Impact of the lack of ergonomics in workers’ health and operational effectiveness: The case of a clothing industry in Brazil

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1. Introduction
The specificity of Ergonomics sits in two goals: the first one is focused in the dimensions of efficiency, productivity, reliability, quality, while the other is related to people, majorly concerned about safety, health, comfort, usability and satisfaction (Falzon, 2004). The purpose of an ergonomic analysis is always to make positive changes, improving the quality of work life and optimizing the limits considered acceptable for production (Guerin et al, 2001).

Hendrick (2008) mentions that managers have to justify any expense in terms of cost-effectiveness. Therefore, professionals must develop ergonomic projects based on financially sound proposals. According to this context, the purpose in this study is to elucidate, through the methodology of ergonomic work analysis, the impact of the lack of ergonomics in the health of workers and company’s operations. A case study is herein presented to contextualize and consolidate the theoretical background (Yin, 2010).

2. Methodology
The methodology is set forth through a case study in which an ergonomic analysis is performed in the production department of a clothing company, focusing on the seamstresses’ activity. The initial demand indicated a need to investigate the high rate of absenteeism in the company. The Ergonomic team elaborated a research survey using both quantitative and qualitative data, based on carried on-site observations.

Other types of systematic observations, assessments and document analysis from all departments were performed. Interviews with supervisors and workers were carried out in the course of the study, while Photographic and video recordings helped the data gathering process and registration. To evaluate the costs and lack of ergonomics, a Costing Methodology for Ergonomics (Mafra, 2006) was used. Then, different parameters and precepts from Regulatory Standards for Safety and Occupational Medicine were checked for compliance.

3. Results and Discussion
According to data from the latest PCMSO (Medical and Occupational Health Control Program), 438 pathological events of various natures were detected in the company. Among the most significant reports, there were: changes in vision, back pain, gastritis, anxiety / sadness, joint pain, constipation, hypertension and allergies. According to the documental survey, there were four employees on medical leave, collecting welfare benefit. Three of those were due to musculoskeletal disease, with possible correlation with the occupation (causal nexus). In addition, there were two employees undergoing retirement process due to disability.

Costs relating to those detected problems, such as absenteeism, proportional to the period of production of a collection, corresponded to 244 days in 120 days lost were related. The calculation of the impact of absenteeism on production was also estimated considering the potential work of absent employees during the production phase of a clothing annual collection.

In terms of production, one particular example showed the impact of lack of ergonomics in the workplace. The cost related to 418 defective parts to 1217 parts orders, canceled by the customer, unpaid orders for errors in size or color on shipped merchandise and those days delay for returning parts routed back to customer service were also added up. The costs of all problems mentioned in here amassed a grand total of
R$ 164,714.31, from which R$ 40,976.96 directly due to canceled orders, being a total of R$ 8,695.28 represented by defective parts, R$ 6,518.30 related to absenteeism, another R$ 107,224.96 related to the impact of absenteeism in production itself plus another R$ 1,298.81 related to delayed receivables.

Considering that the expected profit for this collection was R$ 1,011,980.12, as the cost of lack of ergonomics is subtracted, there is a drop in expected profit down to R$ 847,265.81. Thus, the cost of all the issues concerning to the lack of ergonomics accounted for 19% of losses in profit for one single collection, with approximate production time of 4 months.

4. Conclusion

The results of ergonomic analysis in a sample of companies showed that the costs of the lack of ergonomics produce significant loss in terms of financial resources, which infers validity to justify most of the ergonomic improvements proposed in the course of the ergonomic analysis. A considerable number of those suggestions were estimated to be near “zero cost”. As demonstrated by MacLeod (2006), companies can benefit from ergonomics applications and solutions to improve the performance of their operations, reduce their overall costs and improve the quality of life at work - and away from it – of their employees.

References


