

ABSTRACT

The cosmetics industry in Indonesia, particularly contract manufacturing companies like PT XYZ, is experiencing rapid growth in line with the increasing demand for cosmetics. However, challenges arise in the manual material handling (MMH) process, particularly in the transfer of production drums. These drums, weighing between 150 to 200 kg, pose potential risks to operators, leading to complaints of discomfort in areas such as the arms, shoulders, and back. This non-ergonomic condition has the potential to reduce work productivity, as workers must operate under uncomfortable conditions, and it also increases the risk of musculoskeletal disorders (MSDs). This study implements an ergonomic intervention based on GOTRAK (Skeletal Muscle Disorders) and RULA (Rapid Upper Limb Assessment) evaluations. The research focuses on improving ergonomic aspects by designing a material handling aid. The design process of this aid follows the Quality Function Deployment (QFD) method and incorporates anthropometric considerations. The resulting design is a material handling equipment (MHE) piping system capable of transferring production materials. Simulations of the MHE piping implementation showed improvements in operator posture, reducing the use of MMH methods and the risk of MSDs.

Keyword: Musculoskeletal Disorders, GOTRAK, Quality Function Deployment, Material Handling, Cosmetic