

A Small-Scale Survey on Risk Factors of Musculoskeletal Disorders in Workers of Logistics Companies in Cyprus and on the Early Adoption of Industrial Exoskeletons as Mitigation Measure

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Abstract : Background: Musculoskeletal disorders (MSDs) in the workplace is a very common problem in Europe which are caused by multiple risk factors. In recent years, wearable devices and exoskeletons for the workplace have been trying to address the various risk factors that are associated with strenuous tasks in the workplace. The logistics sector is a huge sector that includes warehousing, storage, and transportation. However, the task associated with logistics is not well-studied in terms of MSDs risk. This study was aimed at looking into the MSDs affecting workers of logistics companies. It compares the prevalence of MSDs among workers and evaluates multiple risk factors that contribute to the development of MSDs. Moreover, this study seeks to obtain user feedback on the adoption of exoskeletons in such a work environment. Materials and Methods: The study was conducted among workers in logistics companies in Nicosia, Cyprus, from July to September 2022. A set of standardized questionnaires was used for collecting different types of data. Results: A high proportion of logistics professionals reported MSDs in one or more other body regions, the lower back being the most commonly affected area. Working in the same position for long periods, working in awkward postures, and handling an excessive load, were found to be the most commonly reported job risk factor that contributed to the development of MSDs, in this study. A significant number of participants consider the back region as the most to be benefited from a wearable exoskeleton device. Half of the participants would like to have at least a 50% reduction in their daily effort. The most important characteristics for the adoption of exoskeleton devices were found to be how comfortable the device is and its weight. Conclusion: Lower back and posture were the highest risk factors among all logistics professionals assessed in this study. A larger scale study using quantitative analytical tools may give a more accurate estimate of MSDs, which would pave the way for making more precise recommendations to eliminate the risk factors and thereby prevent MSDs. A follow-up study using exoskeletons in the workplace should be done to assess whether they assist in MSD prevention.

Keywords : musculoskeletal disorders, occupational health, safety, occupational risk, logistic companies, workers, Cyprus, industrial exoskeletons, wearable devices

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