

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 ($18.5 - 22.9 \text{ kg/m}^2$) 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 considering everyday occurrence 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 occurred 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 ± 5.21 dB (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