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The differences of pulse, core body temperature, and weight: Before and after work in the heat stress environment at a tea company-filling process

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Statement of the Problem: Heat stress in the work environment affects worker's physical condition; the blood vessel capacity increases and dilates. Also, heat stress can trigger the heart to pump more blood to the skin to release heat. This leads to an increased pulse rate. Furthermore, it affects the evaporation mechanism of the body and causes changes in body temperature and continuous sweating affects the composition of body fluids. The purpose of this study was to determine the differences in pulse, core body temperature, weight of the workers before and after work in the heat stress environment of a tea filling process at 30.8 °C room temperature in average.

The design of this study: Utilized cross-sectional methods: 15 tea workers were samples of a total workforce of 20. The data was analyzed using a Paired t-Test and Wilcoxon Signed Ranked Test.

Findings: The results showed that 80% of respondents experienced an increasing of pulse rate, 100% of respondents experienced an increasing of the core body temperature, and 66.7% of respondents experienced weight loss.

Conclusion & Significant: The results of the Paired t-Test revealed there was a significant difference in pulse rate before and after working in the hot environment ($p=0.007$), there was also a significant difference in body core temperature before and after work in the hot environment ($p=0.001$). However, there was no significant difference in weight loss before and after working in the hot environment ($p=0.630$).

Recommendations: To improve the work environment temperature by installation of proper ventilation, to manage the schedule of the workers, to provide drinks for the workers and to provide adequate cool rest facilities for break times.

Biography

Gustina is pursuing her MSc in occupational safety, health, and the environment at University of Birmingham, United Kingdom. She has graduated BSc in Occupational Safety and Health at Diponegoro University, Indonesia. She has working experiences in oil and gas industry as Health, Safety and Environmental Engineer and Specialist. She was a Process Advisor in repetitive stress injury prevention and based-behavior safety in a company of Indonesia. Her passion in Health and Safety field leads herself to conduct the fascinating researches. She believes that her researches can contribute the new knowledge on its fields.

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