

ABSTRACT

Welding is an important part of a steel fabrication company. An unergonomic body position during welding process may cause the occurrence of musculoskeletal complaints. This research was conducted to analyze the relation between individual characteristics and body position with musculoskeletal complaints in welding unit of PT. Duta Hita Jaya.

This research is an observational research with cross sectional approach design. The number of population was 33 welders. Of the 33 population, 32 workers were chosen as sample by using simple random sampling technique. Variables researched were individual characteristics (age, body mass index, working duration, years of service, smoking habit and exercise habit), body position, and musculoskeletal complaints. Data were obtained by measuring, observing, and filling out questionnaire. Musculoskeletal risk was measured by using REBA method, while the level of musculoskeletal risk was measured by using Nordic Body Map. Spearman rho correlation test was used to analyse the relation between variables.

The results showed that 62.5% workers were under 35 years old, 53.1% workers had normal body mass index, 87.5% workers worked more than 8 hours per day, 71.9% workers have worked for 1-5 years, 53.1% workers smoked 10-20 cigarettes per day, and 50% workers did not exercise. As many as 68.6% workers had a weak risk of having musculoskeletal disorder (REBA score of 4-7) and 62.5% workers had a weak level of musculoskeletal complaints. Aged, body mass index, working duration, duration of employment and body position were significantly related to musculoskeletal complaints. There was a weak significant relationship between body position and musculoskeletal complaints ($p_{value}=0.005$).

The company is suggested to evaluate the working unit and to give training in order to increase workers knowledge on welding, the ergonomic body position during welding as well as the right steps on welding process to minimize the risk of musculoskeletal complaints.

Keywords: REBA, Nordic Body Map, body position and musculoskeletal complaints