

A PREVALENCE STUDY ON THE EFFECT OF HEAT STRESS AMONG A STEEL PLANT EMPLOYEES IN SELANGOR DARUL EHSAN, 1997

KAJIAN PREVALENS KESAN TEGASAN HABA (HEAT STRESS) DI KALANGAN PEKERJA KILANG KELULI DI SELANGOR DARUL EHSAN, 1997

Sharfudin Noordin, Jamal Hisham Hashim

ABSTRACT

A prevalence study on the acute and chronic symptoms of heat stress was conducted among 306 confirmed male employees of a steel plant in Selangor Darul Ehsan. The respondents were divided into two groups according to the average WBGT of the environmental temperature in the plant. The heat exposed group comprises of respondents working in an average environmental temperature of WBGT 29-35 °C. Whereas the Nonnal group are those respondent working in an average environmental temperature of WBGT 23-28°C. The questionnaire were based on subjective clinical symptoms experienced by the respondent. Chi-square tests show that there are significant differences between the two groups. For acute symptoms, the heat exposed group reported higher prevalences of subjective symptoms on lethargy ($p < 0.001$), muscle cramps ($p = 0.001$), giddiness ($p < 0.001$), headache ($p = 0.010$), nausea ($p < 0.001$) and unstable movement ($p < 0.001$). The heat exposed group also shows higher clinical symptoms of heat exhaustion ($p = 0.001$) and heat cramps ($p = 0.001$). As for chronic symptoms the heat exposed group shows higher subjective symptoms of headache ($p = 0.001$), giddiness ($p = 0.006$), irritability ($p = 0.011$) and palpitation ($p < 0.001$). This study shows a positive relationship between Nephrolithiasis and hypertension with increasing age of ≥ 35 year old. This study also shows a positive relationship between acute symptoms of giddiness and nausea (heat exhaustion), and chronic symptoms of decreased libido and hypertension with increasing body mass index of ≥ 4 . In conclusion, changes in environmental temperature do affect the employees' health and attention should be given to control measures.

ABSTRAK

Satu kajian prevalens gejala-gejala akut dan kronik tegasan haba telah dijalankan di kalangan 306 pekerja lelaki yang telah disahkan dalam jawatan di sebuah kilang keluli di Selangor Darul Ehsan. Peketja-pekerja telah dibahagikan kepada 2 kumpulan berdasarkan kepada suhu persekitaran tempat kerja (WBGT). Kumpulan Panas merupakan pekerja-pekerja yang terdedah pada WBGTpurata 29-35°C dimana didapati suhu persekitaran kerja adalah panas. Kumpulan Nofnlal merupakan peketja-pekerja yang bekerja di persekitaran suhu WBGTpurata 23-28°C. Masalah kesihatan dalam bentuk simptom subjektif dikenalpasti dengan menggunakan borang soal selidik tersebut. Ujian khi kuasa dua menunjukkan adanya perbezaan yang signifikan di antara 2 kumpulan. Kumpulan Panas melaporkan prevalens gejala-gejala subjektifakut yang tinggi untuk keletihan ($p < 0.001$), kejang otot ($p = 0.001$), pening kepala ($p < 0.001$), sakit kepala ($p = 0.010$), loya ($p < 0.001$) dan pergerakan yang tidak befnyaya ($p < 0.001$). Di samping itu juga, Kumpulan Panas melaporkan kesan akut klinikal tegasan haba yang tinggi terhadap Kelusan haba ("heat exhaustion") ($p = 0.001$) dan "heat cramp" ($p = 0.001$). Bagi gejala kronik akibat gangguan haba, Kumpulan Panas melaporkan gejala-gejala subjektif yang tinggi terhadap gejala sakit kepala ($p = 0.001$), pening kepala ($p = 0.006$), "irritability" ($p = 0.011$) dan rasa berdebar ($p < 0.001$). Kajian ini menunjukkan hubungan yang positif di antara penyakit nefrolithiasis dan hipertensi dengan peningkatan usia ≥ 35 tahun. Hubungan positif juga diperolehi di antara gejala akut pening kepala dan rasa loya (kelusan haba), dan gejala kronik kurang libido dan hipertensi dengan peningkatan BMI ≥ 24 . Kesimpulannya, perubahan suhu persekitaran dan faktor pekerja mempengaruhi masalah kesihatan pekerja dan langkah-langkah pengawalan tegasan haba perlu diberi perhatian.