

OT25-2

The Relationship between Occupational Stressors and Psychopathology of Fire Fighters in East Jakarta

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Objectives: Fire fighters are human resources that often confronted with many problems which is called occupational stressors. The aim of this research was to find out the relationship between occupational stressors and psychopathology of fire fighters in East Jakarta. **Methods:** This was an analytical survey with a cross sectional design.

Results: Stressors of fire fighters were dominated by qualitative overload and job responsibility. Prevalence of psychopathology on fire fighters was 29.7%. There was significant relationships between subject characteristics and lifestyle with psychopathology (OR=3.36 8.69). A significant relationship between occupational stressors with psychopathology was also found in this study (OR=2.70 16.45). By multivariate analysis, responsibility stressor was the only occupational stress which has significant relationship to psychopathology. **Conclusion:** We conclude that occupational stressors associate with psychopathology of fire fighters in East Jakarta. Local government should provide appropriate support such as recreation facility.

OT25-3

Development of An Infectious Risk Assessment Model under Continued Exposure: A Case Study with Shigellosis

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Microbial risk assessment is an emerging tool for predicting risk of infection to specific pathogen. Various models have been proposed to evaluate risk of infection under different exposure scenarios, namely the "single-exposure" and "continued exposure" models. Typical single-exposure models include the Exponential model and the Beta-Poisson model, and the risk of infection depends on the type of pathogen and the amount of pathogen that people are effectively exposed to. For continued exposure, the negative binomial model is commonly used. By assuming a constant infection probability, cumulative risk estimate may be constructed over time, but the results often would not match epidemiological records. In this study, outbreaks of shigellosis were used as an example to derive risk models for continued exposure conditions. An initial risk of infection was estimated from single-exposure data, and the negative binomial model was modified and fitted to the cumulative case data from outbreak reports to estimate the daily infection risk over time. The results showed that, without considering the exposure dose, the risk of shigellosis infection from single exposure was between 0.0615 and 0.0688. During a shigellosis

outbreak, the daily infection risk increased exponentially over time. The daily risk of infection differed by major route of contact, with direct contact with pathogen yielding higher risk of infection than through contaminated food or water. Further application of the model on predicting infection risks are warranted.

OT25-4

Bagasse Dust Exposure to Pulmonary Function Impairment of Bagasse Stored Workers in Sugar Industry, Thailand

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To determine bagasse dust exposure and some factors which were related to pulmonary function impairment of 39 bagasse storage workers in Khon Kaen, Thailand from May 2006 to February 2007. Five manufacturing processes, including dumping, shredder, quality analysis room, boiler, and bagasse storage operation, were involved. Spirometer test, IOM sampler, cyclone sampler, and a self-administered questionnaire were developed. The average of bagasses dust concentration in all areas and types of dust was not over Thai legal limits, ACGIH recommend and OSHA standard for nuisance dust. Pulmonary function test revealed that 6 cases were moderate and 3 cases were mild restrictive patterns. A total of 9 cases (23.68 %) had abnormal pulmonary function. For all type of dust, there was no statistically significant relationship between level of bagasse dust concentration and pulmonary function impairment ($p\text{-value} > 0.05$) including among age, working duration, mask usage and abnormal pulmonary function ($p\text{-value} = 0.05$).

OT25-5

Aerial Lead Level, Blood Lead Level and Their Health Effect and IQ of the Students

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The main objective of the current research was to analyze a difference in blood lead levels and their impact on the health and IQ among the fifth-grade students of Banyuwajuh 5 and Kamal 1 in Bangkalan, Madura. The study was an analytical-observational study carried out using cross-sectional design among the fifth-grade students of Kamal 1 and Banyuwajuh 5. The study was conducted in Kamal Sub-district Madura. The population of the study included the fifth-grade students of Kamal 1 and Banyuwajuh 5 Kamal. The results of the current study showed blood lead levels of the fifth-grade students in Banyuwajuh 5 averaged at 2,5907 $\mu\text{g}/100\text{ ml}$ and those in Kamal 1 averaged at 3,6142 $\mu\text{g}/100\text{ ml}$. Some health problems experienced by those students were generally the reduced haemoglobin level, headache, decreased memory, difficulty in concentration, constipation and lower IQ. Two-tailed t test showed p