

0391 **HEART RATE VARIABILITY IN PARTICLE EXPOSED TRAIN DRIVERS IN THE STOCKHOLM SUBWAY**

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Objectives Exposure to particulate matter in urban air is a recognised risk factor for cardiovascular disease, but little is known about possible effects from exposure to the high levels of metal-rich particles prevailing in underground subway systems. This led us to investigate heart rate variability (HRV) in occupationally exposed subway drivers.

Method 29 train drivers (18 men and 11 women) in the Stockholm subway were investigated from November 2004 to March 2005. All were non-smokers in ages 25–50. Personal particle exposure levels were obtained in an occupational hygienic investigation (mean PM_{2.5} 19 µg/m³, DataRAM 33 µg/m³). We registered continuous ECG over 24 h. The HRV measures obtained were LF, HF, LF/HF, HR and SDNN. The arithmetic mean (based on 5-minutes intervals) in the group was calculated for each measure and exposure situation, as well as the mean in group of the individual quotients between the exposure situations. One-sample t-tests were used to analyse whether the quotients differed from one.

Results The mean quotients between working in tunnel and working outside tunnel were significantly above one for LF (p = 0.04) and significantly below one for HR (p = 0.03) and SDNN (p = 0.00). The quotients between total working-hours and leisure-hours were significantly above one for HR (p = 0.03) and significantly below one for SDNN (p = 0.00).

Conclusions Overall, our results do not indicate any clinically significant effects on the cardiac autonomic function, as measured by HRV, for particle exposed subway drivers in Stockholm, even though there were some indications of a decrease in SDNN.

0392 **WORKPLACE BULLYING AND POSTTRAUMATIC STRESS SYMPTOMS AMONG FAMILY PHYSICIANS IN LITHUANIA**

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Objectives The study investigated the associations between workplace bullying and posttraumatic stress symptoms as compared to and controlled for associations between the latter and other psychosocial stress factors at work and in everyday life, employing a representative sample of Lithuanian family physicians.

Method With a response rate 89.2%, a total of 323 family physicians filled in anonymous questionnaire on workplace bullying, post traumatic symptomatology (IES-R), other psychosocial stressors at work and in everyday life, personal health resources (sense of coherence), behavioural characteristics and demographic variables. The statistical software SPSS 14.0 for Windows was used in the analysis. Associations were tested by way of multivariate logistic regression analysis.

Results A high prevalence of bullying was found among the family physicians in Lithuania, with 13% experiencing severe workplace bullying and 17.3% more occasional incidents of bullying. The prevalence of posttraumatic stress symptoms was also high (15.8%). The Odds ratio (OR) of severe bullying for posttraumatic stress after adjustment for age and gender was 8.05, 95% confidence interval (CI) 3.80–17.04. In the fully adjusted model it increased to 13.88, 95% CI 4.68–41.13, indicating cumulative effects of all the investigated stressors.

Conclusions Workplace bullying is prevalent among Lithuanian family physicians, as is symptoms of posttraumatic distress. Strong associations between posttraumatic stress and exposure to severe bullying indicate that bullying is a significant source of mental health problems among physicians and more so than most other well known psychosocial stressors at work and in daily living.

0393 **EPIDEMIOLOGY OF LOW BACK PAIN AMONG NURSES OF THE HOSPITAL OF SÉTIF (ALGERIA)**

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Objectives Identifying risk factors and quantification of the prevalence of low back pain among nurses and service agents working at the hospital in Sétif (Algeria).

Method A questionnaire containing 45 items was submitted by a physician to 450 people, of which only 300 people have agreed to meet. Responses have been verified by cross-checking with the information contained in the medical records of the occupational medicine service. Controlled data have been analysed by the chi-square test and multivariate logistic regression techniques using the “IBM SPSS 20” software.

Results The prevalence of LBP is 66.67%, it is significantly higher between 30 and 49 years of age and between 2 and 5 years of seniority at the hospital. These low back pains have a gradual onset in 52.0% and radiates along the sciatic nerve in 62.0%. The logistic regression analysis revealed the following associations: low back pain predicted by psychosocial factors (stress, sleep disturbance and fatigue late in the day), the usual working posture and frequent positioning of patients in bed. Regarding sleep disorders, we cannot say if they are a source or a consequence of low back pain even if they are strongly associated with this disease.

Conclusions Occupational factors that have a significant influence on the development of low back musculoskeletal disorders are not only mechanical and postural order but also organisational, social and psychological.

0398 **RISK OF NON-HODGKIN LYMPHOMA IN HEALTH OCCUPATIONS**

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Objectives Several non-Hodgkin lymphoma (NHL) risk factors are typical features of health occupations. We investigated risk of NHL and its major subtype among health workers.