Musculoskeletal complaints among workers of a poultry slaughterhouse

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1. Introduction

Brazil is the world’s major chicken meat exporter, 54.71% in the form of cuts, 4.6% as processed meat, 4.51% as salted meat and 36.18% as whole chicken (Brazilian Association of Animal Protein, 2014). Therefore, most of the exported meat is cut by means of tools or specific machines. Tasks in slaughterhouses are monotonous and repetitive, and the pace and volume of work are high (Caso, Ravaioli, & Veneri, 2007). Tirloni et al. (2012) found that the majority of workers of poultry slaughterhouses feel some kind of bodily discomfort (67.2%), mainly on shoulders (62.6%) and neck (46.2%). To OSHA (1993) artificially cold environment is a risk factor for the emergence of work-related musculoskeletal disorders (WRMD).

Thus, the aim of this study was to verify the presence of bodily discomfort among workers of a poultry slaughterhouse and its associations with working time in the company, task characteristics, presence and distribution of breaks, job rotation, use of tools and perception of cold.

2. Method

All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration.

The study included 312 workers of a poultry slaughterhouse, 207 women (33.6 ± 8.7 years) and 105 men (36.0 ± 10.0 years). A body map was used to assess discomfort (Tirloni et al., 2012), in which subjects reported the body region that they perceived discomfort. Issues concerning the presence of job rotation and breaks, use of tools and perception of cold were also used. The criterion of Colombini, Occhipinti, and Fanti (2008) was used to classify repeatability. Descriptive statistics was applied and to verify association between variables, the chi-square test (p = 0.05) was used.

3. Results

The working time of respondents in the company was from five months to thirty-five years. It was found that 85.9% of workers performed repetitive tasks, 98.1% had breaks, 44.6% had job rotation (2-7 tasks), 40.4% used tools and among workers in artificially cold sectors (n = 204), 71.1% felt cold. Additionally, 71.2% felt discomfort in at least one body region, with pain, tingling and fatigue as the most common symptoms. Most complaints were reported for shoulders (50.3%), arms (34.3%), wrists (23.4%), hands (21.8%) and lumbar spine (20.5%). Of the 222 workers who reported bodily discomfort, 50% classified it as moderate and 32.9% as strong or very strong.

There was no association between body discomfort and working time in the company (p = 0.119), distribution of breaks (p = 0.917) and job rotation (p = 0.326); however, it was associated with sex (p < 0.001), task characteristics (repetitive and non-repetitive) (p = 0.001), use of tools (p = 0.006) and perception of cold (p < 0.001).

4. Discussion

The results indicated that women were more affected with bodily discomfort, unlike the study of Tirloni et al. (2012) in which the proportion of workers with bodily discomfort was similar between sexes. Another variable associated with bodily discomfort was the task characteristics, most of them being repetitive. According to OSHA (1993), symptoms of WRMD can be decreased by reducing the speed of the production process, adoption of breaks, job rotation and increasing the number of workers. In relation to the use of tools, Reilly et al. (2004) found that the sharpening condition of tools is a factor that can interfere with the cutting process.
According to the Regulatory Standard 36 (BRAZIL, 2013), employers must ensure the constant replacement of sharp knives and production process must consider their sharpening time.

Finally, the temperature of artificially cold sectors of poultry slaughterhouses in Brazil should range from 10 to 15 °C (BRAZIL, 2013), which is a factor that may contribute to increase work-related diseases (OSHA, 1993), thus justifying the association between bodily discomfort and perception of cold.

References


