WORKPLACE ERGONOMIC RISK ASSESSMENT TOOL FOR WORK RELATED MUSCULOSKELETAL DISORDER ON ALUMINUM FRAME FABRICATION PROCESS

THESIS

ROMUEN O. DEMEGELIO
MARK ROLAND H. FERRER

College of Engineering and Information Technology
CAVITE STATE UNIVERSITY
Indang, Cavite

May 2017

WORKPLACE ERGONOMIC RISK ASSESSMENT TOOL FOR WORK RELATED MUSCULOSKELETAL DISORDER ON ALUMINUM FRAME FABRICATION PROCESS

Thesis Manuscript
Submitted to the faculty
of the College of Engineering and Information Technology
Cavite State University
Indang, Cavite

In partial fulfillment
Of the requirements for the degree,
Bachelor of Industrial Engineering

ROMUEN O. DEMEGELIO
MARK ROLAND H. FERRER
May 2017

ABSTRACT

DEMEGELIO, ROMUEN O. and FERRER, MARK ROLAND H. Workplace Ergonomic Risk Assessment on Work-related Musculoskeletal Disorder of Aluminum Frame Fabrication Process. Undergraduate Thesis. Bachelor of Science in Industrial Engineering. Cavite State University. Indang, Cavite. May 2017. Adviser: Engr. Willie C. Buclatin.

The study "Workplace Ergonomic Risk Assessment on Work-related Musculoskeletal Disorder of Aluminum Frame Fabrication Process" aims to determine risk assessment of the aluminium frame fabrication workers (n=53, 90.5% response) and the relationships between work setting and ergonomics risk factors to the body parts primarily affected by musculoskeletal disorders. The result of the statistical analysis showed that the neck, shoulder, upper and lower back, wrist and hands, hips and feet were affected by musculoskeletal disorders in the process of aluminum fabrication. These body parts were associated with different ergonomic factors based on Workplace Ergonomic Risk Assessment tool such as awkward posture, exposure to vibration, lifting heavy loads, changes in workplace temperature, and forceful movements and contributes to musculoskeletal disorders. The risk assessment of the study is low due to aluminum fabrication is not as hazardous as other metal fabrication like steel fabrication. Stretching the muscles before working is the best recommendation.

LIST OF TABLES

LIST OF APPENDICES

LIST OF APPENDIX TABLES

TABLE OF CONTENTS

WORKPLACE ERGONOMIC RISK ASSESSMENT TOOL FOR WORK RELATED MUSCULOSKELETAL DISORDER ON ALUMINUM FRAME FABRICATION PROCESS

Romuen O. Demegelio
Mark Roland H. Ferrer

An undergraduate thesis submitted to the faculty of the Department of Industrial Engineering and Information Technology, Cavite State University, Indang, Cavite in partial fulfilment of the requirements for the degree of Bachelor of Science of Science in Industrial Engineering with contribution number: CEIT-2016-17-2-081. Prepared under the supervision of Engr. Willie C. Buclatin.

INTRODUCTION

The Workplace Ergonomic Risk Assessment (WERA) method has been developed by Dr. Mohd Nasrull Abd Rahman. According to Rahman, WERA covers an extensive range of physical risk factors including posture, repetition, forceful, vibration, contact stress and task duration and it involved the five main body regions to be assessed (shoulder, wrists, back, neck and legs). It has a scoring system and action levels which provide a guide to the level of risk and need for action to conduct more detailed assessments. The WERA has been tested on its psychometric properties including reliability and validity trials during the development process.

In the study entitled, "WERA Tool for Assessing Exposure Risk Factors of Work Related Musculoskeletal Disorders – A Reliability and Validity Study", it shows that the WERA assessment provided a good indication of work related musculoskeletal disorders