HEALTH MANAGEMENT OF OCCUPATIONAL DISEASES – A CHALLENGE FOR BULGARIAN ECONOMY AND PUBLIC HEALTH

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Summary. Background: In 2009 more that 400,000 people in Bulgaria have permanent disability and compensations were paid to more that 477,000 people with a disability more that 71%. Many of these people are victims of occupational diseases. Objectives: In 2001 a National Register of Occupational diseases was founded in Bulgaria and a new information system for notification and registration of occupational diseases was introduced into practice. Aim: The aim of the study was to study and analyze the prevalence and type of different occupational diseases and to identify the risky economic branches and work activities. Methodology: Thorough collection of experts' decisions and registration cards of all patients with occupational diseases in Bulgaria for the investigated period was done. Results: The result showed that during the last 10 years (1998-2008) the prevalence of occupational diseases in Bulgaria increased, especially in some pathological groups. Musculoskeletal diseases and diseases of the peripheral nerves due to occupational factors represent 55% of the cases. Non-specific respiratory diseases (as chronic bronchitis, COPD, bronchiectasis) were 2%, diseases caused by noise and vibrations were 12%. Discussion: The number of people with permanent disability in Bulgaria is extremely high which is unacceptable from social, medical and economic point of view. It is necessary to increase the quality of the occupational health training which will accelerate the early diagnostics and prevention of the occupational diseases and will contribute to improvement of the working conditions in the risky economic sectors.

Key words: *occupational diseases, National register, risk factors, economics, public health*

INTRODUCTION

The data from the official document “Health and safety at work strategy 2008-2013” showed that in the last few years the Bulgarian workforce and economy have faced serious problems related to the aging of the population and the negative birth growth (6). This led to new requirements and challenges to the training and skills of employers, employees and health and safety experts in order to protect the health, especially to the most vulnerable groups- young employees and those 55-64 years old.

The statistics showed that for the period 2008- 2013, 80% of the workforce will become “old participant’ at the work market [1, 2]. Annually 13,000 people or 2.3% of the workforce will be renewed – people with contemporary knowledge in production technologies. Qualification according to the specific work is necessary, however, for a great part of the workforce [3, 4, 7]. The Bulgarian workforce has some specific features:

The sex distribution shows higher percent for men employees.

The age distribution reveals that the biggest part of workers are within the age group 35-44 years (27,3%), followed by the age group 45-54 yeas (27,0%) and the age group 25-34 years (25,8%). In 2002 young employees (15-24 years old) were 10,1% of all.

The geographic distribution shows that the greatest part of the workforce is situated in the South West region, while the smallest number of workers is registered in the North West region. This is a result from the interaction between different demographic and economic factors.

The health status of employees is characterized by permanent disability among 9% of the Bulgarian population. Many workers are victims of occupational diseases and/ or work accidents which are related to significant medical, social and financial losses.

Census data analysis in 2011 showed that the Bulgarian population equals to 7.3 million people. The National insurance institute statistics revealed that in 2009 more than 400,000 people suffered from permanent disability. Compensations were paid to 477,000 people with disability greater than 71%. Temporary disability incidence among Bulgarian employees was also high for the investigated period 2000-2010 (Table 1).

The number of the lost working days due to work accidents (annually for the period 2005-2009) was 223,905 (Table 2).

Table.1 Temporary disability morbidity in Bulgaria (2000-2010)

Indices / Years	Frequency of cases			Frequency of days			Mean duration of a case		
	Total	men	women	Total	men	women	Total	men	women
2000	**101.33**	94.49	109.10	**1024.67**	964.49	1093.04	**10.11**	10.21	10.02
2001	**103.75**	94.14	114.93	**1075.69**	997.32	1166.88	**10.37**	10.59	10.15
2002	**90.48**	80.47	101.55	**1036.12**	938.51	1144.06	**11.45**	11.66	11.27
2003	**95.81**	87.66	104.31	**1073.27**	996.60	1153.25	**11.20**	11.37	11.06
2004	**93.07**	86.54	101.89	**1047.67**	961.17	1137.19	**11.26**	11.37	11.16
2005	**92.36**	85.65	99.14	**960.44**	897.47	1024.15	**10.40**	10.48	10.33
2006	**92.39**	88.68	101.48	**937.84**	849.28	1030.28	**10.15**	10.15	10.15
2007	**100.71**	94.12	107.34	**953.33**	869.45	1037.21	**9.50**	9.31	9.95
2008	**102.15**	96.2	108.1	**1029.23**	962.71	1095.76	**10.07**	9.91	10.01
2009	**104.1**	97.6	110.5	**1038.66**	978.54	1098.78	**9.98**	10.02	9.94
2010	**104.3**	99.1	109.4	**1033.48**	980.42	1086.54	**9.91**	9.89	9.93
MEAN	**101.8**	**95.0**	**108.2**	**1029.1**	**967.5**	**1097.4**	**10.1**	**10.2**	**10.0**

Table. 2. Dynamics of frequency of occupational accidents and lost working days due to temporary disability

Years / Indices	2005	2006	2007	2008	2009
Number insured employees	2,239,189	2,357,694	2,522,140	2,865,981	2,829,819
Work accidents	4,311	4,096	3,811	3,737	2,956
Fatal work accidents	169	130	179	168	91
Calendar days lost due to work accidents	268,286	260,180	238,896	193,901	158,266

The great number of the occupational diseases being registered is due to the high percent of employees with impaired health – permanent disability, long-lasting temporary disability or work- related health problems.

Because of the numerous changes in Bulgaria in the last 20 years, there was a lack of precise and reliable registration of occupational diseases and work accidents. Some of the reasons for this were: transformation in legislation and insurance system, new occupational health training programs of medical doctors, low quality of education of health and safety experts, etc. [5].

Aim of the study: A study focused on the health of the workforce in Bulgaria was performed. The aim of the study was to assess the prevalence, structure and dynamics of the occupational diseases in Bulgaria for a ten-year period.

METHODOLOGY

Thorough collection of experts' decisions and registration cards of all patients with occupational diseases in Bulgaria for the investigated period was done. Analysis of the health information with determination of the workplace characteristics was performed. The prevalence and type of different occupational diseases was determined and risk economic branches and work activities were identified.

Programs for training of bachelors, masters, post-doc, PhD students and health and safety experts were developed in the Department of Occupational health at the Medical University of Sofia.

RESULTS

In 2001 a National Register of Occupational diseases was founded in Bulgaria and a new information system for notification and registration of occupational diseases was introduced into practice. The Register followed the requirements and methodology of the European Statistics of occupational diseases (EODS) in the working group "Health and safety" into EUROSTAT.

In the investigated period the main economic activities have changed their characteristics. The main economic braches were mining, textile production, and services. The analysis of the results revealed the necessity of encouraging employers to conduct workplace health promotion and prevention programs for employees at higher risk.

The analysis of the results showed that the main workplace risk factors were: manual handling and heavy weight work – 45.5%, dust – 38.0%, unhealthy work posture – 27.3%, noise and vibrations – 23.5%, chemical substances – 16.3%, unhealthy microclimate – 15.4%, heavy physical activity – 14.0%, monotony at work – 8.1% and pressure at work – 5.1%.

The dynamics of the prevalence of occupational diseases for 10,000 exposed employees and per 10,000 employees for the period 2007-2008 is presented in Fig. 1.

The frequency of occupational diseases is higher among the exposed workers which confirm the hypothesis for the strong relationship between the workplace risk factors and the health status of the employees.

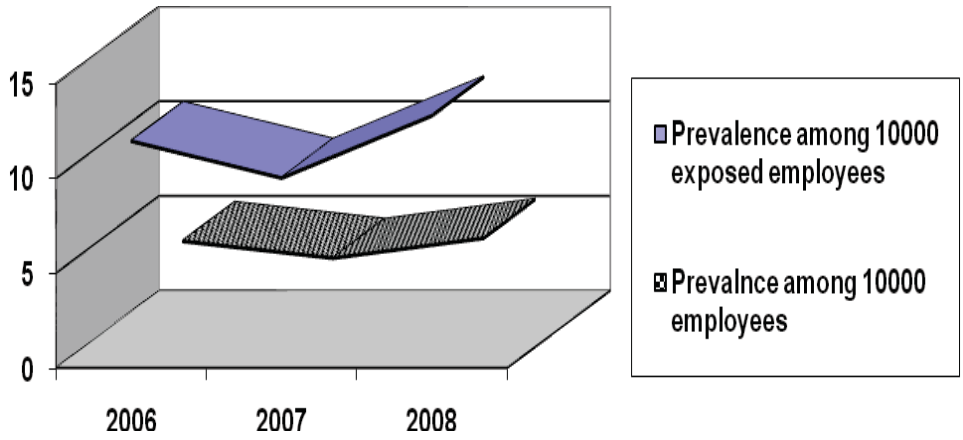

Fig. 1. Dynamics in the prevalence of occupational diseases in Bulgaria (2006-2008)

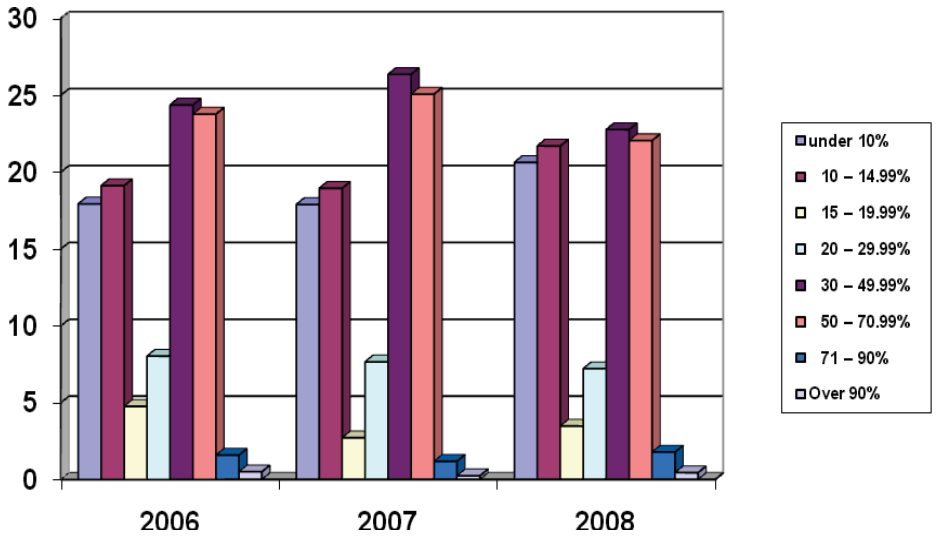

Fig. 2. Distribution of the registered occupational diseases by the degree of disability (2006-2008)

The analysis of the study results showed that the prevalence of occupational diseases in Bulgaria has increased in the last 10 years (1998-2008). Occupational diseases of concern were: musculo-skeletal diseases (23% of all) and diseases of the peripheral nervous system (22%). Both groups of diseases represented 55% of all registered cases of occupational disorders. Another main pathological group included non-specific lung diseases (22%), such as chronic bronchitis, chronic obstructive lung disease and bronchoectatic disease. Disorders due to noise and vibrations represented 12% of all registered occupational diseases (Fig. 3).

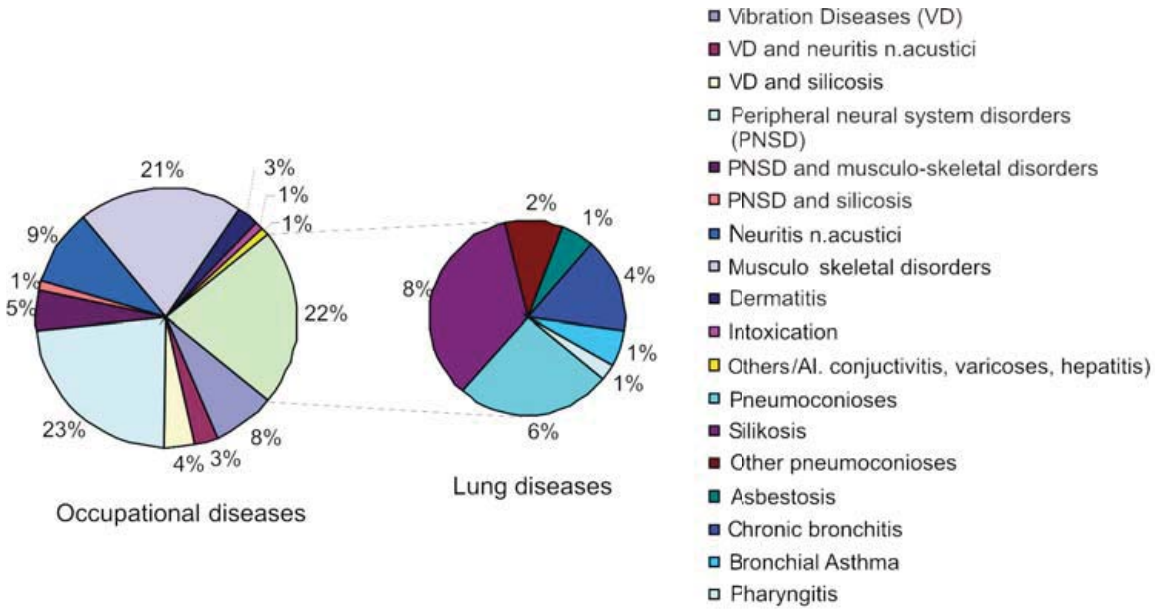

Fig. 3. Distribution of the registered occupational diseases According to nosology groups

DISCUSSIONS AND CONCLUSION

The number of people with permanent disability in Bulgaria is extremely high – a tenedency which is unacceptable from social, medical and economic point of view. This is a result of the changed workforce characteristics (aging population, migration), impaired working conditions during the transition period and changes in health and safety policy, legislation and occupational health training of medical experts.

It is necessary to increase the quality of the occupational health training which will accelerate the early diagnostics and prevention of the occupational diseases and will contribute to improvement of the working conditions in the risky economic sectors.

This process must be facilitated by a better collaboration between the administrative bodies responsible for the management of health and safety at work.

The total amount of people suffering from occupational diseases in Bulgaria for 2008 (both employed and retired) was 32,700 or 17 per 1000 inhabitants. High was the portion of all non-specific respiratory diseases due to chronic bronchitis (67%), COPD (23%) and bronchiectasis (9%). An ascending trend was registered which was due to the high percent of occupational risk factors- common dust (45%), unhealthy microclimate (59%), and chemical substances (29%) in numerous workplaces.

A new contemporary training program has been introduced to the Department of Occupational Health at the Medical University of Sofia. It will contribute to the

improvement of early diagnostics, treatment and, most importantly, prevention of the occupational diseases.

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