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Vieira da Silva, Manuela; Oliveira, Rui; Rodrigues, Matilde; Nunes, Mafalda;
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Scientific Area of Environmental Health of
Allied Health Sciences School of Polytechnic Institute of Porto

Rua de Valente Perfeito, 322
4400-330 Vila Nova de Gaia
Porto - Portugal
t. +351 222 061 000
f. +351 222 061 001
e. geral@estsp.ipp.pt
w. www.estsp.ipp.pt

Characterization of OSH hazards in the Portuguese furniture sector

Authors: Matilde A. Rodrigues[1,2], Pedro Arezes[2], Celina P. Leão[3]

1 *Research Centre on Environment and Health, Allied Health Sciences School of Polytechnic Institute of Porto, Portugal*
2 *CGIT, Department of Production and Systems, Engineering School, University of Minho, Guimarães, Portugal*
3 *R&D Centro Algoritmi, Engineering School, University of Minho, Guimarães, Portugal*

Presenting Author: Email: mar@estsp.ipp.pt | Tel.: +351 918 043 393 | Fax: +351 222 061 001

INTRODUCTION:
The furniture sector is one of the most important economic sectors in the north of Portugal, comprising 5 798 companies and employing more than 32 000 workers (Eurostat, 2012). However, this is a sector with several economical and organizational constraints. For example, in these companies most of the workforce is unqualified, the professionalization in terms of their management, marketing and trade policies is reduced and the occupational accidents remain high (EGP, n.d.; Eurostat, 2012).

The high number of accidents in this sector is the result of several factors, namely the sector's risk, stakeholders' low safety concerns, lack of machine maintenance and the lower qualifications of workers in the sector. Furthermore, the current economical situation in Portugal can also contribute to the small decrease of the number of accidents in this sector, which may be associated to the lack of investment on Occupational, Safety & Health (OSH) domain (Loureiro *et al.*, 2014).

Considering this scenario, it is important to know and characterize the hazards in this sector in order to identify the key risks of the sector, helping the competent authorities and the companies in the definition of a strategy of intervention in this crisis period.

OBJECTIVES:
This work aims to characterize the OSH hazards in the furniture sector, identifying the key risks for workers, as well as, some possible risk reduction measures.

MATERIALS AND METHODS:
A safety audit was performed to 14 furniture companies. The analysed companies varied in size, from micro- (less than 10 employees) to small- (from 10 to 50 employees), and medium- (from 50 to 250 employees) sized companies as well. To support this process, a checklist was formulated and applied based on safety legislation and guidelines. It included a set of 112 items related to workplace conditions involving health and safety issues, tasks, equipment and machinery. The items were selected according to the major risk factors in the furniture sector. These items were evaluated based on a 5-point Likert scale, in which 1=very deficient and 5=excellent, to characterize the level of deficiency of each feature under analysis. At the end of the safety conditions analysis, all results were discussed with the companies' management and supervisors and the risks related to each identified hazard were characterized.

RESULTS AND DISCUSSION:
The obtained results showed that in furniture industries the main risks are related to contact with saws, drill and milling cutter. Furthermore, noise and particles exposure, as well as, the risk of musculoskeletal disorders also appear as prevalent risks in the studied companies. These risks were related to: machines without protection or protection raised; non-use of the driving-bar for cutting small pieces; pieces blocked in machines removed with the hands; inadequate use/stowage of manual tools; non-use or inexistence of sound proofing protections and a large number of tasks with manual handling of loads.

One of the more critical situations was the saw used for panel dimension. Only in two companies the protection was used. However, even in these situations it was not always used and in some cases it was adjusted to the upper limit, and not carrying out the supposed protection function. Furthermore, only these two companies had a plan of the saws' maintenance and have adjusted the same in accordance to the wood height. Also, only in two companies workers always use the driving-bar for cutting small pieces. Taking this into account and considering the continuous exposure of the operator, the probability of a cut in the hand when operating these machines is high. In the other machines, as manual crosscuts and guillotines, the protections were used in some cases.

Another important risk in this sector is the projection of some components of the machine. Without a suitable protection and maintenance, saws, milling cutter, drills and particles, can be projected and cause severe damages in workers (Miguel, 2005).

The continuous high noise levels exposure verified in some workplaces, as well as, the constant manual materials handling, particularly in tasks of wood pieces and furniture transportation and in support of the pieces when supply the machinery were also identified as important risk factors in this sector.

CONCLUSION:

This study highlighted that in the furniture sector the risks are diverse; however, most of them can be prevented through correct work procedures and training. Some of the actual level of deficiency can be related to the current pressure that companies put on workers, denoting a lower interest in safety comparing with the production. In fact, it was observed that the tasks are being performed with a minimum of workers number (e.g. furniture handling) and the workers are susceptible to unsafely behaviors, where most of them can be related to an attempt to increase production. Therefore, the intervention in this sector needs to be performed not only at workers' level, but also at the management level, in order to avoid unsafe behaviors and promote safe procedures with a better and more efficient resources' management.

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