

Investigation of ergonomic risk factors in a car tyre service centre

ABSTRACT

The purpose of this study was to investigate the ergonomic risk factors, the prevalence of body discomfort among workers and sources of injury/discomfort in a car tyre service centre. Questionnaire survey and interview session was used to identify the level of body discomfort areas and sources of injury or discomfort. Direct observation was performed by walk through inspection using digital camera to evaluate and identify ergonomic risk factors based on work activity. From questionnaire survey findings, the twelve (12) of respondents have body discomfort in the neck (8 each), shoulder (10 each), elbow/forearm (9 each), hand/wrist (11 each), knee (7 each), lower leg (7 each) ankle/foot (4 each) and lower back (9 each). The main sources of injury/discomfort in workplace were poor body posture (75%), bending the back (75%), highly repetitive motion (75%), lifting heavy object (83.3%), the long term standing (66.7%), long term squatting (58.3%), bending the neck (66.7%) and high hand force (58.3%). About 50% reported that poor workplace design also contributed to injury while 41.7% reported in use of hand tools. Eight (8) pictures were taken by using digital camera for the eight (8) different tasks to identify the ergonomic physical risk factors. Most of the physical risk factors identified were awkward posture from working with the hands above the shoulders, neck bending, bending the back forward, repeated bending, reaching, squatting and kneeling on the hard surface. Lifting heavy objects more than 10 kg, not wearing a hand gloves and exposed to high hand arm vibration when using high impact wrench (air gun) also contributed to the ergonomic physical risk factor. To address modifying the ergonomic hazards, engineering controls and administrative controls can be used. The study will be useful to ergonomists, researchers, consultants, workshop managers, maintenance workers and others concerned with identifying ergonomic risk factor on the workplace.

Keyword: Ergonomic; Risk factor; Body discomfort; Source of injury; Car tyre service centre