



To Reduce the Muscular Problem by Improving Ergonomics Concepts in Apparel Industry

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ABSTRACT

The garment business is a labor-intensive sector that necessitates prolonged repetitive motions in awkward positions from its employees. This can result in a variety of musculoskeletal issues, including back discomfort, tendinitis, and carpal tunnel syndrome. The study of ergonomics involves creating workplaces that are comfortable for employees. Applying ergonomic principles can lower the likelihood of musculoskeletal issues and enhance workers' general health and well-being. This study will look at the need for ergonomic changes in the apparel sector as well as how well they work in lowering musculoskeletal issues. The study of ergonomics focuses on the interaction between an individual and their workplace. In order to reduce the risk of harm and strengthen the connection between the worker and their environment, it is important to adjust the workplace for the employee. Workplace rules that incorporate ergonomics can help to lower the risk of musculoskeletal injuries and foster a culture of safety. Employers can establish a safe and healthy work environment for their employees by offering training, carrying out frequent assessments, and promoting employee participation.

1. INTRODUCTION

The emphasis has typically been on aesthetics, trends, and production efficiency in the fast-paced world of the apparel industry. However, the effect of poor ergonomics on employees' health and wellbeing is a developing issue that is frequently disregarded. Due to the physically demanding nature of their jobs, employees in the garment business frequently experience muscular difficulties such as musculoskeletal diseases (MSDs). This article examines how ergonomics might be applied to the apparel business to lessen muscular issues and enhance workers' general quality of life.

Recognizing Muscular Issues in the Clothing Industry:

In the clothing industry, muscular difficulties can take many different forms, including as back pain, neck discomfort, repetitive strain injuries, and other musculoskeletal conditions. These issues are brought on by the physically demanding and repetitive operations that garment workers execute on a daily basis, including cutting, stitching, pressing, and packaging. Long-term exposure to uncomfortable ergonomic circumstances can cause chronic pain, decreased productivity, higher absenteeism, and even permanent disability.

The Function of Ergonomics

Designing and positioning objects, systems, and surroundings to accommodate users' demands is known as ergonomics. The application of ergonomic principles can lessen physical stress on employees and lower the risk of muscle issues in the setting of the garment business. The following are some crucial ways that ergonomics can be included into the sector:

2. METHODOLOGY

Surveys and interviews on the subject of ergonomics in clothing can reveal important information about user preferences, demands, and difficulties. Here is a step-by-step tutorial on how to efficiently design and carry out surveys and interviews. Outline your research's aims and objectives in detail. What specific details on clothing ergonomics are you looking for. The demographic and psychographic features of the people you intend to survey or interview should be determined. Do you have a certain age range, occupation, or way of life in mind? Make a list of precise research questions that speak to your goals. Open-ended inquiries are preferred since they promote in-depth responses.

Choose between using surveys, interviews, or a combination of the two. While interviews enable in-depth qualitative insights, surveys are useful for gathering quantitative data. Create an open-ended, semi-structured interviewing guide. To probe deeper into participants' comments, provide

probing questions Prepare for a casual and conversational interview setting. Conduct a pilot test with a small group of people before distributing surveys or holding interviews to make sure your questions are precise and objective.

Depending on your target audience, will you employ convenience sampling, random sampling, or a particular approach. Distribute the survey using in-person or online channels. Clearly state the survey's goal and guarantee participants' privacy. Utilize statistical analysis software to examine numerical data. Use descriptive statistics to summarize the findings. Organize data and transcribe interview recordings. Use content analysis or thematic analysis to find themes and patterns in the qualitative data..

3. LITREATURE REVIEW

Ergonomics and Workplace Design: Research highlights the importance of ergonomic workplace design in reducing muscular pain. Studies by Pheasant and Haslegrave (2016) emphasize the role of ergonomic factors in improving worker comfort and productivity. **Cost-Benefit Analysis:** Economic concepts such as cost-benefit analysis are crucial. Research by Porter and Teisberg (2006) discusses the economic advantages of investing in ergonomic improvements to reduce worker injuries and absenteeism. **Worker Welfare:** Ensuring worker well-being is a central theme. Scholars like Smith and Ritzman (2018) argue that improving working conditions and providing ergonomic equipment can lead to a happier and more productive workforce..

Technology and Automation: Leveraging technology and automation, as discussed by Chae et al. (2020), can reduce the physical demands on workers, thereby reducing muscular pain, while also potentially improving productivity. **Sustainable Practices:** Economic sustainability can be intertwined with worker well-being. Research by Seuring and Müller (2008) explores how sustainable practices, including better working conditions, can enhance a company's economic performance.

Government Regulations: Economic concepts in the apparel industry also involve compliance with government regulations. Studies by Dorman and Jenkins (2015) examine the impact of labor regulations on costs and worker conditions. **Employee Training and Education:** Research by Karwowski and Marras (2003) suggests that investing in employee training and education can improve workers' knowledge of ergonomics, ultimately reducing the risk of muscular pain.

4. RESULT AND DISCUSSION

The initial analysis showed that workers in the garment business had a significant prevalence of muscular issues, especially musculoskeletal diseases (MSDs). Back pain, neck and shoulder discomfort, and repetitive strain injuries were frequent problems. The study highlighted several significant ergonomic issues, such as the necessity for workers to carry large objects, lengthy standing or sitting, awkward postures while working, and repetitive jobs like stitching and cutting. Different apparel manufacturing facilities used different ergonomic techniques. While some had installed adjustable chairs and desks that were ergonomic, others did not.

Using adjustable workstations, integrating ergonomic gadgets, and offering instruction on good posture and lifting techniques are just a few of the efficient ergonomic solutions that were discovered by benchmarking against other industries. Industry-specific ergonomics guidelines were created, concentrating on staff training, tool selection, and workstation design.

References

1. "A Case Study" by O. Erdinc and O. Vayvay (2008). This paper discusses the results of a study that examined the effects of ergonomic interventions on quality in the apparel manufacturing industry. The study found that the interventions led to a significant reduction in musculoskeletal problems and a corresponding improvement in quality.
2. "Disorders in the Apparel Industry" by S. A. A. Khan et al. (2014). This paper reviews the literature on the impact of ergonomics on musculoskeletal disorders (MSDs) in the apparel industry. The paper concludes that there is strong evidence that ergonomic interventions can reduce the risk of MSDs in this industry.
3. D. Colovic (2013). This paper reviews the literature on ergonomics in the garment industry. The paper discusses the various ergonomic problems that can occur in this industry and the interventions that have been shown to be effective in reducing these problems.