Objective This cross sectional study was conducted to determine the prevalence of musculoskeletal disorders (MSDs) among government dental personnels in Khon Kaen Province of Thailand.

Methods There were 282 dental personnels enrolled into this study. Data were collected by interviews with the modified structural questionnaires. Descriptive statistics were used to describe characteristics and inferential statistics were MSDs prevalence and confidence interval (95%CI).

Results The results showed that most participants were female (81.9%), the minimum and maximum age were 20 years and 59 years, respectively (mean = 32.8 ± 9.4 years). Most participants had body mass index at normal level (18.5 - 22.9 kg/m^2) for 55.3%. Most positions were dental nurses (46.4%), dentists (22.0%) and patient assistants (18.1%), respectively.

For the last 7-day and 1 month period, the prevalence of MSDs were 57.8% (95% CI = 0.52 - 0.64) and 93.6% (95% CI = 0.91 - 0.96), respectively. The highest prevalence at severe level of pain were found at areas of shoulder (23.0%), lower back (18.1%), and neck (15.6%), respectively. Frequency of MSDs concidering everyday accurence found on areas of neck (12.8%), lower back (7.1%), shoulder (6.4%) and upper back (6.4%), respectively. Among 264 MSDs cases of dental personnels, the report of pain impacted to daily activity was 76.1%. The report of work was related-MSDs was 71.2%. Symptoms was occured at evening time after work (41.3%). The intake of painkillers or treatment by Thai traditional medicine program was 64.4%.

Conclusions The results identified neck-shoulder-back pain among dental personnels by showing the severity and the frequency of pain. Therefore there should be the health surveillance program of neck- shoulder- back pain among dental personnels. This findings are useful for the *prospective cohort*study to find out the risk factors for neck-shoulder-back pain among dental personnels.

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142   THE ASSOCIATION BETWEEN STANDARD THRESHOLD SHIFT AND HEALTH EFFECTS IN NOISE WORKING ENVIRONMENT AMONG WORKERS IN A MOTOR COMPRESSOR FACTORY

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Introduction Working in a noisy environment puts employees hearing health at risk. Standard threshold shift (STS) can be used as a screening method to detect early indications of hearing deterioration.

Objective The objective of the study was to investigate health effects related to STS in motor compressor workers.

Methods A cross sectional study of 464 motor compressor workers was conducted including hearing health examination by audiometer, and noise level in the workplace was monitored. Workers who reported having hobbies relating to noise e.g. gun shooting, or a personal history of disease relating to the ear were excluded. The relationship between health effects and workers with STS was studied.

Results There were more men 81.90% (aged range 31–40 years old) than women working for the company. The average continuous noise level in the workplace was 84.14 ± 5.21dB (A). The

study showed that working at the factory for more than 14 years (OR = 3.84, 95% CI 1.54 - 9.56) and being exposed to noise at least 8 hours a day (OR = 2.12, 95% CI = 1.02 - 4.40) results in a significant change of STS.

Workers with STS showed significant communication difficulties (OR = 1.89, 95% CI = 1.03 - 3.49) and stress/nausea more than workers without STS, although not statistically significant (OR = 1.54, 95% CI = 0.90 - 2.65).

Conclusions Workers exposed to continuous noise in a motor compressor industry are at risk of STS and adverse effects on health. Duration of exposure to noise is a key factor harm to hearing health. STS could be used as a tool to screen workers who have hearing health problems.

143   PERSISTENT ROTATING SHIFT WORK IS A SECOND HIT CONTRIBUTING TO ABNORMAL LIVER FUNCTION AMONG ON-SITE WORKERS HAVING FATTY LIVER

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Objective To investigate the relationship between elevated serum alaninetransaminase (ALT) and persistent rotating shift work (p-RSW) among employees with sonographic fatty liver (SLF).

Methods The authors performed a retrospective analysis on a cohort of electronics manufacturing workers. The records of 758 workers (507 males, 251 females) with initially normal ALT and a mean age of 32.9 years were analysed.

Results A total of 109 workers (14.4%) developed elevated ALT (e-ALT) after five years. Compared with those having neither initial SFL nor p-RSW exposure, multivariate analysis indicated that employees who had initial SFL but without p-RSW finally had a higher risk (odds ratio: 2.9; 95% confidence interval (CI): 1.7–5.1) for developing e-ALT; workers with baseline SFL plus p-RSW had a 3.7-fold increased risk (95% CI: 1.8–7.5).

Conclusions SFL poses a conspicuous risk for the development of e-ALT, and persistent p-RSW exposure significantly aggravates the development of e-ALT among on-site workers with preexisting SLF.

144   NEUROPSYCHOLOGICAL EFFECTS AND LOW EXPOSURE TO ORGANIC SOLVENTS IN WORKERS AT A PAINT FACTORY IN MEXICO CITY

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Objective It is likely that organic solvents (OS) cause neuropsychological alterations even at low concentrations. The aim is to identify the presence of neuropsychological deficits in workers exposed to low levels of organic solvents.

Methods A cross sectional study was performed on 208 workers from a paint factory who were exposed to lower mean concentrations, as per Mexican official norms, to OS mixtures, mainly of toluene and xylene. Using the cumulative index for toluene (concentration weighted in time x years working at the

company), two groups were formed: one for low and one for higher high exposure. Thirteen neuropsychological tests evaluated cognitive, motor, and four evaluated affective aspects.

Results Means were for: age 35(9.14) years; time working at the company 8(8.6) years. In the multiple linear regression models decreased function was confirmed only for two tests: trail-making A (R^2 = 12.3%) and Pursuit aiming II (R^2 = 19.5%). Age contributed to this and higher education level improved performance.

Conclusions Slight alterations were observed in this population exposed to low OS concentrations. However, it is necessary to improve cumulative exposure measurement and identify the best, most sensitive neuropsychological tests.

145 RELATIONSHIP BETWEEN WORKING CONDITION AND HEALTH-RELATED QUALITY OF LIFE AMONG KOREAN SCHOOL COOKS FOR LUNCH SERVICES

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Objectives This paper investigates the health-related quality of life (HQOL) among Korean school cooks for lunch services, especially focusing on the relationship between working conditions and their physical and mental HQOL.

Methods A cross-sectional study of 1,397 school cooks in one province was carried out, using a mail survey from June to October 2012. Working conditions and HQOL were determined through structured self reported questionnaires.

To evaluate working conditions, subjective labour intensity was investigated using Borg scale, and the numbers of both daily working hours and meals assigned per cook were questioned. HQOL was determined by applying 'Korean SF-8.'

To evaluate the degree of association between working conditions and HQOL, odds ratios were estimated after adjusting for demographic factors, such as age, education, chronic disease, exercise and drinking habits by logistic regression.

Results All of respondents were female, and the mean age was 47.8 (S. D = 5.36).

School cooks assigned more than 120 meals showed statistically significantly lower HQOL scores both in physical (OR = 1.48, 95% CI = 1.03–2.13) and mental (OR = 1.47, 95% CI = 1.03–2.10) criteria than those who were assigned less than 90.

Workers who responded that 'My work is hard' (13≤Borg scale≤16) or 'My work is very hard' (17≤Borg scale≤20) have significantly lower physical (OR = 3.47, 95% CI = 2.47–4.86) and mental (OR = 1.88, 95% CI = 1.36–2.59) HQOL scores than those who did not (6≤Borg scale ≤12).

The number of daily working hours was not significantly related to physical and mental HQOL scores.

Conclusions The degree of subjective labour intensity and the number of meals assigned per cook were related to the physical and mental HQOL of school cooks for lunch services.

Since cooks assigned more than 120 meals have significantly lower physical and mental HQOL scores, the number of lunch meals assigned per cook should be reduced.

146 NIGHT SHIFT WORK AND HEALTH STATUS OF WORKERS EMPLOYED IN INDUSTRIAL PLANTS. PRELIMINARY RESULTS

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Objective Night shift work has been linked to a higher incidence of some chronic diseases such as gastrointestinal or cardiovascular diseases. This is the first study assessing the prevalence of selected diseases and symptoms among middle-aged Polish night shift workers.

Methods We conducted a cross-sectional study of 605 blue collar workers in plants operating based on a shift system in Łódź, Poland. The study included 434 night shifts workers and 171 day-only workers (369 men and 236 women), aged 35–65. The employees coming to a periodic health examination to occupational physicians were invited to participate in the study. The data were collected via a self-administered questionnaire based on the "Standard Shiftwork Index". Crude frequencies of occurrence of particular diseases and symptoms were calculated.

Results The mean age of the night shift workers and the day workers were similar, i.e. 47.6 and 46.6 years, respectively (p = 0.13). Hypertension (14.7%), high cholesterol/hypercholesterolemia (10.9%) and chronic back pain (10.9%) were the most common diseases in this population. The prevalence of hypertension (14.3% among the night shift workers) and gastric ulcer (6.0%) was slightly higher than in the general population in Poland in a similar age group (hypertension ∼ 12% and gastric ulcer ∼ 4%). The prevalence of irritable bowel syndrome (IBS) (1.2% among the night shift workers), coronary heart disease (CHD) (1.2%) and high cholesterol (9.9%) were slightly lower among the industrial workers compared to the general population in Poland (IBS ∼ 13%, CHD ∼ 5% and high cholesterol ∼ 60%).

Conclusions Our study suggest some associations among Polish workers for the diseases potentially linked to night shift work, however further analyses are necessary (with adjustment for important confounders) to confirm these preliminary findings.

147 DESCRIPTION OF WORK ACCIDENTS IN SERIOUS CONDITION PARANÁ - SOUTHERN BRAZIL

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Objective Characterise serious occupational accidents occurred in the state of Paraná between 2007 and 2010.

Methods This is a descriptive epidemiological study design, cross-sectional and retrospective type, which covered the area of the state of Paraná, southern Brazil. Data source was the Sistema de Informação de Agravos de Notificação (Brazilian Case Registry Database). The inclusion criterion was being a worker aged 16 to 65 years. We have selected 24 variables and the data analysis followed descriptive statistics.

Results Between 2007 and 2010, were 4354 notifications, with an increase in records number as the years progressed. Regarding to the workers profile, 88.36% were male, predominantly Caucasian (69.66%), 21.52% finished secondary school, and 17.16% were between 26 and 30 years. Most affected occupations were among workers in mining industry and construction (13.85%), production of consumer goods and industrial services (13.37%) and services workers, safety and security, selling at stores (11.97%). Regarding to work situation, 70.88% of workers had a formal contract, however, the CAT (employment