

Total Ergonomic Approach in Decreasing Quality of Fatigue of Metal Crafters

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Overtime work condition can create work related fatigue caused by stress. Work condition improvement could decrease quality of fatigue of the employees. A total ergonomic approach (TEA) was conducted to decrease the quality of fatigue of metal crafters at Kediri Tabanan. Samples ($N = 23$) were chosen randomly from the population. Fatigue was measured through a modification of 30 items questionnaire from the Industrial Fatigue Research Committee. Results show a 9.22% ($p < 0.05$) decrease in fatigue, revealing that decrease of motivational fatigue is higher than decrease in fatigue due to physical activity, due to the type of work: manual, repetitive, and continuous. It was suggested to use TEA continuously to decrease the fatigue and maintain motivation.

Keywords: work condition, total ergonomi approach, quality of fatigue

Kondisi kerja lembur dapat menimbulkan kelelahan sebagai salah satu akibat stres. Perbaikan kondisi kerja diharapkan menurunkan kualitas kelelahan karyawan. Sebuah pendekatan ergonomi total telah dilaksanakan untuk mengetahui perubahan kualitas kelelahan perajin logam di Kediri Tabanan. Sampel sejumlah 23 orang dipilih secara acak dari populasi. Kelelahan diukur dengan modifikasi 30 butir kuesioner model Industrial Fatigue Research Committee. Hasil-hasil menunjukkan penurunan kelelahan sebanyak 9.22% ($p < 0.05$) dan menunjukkan bahwa penurunan kelelahan motivasi lebih banyak daripada kelelahan aktivitas fisik, mengingat jenis pekerjaan yang manual, repetitif, dan berkelanjutan. Disarankan pendekatan ergonomi total diteruskan untuk menurunkan kelelahan dan mempertahankan motivasi kerja karyawan.

Kata kunci: kondisi kerja, pendekatan ergonomi total, kualitas kelelahan

Global economic development requires the ability of everyone capable of dealing with change, competition and complexity, including in the small scale industries. Small scale industrial competition should have the ability to meet consumer desires for customer satisfaction. Among the expected form of satisfaction is the ability to maintain the productivity of employees, in order to execute the production process just in time.

Various efforts can be implemented to meet customer desires such as addition of employees and work for 24 hours. But those efforts could not be implemented due to differences of ability of employees based on work experiences and their respective skills. Therefore, an effort that could be

done is just encourage the employee to add their working hours. Normally, employees work from 8 am to 5 pm every day including lunch time and break. Addition of working hours is performed every time before the deadline in the form of work overtime. Length of work overtime varies from 1 - 4 hours per day, starting from 5 pm until 10 pm, even occasionally until dawn.

Work overtime should be avoided because it will provide a variety of psychological and physiological effects (Anonymous, 2003; Spurgeon, 2003). One of the effects of working overtime is emergence of stress on the employees. The accumulated stress will be manifested in the form of complaints and behaviors that affect productivity. There are various forms of complaints and physiological changes due to the accumulated stress. One form of complaint is the perceived physical and mental fatigue of employees such as drowsiness and headache (Manuaba, 2003; Grandjean & Kroemer, 2000).

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