



PRODUCTION RISK FACTORS AND SPINE INJURIES IN GARMENT WORKERS

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ABSTRACT:

Garment workers are exposed to various factors in the work environment, classified as physical and ergonomic. Occupational injuries of the spine develop as a result of the action of harmful production factors, the most important of which are overstrain, vibrations and an unfavorable production microclimate. The aim of the study is to improve the health and prevention of spine injuries among garment workers. The subject of the study is 75 cases of spine injuries in garment workers. The persons were hospitalized in University Hospital - Pleven during the period 2019-2023. Clinical, laboratory, functional, imaging and statistical research methods were used. Treatment with medication and physical factors was carried out. In 93% of the patients, an improvement in clinical syndromes and the performance of activities of daily living was found. 7% of the examined persons required surgical treatment. Conclusions: Spinal injuries are a current health problem among garment workers. Combined medication and physical therapy is an effective and practically applicable therapeutic approach for the investigated disabilities.

Keywords: occupational diseases, spine, garment industry,

BACKGROUND

A number of factors can lead to the development of health problems in garment workers [1]. The work environment factors in garment production are mainly of two types - physical and ergonomic. Physical includes: broad-spectrum, mostly high-frequency noise (above 800 Hz); production dust - of vegetable (cotton, linen), animal (wool, silk) and synthetic (artificial fibers) origin; whole body vibrations, most intense for low frequencies (up to 35 Hz); unfavorable production microclimate [2]. The ergonomic factors of the work environment are the performance of repetitive movements, application of force, speed of work, forced work posture, etc. [3, 4]. Ergonomic factors influence the psycho-social aspects of work, the satisfaction of employees, their health and well-being [5].

Individual factors include physical abilities, age of the worker, past illnesses, harmful habits (smoking, alcohol use), obesity.

The noted risk factors can create conditions for the occurrence of different types of damage to the locomotor system [6]. The spinal column is the main part of the locomotor system, consisting of vertebrae connected to each other through ligaments and intervertebral. Damage to the spine is accompanied by disorders of the functions of the spinal cord and its roots [7].

The aim of the study is to improve the health and prevention of spine injuries among garment workers.

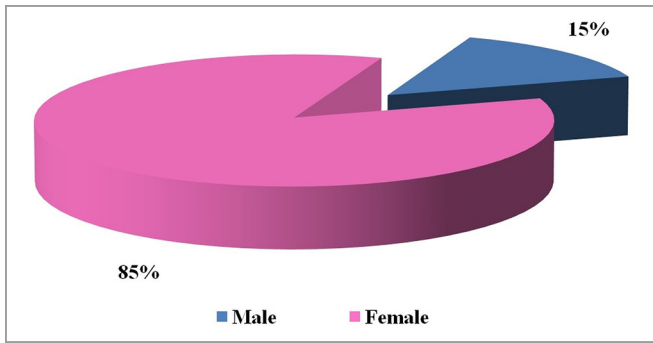
MATERIAL AND METHODS

The subject of the study is 75 cases of spine injuries in garment workers. The persons were hospitalized in the Department of Occupational Diseases and Clinic of Physiotherapy and Rehabilitation, UMBAL - Pleven, during the period 2019-2023. Clinical, laboratory, functional, imaging and statistical research methods were used [8, 9]. Treatment with medication and physical factors was carried out [10, 11, 12]. All participants signed informed consent forms for the study.

RESULTS AND DISCUSSION

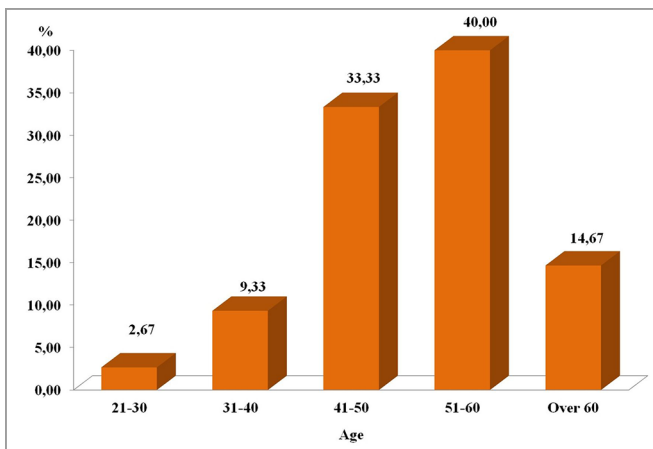
The total number of persons examined is 75. By gender - 64 women and 11 men (fig. 1).

Fig. 1. Distribution of persons by gender



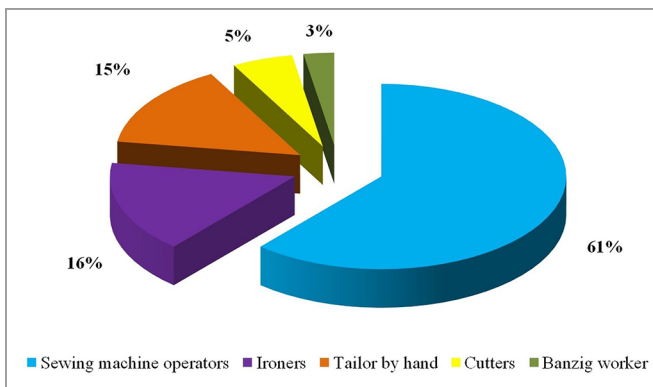
The age distribution was from 26 to 63 years, with a mean age of 50.47 ± 6.22 years ($n=75$) (fig. 2).

Fig. 2. Distribution of cases by age



The distribution of persons by occupation is shown in fig. 3:

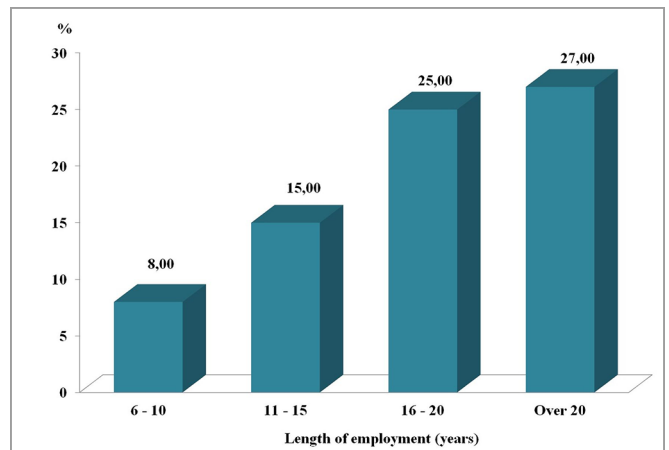
Fig. 3. Distribution of persons by occupation



The distribution of the surveyed persons by work experience is presented in fig. 4.

The mean duration was 18.40 ± 4.87 ($n=75$).

Fig. 4. Distribution of cases by length of service

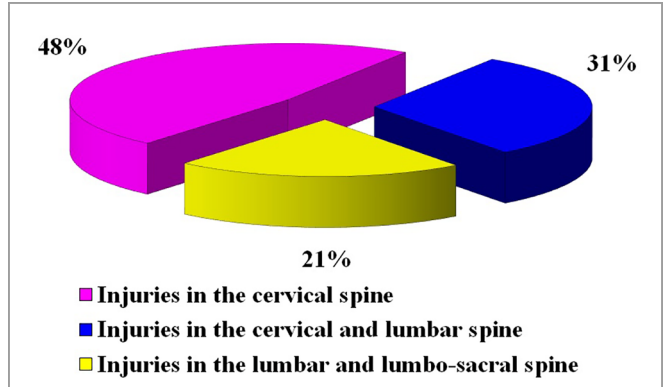


The distribution of the examined persons by nosological units includes: Injuries in the cervical spine (cervical spondylosis with radiculopathy, cervical non-vertebral radiculopathy, cervical osteochondrosis with radiculopathy, cervicalgia).

Damage to the lumbar and lumbo-sacral spine (damage to the intervertebral discs in the lumbar or lumbo-sacral region with radiculopathy, lumbar or lumbo-sacral non-vertebral radiculopathy, lumbago).

The distribution by nosological units is presented in fig. 5.

Fig. 5. Distribution of cases by nosological units



The following treatment was performed in the studied patients (fig. 6):

All patients were treated with physical factors - paraffin, lye, heating, massage, magnetic field, extension therapy, electrophoresis, IHR, interference currents, ultrasound with NSAIDs.

At discharge and on the 30th day after discharge, a clinical examination of the persons and a direct individual survey were carried out.

Treatment results

Improvement was reported in 70 cases, and 5 of the patients had no significant change in condition. They are referred for additional consultations and tests to clarify the diagnosis (fig. 7).

Fig. 6. Treatment performed

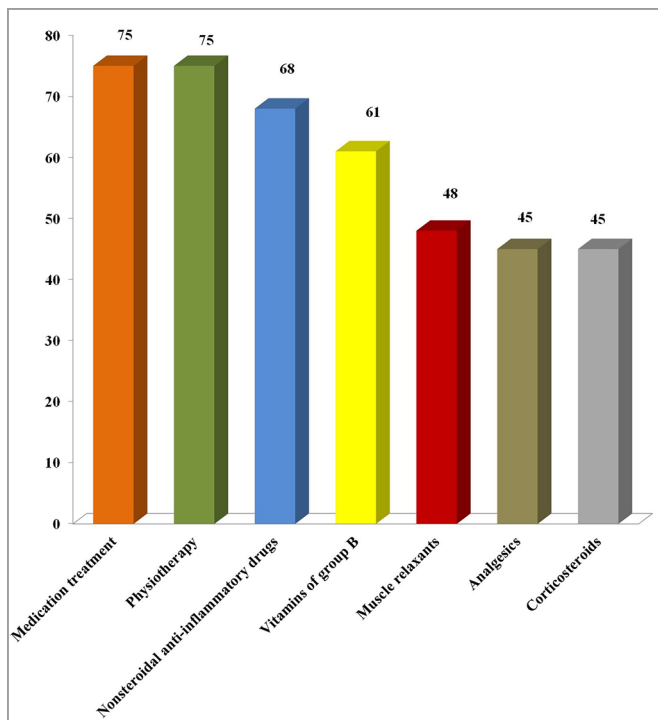
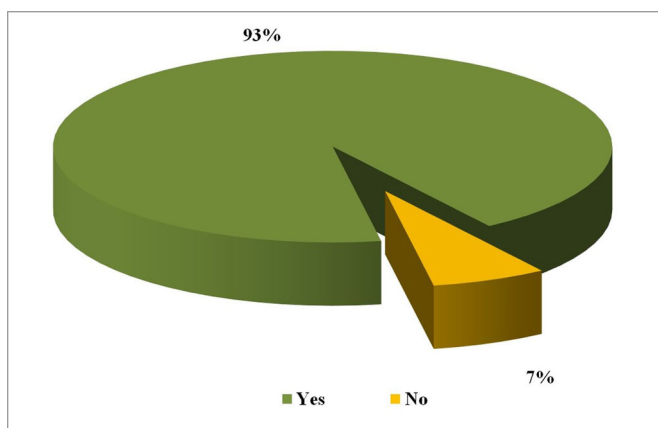
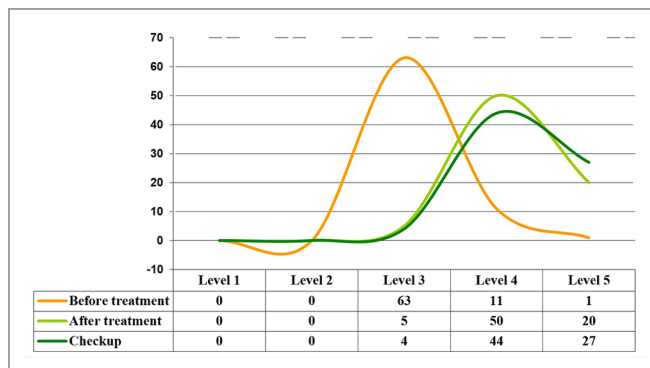


Fig. 7. Treatment results



Statistical analysis was performed using a non-parametric Wilcoxon rank test for the development of the ability to perform activities of daily living (ADL) for three control points - admission, discharge and control examination on the 30th day (fig. 8). The Wilcoxon curve represents the results of ADL at baseline, at the end of treatment and at day 30 after discharge. A shift of the Wilcoxon curve to the right is an indicator of a significant improvement in the patient's condition and independence.

Fig. 8. Wilcoxon rank test of the ability to perform the ADL



CONCLUSIONS

- Spinal injuries are a current health problem among garment workers.
- Combined medication and physical therapy is an effective and practical therapeutic approach for the investigated disabilities.

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