The work in the jewelry manufacturing

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1. Introduction:
The Brazilian market for plated jewelry moves around R$ 940 million a year, according to research conducted by the FIESP / CIESP (Foundation and Center of São Paulo State Industries). From this amount, the plated jewelry sector represents 66%, moving approximately R$ 620 million in the country (SINDIJOIAS, 2014).

The city of Limeira, with approximately 290,000 inhabitants (IBGE, 2013), is characterized by significant production of jewelry and accounts for 60% of national production of this type of jewelry. In addition to supplying the domestic market, the city exports its plated jewelry and costume jewelry to many countries such as United States, Germany and other from Latin American (CIDADES PAULISTAS, 2008).

The city of Limeira has about 500 factories employing 20,000 employees and produces 35 tons of parts per month (SINDIJOIAS, 2014). The supply chain can be divided into four simple links: raw material supply; gross production (e.g. stamping, casting and welding); chemical sector (e.g. electroplating) and commercial activity.

However, we can see a contradiction, since, while the veneers and jewelry industry brings gains in economic terms and creates jobs for the city of Limeira, it encompasses a number of limitations, such as the little sophistication in technological terms increased by environmental problems and child labor (FERREIRA, 2005). In addition there is the outsourcing process demanded by production flexibility which often comes with precarious working conditions.

The risks to human health and the environment, arising from the current conditions of this type of production, are important justification for further studies to assist in formulating a broad diagnosis.

2. Method:
The approach adopted here is the Francophone current ergonomics, which aims to clarify the actual work through a set of fundamentals, methods and practices articulated in a meaningful way to the unique and specific work situations. The method was developed by an adaptation of the Ergonomic Work Analysis – EWA (GUÉRIN et al., 2001). This method consists of three main phases: the demand analysis, the task analysis and actual activity (WISNER, 1987). The study was done in a small company responsible for plated jewelry manufacturing located in Limeira, Sao-Paulo, Brazil.

3. Results and discussion:
The study of the work was done in a small business with 33 employees from the stamping plated jewelry branch in the city of Limeira, SP, Brazil. Despite its small size, the factory exports parts to Chile, Ecuador and Colombia, although much of their production is sold to the domestic market (90% of total sales).

The plant production is distributed into stamping, tooling, cleaning and shipping sections. The assembly of the parts is outsourced. In all of production sections the male figure is predominant, only the shipping area is composed exclusively by women.

In the tooling shop the work is to produce or modify tools and parts which will be used ahead. In stamping section the semi jewel format is traced and cut over the metal. Next, the model of the part is imprinted, shaped and can be finally assembled. The cleaning section handles shining and polishing of stainless steel parts. Finally, in shipping section various activities are performed, especially those related to the quality evaluation, assured through the inspection of all the parts that were assembled outside the factory, as this stage of the process is outsourced. During this production phase, the screw of earrings must be put so that later it can be packed. Other activity is the separation of purchase orders in accordance to the number of parts required by each customer, weighing and packaging.
The deeper analysis of the work took place in the shipping area. This section is composed entirely by women, with less experience. All activities require attention and detail, as each piece is unique in its details.

The analyzed work is strictly manual and performed in the seated position. The consequences of fixed posture for working are the pain in the legs, back, hands / wrists and cramps. The best way they found to increase productivity is not to support the elbows and fists on the table, as this would cause a reduced speed, despite the increased discomfort in that position, especially on colder days.

To meet targets, the employees have to accelerate the pace of work, because despite the varieties, the production still suffers seasonal variation throughout the year. In some occasions this acceleration was not enough to meet the demand and employees began taking extra work home.

The research is still in progress, but one can see that there are many risks to the health of workers who need to be further described, in order to generate a diagnosis aiming for work transformation.

References


