Oral Presentation

Risk Assessment

0065 SLEEP QUALITY AMONG HEALTH SCIENCES STUDENTS LIVING IN DORMITORY

Alireza Dehdashti*, Mahshid Bahrami, Meysam Karami. *Semnan University of Medical Sciences, Semnan, Iran*

10.1136/oemed-2017-104636.47

Introduction Sleep disturbances have been associated with an increased risk of health problems among higher education students. The purpose of this survey was to determine the prevalence and identify the factors that influence the sleep quality in dormitory students.

Materials and Methods We applied a descriptive and cross-sectional survey. The participants consisted of 249 health sciences students at Semnan University of Medical Sciences. Data were collected through a self-reported reliable and validated questionnaire.

Results the students aged 21.7 ± 1.1 years. In overall, 80.7% of female and 72.1% of male students revealed insufficient sleep. Mental engagement commonly reported as a frequent risk factor for sleep disturbance (53.8%). Uncomfortable sleeping environment in dormitories ($p=0.03$) and behaviours that cause arousal till midnights ($p=0.05$) were significantly associated with poor sleep quality. Approximately half of students perceived daytime somnolence as sleep disorder consequence.

Conclusion Our results indicated high prevalence of poor sleep quality among university students. Sleep disorders should be considered a major health concerns among dormitory students. Providing better environmental conditions, training and advisory programs may help to improve students' sleep quality and academic achievement.

Oral Presentation

Cancer

0066 MATERNAL OCCUPATIONAL EXPOSURE TO BENZENE INCREASES THE RISK OF CHILDHOOD LEUKAEMIA IN OFFSPRING – A PROSPECTIVE STUDY IN THE NORWEGIAN MOTHER AND CHILD COHORT STUDY

^{1,2}Jorunn Kirkeleit*, ²Trond Riise, ^{2,3}Tone Bjørge, ⁴David C Christiani, ⁵Andrea Baccarelli, ⁶Stefano Mattioli, ^{1,2}Björg Eli Hollund, ²Bjørn Tore Gjertsen. ¹Haukeland University Hospital, Bergen, Norway; ²University of Bergen, Bergen, Norway; ³Cancer Registry Norway, Oslo, Norway; ⁴Harvard School of Public Health, Boston, USA; ⁵Columbia University Mailman School of Public Health, New York, USA; ⁶University of Bologna, Bologna, Italy

10.1136/oemed-2017-104636.48

Introduction There is an established causal relationship between benzene exposure and acute myelogenous leukaemia in adults, but the association between parental benzene exposure and childhood leukaemia in offspring remains inconclusive.

Objective Using the prospective population-based Norwegian Mother and Child Cohort Study (MoBa) comprising 1 13 754 offspring (1999–2009), we investigated the association between parental exposure to "gasoline or exhaust" as a proxy to benzene exposure and childhood leukaemia.

Method Around the 17th gestational week mothers and fathers responded to questions on a range of occupational exposures during the last 6 months and pre-conception, respectively. Exposure to benzene was assessed through self-reported exposure to "gasoline or exhaust" ("never exposed", "ever exposed" and "exposed >30 days"), the latter interpreted as being occupational. Development of subsequent childhood leukaemia ($n=70$) were identified through linkage with the Cancer Registry of Norway. The risk was estimated by odds ratios (OR) with 95% confidence intervals (95% CI) comparing the offspring from exposed and unexposed parents using a logistic regression model, adjusting for maternal smoking and birth weight.

Results Maternal exposure was associated with an increased risk of childhood leukaemia (OR 2.6; 95% CI 1.03, 6.50). The risk increased with number of days being exposed during the last 6 months categorised in "0", "1–30", "31–180" (p -value for trend=0.03). No excess risk of leukaemia was found for paternal exposure.

Conclusion We found an excess risk of leukaemia in children having a mother reporting being exposed to benzene-containing "gasoline or exhaust" prior to and/or during pregnancy.

Oral Presentation

Migrant Workers

0068 USING WORKERS COMPENSATION DATA TO ESTIMATE INJURY PATTERNS IN INTER-PROVINCIAL WORKERS

Cherry Nicola, Haynes Whitney. *University of Alberta, Edmonton, Alberta, Canada*

10.1136/oemed-2017-104636.49

Background The western Canadian province of Alberta attracts skilled workers from across Canada to work in the oilfields. We investigated whether information from Workers Compensation Board (WCB) claims would provide unbiased estimates on the rate of injury in such migrant workers. Work injuries in Alberta are compensated by the Alberta WCB regardless of province of residence.

Methods The Alberta WCB provided claims data with home province, sex, age, industry and time lost from work. Denominator data came from Statistics Canada, linking census and taxation information. We also recruited a cohort of workers in Fort McMurray, the hub city for oil and gas, and followed them for 4 months to record work injuries.

Results From Statistics Canada, we had 1,720,716 people working in Alberta in 2012 whose home was Alberta and 10403 whose home was Newfoundland. The overall rate of injury (with no correction possible for days employed) was lower in the migrant workers, after adjustment for age, sex and industry. Within claims, the pattern of time loss differed importantly: those from Newfoundland had a marked deficit in claims with time loss 1–28 days (OR=0.18; 95%CI 0.12–0.27). WCB reporting among the 151 cohort members was lowest among those from out of province or recently settled: overall only 38% of loss time injuries were reported. Those in precarious employment were more likely to self-medicate or quit their job to avoid being labelled with a history of injury.

Conclusion Injury risk in inter-provincial workers could not be estimated using only WCB data.

Poster Presentation

Musculoskeletal

0069 KNEE DISORDERS, WORK LIMITATIONS AND WORK STATUS. FIRST RESULTS FROM THE CONSTANCES COHORT

¹Alexis Descatha*, ²Paul Kuijer, ³Ann-Marie Dale, ⁴Audrey Petit, ²Monique Frings-Dresen, ³Bradley A Evanoff, ¹Annette Lederer, ⁴Yves Roquelaure. ¹Inserm UVSQ AP-HP, Villejuif, France; ²Academic Medical Centre, Coronal Institute of Occupational Health, Amsterdam, The Netherlands; ³Washington University in St Louis, St-Louis, MO, USA; ⁴CHU Angers Inserm, Angers, France

10.1136/oemed-2017-104636.50

Objective Knee disorders, including osteoarthritis and knee replacement, are a growing problem for more and more workers due to increasing retirement ages. Aim is to describe work-related outcomes of possible knee replacement, meniscal surgery and other knee pain in a new large population cohort at its inception.

Methods The CONSTANCES cohort is a randomly selected representative sample of French adults aged 18–69 years at recruitment. Participants completed symptom questionnaires, and surgery in the last 4 years period was collected from a national health claims database. Knee disorders were defined as severe or daily knee pain, or history of surgery for meniscal tear or knee replacement. We considered several outcomes, including self-reported functional limitations (climbing stairs, walk 1 km, carrying 5 kg), task modifications and current work status. Multinomial logistic models were built separately for men and women; only variables with an Odds Ratio >2 (or <0.5) at $p < 0.001$ were considered significant after adjustment for other relevant variables.

Results Of 85,826 participants, of whom 38,571 (44.9%) reported knee pain. 10,683 (12.4%) reported severe knee pain, 1305 (1.5%) with meniscal tear surgery, and 403 (0.5%) with knee replacement. All limitations considered were significantly associated with severe knee pain, meniscus surgery and knee replacements among men and women, such as task modification for knee disorders. Loss of activity was only significantly associated with knee replacement among men.

Conclusions Based on a cross-sectional design at this time, these first analyses reported a poor outcomes of knee disorders for work-related activities.

Oral Presentation

Dusts and Fibres

0071 VALIDATION OF ACM CHECK: A MOBILE APPLICATION TO SCREEN FOR ASBESTOS IN RESIDENTIAL SETTINGS

Matthew Govorko. Curtin University, Perth, Western Australia, Australia

10.1136/oemed-2017-104636.51

Background/Aim A large reservoir of *in situ* asbestos-containing materials (ACM) remain in residential settings throughout Australia. Tradesmen and householders are at risk of exposure if they work on or near these materials, without knowing they contain asbestos. The aim of this study was to validate ACM Check, a

screening tool to identify and assess the condition of potential ACMs located in and around Western Australian homes.

Methods A two stage cross-sectional study was undertaken: 1) completion of ACM Check by 40 Western Australian householders, and 2) an on-site asbestos inspection by an experienced Environmental Consultant, which included collecting samples of suspect ACM to be tested in a laboratory. Cohen's kappa coefficient compared the results obtained from ACM Check with those of the Environmental Consultant.

Results 40 houses ranging in date of construction from 1898 through to 1988 with a median year of 1966, were sampled. 38 of the 40 houses (95%) were identified as having one or more 'possible' or 'likely' asbestos-containing materials present on the property. Overall, there was perfect agreement between ACM Check and the Environmental Consultant's assessment for any (1 or more) ACM present, $K=1.00$, $p < .005$, perfect agreement for any ACM located outside the house, $K=1.00$, $p < .005$, and moderate agreement for any ACM located inside the house, $K=0.593$, $p < .005$.

Conclusions ACM Check is a reliable screening tool to identify *in situ* ACMs in Western Australian residential settings. Its method can potentially be modified for implementation in other countries

Poster Presentation

Chemicals

0072 OIL MIST, FROM EXPOSURE DETERMINANTS TO EARLY EFFECT MARKERS: AN INTEGRATIVE STUDY DESIGN

³Sébastien Hulo, ¹Eve Bourgard, ²Jean-Jacques Sauvain, ¹Valérie Demange, ²Nancy Hopf, ¹Yves Guichard, ¹Fanny Jeandel, ³Jean-Louis Edmée, ³Nathalie Chérot, ^{1,2}Pascal Wild*. ¹INRS, Vandoeuvre, France; ²IST, Lausanne, Switzerland; ³CHU Lille, EA 4483 – IMPECS – IMPact de l'Environnement Chimique sur la Santé humaine, Lille, France

10.1136/oemed-2017-104636.52

The present project focuses on the effects of occupational exposure to oil mists on a panel of exposure and effect biomarkers in an epidemiological study. The assumption is that different health outcomes are caused by reactive particles causing oxidative stress leading to lung inflammation and ultimately cancer or asthma.

Ninety workers from France and Switzerland (30 controls, 30 exposed to straight cutting oil and 30 to soluble cutting oil) will be followed over two days after a non-exposed period of at least two days.

The exposure assessment is based on measurements of particles, metals, aldehydes, amines, the intrinsic oxidative potential of aerosols and the cutting oil. Furthermore, exposure biomarkers are measured in exhaled breath condensate (EBC)-metals, ions (nitrite, nitrate...) and urine –metals, metabolites of PAHs-. Finally, exposure determinants will be collected to guide future efforts in exposure prevention.

Effect biomarkers of oxidative stress (malondialdehyde, 8-isoprostane, 8-hydroxy-2'-deoxyguanosine) in EBC and urine will be repeatedly measured as well as exhaled nitric oxide (FeNO), an inflammation marker.

Genotoxic effects will be assessed using the buccal micronucleus cytome assay. Finally, the possible chronic effects of oil mist exposure on respiratory health will be explored by standard questionnaires.