissions there was no association with life expectancy. Among 30 countries with high life expectancy ( $>75$  years) and relatively low CO<sub>2</sub>pc emissions ( $<10$  t) with a population  $>0.5$  M there was a modest association overall between CO<sub>2</sub> emissions and life expectancy (rank correlation 0.51,  $p=0.004$ ). Within this group, life expectancy ranged between 75.5 (Argentina, annual emissions 4.6 t) and 82.5 years (Switzerland, 5.1 t). Using the 2008 World Bank income classification, per capita emissions were associated with life expectancy among low and low middle income countries, but not in high middle or high income countries.

**Conclusions** Life expectancy, a surrogate indicator of population health, is unrelated to energy consumption above a low level. It appears, looking to the future, that the environmental sustainability and global health development agendas are compatible in practice.

#### SP4-33 RISK FACTORS FOR LOW BIRTH WEIGHT IN THE MUNICIPALITIES OF JUAZEIRO AND PETROLINA (BRAZIL): A CASE-CONTROL STUDY

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The aim of this study was to evaluate the association between maternal characteristics and low birth weight (LBW). An exploratory case-control investigation was conducted in two hospital that provide attendance through SUS in neighbouring municipalities: Petrolina (Pernambuco) and Juazeiro (Bahia), Brazil. The sample consisted of 588 puerperae, of whom 136 were in the case group (women with low-weight children) and 452 in the control group (mothers of normal-weight children). In the data analysis procedures, the distribution of the variables was evaluated using the  $\chi^2$  test at the significance level of 5%. This study was approved by the Research Ethics Committee of UEFS (CAAE: 0151.0.0590.000-08). The results demonstrated that LBW was associated with the mother's occupation during pregnancy ( $p=0.04$ ), father's schooling level ( $p=0.01$ ), mother's race/colour ( $p=0.00$ ), municipality of origin ( $p=0.01$ ), mother's age ( $p=0.00$ ), number of prenatal consultations ( $p=0.00$ ), presence of pregnancy card at time of delivery ( $p=0.00$ ), number of consultations with a medical professional ( $p=0.04$ ), number of pregnancies ( $p=0.01$ ) and gestational age ( $p=0.00$ ). However, there were no statistically significant associations with the other variables. The findings reaffirm that having quality prenatal care is of utmost importance, with greater efforts made towards identifying factors that are associated with LBW, with a view to reducing the occurrence of this undesirable gestational outcome.

#### SP4-34 FACTORS ASSOCIATED WITH QUALIFIED MEDICAL CARE FOR SICK NEONATES AMONG URBAN POOR IN LUCKNOW, NORTHERN INDIA

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**Introduction** This study assessed factors associated with qualified medical care-seeking (QMC) for sick neonates among urban poor.

**Methods** The study was conducted at an urban Reproductive and Child Health (RCH) center and free facility of the District hospital. Neonates were enrolled within 48 h of birth and were followed-up once at 6 weeks  $\pm$  15 days at the outpatients' clinic of the respective hospitals or at home.

**Results** 510 neonates were enrolled and 481 (94.4%) were followed-up. Parents of 50.3% (242/481) neonates reported at least one sign of

illness and 80.1% (196/242) of these went to at least one type of medical provider, while 50.8% (123/242) went to at least one qualified medical provider. 6.6% (16/242) went to traditional/spiritual healers. Mothers who delivered at RCH center ( $p<0.001$ ), those with no schooling ( $p=0.02$ ), those with parity  $>4$  ( $p=0.007$ ), those who made  $<3$  ANC visits ( $p=0.002$ ) and families with uneducated fathers ( $p=0.02$ ) and income  $<2500$  Indian Rupees ( $p<0.001$ ) were less likely to seek QMC than their counterparts. In Multiple Logistic Regression Model, delivery at RCH center, family income  $<2500$  INR and fewer ( $<3$ ) ANC visits significantly predicted no QMC for sick neonates.

**Conclusion** Since more than half of the neonates have morbidity, QMC for sick newborns should be promoted in urban Lucknow. Interventions promoting QMC for sick newborns should especially focus on uneducated mothers & fathers, mothers who make fewer ANC visits, mothers with high parity, those belonging to lower income groups and those delivering at the lower tier public health facilities.

#### SP4-35 "SENSE OF INJUSTICE" A MECHANISM TO EXPLAIN SOCIAL INEQUALITIES IN HEALTH

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**Background** There is an increasing interest in the literature to examine plausible mechanisms explaining social inequalities in health above and beyond income. We propose "sense of injustice", coined by Cahn, a sociologist, in 1950, and denoting a cognitive process rather than a psychological individual reaction to unjust social and economic structures in society while reckoning that people regard themselves in relation to each other, as a community.

**Methods** The data used are from the Ras Beirut well-being survey designed for this purpose by a cross-disciplinary research team and conducted in 2009 in a socially and economically diverse neighbourhood of Beirut, Lebanon. To measure sense of injustice, a 17-item instrument with five-point Likert scale responses was developed through an engaged reiterative qualitative and quantitative process. A random sample proportional to cluster size of 1200 households sample was drawn using spatial sampling techniques to maximise contextual variability. A proxy was interviewed on the household social, economic and demographic variables and one randomly chosen adult member ( $>21$  years) answered the individual questionnaire. The vast majority of interviews were conducted in Arabic and the response rate was 56.25%.

**Analysis** Exploratory factor analysis was used to identify the common factors among the measured variables for sense of injustice. Using ecosocial theory of disease distribution, specifically the notion of embodiment, the association between sense of injustice and self-rated health was examined adjusting for relevant exposures.

**Implications** Proposed interventions to reduce health inequalities should address the structural issues of economic inequality and power imbalance.

#### SP4-36 DESCRIPTION OF EPIDEMIOLOGIC SITUATION OF HIV/AIDS IN ECUADOR, SOUTH AMERICA 2000–2009

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**Introduction** HIV/AIDS in Ecuador is a concentrated epidemic ( $<1\%$  in the general population and  $>5\%$  in high risk groups). The aim of