

concentrations with PSC using multiple regression model (SAS 9.1).

Results : The means of cord blood lead and manganese concentration were 14.3 and 49.9 µg/L respectively. Cord blood manganese concentration was significantly associated with PSC ($\beta=0.25$; $p<0.0001$) after adjusting for family income, maternal education, maternal smoking, alcohol drinking during pregnancy, maternal age, child gender, gestational age. No association was found between lead and PSC.

Conclusion: This ecological study found that fetal cord blood concentration was related to neighborhood petrol station density. This finding suggested that exposure to MMT-containing gasoline might have lead to fetal exposure to manganese.

SP-143

Analyzing the Factors That Are Related to the Occupational Stress among Nurses within the Overnight Hospitalization Unit of Dr. Tadjuddin Chalid Hospital Makassar 2009

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Objective: WHO stated that stress was an epidemic that was spreading around the world. Based on the results of a survey carried out by PPNI, around 50,9% of nurses in 4 provinces in Indonesia experience occupational stress, the symptoms such as dizziness, tiredness, difficulties in taking a rest which are caused by a large work load, time-consuming jobs, without any sufficient incentive. . The aim of this research is to analyze the relationship among occupational stress with work load, work shift, and type of personality of the workers. The samples of this study are 63 nurses in Dr. Tadjuddin Chalid Hospital, Makassar.

Method: This research uses the method analytical survey with a cross sectional approaching

Result: The result of this study reveals that based on chi square test and creames V test with prosperity level $p \leq 0,05$, variable work load ($p = 0,019$ and $\phi = 0,355$), work shift ($p = 0,029$ dan $\phi = 0,334$) are related to occupational stress. On the other hand, work relationship ($p = 0,188$) and type of personality ($p = 0,142$) are not associated with occupational stress.

Conclusion: There is a significant relationship among occupational stress, work shift, and work load. The researchers hope that the involved hospitals carry out the stress management techniques, manage the physical facilities in work areas, and provide workers with entertainment.

SP-144

Concentrations of Phthalates in Cup Water at Various Thermal Conditions

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Phthalate esters are commonly used for plasticizing in most plastic products, and some of them have been found to be harmful as environmental hormone. To determine how many phthalate esters could be dissolved in sealed plastic cup water in various thermal conditions, we conducted a factorial experiment model using split-plot design. The settings of the experiment were three temperatures (room temperature, 60 °C, 80 °C) and three baking times (2 hours, 4 hours, 8 hours) with three replications. Each water samples was extracted with n-hexane and concentrated to a volume of 0.5 ml for analysis of gas chromatography-mass spectrometry. The preliminary results showed that cup water contained micro amounts of phthalates, such as diethyl phthalate (DEP) and dibutyl phthalate (DBP); the amounts of phthalates, however, increased significantly after the cup water was placed at high temperatures during a certain period of time. Based on the precautionary principles, we suggest that cup water should be placed away from any sources of heat (e.g., sunlight) to reduce the intake of phthalates.

SP-145

The Study of Foundry's Crystalline Free Silica Exposure By Xrd

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Exposure to crystalline free silica for a long term may damage human respiratory system seriously. Foundry is the basal industry in Taiwan, the dust containing crystalline free silica is produced in the working environment. Environmental monitoring of crystalline free silica is very difficult, due to the analysis is not only complicated but also costly. The main purpose of this project is to explore an inexpensive alternative analysis with simpler process. First of all, we used the cyclone to test the usability and the uniformity. Second, we tested and took the method of Japanese JIS A1481 X-ray diffractometry. Third, we used the simple resources to build the calibration curve. Finally, we applied this method in the working environment and took this method. The results showed that the aluminum plated had a much better effect in identifying crystalline free silica. The all open-faced samples had good uniformity in the filter no matter how many middle. The calibration curve had a good correlation coefficient ($r=0.995$). Due to different industrial operating patterns, the industrial environment had the different concentration distribution. The dust consisted of 10- 30% of crystalline free silica in all samples obtained from the foundry environment. The crystalline free silica was accounted for less than 10% in the respirable dust. This simple and low cost method can become to improve the foundry working environment.