DESIGN AND DEVELOPMENT OF POSTURE CHECKER AND CORRECTOR DEVICE

THESIS

JOHN EDMOND P. CARAMPOT
REGINWELL J. MALABANAN
ANGELU FEI E. RODEROS

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

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JOHN EDMOND P. CARAMPOT
REGINWELL J. MALABANAN
ANGELU FEI E. RODEROS
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ABSTRACT

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Posture is the way your muscles and skeleton hold the body erect. Safe lifting should be stressed by all workers to avoid having musculoskeletal disorder. Also, knowing the proper lifting posture is essential to minimize the stress and load trough the spine and other joints. Thus, the general objective of the study was to design and develop a posture checker and corrector device. Specifically, the study aimed to: 1.) determine the types of poor posture when lifting manually; 2.) identify the part of the body that is most prone to musculoskeletal disorder when lifting manually; 3.) determine the ideal posture for manual lifting; 4.) develop the posture corrector device for manual lifting with the use of NIOSH Lifting Standards and ; 5.) 5. evaluate and assess the device in terms of product aesthetics, materials used, and safety features. Descriptive research was used in the study. Company visits, interviews, observations and surveys were done to gather pertinent data.

Evaluators of the study were all workers who were lifting manually, composed of 71 male and 4 female workers. The study utilized descriptive statistical analysis to determine the musculoskeletal disorder. Six Sigma, Define-Measure-Analyze-Design-Verify approach was used to determine the problems and needs of the respondents and verify its solution.

The study showed that there was a significant relationship between musculoskeletal disorders and the number of working hours. It was found out that the most affected parts of the body while lifting manually were the upper back, lower back and hips.

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DESIGN AND DEVELOPMENT OF POSTURE CHECKER AND CORRECTOR DEVICE

John Edmond P. Carampot
Reginwell J. Malabanan
AngeluFei E. Roderos

An undergraduate thesis outline submitted to the faculty of the Department of Industrial Engineering and Technology, College of Engineering and Information Technology, Cavite State University, Indang, Cavite in partial fulfillment of the requirements for the degree of Bachelor of Science in Industrial Engineering with Contribution No. CEIT 2018-19-2-020. Prepared under the supervision of Engr. Gerry M. Castillo.

INTRODUCTION

Posture is the position which an individual holds his body upright against gravity while standing, sitting or lying down. Good postures involve training an individual's body to stand, walk, sit and lie in position where the least strain is placed on supporting muscles and ligaments during movement or weight–bearing activities. Poor posture is a very common condition. Posture issues are generally caused by muscular imbalances, in which a muscle is either too tight or too weak. Poor posture can manifest into many different conditions.

According to the Bureau of Labor Statistics (2014), more than one million workers experience back injuries each year. One fourth of all workers compensation indemnity claims are a result of back injuries. Low back pain is one of the most common reasons that people miss work, second only to the common cold.