0332 STRESS AS HUMAN ELEMENT AT WORK: A SURVEY OF FILIPINO SEAFARERS

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Objectives Seafaring entails working on board ships for a long period of time away from home. This results into various psychological experiences by the world's 1.2 million seafarers working on international commercial vessels. Filipino seafarers comprise almost 30% of the world's seafarers. The study will look at the stress management profile of Filipino seafarers including how stress is manifested and implications for prevention.
Method Questionnaires were administered to 2500 Filipino seafarer respondents representing various ranks/positions. Respondents were chosen from different manning agencies and training centres in different parts of the Philippines. Different sets of questionnaires were administered to different sectors such as management and labour. The questionnaire was divided into the following categories: socio-demographic profile, health and lifestyle, attitude towards work and family/home, work and home-related experiences, symptoms/signs of stress, coping with work experiences, and infrastructure on board.
Results Respondents were 69% ratings and 31% officers mostly within the age of 25–50 working in bulk carrier vessels and tankers. Health problems normally experienced are vision, hypertension, muscular, hearing and respiratory. 50% drink alcohol and 20% smoke on board. 55% sleep well and 87% exercise. Most workers are satisfied with their jobs. Significant sources of stress are routinary nature of job, long hours of work, tension among crew, and thoughts of impending early retirement. Home-work interface elements are major sources of stress such as family concerns and careers of wives.
Conclusions Socio-psychological problems need to be addressed by developing appropriate programmes. This should be mainstreamed in the occupational health agenda for seafarers.

0334 USE OF SALIVARY BIOMARKERS TO EVALUATE RESPONSE TO A STRESS MANAGEMENT INTERVENTION

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Objectives To discuss methodological issues related to using salivary biomarkers to evaluate response to a stress management intervention.
Method Findings from a study which utilised salivary biomarkers to evaluate group responses to a stress management program are discussed.

In that study, we measured responses to qigong practice as a stress intervention among 34 healthy adults.
Results Specific biomarkers studied were a stress hormone (cortisol); a surrogate marker co-released with acute stress (alpha amylase); and a marker of early physiological response to stress i.e. immune status as reflected by immunoglobulin A (IgA).

Salivary cortisol and IgA were monitored over 10 weeks in the intervention group (n = 18) and the control group (n = 16).

Median salivary cortisol concentrations (nmol/l) at weeks 1, 6 and 10 were 4.4, 4.8, 4.3 and 4.3, 4.0, 3.3 for the control and intervention groups. Median IgA secretion rates (μg/min) were 58.9, 63.6 and 67.4 for the control group and 43.8, 54.9 and 72.9 for the intervention group.

Acute response to qigong practice, measured by median salivary alpha amylase (U/ml) showed no significant change before and after a one hour session of practice (107.7 and 93.8).

Saliva collection technique, circadian rhythm and half-life of the biomarkers, and their relative concentrations in different body compartments e.g. blood and saliva, can affect the results and were taken into account in the study protocol.
Conclusions For valid interpretation of study findings, the choice of biological markers and other methodological issues have to be considered when using salivary biomarkers to evaluate response to a stress management intervention.

0336 MUNICIPAL CARTOGRAPHY OF ASBESTOS EXPOSURE IN A PARIS' SUBURB: AN ORIGINAL USE OF AN OCCUPATIONAL EXPOSURE DATABASE

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Objectives *Fibrex* database can be described as a board giving a correspondence between jobs and quantitative indications of occupational exposure to one or several noxious fibres. The objective of this present work is to propose a municipal index of asbestos exposure and finally map it by crossing the *Fibrex* database with activity sectors data of the French national institute for statistics and economic studies (INSEE) at a city scale in a northern Paris' suburb.
Method *Fibrex* database consists of more than 10 000 data of occupational exposure to organic or inorganic fibres from natural or artificial origins. It allows a focus on asbestos fibres by giving a median value of exposure to that carcinogenic substance within a given activity sector. Knowing the distribution of the workforces by activity sectors and associating the median values of exposures of the considerate work, it is possible to envisage an exposure score at a city scale.
Results The calculated score proposes a partial but original view of the potential exposure to asbestos by territorial unit in the end of 90's. The use of city-scale data allows bringing to light the territorial heterogeneity of occupational exposures to asbestos in a Paris' suburb.
Conclusions This contribution shows an original use of an occupational exposure database ending in a city-scale mapping.

0337 SENSE OF COHERENCE AND MENTAL HEALTH AMONG SEAFARERS IN RELATION TO PHYSICAL ACTIVITY

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Objectives Seafaring is a specific occupation due to long-term isolation from the society and the family. The aim of the study was to investigate the prevalence of psychological distress (PD) and sense of coherence (SOC) among seafarers in relation to occupational and leisure time physical activity (PhA).
Method 248 seafarers, attending the Maritime Medical Centre in Klaipeda for the mandatory health examination answered the anonymous questionnaire (GHQ-12) and SOC. The mean values

of 2 scales were compared in 4 groups of occupational and 3 groups of leisure time PhA. The differences in means were tested by significance level (p < . 05). The statistical software SPSS 13.0 for Windows was used in the statistical analysis.

Results The prevalence of PD among seafarers was 9.3%, weak SOC 24.2%. Spearman's correlation between SOC and PD was 0.211 (p < 00.01). SOC was correlated with occupational (Spearman's correlation 0.108 (p < 0.05) and leisure time (Spearman's correlation 0.114 (p < 0.05) PhA. SOC was weaker in the heavy occupational PhA group and showed no difference between leisure time PhA groups. The mean values of the GHQ-12 scale showed no differences in the occupational and leisure time PhA groups.

Conclusions Psychological distress was not more prevalent among seafarers as compared to the investigations among other occupations in Italy, UK, the Netherlands and Sweden. Sense of coherence among seafarers was weaker in the heavy occupational physical activity group, confirming the findings in the other investigations (weaker SOC in lower socioeconomic status groups).

0338 ABSENTEEISM FOR MEDICAL REASON IN HOSPITAL SURROUNDINGS

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Objectives Our work aims to:

- assess occupational disability for medical reasons in hospitals across the entire work stoppages substantiated by a medical certificate,
- to identify the reasons
- and describe the causes and medical certificates responsible for this phenomenon.

Method It is a descriptive epidemiological study on the whole of the medical absences reported by employees between January 1, 2012 and December 31, 2012 in two hospitals: CHU and EHS Obstetrics and Gynaecology of Sidi-Bel-Abbes.

Support for the survey is a questionnaire completed by the doctor, it collects informations about: individual characteristics, socio-professional characteristics, and information on the declared absence (place of occurrence, the date of delivery to the employer, the type of certificate...)

- Medical causes listed according to the International Classification of Diseases (CIM 10).

Results The study population represents a workforce of 2884 employees and includes the entire staff of the CHU and EHS Obstetrics and Gynaecology of Sidi-Bel-Abbes.

We recorded 331 medical certificates off work reported by our study population. However we objectified about 3/4 of the certificates are initial certificates and 72% that are issued by the public sector.

The rate of medical absenteeism in the hospital surroundings is estimated at 7,68% with a predominance of medical absences related to illness (98%) against only 2% for those related to accidents with a male predominance (5%) containing 1% for females.

Conclusions Our results can be used in a preventive perspective to improve the professional environment and therefore reduce the incidence of medical absenteeism.

0339 EVALUATING TEMPORAL TRENDS IN OCCUPATIONAL LEAD EXPOSURE USING META-REGRESSION OF DATA IN THE PUBLISHED LITERATURE

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Objectives The published literature provides useful data for examining exposure differences across industries, jobs and time periods, but the analysis is challenging because the data is usually in summary form. We used mixed-effects meta-analysis regression models, which are commonly used to summarise health risks from multiple studies, to predict temporal trends of lead blood and air concentrations in multiple US industries from the published data.

Method We extracted the geometric mean (GM) and geometric standard deviation (GSD) of blood and personal air measurements from US worksites from the literature. When not reported, we derived the GM and GSD from other summary measures. Industries with measurements in ≥2 years and spanning ≥10 years were included. Models were developed separately by industry and sample type. Each model used the log-transformed GM as the dependent variable and calendar year as the independent variable. It also incorporated a random intercept that weighted each study by the inverse of the sum of the between- and within-study variances. Within-study variances consisted of the squared log-transformed GSD divided by the number of measurements. Maximum likelihood estimation was used to obtain the regression parameters and between-study variances.

Results The blood measurement models predicted statistically significant declining trends (2–11% per year) in 5 of the 13 industries. The air measurement models predicted statistically significant declining trends (1–3%) in 2 of the 10 industries; increasing trends (7–10%) were observed for 2 industries.

Conclusions Meta-analysis provides a useful tool for synthesising occupational exposure data that can aid future retrospective exposure assessment.

0342 LUNG CANCER RISK ATTRIBUTABLE TO OCCUPATION: IN A CASE CONTROL STUDY IN BLACK SOUTH AFRICANS, 2001–2008

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Objectives Lung cancer is the 4th most common malignancy in South Africa. Although smoking is a well established risk factor, the role of occupational exposures in the local setting is not clear. We estimated the lung cancer risk attributable to occupations.

Method Data from on-going Johannesburg Cancer Case-Control Study of black African adult cancer patients (2001–2008) was used. Information from 579 lung cancer cases and 1120 frequency matched controls was analysed. Controls were randomly selected from cancers not known to be associated with the effects of tobacco, matched by sex and age (±5years). Usual