

### O3 - Comunicación Oral/Oral communication

#### Desigualdades sociales I

#### Social inequalities I

Jueves 2 de Octubre / Thursday 2, October  
9:00:00 a/to 11:00:00

Moderador/Chairperson:  
Anette Leclerc y Anna Schiaffino

#### DO LIFESTYLE FACTORS EXPLAIN SOCIAL HEALTH INEQUALITIES? A TEN YEAR FOLLOW-UP OF THE MORTALITY OF MEN OF THE FRENCH GAZEL COHORT

Marie Zins, Alice Guéguen, Marcel Goldberg

Unité 88, INSERM, Saint Maurice, France.

**Introduction:** Strong inequalities according to social status are well documented for most health conditions, as well as for risky lifestyle factors. In most countries, public health policies aimed at reducing social health inequalities are mainly focused towards the promotion of healthy lifestyles. The objectives of this study is to investigate whether negative lifestyle factors can fully explain social health inequalities, or whether they persist once lifestyle factors are taken into account.

**Methods:** The study took place within the GAZEL cohort, set up in 1989 in a large French company. The all-cause mortality and mortality from cancer, cardiovascular diseases and suicide of 13,740 men aged from 40 to 50 years at baseline was followed from 1989 to 2002 (1999 for cause specific mortality). Socioeconomic data (family income, socioeconomic status (SES)), and lifestyle factors (alcohol and tobacco consumption, body mass index (BMI), used as a proxy for healthy eating habits, and marital status) were collected for each participant at baseline. We used Cox models to conduct the analysis in successive steps. First, we looked at associations between mortality (separately for all-cause, cancer, cardiovascular diseases and suicide), and socioeconomic variables in 1989. Then, for each cause of death, we analysed separately the role each behavioural factor. Finally, for each cause of death, global models including all lifestyle variables were used to investigate the associations between mortality and socioeconomic variables.

**Results:** All lifestyle factors were strongly stratified according to SES. Among the men, 549 deaths occurred from 1989 and 2002 (cancer: 175; cardiovascular diseases: 76; suicide: 35). A regular mortality gradient was apparent according to SES: for all-cause mortality the relative risk (RR) between the extreme groups was 2.51 (95% Confidence interval (CI): 1.91-3.30). All-cause mortality was also associated with a dose-dependant way with alcohol consumption (U-shaped curve), smoking and family income. Risks of death from specific causes were associated both with SES and economic and lifestyle factors. To check whether the uneven distribution of lifestyle variables among SES categories could explain the social mortality differences, we compared the adjusted (on smoking, alcohol, BMI and marital status) and unadjusted RRs between socioeconomic categories, using executives as the reference group, and all-cause, cancer, cardiovascular diseases and suicide mortality. For each cause of death, the adjusted RRs were systematically lower than the unadjusted ones, but a social gradient among SES categories persisted, significant for most of them.

**Conclusions:** Lifestyle factors explain only partially social inequalities in mortality. Other determinants have a strong impact on differences between SES categories, and we are currently exploring other individual and occupational factors.

#### THE IMPACT OF MARITAL HISTORY FROM AGE 15-40 YEARS ON SUBSEQUENT MORTALITY IN YOUNG ADULT MEN

Rikke Lund\*, Bjørn E Holstein\*, Merete Osler\*, en nombre del Grupo: Metropolit Study

\*Department of Social Medicine, Institute of Public Health, University of Copenhagen, Copenhagen, Denmark.

**Introduction:** The protective effects of marriage on male survival is well established, however few studies have attempted to study changes in marital history as a predictor of mortality. Furthermore, the association among younger adults is not well described. The aims of the present study were 1) to analyse the association between marital status at different ages (24, 29, 34 and 39) and subsequent mortality; 2) to study the cumulative effects of number of years married and number of years divorced respectively from age 15-39 on later mortality and 3) to examine whether the cumulative impact of each of these conditions on mortality was changed by current marital status.

**Methods:** The present study is based on all males born within the metropolitan area of Copenhagen, Denmark in 1953. Of them 11,376 (93%) were identified in the Danish Civil Registration System (CRS) in 1968. This register contains various variables e.g. date of birth, vital status, marital status and immigration. The outcome measure was deaths from all causes occurring from 1993-2002 (401 events). Information on current marital status as well as all previous marital status events were retrieved from the CRS from 1968 to 1992. Cox proportional hazards regression analyses of the association between marital history and mortality were performed, and adjusted for admissions to psychiatric wards from age 16-22 years, birthweight, parental social position in 1953, age at first marriage and whether the male had a biological child.

**Results:** At age 29, 34 and 39 years we found a significantly doubled mortality risk among the never married and divorced compared to the married. The effects of especially never being married seemed to increase with age. Among those aged 34 and 39 we found an inverse effect of number of years married. At every age there was a deleterious effect of being divorced for just a short time. E.g. among the 39 years old hazard ratios increased from 1.57 (1.03-2.04) to 3.68 (2.32-5.84) when number of years divorced increased from 1-4 to 10-25. The effect of prior marital history was changed by current marital status and showed that the fewer years the male had been married at the age of 39 years, the larger was the impact of the current marital status on mortality.

**Conclusions:** We found evidence of a strong association between current marital status and mortality among these relatively young males. Furthermore, a cumulated protective effect of number of years married, but especially a cumulated deleterious effect of number of years divorced was identified. Finally, we found that the most recent marital status had a stronger effect the fewer years the male had been married from age 15-39 years.

#### INCOME AND HEALTH BEHAVIOURS. EVIDENCE FROM MONITORING SURVEYS AMONG FINNISH ADULTS

Mikko Laaksonen\*, Ritva Prättälä\*\*, Ville Helasoja\*\*, Antti Uutela\*\*, Eero Lahelma\*

\*Public Health, University of Helsinki, Finland. \*\*Department of Epidemiology and Health Promotion, National Public Health Institute, Helsinki, Finland.

**Introduction:** The aim of the study was to examine the associations of individual and household income with various health behaviours, before and after adjusting for educational attainment and occupational social class.

**Methods:** Data from 19,982 respondents to nationwide health behaviour surveys from 1993-1999 were linked with socio-economic information from population registers. The annually repeated postal surveys using random samples of 5,000 Finns yielded response rates of approximately 70%. The income measures were total individual income liable to taxation and household's monthly disposable income. Health behaviours included smoking, alcohol use, leisure-time physical activity, use of vegetables, use of saturated fat on bread, and being overweight.

**Results:** In men, smoking was more common among those with lower individual (odds ratio 2.56) and household income (OR 2.02). However, adjusting for education and occupational class removed most of the differences (OR 1.52 and 1.36, respectively). Infrequent vegetable use showed income differences of similar pattern and magnitude with smoking. Use of saturated fat on bread was the higher the lower the individual income, before and after adjusting for education and occupational class. In women, smoking, infrequent vegetable use and being overweight were more common among those with lower income, but the differences by both income measures were largely removed by the adjustments. Infrequent vegetable use showed the largest income differences (with an OR of 2.14 by individual income, reduced to 1.55 after adjustments). Women with higher income more often also were high alcohol users and had less physical activity, in particular when income was measured by the respondents' individual income.

**Conclusions:** Adjusting for education and occupation largely removed income differences in health behaviours, but for some behaviours some independent effect remained. The results suggest that income does not only reflect the available material resources, but works as a general socio-economic indicator that is associated with health behaviours in much the same way as other socio-economic indicators.

023

### GENDER DIFFERENCES IN WORSENING SELF-PERCEIVED HEALTH. THE CORNELLÀ HEALTH INTERVIEW SURVEY FOLLOW-UP (CHIS.FU) STUDY

Anna Schiaffino\*, Esteve Fernández\*, Montse García\*, Jorge Twose\*, Mercè Peris\*, Gloria Pérez\*\*, Carme Borrell\*\*\*, Josep Maria Borràs\*  
*\*Prevenció i Control del Càncer, Institut Català de Oncologia, Hospitalet (Barcelona). \*\*Departament de Sanitat i Seguretat Social, Generalitat de Catalunya, Barcelona. \*\*\*Sistemes de informació Sanitària, Agència de Salut Pública de Barcelona, Barcelona.*

**Background and aim:** Gender inequalities in self-perceived health have been described, mostly using cross-sectional studies. There is, however, scarce information from longitudinal designs. We analyse gender differences in worsening self-perceived health in a cohort followed-up during 8 years in Cornellà de Llobregat (Barcelona, Spain).

**Methods:** We used data from the Cornellà Health Interview Survey Follow-up (CHIS.FU) Study, a population-based cohort followed from 1994 to 2002 (the follow-up was done through a telephone survey). We obtained complete follow-up from 1608 participants, and we analysed the 1157 persons who perceived their health as optimal in 1994 (592 men and 565 women). The dependent variable was "worsening self-perceived health between 1994 and 2002". It was computed as 0 for people who perceived their health as optimal (very good or good) in 1994 and in 2002, and 1 for people who perceived their health as optimal in 1994 but suboptimal (poor, bad, or very bad) in 2002. We adjusted logistic regression models to compute the odds ratio (OR) and 95% confidence interval (CI) of worsening self-perceived health (to make worse/not to change) according to selected sociodemographic variables, morbidity, health care services use, and life-styles collected in 1994. The analyses were carried out by sex and we adjusted all models for age.

**Results:** More women (23.5%; 95% CI 20.0%-27.0%) than men (16.7%; 95% CI 13.7%-19.7%) perceived their health worse in 2002 (OR=1.55; 95% CI 1.14-2.11). Among men, the predictors of worsening self-perceived health were the presence of any chronic condition (OR=2.27; 95% CI: 1.39-3.69), the visit to a health professional during the 15 days before interview (OR=2.72; 95% CI: 1.51-4.89), to have one's blood-pressure taken for preventive purposes (OR=1.85; 95% CI: 1.12-3.04), declaring a restricted activity day during the last year (OR=7.82; 95% CI: 2.18-28.03), to take medication within the two days before interview (OR=1.93; 95% CI: 1.16-3.19), to do light leisure physical activity (OR=2.70; 95% CI: 1.31-5.57) and to be a current smoker (OR=2.28; 95% CI: 1.31-3.96). In women, the predictors of worsening self-perceived health were to have less than primary studies (OR=2.90; 95% CI: 1.29-6.51), to have only public insurance (OR=2.08; 95% CI: 1.01-4.31), pertaining to social classes IV-V (OR=1.67; 95% CI: 1.04-2.69), the presence of any chronic condition (OR=2.11; 95% CI: 1.32-3.39) and occupational physical activity (OR=1.64; 95% CI: 1.04-2.58). No association according to civil state, occupational situation, restriction of activity during the last 15 days, visit to a health professional in the 12 months, hospitalisation during last year, presence of disabilities, to have one's cholesterol level measure for preventive purposes, and alcohol consumption were found in men neither in women.

**Conclusion:** The variables associated with worsening self-perceived health are different according to gender. In men, worsening self-perceived health is related to morbidity, health care services use, leisure physical activity, and smoking whereas in women it is related to socioeconomic position, occupational physical activity and morbidity indicators.

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### SOCIAL INEQUALITIES IN THE INCIDENCE OF SMOKING-RELATED CANCERS: DOES THE CONSUMPTION OF TOBACCO AND ALCOHOL EXPLAIN IT ALL?

Maria Melchior\*, Gwenn Menvielle\*\*, Danièle Luce\*\*, Marie Zins\*\*, Marcel Goldberg\*\*, Lisa F. Berkman\*

*\*Health and Social Behavior, Harvard School of Public Health, Boston, United States. \*\*Unité 88-IFR69, INSERM, Saint-Maurice, France.*

**Introduction:** Social inequalities in mortality and morbidity have extensively been documented in all industrialized countries. In France inequalities are particularly pervasive with regard to men's risk of dying prior to 65. Most deaths among middle aged individuals are due to tobacco and alcohol-related cancers, reflecting both higher incidence and lower survival rates. High cancer incidence in lower socioeconomic groups is likely to result from a greater prevalence of cigarette smoking and alcohol consumption, yet this hypothesis has not previously been tested. Hence we studied the extent to which social inequalities in the incidence of smoking-related cancers are explained by individual risk factors.

**Methods:** Incident smoking-related cancers (oral cavity, pharynx, larynx, oesophagus, pancreas, lung, urinary tract) were studied among 14911 men participating in the GAZEL cohort. The volunteers, aged 40 to 50 at baseline, were followed from 1989 through 1999. Hazard ratios by occupational class (using managers as the reference group) were computed via Cox proportional hazards models. We adjusted for age, tobacco and alcohol consumption and possible confounders (marital status, region of residence, overweight, fruits and vegetables consumption, comorbidities). To further understand the link between occupation in mid-age and cancer we also examined the effect of occupational mobility on the risk of disease.

**Results:** During the 11 years of follow-up 99 smoking-related cancers occurred in the study population. Adjusting for age clerks had an increased risk of any smoking-related cancer (RR: 3.39 (1.59-7.29)) and in particular of a cancer of the upper aerodigestive tract (RR: 10.12 (1.69-60.65)). Manual workers' risks were somewhat lower (respectively: RR: 1.86 (0.97-3.60) and RR: 8.04 (1.67-38.78)). These associations were reduced after adjusting for tobacco and alcohol consumption but did not entirely disappear. Individuals hired as clerks or manual workers who did not move up professionally by 1989 had a higher risk of cancer than men employed as managers throughout their career [age-adjusted RR: clerks: 3.68 (1.42-9.55), manual workers: 2.24 (0.96-5.25)].

**Conclusions:** The risk of a smoking-related cancer, in particular of a tumor of the upper aerodigestive tract, was elevated among men who in 1989 worked as clerks or manual workers. This association could not be entirely explained by occupational class differences in cigarette smoking and alcohol drinking. The excess risk among men who were hired as clerks and manual workers and did not change status by 1989 suggests that individuals who are less healthy may not experience occupational mobility. In addition, men who remained in blue-collar occupations may have been exposed to occupational hazards which favored the development of the types of tumors that we studied. This study implies that cancer screening and smoking cessation programs should be targeted to men in lower occupational groups.

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### HOUSEHOLD PROPERTY VALUE AS A HEALTH AND SOCIO-ECONOMIC MARKER IN THE UK

David Fone\*, Stephen Christie\*, Margaret Webber\*, Jonathan West\*\*, Andrew Jones\*, John Watkins\*, Edward Coyle\*\*\*

*\*Public Health, Gwent Health Authority, Pontypool, UK. \*\*Public Health Resource Unit, Institute of Health Sciences, Oxford, UK. \*\*\*Wales Centre for Health, Cardiff, UK.*

**Introduction:** Household property value, as measured by the Council Tax Valuation Banding (CTVB) in the UK, is the basis of a system of raising revenue by local government. CTVB data are routinely maintained and are available for all households in the UK, and thus are a potential source of information on household-level socio-economic status. However, CTVB has not previously been used as a socio-economic marker in epidemiological studies. One study found that CTVB is associated with other markers of socio-economic status and general practitioner workload. We investigated the extent to which CTVB is a predictor of lifestyle, morbidity and health status variables, compared with the widely used Registrar General's occupational social class coding and the Townsend area deprivation index.

**Methods:** The Caerphilly Health and Social Needs Survey asked adult residents of Caerphilly, Wales, UK a range of socio-demographic and health-related questions. The survey, conducted in mid-2002, obtained responses from 12 408 residents, equating to a response of 62.7 percent. We obtained from the Caerphilly council's publicly available property records the CTVB (band A to H) for each household and matched these to the survey data. We examined the relationship between CTVB and a range of lifestyle, morbidity, and health status variables derived from the survey. Lifestyle variables analysed were smoking, beneficial physical activity, and poor diet; morbidity variables were cardiovascular disease, respiratory disease, injuries, and limiting long-term illness; health status variables were the physical health (PCS) and mental health (MCS) component summary scores from the Short Form 36 Health Survey questionnaire. We compared results for the CTVB analysis with those for quintiles of enumeration district-level Townsend index of area deprivation and Registrar General's occupational social class of individuals.

**Results:** All the health-related variables that we investigated showed a clear gradient across CTVB categories. The inequalities in lifestyle, morbidity, and health status between the highest and lowest CTVB categories were similar in magnitude to the inequalities between the highest and lowest quintiles of Townsend index and social class categories. For example, the odds ratio (OR) for being a current smoker in the lowest versus highest CTVB category was 3.43 (95 percent confidence interval [95% CI] 2.77 to 4.26), which suggests a similar socio-economic gradient to that shown by Townsend score (OR 2.49, 95% CI 2.20 to 2.82) and social class (OR 2.09, 95% CI 1.85 to 2.36).

**Conclusions:** Household property value is strongly associated with lifestyle, morbidity and health status of adults. Household property value has the advantage that, unlike other proxy indicators of socio-economic status, it is available in the form of CTVB categories at the household level across the UK. CTVB is a potentially useful health and socio-economic marker for epidemiological studies in the UK.

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### DOES YOUR HEALTH DEPEND ON YOUR OWN, YOUR PARTNER OR YOUR HOUSEHOLD SOCIO-ECONOMIC POSITION?

Bruna Galobardes\*, Alfredo Morabia\*\*

*\*Department of Social Medicine, University of Bristol, UK. \*\*Division of Clinical Epidemiology, University Hospitals of Geneva, Switzerland.*

**Introduction:** Social position in women has traditionally been measured with their partner's occupation. Given the changes of women's role in industrialized societies this approach is questionable. Moreover, women social position may also affect their partner's health. The objective of this study is to assess which indicators of socio-economic, own, partner or household-based, captures better the association with health risk factors.

**Methods:** Cross-sectional survey of 965 men and 834 women aged 35 to 74 reporting being married or having a partner, randomly selected from the general population of Geneva, Switzerland (2000-2001). Six indicators of socio-economic position (own longest occupation, partner longest occupation, own education, highest household occupation, men household occupation, household income) and health information were obtained through questionnaire and physical exam. The main outcome measures were hypertension, overweight, high cholesterol and smoking. Age-adjusted prevalences of risk factors are presented. The correlation between socio-economic indicators was measured with the Spearman correlation. The OR (odds ratio) and 95% CI (confidence intervals) were obtained with multiple logistic regression adjusting for the other indicators of socio-economic position.

**Results:** The correlation between socio-economic indicators ranged between 0.30 and 0.80 in men and between 0.30 and 0.76 in women. The highest occupation in the household followed more closely men's social stratification. Hypertension was more prevalent among women whose partners were from medium (prevalence= 15.0%, OR=1.9, 95%CI: 1.1-3.2) and low (14.7%, OR=1.8; 95%CI: 1.0-3.2) compared to high occupation (10.0%), but did not change with their own occupational level. Among men, the association of socio-economic position with overweight was stronger using their partners' than their own occupation. Smoking, among men, increased with decreasing own occupational level (high=19.5%, medium=23.9%, low=35.8%, OR for trend= 1.5; 95% CI: 1.3-1.8). The prevalence of current smoking was higher among women with medium occupations (27.7% vs. 19.4% in high occupations; OR=1.6, 95% CI: 1.1- 2.4). This association was not captured using the women's partner or household socio-economic position.

**Conclusions:** Different indicators become more relevant depending on the outcome assessed. Women's hypertension was distributed accordingly to their partner's social position, men's overweight was influenced by their own and wife's social class but, men and women smoked following their own social class pattern. Household-based measures did not contribute beyond the individual socio-economic position. Using different indicators provides a better description of the socio-economic distribution of health outcomes.