

Poster presentation

Objectives To evaluate the mortality experience among all workers (n = 3199) employed at a phosphate fertiliser plant in central Florida beginning 1953 and followed through 2005.

Method All-cause, all-cancers, and cause-specific standardised mortality ratios (SMRs) were calculated with the U. S. population as referent. Lung cancer and leukaemia risks were further evaluated using conditional logistic regression. Employment duration was used as an exposure surrogate for dose-response analyses.

Results The mortality due to all causes combined (SMR=1.07, 95% confidence interval (CI)=1.01–1.13, observed deaths n = 1124), lung cancer (SMR=1.25, 95% CI=1.04–1.49, n = 122), leukaemia (SMR=1.76, 95% CI=1.02–2.81, n = 17), and chronic obstructive pulmonary disease (SMR=1.45, 95% CI=1.09–1.89, n = 54) were significantly elevated. All-cancer mortality was elevated (SMR=1.09, 95% CI=0.97–1.22, n = 303) but not statistically significant for the cohort. Dose-response modelling with adjustments for gender and race did not show statistically significant associations between employment duration (in years) and lung cancer (Odds Ratio (OR)=0.99, 95% CI=0.97–1.02) or leukaemia (OR=1.01, 95% CI=0.96–1.06) mortality.

Conclusions Findings are suggestive of increased lung cancer and leukaemia mortality from exposures encountered in the phosphate fertiliser industry. Increased employment duration, however, did not have significant associations with increased lung cancer or leukaemia mortality.

0104 THE IMPACT OF OCCUPATIONAL STRESS ON SUICIDE IDEATION OF SUBWAY DRIVERS

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Objectives To investigate and manage subway drivers' mental health, we conducted a temporary mental health checkup on the subway drivers of one transportation company, and analysed the relationship between the suicide ideation and occupational stress factors.

Method The subway drivers (n = 995) were asked to fill out a questionnaire and individual interviews were conducted afterwards. Interviews were performed using Korean Composite International Diagnostic Interview (K-CIDI). Participants were classified into two groups; suicide ideation group (SIG) and non suicide ideation group (NSIG). Socio-demographic factors, health information, occupational characteristics, Korean Occupational Stress Scale (KOSS), Davidson Trauma Scale (DTS) and Centre for Epidemiological Studies-Depression Scale (CES-D) were included in the questionnaire. Relationship between occupational stress and the suicide ideation within a year were analysed using multiple logistic regression.

Results Logistic regression model after adjusting the age showed that domains of Job demand, Insufficient job control, Interpersonal conflict, Lack of reward, Occupational climate had significant relationship with suicidal ideation. Another model that adjusted factors that was significant in descriptive statistics revealed that domains of Insufficient job control (OR=2.223), Interpersonal conflict (OR=2.478), Lack of reward (OR=2.701) had significant relationship with suicidal ideation.

Conclusions Three occupational stress domains of KOSS had statistically significant relationship with the suicidal ideation

within a year after adjusting occupational factors that was related to it. To prevent subway drivers' suicide ideation, stress management program should be applied to this group.

0109 STUDY ON DISEASES OF THE SKIN IN AN INDUSTRIAL POPULATION OF A PETROCHEMICAL SITE IN SICILY

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Objectives The study 'Skin Project' took place over three years (2010–2012) in a petrochemical site in Sicily, in order to identify skin diseases and the risk of pre-cancerous changes. The idea for the study came from an evaluation of mortality data for skin diseases published by the province of Siracusa in the journal 'ATLAS RERURUM cognoscere causas' 2003–2005.

Method The health service of the petrochemical company had addressed first the interest towards its employees, directing them to the screening of skin disorders and in particular towards pre-cancerous and non precancerous forms. The first pilot to assess the eventual success of the project was launched in 2010; the public was invited to undergo a skin examination and videodermatoscopy and epiluminescence mapping, simply by calling a dedicated health service number. The first cases also showed the need to reach an agreement with the city hospital for the surgical removal of malignant growths.

The visit was carried out by a medical doctor specialising in dermatology, in this case the primary dermatologist of ASP Syracuse and heightened by the use of dermoscopy and epiluminescence. The use of non-invasive technology allowed the study to show the morphological structural of the pigmented lesions.

Results From October 2011 to October 2013, 788 dermatological and videodermatoscopy with epiluminescence have been carried out, identifying and permitting the surgical removal of 10 melanomas surface, 6 basal cell epithelioma and the identification of more than 40 individuals with dysplastic moles.

Conclusions During the medical examination carried out by the qualified doctor or dermatologist, the patient is asked to undergo a primary prevention and skin self-examination. The study showed a significant effect on the onset of skin diseases compared to the national population and correlated with sun exposure from a young age or from the high temperatures recorded in recent years in Sicily between 2006 and 2012. We report the cases of 3 person a 48 year old male that in two sessions a year apart has seen a trasformation of his nevus after the removal of melanoma surface. of a subject of 40 years old whom removed a melanoma in the region above the right eye-brow and a third case of a man 52 years old removed a melanoma of the left ear.

0110 CANCER MORTALITY AMONG STYRENE AND FIBREGLASS EXPOSED WORKERS IN THE REINFORCED PLASTIC BOATBUILDING INDUSTRY

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Objectives Mortality was updated through 2008 for 5203 workers exposed to styrene, fibreglass, and wood dust between

1959 and 1978 at two boatbuilding plants. The a priori hypothesis: leukaemia and lymphoma excesses would be found

Method Standardised mortality ratios (SMR), standardised rate ratios (SRR), and 95% confidence intervals (CI) were calculated using Washington State rates and a person-years analysis program, LTAS. NET, controlling for age, calendar period, race, and gender. The SRR analysis compared tertiles of estimated cumulative styrene exposure.

Results Overall, 484 cancer deaths occurred (SMR 1.20, CI 1.10–1.31), with excess mortality for respiratory cancers ($n = 171$, SMR 1.33, CI 1.14–1.55) and prostate cancer ($n = 41$, SMR 1.44, CI 1.03–1.96). Among 2063 workers highly exposed to styrene and fibreglass there were excesses of mesothelioma ($n = 3$, SMR 5.28, CI 1.09–15.4) and ovarian cancer ($n = 6$, SMR 2.94, CI 1.08–6.41). The SRR analysis did not find strong associations between tertiles of styrene exposure and cancer mortality.

Conclusions We found no excess leukaemia or lymphoma mortality. Unanticipated excess mesothelioma and ovarian cancer mortality are difficult to interpret and could be due to fibreglass exposure or employment elsewhere, or could be chance findings.

0115 IS GENDER ADEQUATELY STUDIED IN AGRICULTURAL WORKERS' HEALTH RESEARCH?

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Objectives Gender-sensitive research strategies address men's and women's health problems by identifying physiological, ergonomic and socio-cultural gender characteristics that shape study outcomes. These strategies have been inadequately accounted for in many occupational health researches on agriculture workers. In reviewing the occupational health literature on agriculture workers, this paper assesses the processes employed to analyse how gender affects work-related health outcomes.

Method Peer-reviewed articles concerned with male and female agricultural workers' health and published between 2000 and 2011 in PubMed were evaluated. Articles that use gender stratification were identified and analysed for their approaches toward sampling, data analysis, task differentiation and use of other exposure indicators.

Results Out of 176 articles, only 26 (15%) analysed the associations between occupational health exposures and health outcomes using gender stratification. Many studies failed to recruit adequate female participants or have marginalised gender at an early stage of the research. The role of females as homemakers was also inadequately conceptualised. Several others did not collect adequate task or exposure information to identify established risk factors relating to study outcomes.

Conclusions Occupational health research on farm workers struggle to incorporate gender analysis into research design and analytical approaches. The role of gender in shaping health outcomes is evident in occupational health research. Developing methodologies, study designs, and analysis that are gender-sensitive will improve the quality of research and help tailor sound interventions and policies. This could be through incentives and support from research funding agencies and through incorporating gender perspectives into academic journal editorial policies.

0118 LIFETIME OCCUPATIONAL EXPOSURE TO DIESEL EXHAUST AND BLADDER CANCER AMONG MEN IN NEW ENGLAND

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Objectives We examined the association between lifetime occupational diesel engine exhaust (DEE) exposure and risk of bladder cancer in 1171 cases and 1418 controls in a population-based case-control study.

Method Lifetime occupational histories combined with additional exposure-oriented questionnaires were administered to obtain detailed information on DEE. We estimated the probability, frequency and intensity of exposure to respirable elemental carbon (REC) ($\mu\text{g}/\text{m}^3$), a primary surrogate for DEE. Unconditional logistic regression was used to calculate odds ratios (ORs) and 95% confidence intervals (CIs), adjusting for smoking and other risk factors.

Results DEE was associated with an increased risk of bladder cancer, with the highest level of cumulative REC ($>252.8 \mu\text{g}/\text{m}^3$ per year) having a 35% elevated risk (95% CI = 0.86–2.13) compared to those with no exposure. Among nonsmokers, we observed a significant trend in risk with increasing cumulative REC (p -trend = 0.03), with heavily exposed subjects having an OR=2.80 (95% CI = 1.08–7.22). Time-period analyses by decade of first DEE-exposed job showed a statistically significant increased risk among men first exposed in the 1950s (heavily exposed: OR=2.73, 95% CI = 1.29–5.79, p -trend = 0.009).

Conclusions The overall risk observed is modest, but similar in magnitude to those observed at comparable levels of exposure in previous studies of bladder and lung cancer. Greater risk for those first exposed in the 1950s may reflect secular trends in risk or a long latency for bladder cancer. Our results provide additional evidence that DEE is related to an increased bladder cancer risk.

0121 HOME CARE WORKER ERGONOMIC HAZARDS

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Objectives Home care workers (HCW) are at high risk of musculoskeletal disorders related to consumer care and housekeeping tasks and need of ergonomic interventions (Arlinghaus, *et al.*, 2013; Baron and Habes, 2004; Hodson *et al.*, 2010). The goal of this project is to explore HCW experiences and perceptions to document potentially hazardous tasks to inform intervention and policy.

Method In 2012 researchers partnered with a labour union (SEIU) representing HCWs to recruit those with at least 3 years of experience with consumers needing moving assistance. Forty six mostly African Americans participated in four focus groups and a validation session. Participants were asked to review a



0110 Cancer Mortality among Styrene and Fibreglass Exposed Workers in the Reinforced Plastic Boatbuilding Industry

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