ABSTRACT

THE RELATIONSHIP BETWEEN ERGONOMIC RISK FACTORS AND LEVELS OF FATIGUE AND MUSCULOSKELETAL DISORDERS AMONG WELDING WORKERS AT PT ADILUHUNG SARANASEGARA INDONESIA

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Abstract

Welding workers at PT Adiluhung Saranasegara Indonesia are exposed to ergonomic risk factors characterized by awkward postures, static positions, and repetitive movements, which have the potential to cause fatigue and musculoskeletal disorder complaints. This study aims to determine the relationship between ergonomic risk factors and the level of fatigue and musculoskeletal disorder complaints among welding workers at PT Adiluhung Sarana Segara Indonesia. This study employed a quantitative approach with a cross-sectional design. The study population consisted of 69 people, and the sample consisted of 59 people, selected randomly using a simple random sampling technique. Data were collected using REBA, NBM, and IFRC questionnaires. Data analysis was conducted using univariate and bivariate methods with the Spearman Rank correlation test at a significance level of α = 0.05. The results showed that the majority of welding workers were at a moderate ergonomic risk level (66.1%), with a low level of work fatigue (45.8%), and low musculoskeletal disorder complaints (49.2%). The analysis results revealed a significant and positive relationship between ergonomic risk factors and the level of fatigue (p = 0.000; r = 0.725), as well as between ergonomic risk factors and musculoskeletal disorder complaints (p = 0.000; r = 0.540). Thus, non-ergonomic work practices play an important role in the level of fatigue and musculoskeletal disorder complaints. Therefore, ergonomic improvement efforts are needed through the implementation of proper work postures, provision of ergonomic work aids, and regular ergonomic monitoring and evaluation to prevent and reduce the risk of fatigue and musculoskeletal complaints among welding workers.

Keywords: Ergonomics, Fatigue, Musculoskeletal Disorders, Occupational Safety and Health, Welding Workers