

05-5.5 SOCIAL CAPITAL AND HEALTH: PURELY A QUESTION OF CONTEXT?

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Introduction Despite association between “social capital” and health outcomes having been extensively researched, debate still surrounds which level of analysis is most appropriate to investigate this contextual phenomenon. Traditional contexts such as “neighbourhood” seem only to explain a very small amount (~ 5%) of total variance in individual health outcomes, often chosen more out of data availability than as representations of individuals’ social interactions and networks. The aims of this United Kingdom study are twofold; to investigate the strength of association between social capital and health at individual- and aggregated-levels; and second, to determine which context (household vs neighbourhood) better explains variation in individual-level health.

Methods Applying multilevel analyses to British Household Panel Survey data (N=10 992), we estimated fixed and random effects between individual-, household- and small area-level social capital indicators and general health. We further compared the variance in health attributable to each level using intraclass correlations.

Results Association between social capital and health seems to depend on indicator type and context, with one fifth of individual-level health variance found at the household-level. However, only individual-level variables appear to influence contextual-level variance.

Conclusion Social capital research could be advanced by focusing on contexts based on extended social networks, not just geographic proximity of random individuals. Furthermore, decision makers must now appreciate that social capital interventions targeting health are unlikely to be cost-effective if directed solely at the “community” level, as only small variations in health are attributable to such a context.

05-5.6 EVALUATION OF THE COMPRESSION EXPANSION AND DYNAMIC EQUILIBRIUM THEORIES USING WESTERN AUSTRALIAN LINKED HOSPITAL MORBIDITY AND MORTALITY DATA

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Introduction Three hypotheses have been advanced to predict changes in population health in countries experiencing low birth and death rates, and increasing expectation of life. Determining which of these best accounts for changing patterns of illness and death is an important step in understanding both the public health and economic impacts of health intervention in an ageing population. The aim of this study was to evaluate the compression, expansion and dynamic equilibrium theories in Western Australia.

Methods Life tables and survival curves for first-time hospital episodes for chronic disabling and activity limiting conditions and all cause mortality in persons aged 15 or more years in WA in 1980–2003 were constructed using data from the WA Data Linkage System. Changes in life expectancy, average age at first-time hospitalisation and time spent in chronic disabling or activity limiting states were used to evaluate the competing hypotheses.

Results Life expectancy increased by 4.0 and 2.6 years over the 24-year study period in males and females respectively. However, average time spent with a diagnosed chronic disabling condition increased by 8.2 and 8.1 years in males and females respectively, while time spent in an activity limiting state remained largely unchanged.

Conclusion We found evidence to support an expansion of morbidity and some evidence against the dynamic equilibrium theory. This is

consistent with population trends towards higher levels of self-reported ill-health in Australia and portends further challenges for the containment of healthcare costs in the future.

5.6 EXPLORING RISK FACTORS

Chair: Prof. Harry Campbell, UK

05-6.1 IMMUNOLOGICAL RESPONSE TO HEPATITIS B VACCINATION IN HIV INFECTED PATIENTS: ASSOCIATED FACTORS

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Background HIV patients are at a higher risk of hepatitis B virus (HBV) infection than general population. The aim of this study is to assess the immunogenicity of inactivated hepatitis B vaccine among HIV infected patients.

Methods A total of 536 HIV infected patients from a university hospital in Barcelona who were vaccinated against HBV between 1996 and 2009 were analysed. Anti-HBs titres were evaluated after the last hepatitis B dose for each patient. Multivariate logistic regression was conducted to identify independent factors (sex, age, hepatitis C coinfection, HIV viral load, CD4 count, type of schedule, dose and number of vaccines) associated with vaccine response.

Results About 71% of the vaccinated HIV population were respondents (Anti-HBs antibodies ≥ 10 IU/l). Vaccine recipients receiving <3 doses (OR 0.29, 95% CI 0.16 to 0.52) and performing an accelerated schedule (0, 7, 21 days and booster dose at month 6) (OR 2.10, 95% CI 1.02 to 3.22) were factors associated with a decreased likelihood of a positive response. Development of anti-HBs was higher in patients with CD4 count ≥ 350 cells/ μ l (OR 1.78, 95% CI 1.37 to 2.94), HIV-RNA <50 copies/ml (OR 2.13, 95% CI 1.41 to 3.22) and 40 μ g dose schedule (OR 1.82, 95% CI 1.14 to 2.94).

Conclusions These findings show that a 40 μ g dose schedule and earlier vaccination from HIV diagnose may be effective strategies for an increased HBV response among HIV infected patients. Anti-HBs titres should be assessed after an accelerated vaccination schedule and after any schedule in patients who present a viral load <50 copies/ml or CD4 count <350 cells/ μ l, given the low likelihood of response.

05-6.2 SURGICAL TREATMENT OF ELDERLY BREAST CANCER PATIENTS WITH DISTANT METASTASES AT DIAGNOSIS

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Introduction Several recent retrospective studies have shown a survival gain for patients who received local surgery for metastatic breast cancer. However, data for elderly are not available; so the aim of this study was to assess survival differences according to local surgery for elderly patients (65 years and older) with metastatic breast cancer.

Methods All adult females diagnosed with metastatic breast cancer between 1990 and 2007 were selected from the Netherlands Cancer Registry. Relative survival was calculated as the ratio of survival observed and expected survival based on the corresponding (age, sex

and year) general population. Relative Excess Risks of death were estimated using a multivariable generalised linear model with a Poisson distribution.

Results Overall, 10,782 patients were included; 50.4% was 65 years or older. Surgery was performed in 30% of the patients and decreased with increasing age ($p < 0.001$). Over time, less patients received surgery ($p < 0.001$). Relative survival was increasing in patients that received surgery, adjusted for potential confounders the Relative Excess Risks was 0.7 (95% CI 0.6 to 0.9; $p < 0.001$) for 65–74 years old patients, 0.5 (95% CI 0.5 to 0.6); $p < 0.001$) for patients aged 75–84 and 0.4 (95% CI 0.3 to 0.6; $p < 0.001$) for the patients 85 and older. There were no differences in the independent prognostic factors associated with relative survival (age, grade, tumour size, lymph node involvement, type of metastases, additional treatment).

Conclusion This large retrospective study showed an improved relative survival for all elderly that received local surgery for metastatic breast cancer. However, large prospective randomised trials, including the elderly, are needed to confirm this association.

05-6.3 ADVANCED PATERNAL AGE AND RISK OF DEATH BEFORE THE AGE OF 5 YEARS: A REGISTER-BASED COHORT STUDY

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Introduction An association between paternal age and children's health was suggested by Penrose as early as 1955. More recently, relationships have been suggested between paternal age and specific diseases and fetal death. The association is mainly put down to the increased mutation rate in male germ cells. The aim of this study was to investigate the relationship between paternal age and under 5-year mortality.

Methods Based on data from Danish population-covering registers, we investigated the relationship between paternal age and under 5-year mortality, including cause-specific mortality, taking maternal age, parity and parental educational levels into account. A total of 1 140 689 live born children were included in the study. Cox regression models were used to estimate HRs for death during the first 5 years of life.

Results Compared with children born to fathers aged 30–34 years an excess risk was found for children born to fathers aged 45+ years (HR 1.22; 95% CI 1.05 to 1.42). When only 1–5 years olds were included the RR rose to 1.70; 95% CI 1.23 to 2.34. The excess risk for children of fathers aged 45 years or more was primarily attributed to an elevated risk of dying from congenital malformations and malignancies.

Conclusion Children with a father aged 45 years or more have an increased risk of dying before the age of 5 years. The findings are compatible with the hypothesis suggesting increased frequency of point mutations in the fertilising sperm cells from men of advanced age.

05-6.4 LIFECOURSE PREDICTORS OF PHYSICAL ACTIVITY AT AGE 50 YEARS: THE NEWCASTLE THOUSAND FAMILIES STUDY

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Introduction Beneficial effects of physical activity (PA) on health are well known, but limited evidence exists for lifecourse factors that

may influence physical activity levels in adulthood. Our aim was to investigate the relative contributions of a range of factors from across life to variations in PA levels in the Newcastle 1000 Families Study.

Methods Detailed information was collected prospectively during childhood. At age 50 years, 574 study members returned self-completion questionnaires. Responses included details of PA levels, collated into four indicators—work, commuting (walking, cycling), household (house work, DIY, gardening) and sport activities. Each was defined by three categories (inactive, less active, most active) and analysed by ordered logistic regression, factor analysis and path analysis.

Results Males had higher levels of work activity ($p = 0.010$) and lower levels of household activity ($p < 0.001$). Increased sport ($p = 0.009$) and household ($p = 0.002$) activity were associated with reduced BMI. Increased sport activity was associated with more advantaged social class ($p = 0.004$) and an increase in work activity with middle classes ($p < 0.001$). Current smoking was associated with reduced sport ($p < 0.001$) and work ($p = 0.012$) activities and higher achieved education with decreased household and commuting activities. Factor analysis identified two components: “sport” and “all other PA”, to be considered separately in path analysis which showed highest relative contributors were BMI for other PA and current social class and smoking for sport.

Conclusion The association between PA and BMI should be considered bidirectional. Early life factors were negligible when contemporary factors were addressed with the exception of achieved education.

05-6.5 LIFECOURSE MEASURES OF BODY COMPOSITION AND THE RISK OF KIDNEY CANCER: A SYSTEMATIC REVIEW AND META-ANALYSIS OF OBSERVATIONAL STUDIES

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Introduction Increased body mass index (BMI) is a risk factor for kidney cancer. However, previous reviews on this topic included only studies that reported on mid-life BMI. We carried out an updated and more comprehensive review to describe the association between lifecourse measures of body composition and kidney cancer risk.

Methods We searched MEDLINE, EMBASE, ISI and four other databases in July 2010. We assessed identified studies against pre-specified criteria, and extracted data using a standard form. We used fixed and random-effects meta-analyses to derive a pooled OR and CIs for the association between kidney cancer risk and measures of body composition.

Results We identified 17898 hits; 741 papers were retrieved and assessed. Seventy-three papers met inclusion criteria and will be included in updated meta-analyses. Based on results from our previous search (April 2007, 52 studies), higher BMI was associated with kidney cancer (OR 1.39; 95% CI 1.30 to 1.47 per 5 kg/m² increase), with a linear dose-response observed for most studies. Measures of body composition, including waist circumference, waist-to-hip ratio and weight-cycling showed a similar trend, although derived from a smaller number of studies. We are currently updating our meta-analyses with recent studies, focusing on measurements of body composition other than BMI.

Conclusion The linear dose-response, across a range of BMI, suggests that even mildly overweight individuals may decrease their risk of kidney cancer via small reductions in BMI. Updating evidence on