

## **Scholarly Paper**

### ***Introduction***

Industrial spaces, particularly warehouse centers, have among some of the highest rates of musculoskeletal disorders (MSD) within this population due to the nature of the job. Long hours, limited breaks, repetitive tasks, and heavy loading coupled with limited knowledge in body mechanics create an environment that deteriorates the human body over time. To combat these long-term, debilitating physical ailments, the Student was granted the opportunity to complete a manual handling risk assessment for a local tool distribution center. Findings revealed a need for annual safety training, education on body mechanics, and recommendations for adaptations to the person, task, and environment to assist in decreasing the risk of MSDs.

### ***Processes/Methodology***

When completing a manual handling risk assessment, there are various factors that contribute to the overall safety and well-being of warehouse employees. Initially, the Student observed day-to-day operations to better understand the internal system that comprises the overall functionality of the distribution process. Using film, goniometry, measurements, brief interviews, MOHO and PEO models, and the following ergonomic assessments: Rapid Upper Body Assessment (RULA) and the Rapid Entire Body Assessment (REBA), I was able to gather information on the risk of employees developing MSDs based on task/environmental demands and human performance. Furthermore, the findings gave insight into some of the contributing factors that encourage or inhibit poor body mechanics, ultimately leading to my ability to determine changes or recommendations based on my knowledge in occupational therapy (OT).

## ***Outcomes***

REBA and RULA assessments were performed to illustrate the potential risk of MSDs utilizing a numeric scoring system that outlines expected timing for recommendations. As a result, a 3-column chart detailing each task with their respective scores along with a presentation on proposed suggestions were given to warehouse management. Furthermore, the Student conducted and presented a safety training module to 7 warehouse employees based on findings during evaluation and administered a pre and post-test survey over safe body mechanics. The results determined an 18.5% increase in score, ultimately highlighting the significance of annual safety training. Additionally, tasks with assessment scores considered “high risk” were discussed and proposed changes were executed with re-administration of assessments to demonstrate reduction in risk of MSDs.

The outcomes display the potential OT has within ergonomics, including proper safety training, environmental/task modifications, energy conservation/work simplification, and more to assist in achieving optimal warehouse performance. OTs possess the knowledge to excel within this field, and are continually expanding their expertise beyond clinical practice and into larger populations to assist with daily function.

## ***Conclusion***

OTs capacity to effectively evaluate and implement strategies that can assist in individual and group-based tasks in industrial spaces outlines the potential OT has in performing evidence-based ergonomics in a non-clinical setting. This assessment details the impact and overall effectiveness OTs possess in working with mass-production companies in finding

long-term, sustainable solutions that will reform the perspective of business leaders into understanding the value of quality performance and its impact on warehouse operations. Such findings can reinforce the notion that ergonomically-designed workspaces positively influence performance, quality of product, and the health and well-being of employees, ultimately rearing success.