Oral Presentation

Other

0090 THE SYNERGY PROJECT

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The SYNERGY project was established in 2007 to provide a scientific basis for recognition of lung cancer as an occupational disease in workers exposed to more than one lung carcinogen. It represents the largest database of case-control studies on lung cancer with complete life course information on occupation and tobacco smoking. Data from 19 370 lung cancer cases and 23 674 controls are available from 16 case-control studies conducted between 1985 and 2010. Cases were recruited from hospitals or cancer registries, and in most studies eligible if: 1) <75 years; 2) resident for at least one year and 3) confirmed diagnosis of lung cancer by histology or cytology. Controls were recruited from the general population (81%) or hospitals (19%), and were individually or frequency matched to cases by sex and age. Information was predominantly collected by interviews with the study participants themselves, though next-of-kin respondents were accepted in five of the studies if subjects were unavailable (9.1% of cases, 6.6% of controls). Ethical approvals for the original studies were obtained in each country and for the SYNERGY project from the IARC Ethics Committee. The database comprises around 14% never smokers, whereof 822 cases. Women represent around 20% of the study population. The strengths of SYNERGY includes bringing together epidemiologists and exposure assessment experts from around the world to advance occupational cancer epidemiology, 2) power to study small risks, 3) providing quantitative exposure estimates for population-based case-control studies, and 4) allowing sub-group analyses, e.g. by gender, histology and smoking status.

Oral Presentation

Methodology

0091 EVALUATING THE EPIDEMIOLOGICAL EVIDENCE – A COMPARISON OF FRAMEWORKS FOR ASSESSING INDIVIDUAL STUDIES

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Introduction Frameworks and tools developed to evaluate observational studies of environmental and occupational exposures for systematic reviews draw from similar efforts in the field of healthcare management to achieve increased transparency in assessment conclusions.

Methods This presentation compares approaches developed by U.S. and European government and academic institutions that evaluate risk of bias and sensitivity for observational studies of environmental and occupational exposures. An international collaborative project to adapt a risk of bias tool developed by

the Cochrane Collaborative (Risk of Bias in Non-Randomised Studies of Interventions) that will address the varied study designs and exposure assessment methods used in these types of studies is described.

Results Several commonalities are identified, including the use of signalling questions to guide evaluations, outcome-specific rather than study-specific evaluations, and avoidance of numeric scores. All frameworks evaluate participant selection/attrition/exclusion, confounding, reliability and validity of exposure and outcome assessments, and selective reporting. Less consistently used domains are analytic methods, sensitivity, and conflict of interest. The frameworks use different approaches to derive an overall conclusion about risk of bias or confidence.

Conclusion As with narrative reviews, structured frameworks depend heavily on expert judgement requiring the involvement of reviewers with the correct discipline-specific expertise. The transparency of the overall evidence integration in a systematic review depends on the knowledgeable and clear presentation of study evaluation conclusions.

The views expressed are those of the author and do not necessarily represent the views or policies of the U.S. Environmental Protection Agency.

Poster Presentation

Respiratory

0092 A CRITICAL EVALUATION OF FRACTIONAL EXHALED NITRIC OXIDE (FeNO) AND PULMONARY FUNCTION TEST LEVELS IN BAKERY AND PLASTICS WORKERS

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This study aimed to investigate whether the irritants used in bread and plastic industry cause irritation in the respiratory tract to determine the benefits of adding FeNO measurement method to periodical controls in various business branches.

Our cross-sectional study was carried out 88 workers in the plastics and bread sectors in Istanbul. Our control group consists of 49 people. FeNO levels were measured and the relationship between these parameters and pulmonary function test parameters was investigated. When FeNO levels in control and work groups were investigated, they were found over 25 ppb in 8 persons working in bakery, 11 in plastics, and in 9 of the control group.

When parameters related with respiratory function were evaluated, people whose parameters were found to be lower than 80% were as follows respectively: PEF levels of 29 people (64,4%) working in bakery in and FEF_(25-75%) levels of 5 people (11,1%); whereas PEF values of 26 people (60,5%) among the workers of plastics and FEF_(25-75%) levels of 5 people (11,6%) were found to be less than 80%. A statistical significance was found between FeNO and PEF levels which were under 80%. In workers whose FeNO levels were found under 25 ppb and those whose PEF levels were under 80% were found to be significantly high (p=0.03).

Measuring FeNO levels will be helpful to identify the various environmental respiratory irritants at workplaces before

they cause occupational illness. The widespread use of FeNO level measurement will be beneficial for the protection and development of workers' health.

Poster Presentation

Ageing Workforce

0093

WORK STRESS MEASURES ARE ASSOCIATED WITH HEALTH AND PHYSICAL FUNCTION AROUND THE AGE OF RETIREMENT: FINDINGS FROM THE HERTFORDSHIRE COHORT STUDY

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Background Studies such as Whitehall II have shown that poor psychosocial work conditions are associated with ill health among employees; it is unclear whether these effects persist and affect health in later life. We have addressed this question using data from the Hertfordshire Cohort Study (HCS).

Method 1021 men and 753 women (59–73 years of age) underwent a home interview and clinical examination and completed a social health questionnaire detailing job-strain (JS) and effort-reward imbalance (ERI) in the current or most recent job.

Logistic and linear regression were used to compare the health of participants who reported JS and/or ERI with those who reported neither.

Results 61% reported neither JS or ERI whilst 10% reported both. 72% were no longer working. JS/ERI was not associated with cardiovascular outcomes (stroke, ischaemic heart disease, hypertension) or type II diabetes. However, participants who reported both JS and ERI had increased odds of poor physical function (SF-36) in comparison with those who reported neither (odds ratios: 2.3 [95%CI 1.5,3.7] men; 2.0 [95%CI 1.2,3.6] women). Average grip strength was 1.7 kg [95% CI 0.2,3.3] lower among men who reported both JS and ERI compared to those reporting neither.

Similarly, participants reporting both JS and ERI had poorer SF-36 mental health in comparison with those reporting neither (odds ratios: 2.8 [95%CI 1.8,4.4] men; 3.1 [95% CI 1.8,5.3] women).

Conclusions JS and ERI in combination are associated with poor physical and mental health outcomes in later life.

Further prospective research is required to determine the causal chain of these associations.

Poster Presentation

Ageing Workforce

0096

BODY MASS INDEX (BMI), CHRONIC MUSCULOSKELETAL PAIN AND ADVERSE EMPLOYMENT OUTCOMES IN OLDER WORKERS: THE HEALTH AND EMPLOYMENT AFTER FIFTY (HEAF) STUDY

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Introduction The combination of an ageing population and an obesity epidemic has important health and economic implications, with growing numbers of older people remaining in work. Obesity is a risk factor for musculoskeletal disorders, which are often more common and severe at older ages and limit work capacity. As part of a longitudinal cohort study on the impact of health on employment in later life, we explored the relation between BMI, chronic musculoskeletal pain and employment outcomes.

Methods Some 8,000 50–64 year-olds recruited from 24 English general practices completed a baseline postal questionnaire about work, home circumstances and measures of health. Logistic regression was used to explore associations between BMI and pain (lasting >1 month in the past year and interfering with everyday activity) and work outcomes (health-related job loss, prolonged sickness absence, cutting down at work), adjusting for educational background and mental health.

Results A total of 7585 participants were included, 861 of whom were not in work for a health reason. More than a quarter (26%) of participants reported chronic pain and almost a quarter were obese. Adverse work outcomes were only weakly associated with obesity on its own but strongly associated with the combination of chronic pain and obesity (OR range 3.9–6.8). Significant associations were also seen in the underweight group (BMI <18.5) (OR range 3.9–14.1).

Conclusions Prevention of chronic pain and obesity is important, but weight control is of particular importance in older workers with musculoskeletal problems, in terms of work capability and job retention.