Pajanan PM2,5 dan gangguan fungsi paru serta kadar profil lipid darah (HDL, LDL, kolesterol total, Trigliserida) pada karyawan PT. X, Kalimantan Selatan tahun 2012 = The PM2,5 exposure and lung function disorder as well as level of blood lipid profile (HDL, LDL, total cholesterol, Triglycerides) on PT. X's employees Kalimantan Selatan South Kalimantan year of 2012

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Abstrak

Latar Belakang: Pajanan PM2,5 berperan terhadap berbagai efek kesehatan pada manusia termasuk gangguan fungsi paru dan mempengaruhi kadar profil lipid darah yang secara tidak langsung berkaitan dengan risiko penyakit kardiovaskuler. Tujuan: Mengetahui hubungan antara pajanan PM2,5 dengan gangguan fungsi paru dan kadar profil lipid darah pada karyawan PT X, Kalimantan Selatan, Tahun 2012. Metode: Studi cross-sectional dilaksanakan di dua area kerja PT X (perusahaan tambang batubara) yaitu area pelabuhan dan non-pelabuhan. 154 karyawan terpilih secara acak sebagai sampel dalam penelitian ini. Peneliti mengukur pajanan PM2,5 secara indoor pada kedua area dan menyebarkan kuesioner. Dilakukan review terhadap data medical check-up karyawan pada tahun terakhir. Analisis secara multivariat dengan metode regresi logistik berganda. Hasil: Hasil studi menunjukkan faktor risiko yang berhubungan dengan gangguan fungsi paru adalah umur (p-value= 0,007, 95% CI) dan masa kerja (p-value= <0,001, 95% CI). Faktor risiko yang berhubungan dengan kadar kolesterol total adalah masa kerja (p-value= <0,037, 95% CI), untuk trigliserida adalah umur (p-value= <0,001, 95% CI) dan IMT (OR= 3,375; 95% CI:1,672-6,813). Tidak ada variabel yang berhubungan secara statistik dengan kadar HDL dan LDL. Hasil analisis multivariat menunjukkan pajanan PM2,5 yang paling mempengaruhi gangguan fungsi paru (OR=1,9) serta kadar profil lipid darah yaitu kolesterol total (OR=1,6) dan trigliserida (OR=2,6) setelah dikontrol oleh variabel lain yang mempengaruhi gangguan fungsi paru dan kadar profil lipid darah. Kesimpulan: Pajanan PM2,5 berhubungan dengan gangguan fungsi paru dan kadar profil lipid darah pada karyawan, yaitu kadar kolesterol total dan trigliserida.....Background: Particulate exposure, especially PM2,5 probably affects to various kinds of health effect of human including lung function disorder and influences level of blood lipid profile. Along with that it is indirectly related to the risk of cardiovascular disease. Objective: The main objective of the research was to examine the relationship between PM2,5 exposure with lung function disorder as well as Level of Blood Lipid Profile on PT X`s Employees, South Borneo 2012. Method: The research was conducted with cross-sectional study in two working areas of PT X (coal mining company) those are port area and non-port area. There were 154 employees randomly chosen as samples in this research. PM2,5 exposure measured also within the indoor area. Thus, it had been done through distributing questionnaire and also reviewed upon the data of employee`s medical check-up in last year. The formulated binary logistic regression model was using for statistical calculation on PM2,5 exposure as main variables, along with age, working life, body mass index, smoking history, physical exercise habit, and the usage of personal protective equipment. Those were suspected as potential risk factors that influence lung function disorder and affected the level of blood lipid of the employees. The blood lipid profile was analyzed in each parameter. Outcome: The research shows that the risk factor that statistically relates to total cholesterol is

the working life (p-value= <0,037, for triglycerides the age (p-value= <0,001, 95% CI), and BMI (OR= 3,375; 95% CI:1,672-6,813). There is no variable that is statistically related to increasing of the level of HDL and LDL. Multivariate analysis shows that PM2,5 exposure influences lung function disorder the most (OR=1,9) and blood lipid profile levels, which are total cholesterol (OR=1,6) and triglyceride (OR=2,6).After being controlled by other variables, those risk factors influence lung function disorder and level of blood lipid profile. Conclusion: PM2,5 exposure relates to lung function disorder and level of blood lipid profile of the employees, which are the level of total cholesterol and triglyceride.