



## STUDY OF WORK CONDITIONS AS A FACTOR IN STRESS IN SEWING INDUSTRY WORKERS

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### SUMMARY:

Sewing production is traditionally well developed in Bulgaria. With the development of production and technical progress, new health problems for workers appear. The aim of this study was to clarify the role of work conditions as a factor in the occurrence of stress in sewing industry workers. Subject of the study are 70 persons, employed in small and medium enterprises. Conclusions are made and recommendations given for improvement of the work conditions and psycho-climate.

**Key words:** sewing production, stress, harmful industrial factors,

### INTRODUCTION

Dramatic changes in the world of labor and social structures in our society lead to uncertain self-esteem and attitude to "live in the moment" [1]. The results of the annual large-scale study in Bulgaria of Balkan Institute for Labour and Social Policy, Sofia (BAD), Gesundheitsvorsorge und Sicherheitstechnik GmbH, Germany, and the Scientific and Research Centre at Sofia University, St Kliment Ohridski in working conditions in enterprises in all economic sectors in Bulgaria covered nine major aspects of working conditions: nature of work; working environment; work organisation; working hours; work and health; pay; information and consultations; discrimination and violence; work and non-working life, show that the most important factor in satisfaction of the conditions of service is still the feeling of getting better pay [2].

In the last years the sector of small and medium sized companies, the sewing ones being part of them, is recognized as an important factor providing employability in the country. Along with the food processing, the sewing industry is one of the few vital branches of the light industry that was quite well developed in our country before [3]. It is traditionally well developed and is one of the most popular spheres of contemporary production [4]. Pursuant the data of Bulgarian Association of Garment and Textile Producers and Exporters (BAGTPE) an export amounting up to 1.8 billions EURO was reported in 2013. This represents an increase of 7% in comparison with the previous year. The reported results come close to the profitable years of sewing industry before the crisis and this is due both to the greater

number of orders from abroad and to the increased demand of local market. In 2013 the retails have grown with 25% compared to 2010 and this tendency is maintained during the first trimester of 2014. In the sewing industry sector (the second biggest employer in the country after state administration) are employed 110 thousand persons. In 2013 their number decreased with 2% compared with the previous year this being basically the effect of lack of qualified employees; as a result there are 3 000 unoccupied job positions.

The achievements of technical and scientific progress modified the technology of sewing production. Many of the laborious operations are modernized and the equipment is improved [5, 6]. In the meantime, the role of diminished motive activity increases on the background of the considerable decrease of the strenuous physical work [4]. Work process in the preparatory and cutting out sectors is connected with compulsory stand-up position and considerable physical work-load. The seamstresses - operators of sewing machines and manual operators work in compulsory sitting position, with their bodies tilted forward; the work is monotonous, with unvaried and repetitive work movements, mainly from second and third class (fingers, wrists and forearms). To the unfavorable working conditions we can add also the industrial dust - of vegetal (cotton, linen), animal (wool, silk) and synthetic (artificial fabrics) origin.

The heat emitted by the sewing equipment leads to an increase of the air temperature in the production premises, thus during the warm period of the year it can reach up to 32 - 35°C. Sewing equipment is a source of wide-spectrum, mainly high frequency noise (above 800 Hz). The generated production vibrations are mainly from "whole body vibrations" type, and are most intensive in the low frequencies (up to 35 Hz).

Typical for this industry is the professional feminization - women prevail among the employees, having the respective anatomic and physiological features and the additional engagement with family and the way of living.

### TARGET

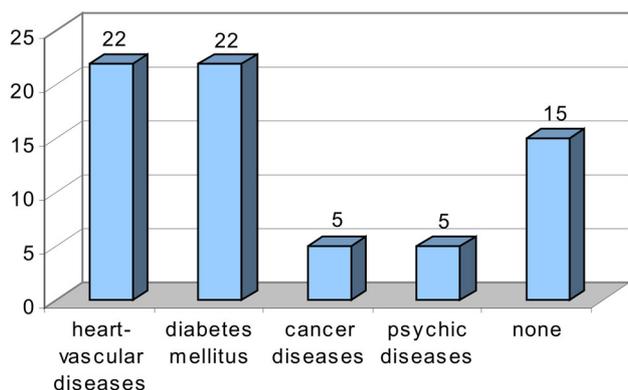
Survey's target is to realize prevention and early diagnostics of the stress connected harms in workers of sewing industry.

**MATERIALS AND METHODS**

The applied sociological method was in the form of direct individual inquiry with 70 persons employed in small and medium sized sewing enterprises, located in the region of Pleven. The inquiry questions included questions clarifying the stress presence or absence, the type of work, the harmful factors of working media and demographic data [7, 8]. From the inquired person 86% were women and 14% - men. Persons with graduated secondary vocational education do prevail – 63%, then followed by the ones with graduated secondary education - 24% and the ones with graduated primary education comprised 13%. More than half of the inquired persons are between 41 and 50 years, followed by the ones between 51 and 60 years - 36%, and hardly 10% of them are between 31 and 40 years. The majority of the employees have labor record more than 20 years - 63%. Pursuant their marriage status the greater number of them (nearly 80%) have marriage signed before the registrar. The statistic processing of the primary data was done by software packages Microsoft Office Excel 2010 and SPSS v.13.

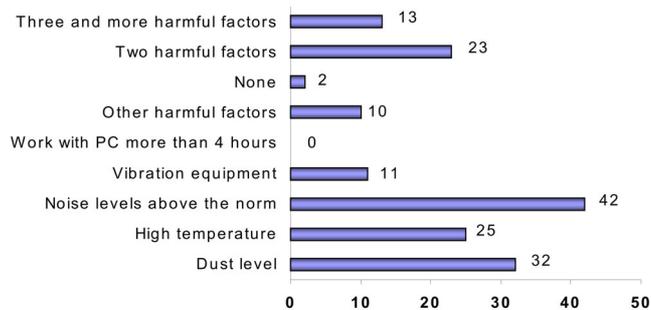
**RESULTS**

The greater number of the inquired persons have pointed out presence of family history for some of the socially important diseases (Fig.1).



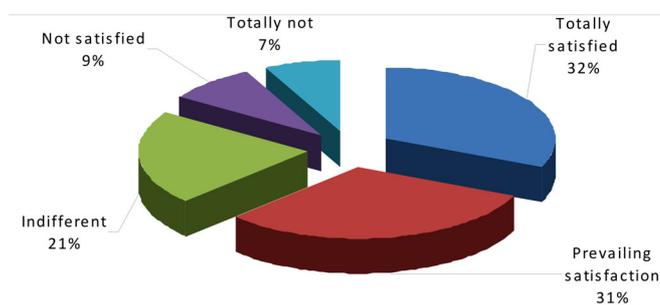
**Fig. 1.** Family history (given in numbers)

Majority of the inquired persons pointed out as a main risk factor of work place the above-norm noise level, followed by the dust level and high temperature, and nearly 30% of them have pointed out more than one harmful factor, and 18.5% - simultaneous impact of more than three harmful factors (Fig. 2).



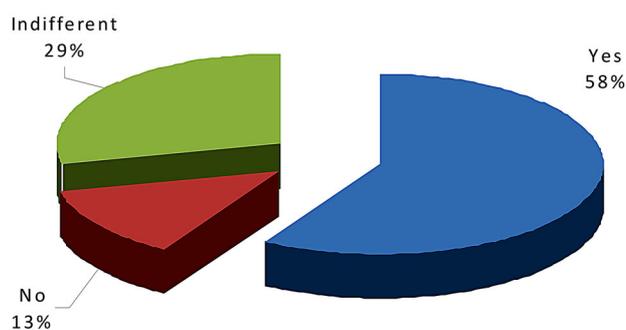
**Fig. 2.** Harmful factors in working media (given in numbers)

One third of the inquired persons are totally satisfied by the work they execute, and 7% are totally unsatisfied (Fig. 3).



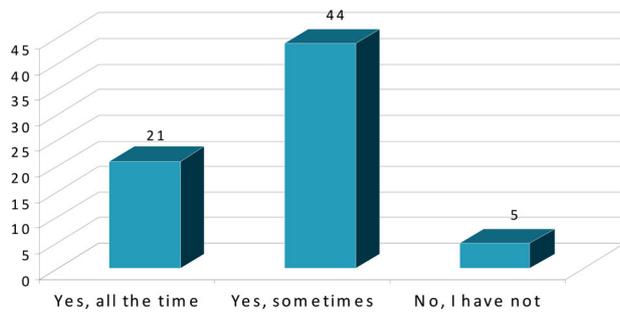
**Fig. 3.** Work satisfaction

More than half of the inquired persons do feel well in their work team, nearly 30% of them are indifferent, while 13% are not satisfied from the work team relations (Fig.4).



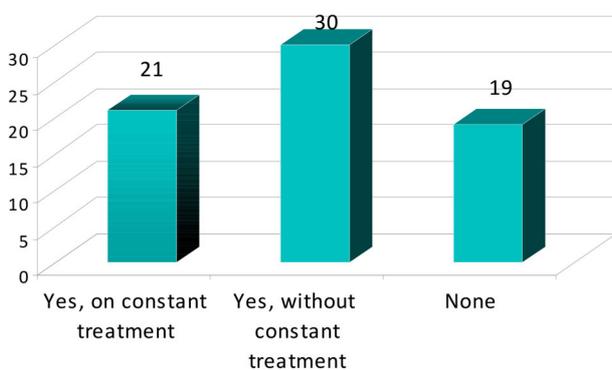
**Fig. 4.** Satisfaction with the work team

Barely 7% of the inquired persons mention that they have no work place stress, 63% mention that sometimes they do have stress, and nearly 30% are in constant stress during their work (Fig.5).



**Fig. 5.** Do you consider that you have work place stress? (given in numbers)

The greater number of inquired persons (73%) mention the presence of chronic diseases, and 30% of them are on constant treatment (Fig.6).



**Fig. 6.** Presence of chronic diseases (number of persons)

## DISCUSSION

There is moderate relation between the stress availability and the harmful factors on work place at  $S = 0.23$  and  $p = 0.05$ .

Reverse correlation is monitored when the results of the question for work team satisfaction and educational degree are compared ( $S = -0.35$ ;  $p = 0.004$ ) – i.e. the higher the education, the work atmosphere is more critically estimated.

At  $S = -0.40$  and  $p = 0.00$  a reverse proportional relation is stated between the presence of chronic diseases and the education.

The presence of harmful factors is in direct correlation relation with the education type at  $S = 0.38$ ,  $p = 0.001$ .

The higher the education is, the more harmful factors are exposed the employees to, i.e. the more qualified persons are in a more complex media of harmful factors.

There is no connection found between the stress presence and family status, the number of family members and the fact whether the employee works or not in his/her specialty.

There is no relation between the stress presence and years of total labour record.

A negative correlation has been found between the data from the last preventive medical test organized by the employer and the labour record in the last company at  $S = -0.32$ ,  $p = 0.005$ , i.e. the stress levels would have a tendency of decrease when the company organizes regularly the preventive medical tests.

There is no connection between the coincidence of residence address and work place and the stress presence or its absence.

Slight, positive correlation has been found between the work place stress, consumption of alcohol and cigarettes and the harmful factors in work media.

There is a relation between the stress and presence of occupational diseases at  $S = 0.25$ ,  $p = 0.005$ .

## CONCLUSION

In this survey 21 (30%) of the inquired employees mentioned a constant risk, 44 (63%) have had stress sometimes and 5 (7%) – declared lack of stress on the work place. Correlation study within several factors of this media gives us the chance to conclude that as whole the employees feel satisfaction with the fact of being employed and are satisfied with the work team relations, thus excluding them as stress provocateurs. The presence of harmful factors in the work media is unquestionable. These factors also influence the stress presence in the employees, whose age varies between 40 and 60 years [9, 10]. The presence of chronic diseases in 51 persons (73%) is alarming along with the fact that 54 (77%) of the employees have family history. Every year 37 (53%) persons pass preventive medical tests that are organized by the employer, and other 24 (34%) pass these tests but not on an annual basis. 9 (13%) do not have preventive medical tests. We consider that under the proved statistically significant correlation the levels of endurable stress could be diminished with the realization of effective team coverage and with better organization of the execution of annual preventive medical tests.

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