

Evaluation of the health risks to garment workers in the city of Xambrê-PR, Brazil

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Abstract. This study evaluated the risks for cardiovascular disease and the life habits of garment industry workers in north-western Paraná state, Brazil. The following parameters were assessed: body composition, cardiorespiratory fitness, eating habits and physical activities by garment industry workers. Cardiovascular risk was observed in some of the studied subjects, in the form of high BMI and reduced maximal oxygen uptake. The development of a workplace quality-of-life program is suggested, aiming to stimulate the development of physical activities to improve the cardiovascular conditioning of workers.

Keywords: garment industry; physical activity; ergonomic analysis

1. Introduction

Northwestern Paraná state, Brazil, is known for its large number of garment enterprises. As the main clothing hub in that area, the Cianorte region features more than 450 related businesses, employing close to 15 thousand direct employees [1]. They are represented by the Clothing Union (SINVESTE) of Cianorte, which comprises 48 municipalities and is currently expanding [2].

Faced with such an economically important sector requiring a skilled labor force, workplace quality of life has become a constant concern in order to prevent increased health problems in that population. Among the actions taken in this regard are those by SESI, which stimulates workplace safety in different ways [3]. That service seeks to empower people and promote their professional advancement.

Despite all efforts, the rapid increase in the numbers of garment sector businesses has not been followed by concerns with the workplace conditions for workers, who exceed their work hours to meet productivity quotas [4].

Seamstresses stand out from other workers, as they represent a vital link in garment industry pro-

duction and perform their duties at often poorly-adapted work stations.

It was with the intention of diagnosing the risk factors and problematic points for seamstresses that Mangeth & Gouvinhas [5] studied those workers. By learning about the task from an ergonomic standpoint, they observed the potential posture risks seamstresses face.

The general objective of this work was to evaluate the incidence of cardiovascular disease and life habits of garment industry workers in Xambrê, northwestern Paraná, Brazil.

2. Materials and Methods

The project was previously approved by the Ethics Committee for Research Involving Humans (CEPEH-UNIPAR).

The study population consisted of workers of a garment business in the city of Xambrê-PR. The company has 91 employees, and the evaluated sample consisted of 45 women, ages 16-50.

The “Lifestyle Morphophysiological Indicators” and “Par-Q and you” [6] questionnaires were applied to collect data on life habits.

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As an anthropometric measurement procedure, the body weight of the workers was evaluated using a digital scale. Waist and hip circumference were measured using a tape measure [7].

The 2-km walk test was applied to evaluate aerobic fitness by measuring the maximal oxygen uptake ($VO_2\text{max}$) in the form of a brisk walk [8].

3. Results and Discussion

The employees at the company in question are young adults, ages 15-34. Most are female (62%), married (49%) and with young children. Of the evaluated workers, 38% have finished high school and 42% have completed middle school. Educational level is a condition that facilitates the education process. Conversely, people with less schooling are more likely to abuse alcohol and tobacco. In the sample evaluated in this study, the number of women who consume alcohol surpassed (40%) the number of smokers (4%), unlike the data described by Tassitano et al [9].

The results of the morphophysiological and lifestyle indicators demonstrated that the diet of the

workers needs improvement. Despite the moderate intake of products that increase the risk of cardiovascular disease, vegetable and fruit consumption can be considered. It should also be highlighted that 34 women ingest soft drinks and sweets at least three times a week, which increases caloric intake and the risk for excess weight. Studies show that workers with children are more likely to be exposed to physical exercise and eat fruits and vegetables [10]; however, these data were not cross-referenced in this study.

With regard to cardiovascular risk and body composition (Figure 1), it was observed that 29% of women were overweight (BMI > 25); of those, 24% had a waist size larger than 88 cm, which puts them at risk for metabolic complications [11]. Older women tend to have higher BMI and larger waist size than younger women, which further aggravates metabolic risks. Of the eight women with “high” or “very high” risk for metabolic risks, six were 38 years of age or older. These results suggest the need to implement a quality-of-life program in the workplace.

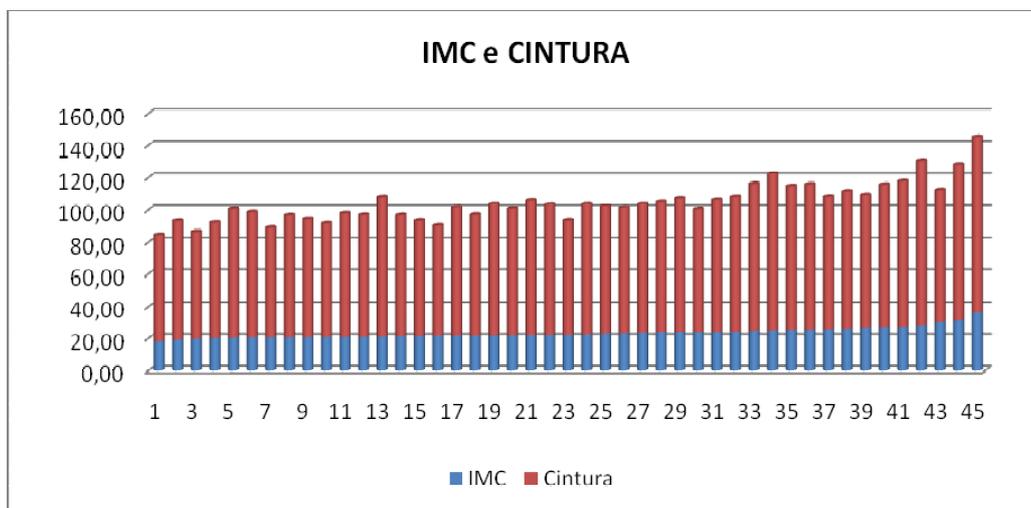


Figure 1 – BMI and waist size of seamstresses at a garment factory in Xambrê, 2010.

With regard to physical activity undertaken by the workers, it was observed that in general the women do not perform physically demanding activities; however, when combining all three types of intensity evaluated in the questionnaires, the women show they do take some time for weekly physical activities. Nevertheless, most women spread out these activities over different days of the week.

Regarding the women’s performance in the walk test, contrary to expected, women ages 16-24 showed results 8% lower than women older than 40 years of age.

The maximal oxygen uptake of more than half of the women was poor or very poor, as can be seen in figures 2 and 3 – women struggled to perform simple aerobic physical tasks. As such, any effort requiring a

minimum of energy expenditure causes a significant cardiac deficit, with increases heart rate. Any increase in these cardiovascular variables can com-

-pound health risks in medium metabolic expenditure situations for people with a similar VO_2 max.

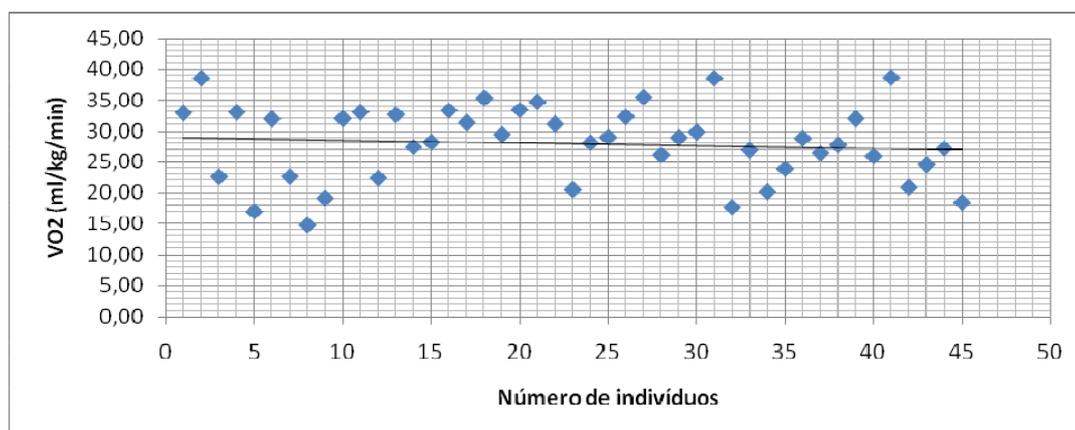


Figure 2 – Maximum Oxygen Uptake Values of female workers at a garment factory in Xambrê – PR, after the 2-km walk test.

The job activities of the studied workers do not favor physical activities that improve cardiovascular health. That perhaps explains the low cardiovascular resistance, as over 25% of work time is spent seating and the rest does not require intense physical exertion, either.

The development of a workplace quality-of-life program to stimulate physical activity, combined with an improved diet, will certainly help develop better health conditions for these workers.

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