

**PRELIMINARY DATA CONCERNING PRIMARY DISABILITY
ASSESSMENT IN WORKERS FROM THE CHEMICAL,
GLASS AND TEXTILE INDUSTRY,
AND MACHINE-BUILDING
IN THE VARNA DISTRICT**

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Disability is an important problem of social medicine. As one of the possible outcomes of morbid conditions, it is taken to be an indicator of the health state of the population, and of the quality of health cares. Along with that, it is closely linked to economics owing to premature loss of working ability, on the one hand, and to the substantial funds allotted to the programs for assistance of disabled persons, on the other.

The level and dynamics of the three aspects of invalidity — medical, social and legal — define the changes taking place in the social and political life of our society, and accordingly, in its public health system.

The great significance of the issue, and lack of clarity in terms of its variable aspects in our district, led us to undertake a comprehensive research along this line. It is part of an extensive study on disability caused by illness or infirmity among workers from the basic industries in the district — chemical, machine-building, textile and glass production.

Method

Primary disability for 1977 is evaluated in the following plants and factories: "Parvi Mai", "Hristo Botev", shipbuilding plant "G. Dimitrov", "Elprom", "Cherno More", "St. I. Peev", PVC plant, new plant for soda, and plant for mineral fertilizers.

The primary disability notion is made up of the number of subjects with primary invalidization, recognized during the year under review.

The data concerning primary disablement were obtained from the disability filing records in the Varna district, and more particularly, from report card No 18 of the Labour Expert Medical Examination Commission (TELK) — "Expert examination decision". In processing the data about primary disability, both extensive and intensive indicators were calculated, as well as average values and correlation indices. To eliminate differences in age-sex structure, the direct standardization method was made use of.

The incidence of primary disability amounts to 1.62 per cent or 16.19‰. According to Y. Magarill's scale (1969) for the assessment of disability indicators, it falls within the low incidence limits (below 6 per cent — low, 6 to 9 per cent — medium, 9 to 11 per cent — high, and above 11 per cent — very high).

In the various industries the level of this indicator is variable (Table 1). The impression is that heavy industries have low incidence of disability (che-

Table 1

Incidence of Primary Disability by Sex and Industrial Branch

Industrial branch	Sex		
	Men	Women	Total
Textile	25.44	23.54	24.13
Machine-building	19.21	9.91	15.86
Shipbuilding inclusive	20.23	19.75	20.19
Glass	11.72	17.02	14.15
Chemical	11.96	17.43	13.68
Total	16.34	15.97	16.19

mistry and machine-building), as compared to textile industry, where the indicator in question reaches the highest value.

Analyzed by sex the difference in incidence is insignificant, being however higher among men, as compared to women (Table 1). The latter difference is not recorded in all four industries. Also, it can be seen from the table that in machine-building and textile industry men really display a higher incidence of disability, reaching twice as high a level in machine-building. In chemical and glass industries women show higher incidence of primary disability. The present research confirms the dependence of primary disability on the length of work, already proved by a number of authors. With extension of the length of work from one to ten years, the proportion of disabled persons grows both totally, and by sex (Table 2).

Table 2

Primary Disability by Length of Service and Sex for All Industrial Branches
(Relative Share)

Length of service	Sex		
	Men	Women	Total
Up to 5 yrs	18.75	40.26	27.51
6 to 10 yrs	26.79	35.06	30.16
11 to 15 yrs	16.96	10.39	14.29
Above 25 yrs	37.50	14.29	28.04
Total	100.00	100.00	100.00

In length of service ranging from 11 to 15 years, a reduction of disability in men and women alike is observed. Above 15 years, the percentage of primary disability is once again augmented, rather marked in men.

The data of the research show also the influence exerted by age on primary disability (Table 3).

Table 3

**Primary Disability by Age Groups and Sex for All Industrial Branches
(Relative Share)**

Age groups	Sex		
	Men	Women	Total
Up to 29 yrs	8.93	3.90	6.88
30 to 39 yrs	15.18	22.08	17.98
40 to 49 yrs	32.14	45.35	37.57
Above 50 yrs	43.75	28.57	37.57
Total	100.00	100.00	100.00

Up to the 50th year of life, primary disability shows a gradual rise until a plateau is reached after 50 years. The same regularity is observed in the various age groups of men. It is characteristic of women too, with a slight exception for the age above 50 years.

The structure of primary disability by the three basic groups (Table 4) confirms the results of other investigators that group I disability is with the lowest relative share. In our series it is more than three times lower than group II, and more than 15 lower than group III disability. In sex related aspect the same finding holds true.

Table 4

**Primary Disability by Basic Groups and Sex
(Relative Share)**

Basic group disability	Sex		
	Men	Women	Total
Group one	6.25	5.19	5.82
Group two	16.96	18.18	17.46
Group three	76.79	76.63	76.72

It is of interest to note the structure and incidence of primary disability by class of diseases, sex and industrial branch (Table 5).

Diseases of the circulation organs rank first as primary disability cause — 26.46 per cent. Of them the highest relative share is assigned to chronic rheumatic cardiopathy (6.88 per cent), hypertension (6.35 per cent), and cerebrovascular syndrome (3.17 per cent). On the second place by relative share come accidents, injuries and poisonings (16.40 per cent), and on the third — diseases of the nervous system and sensory organs — 14.29 per cent. Of the latter, affections of the central nervous system predominate, followed by peripheral nerve lesions and inflammatory diseases of the eye. The fourth place is occupied by neoplasms, malignant tumours in particular. The proportion of musculoskeletal and connective tissue diseases is equal to that of neoplasms.

Table 5

Primary Disability Structure by Class of Disease and Industrial Branch

Industrial branch Class of disease	Textile	Machine- building	Glass	Chemical	Total
1. Infectious diseases and parasitosis	2.50	6.25	3.45	5.00	4.76
2. Neoplasms	7.50	5.00	10.34	5.00	6.35
3. Endocrine and metabolic diseases	5.00	3.75	3.45	—	3.17
4. Psychoses and psychoneuroses	5.00	7.50	—	7.50	5.82
5. Diseases of nervous system and sensory organs	10.00	16.25	10.34	17.50	14.29
6. Disease of circulation organs	30.00	18.75	31.03	35.00	26.46
7. Diseases of respiratory system	12.50	3.75	17.24	5.00	7.94
8. Diseases of digestive system	2.50	5.00	3.45	—	3.17
9. Diseases of urogenital system	7.50	1.25	3.45	2.50	3.17
10. Diseases of skin and subcutaneous tissue	—	—	—	—	—
11. Disease of musculoskeletal system and connective tissue	7.50	6.25	6.90	7.50	6.88
12. Other specified and unspecified morbid conditions	—	—	3.45	—	0.53
13. Accidents, injuries and poisonings	7.50	25.00	6.90	15.00	16.40
14. Congenital anomalies	2.50	1.25	—	—	1.06

In this group arthritis and spondylitis followed by osteomyelitis, are the most frequent causes of disability. Psychoses and psychoneuroses (5.82 per cent) rank fifth, followed by infectious diseases and parasitoses (4.76 per cent). The seven classes of diseases listed above represent about 90 per cent (88.24 per cent) of primary disability morbigenous agents in the industrial branches surveyed.

A certain difference is noted in the classification of diseases (as basic causes of disability) by sex.

In women affections of the circulatory organs, and especially hypertension and chronic rheumatic cardiopathy, represent a very serious problem; diseases of the nervous system and sensory organs rank second. Here malignant neoplasms rank third while psychoses and psychoneuroses come to fore.

In men accidents, injuries and poisonings rank first as a cause of primary disability, second — diseases of the circulatory organs, followed by diseases of the nervous system and sensory organs. As compared to women, diseases of the respiratory system have a higher relative share, and rank fourth as causes of invalidity. The relative share of psychoses and psychoneuroses, neoformations, infectious diseases and parasitoses, diseases of endocrine glands and metabolic disorders is equal with that recorded in women.

Special attention merit the data concerning primary disability by classes of diseases, and by basic group of disability. It was found that more than half (54.55 per cent) of the causes for group I primary disability are assigned to malignant neoplasms. The second most frequent cause of disability in this group is hypertension and cerebrovascular syndromes. Diseases of the nervous system and sensory organs of which more than half involve the peri-

pheral nerves display an analogical relative share. Third some diseases of the urogenital system, nephritis and nephrosis in particular. Thus, the listed four classes of diseases condition group-one disability.

The problems confronted in terms of diseases, assumed as causes of group II primary disability, are rather different. In their classification by severity first rank diseases of the circulatory organs, second — accidents, injuries and poisonings, psychoses and psychoneuroses. These three classes of diseases alone account for 67.57 per cent of the morbid conditions causing group II disability. Third rank endocrine diseases, and more particularly diabetes mellitus and digestive system diseases.

In general outline group III disability is conditioned, with small exceptions, by the same classes of diseases. The study of primary disability by classes of diseases, and by basic group of severity is essential not merely from the point of view of medicine, but also from the point of view of economy, since pecuniary compensation of disabled persons from the different groups differs in amount. The data concerning primary disability by class of diseases and by sex in the various industries have an essential practical bearing on the undertaking of concrete and effective medicosocial steps.

Chemical industry

Affections of the circulation organs, assumed as a cause of primary disability in this case, are with the highest relative share. By comparison with other industries, in chemical production they reach the highest level — 38 per cent. Diseases of the nervous system and sensory organs, placing second (17.50 per cent), are likewise a cause of disability in chemical industry. Accidents, injuries and poisonings (15 per cent) are also noteworthy. Diseases of the three classes listed above alone represent 70 per cent of primary disability causes in the chemical industry. Also comparative high is the proportion of musculoskeletal and connective tissue lesions, psychoses and psychoneuroses (7.80 per cent each).

Machine-building

In this branch of industry the accidents, injuries and poisonings constitute the most serious problem as factors causing disability. Compared to the other industries, here they reach the highest level — 25 per cent. The second important problem are diseases of the circulation organs — 18.75 per cent. Close to the latter is the proportion assigned to affections of the nervous system and sensory organs — 16.25 per cent. Fourth rank psychoses and psychoneuroses — 7.50 per cent, followed by infectious diseases and parasitoses, musculoskeletal and connective tissue lesions, circulation and gastrointestinal disorders.

It is worth noting that the main share of diseases conditioning primary disability in machine-building are at the expense of shipbuilding.

Glass industry

Here the relative share of diseases of the circulation organs, followed by respiratory system disorders, is the highest. Compared to other industries, in glass production they have the highest relative share. They rank second in textile industry too, whereas in chemical industry their proportion is insignificant.

Special attention is focused on diseases of the nervous system, sensory organs and neoplasms. Musculoskeletal and connective tissue lesions, as well as injuries, accidents and poisonings should be by no means underestimated.

Textile industry

In the textile industry the problems confronted are practically analogous to those in glass industry — diseases of the circulation organs, respiratory system, nervous system and sensory organs, neoplasms etc.

The data submitted constitute a basis for setting up and realizing concrete and effective medicosocial measures in the prophylaxis against primary disability, and in the endeavours to reduce its incidence in the main industrial branches of the district.

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НЕКОТОРЫЕ ПРЕДВАРИТЕЛЬНЫЕ ДАННЫЕ ИЗУЧЕНИЯ ПЕРВИЧНОЙ ИНВАЛИДНОСТИ РАБОЧИХ ХИМИЧЕСКОЙ, СТЕКОЛЬНОЙ, ТЕКСТИЛЬНОЙ ПРОМЫШЛЕННОСТИ И МАШИНОСТРОЕНИЯ В ВАРНЕНСКОМ ОКРУГЕ

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РЕЗЮМЕ

Проведено исследование первичной инвалидности за 1977 г. рабочих основных отраслей промышленности — химической, машиностроения, текстильной и стекольной — в Варненском округе. Первичная инвалидность составляет 16,19%. Самые высокие показатели встречаются в текстильной промышленности — 24,13%, в то время как отрасли промышленности с тяжелым производством, как например химическая и машиностроительная, показывают низкую частоту — 13,68%, соотв. 15,86%. Частота инвалидности в машиностроении и текстильной промышленности выше среди мужчин, а в химической и стекольной, чаще наблюдается инвалидность среди женщин. Удельный вес первично признанных инвалидами растет с увеличением длительности трудовой деятельности от 1 года до 10 лет. Самые высокие показатели существуют у мужчин с трудовым стажем превышающим 15 лет.

Наименьший удельный вес в первой группе в 3 раза меньше, чем во второй группы и более 15 раз меньше третьей группы инвалидности.