

aged 15 to 17 years, and the majority (88%) were 18 years of age or older. In each age group, work-related mortality rates (per 100,000) were 1.5, 3.3 and 4.8 among males, and for girls 1.1, 0.3 and 0.3, respectively. The most common circumstance related to the injury involved transport. Farming predominates (89%) among occupations in the youngest group, falling to 48% and 18% in the older age ranges, respectively.

Conclusions Our findings reflect an unacceptable reality in Brazil, the 7th largest world economy. The agriculture industry needs to be targeted for actions to eliminating child labour and to enhancing compliance with protective standards against the worst forms and most hazardous occupations in the group of young workers

Oral Presentation

Other

0219 THE SYNERGY EXPOSURE ASSESSMENT STRATEGY

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Objective The use of measurement data in occupational exposure assessment allows more quantitative analyses of possible exposure–response relations. We describe a quantitative exposure assessment approach for the five lung carcinogens selected for the SYNERGY project, that is, asbestos, chromium-VI, nickel, polycyclic aromatic hydrocarbons (by its proxy benzo(a)pyrene (BaP)) and respirable crystalline silica. A quantitative job-exposure matrix (i.e. SYN-JEM) was developed based on statistical modelling of large quantities of personal measurements.

Methods Empirical linear models were developed using personal occupational exposure measurements from Europe and Canada, as well as auxiliary information like job (industry), year of sampling, region, an a priori exposure rating of each job (none, low, and high exposed) and sampling duration. The model outcomes were used to create SYN-JEM with a quantitative estimate of the level of exposure by job, year, and region.

Results Decreasing time trends were observed for all agents between the 1970s and 2009, ranging from –1.2% per year for personal BaP and nickel exposures to –10.7% for asbestos before a ban was implemented. Regional differences in exposure concentrations varied by agent, ranging from a factor 3.3 for chromium-VI up to a factor 10.5 for asbestos.

Conclusion We estimated time-, job-, and region-specific exposure levels for four (asbestos, chromium-VI, nickel, and RCS) out of the five considered lung carcinogens. Statistical modelling of large amounts of personal occupational exposure measurement data enabled the derivation of a quantitative general population JEM, which can be applied to the SYNERGY population.

Oral Presentation

Other

0220 ADVANCING THE PREVENTION OF LONG-TERM SICKNESS ABSENCE: CONSIDERING THE IMPACT OF THE CONTEXT OF LEGISLATION IN EFFECTIVE PREVENTIVE STRATEGIES

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Background Sickness absence is highly prevalent and has a complex multifactorial aetiology. A multitude of approaches exist aimed at health, personal, work related and cultural factors. But also the context of legislation has to be addressed when developing, evaluating or implementing preventive interventions.

Aims 1) To substantiate the role of legislation in research on the effect of strategies aimed at reducing long term sickness absence; 2) Elaborate on methodological prerequisites for advancing the evidence base of interventions, focussing on (legal) contextual factors.

Results Role of legislation can be threefold:

1. Direct, as (part of) intervention
2. Indirect, such as changing definitions of sickness absence, or (early) pensioning.
3. Facilitating/hindering factor in implementation of proven interventions

To address the context of legislation, ideally large multinational trials with large sample sizes are needed, requiring substantial resources. An alternative efficient approach might be to combine: 1) Address the impact of contextual (legal) factors by integrating contextual data from (new) trials on the effectiveness of preventive strategies by means of meta regression; 2) Use multi-regional or multi-national databases to compare intervention uptake, outcome and contextual factors in workers (registry data) testing prior hypotheses regarding the impact of legal differences on sickness absence indicators.

Conclusion Large potential gains by reducing long term sickness absence and work disability require innovative but methodologically sound approaches, and should consider the impact of the (legal) context. Enhanced access to multinational data-bases and better reporting of contextual and legal factors related to trials (extension of STROBE, CONSORT) are prerequisites.

Poster Presentation

Other

0223 OCCUPATIONAL HEAT EXPOSURES IN INDUSTRIES AND RENAL HEALTH – FINDINGS FROM INDIA

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Statement of the Problem: Workers labouring in high thermally stressful environments are subjected to heat-strain and risks of heat-related health issues.

Methodology A cross-sectional study was conducted with ~700 workers engaged in heavy/moderate labour from various organised occupational sectors in India. Wet Bulb Globe Temperatures(WBGT) and heat-strain indicators such as Core-body-temperature(CBT), Heart-Rate(HR), Sweat-Rate (SwR), Urine-Specific-Gravity(USG) were measured. A questionnaire captured self-reported health symptoms of workers.

Findings About 73% of the WBGT measurements were above prescribed limits(Range:26.5°C–38.7°C) and WBGT>31.0°C was associated with significantly more heat-related health concerns among workers(89% vs 34%). Measured heat-strain indicators were above accepted levels for 60% workers, 72% had symptoms of dehydration and 49% suffered from urogenital issues. Workers had 1.4 times higher odds of heat-strain at WBGTs>29.0°C(CI 1.06 to 1.95; p=0.019), that was more pronounced during hotter seasons (CI 1.41 to 2.53; OR=1.9, p<0.0001) with significant increases in heat-related illnesses (X²=66.088; p=4.311e-16) and productivity losses (X²=62.68;p=0.024*1012). High prevalence of kidney stones and adverse renal issues(9%) in steel industry was significantly associated with years of chronic heat exposures(t=-2.3823, df=66.628, p-value=0.02006, 95% CI 0.44–0.03).

Conclusion The results demonstrate that high-heat conditions and minimum cooling interventions that are common in many occupations could create a 'silent epidemic' of kidney-related illnesses without appropriate work practices in tropical settings. The study results warrant an urgent need for further in-depth research with a multi-targeted seasonal approach to identify causalities and to develop and implement appropriate preventive measures to avert adverse effects of heat on the working population in the rising temperature scenario as Climate Change proceeds.

Poster Presentation Specific Occupations

0224 COMPARISON OF PREVALENCE AND ASSOCIATED FACTORS OF HYPERTENSION BETWEEN SHIP OFFICERS AND IN-LAND OFFICERS OF THE ROYAL THAI NAVY

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Background The objective of this study was to compare prevalence and associated factors of hypertension between ship officers and In-land officers of the Royal Thai Navy.

Method This was an analytic cross-sectional study of 670 naval ship officers and 647 In-land officers in Sattahip district, Chonburi province. Data was collected by self-administered questionnaires. The blood pressure was measured and recorded by medical personnel. Data were analysed by

descriptive statistics. The prevalence of hypertension were compared by proportion test. The associated factors were analysed by multiple logistic regression.

Result Prevalence of hypertension in ship officers was 31.2 percent, statistically less than prevalence of hypertension in In-land officers which was 41.1 percent (95% CI -0.15,-0.04). The associated factors of hypertension were age (Adjusted Odds ratio=1.09; 95% CI 1.03, 1.15) and BMI (Adjusted Odds ratio=1.26; 95% CI 1.11, 1.42).

Discussion and Conclusion The prevalence of hypertension among ship and In-land officers were associated with increasing age and BMI rather than the difference of working unit. Thus, health promotion program for navy officers should emphasise on weight control especially in elder officers.

Poster Presentation Psychosocial

0225 EFFECTS OF CHANGE IN WORK ORGANISATION ON PSYCHOLOGICAL WELL-BEING: INFLUENCE OF PSYCHOLOGICAL DEMAND, DECISION LATITUDE AND SOCIAL SUPPORT

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Consequences of organisational choices on working conditions are complex and may influence psychosocial well-being and health either positively or negatively. Changes in work organisation have been shown to be negatively associated to psychosocial experiences or health within the last French Working Condition Survey (WCS). Here we investigated how these associations were influenced by the following potential modifiers: psychological demand at work, decision latitude and social support.

Psychosocial experiences examined were overwhelmed state, gratitude, internal psychological violence, meaning of work and value conflicts. Health was approached by the WHO5 scale as well as by self-perceived health status. Logistic regressions between change in organisation and psychosocial well-being and health were carried out on the 7000 market sector employees of the WCS belonging to companies with at least 10 employees. The modifier was included in the model together with an interaction term to account for the modification effect.

High psychological demand increased the effect of change in organisation on the meaning of work. Low decisional latitude increased the effect of change in organisation on gratitude, meaning of work and value conflict and low social support increased the effect of change in organisation on gratitude and internal psychological violence.

This analysis illustrates the complexity of relationships between organisation at work and psychological well-being. More analyses will be carried out on specific types of organisation such as quality management of just-in-time management.