

CHARACTERISTICS OF SUSCEPTIBILITY TO ILLNESS AMONG WORKERS OF SHIPBUILDING AND SHIP-REPAIR INDUSTRIES

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ABSTRACT — Analysis of morbidity of shipbuilders and ship repairers exposed to harmful industrial factors allows to assess their health problems, the degree of the industrial impact on the level of health, to detect groups of people with an increased risk of developing occupational pathology, to work out effective prevention strategies that ensure the preservation of health of the population.

KEYWORDS — morbidity, employees of shipbuilding and shiprepair production, unfavorable production factors, length of service.

The actual issues of industrial health include the study of morbidity, the examination of the relationship of diseases with the profession, the search for approaches to conducting preliminary and periodic medical examinations, formation of groups of people with an increased risk of developing occupational pathology, identification and dynamic observation of early forms of occupational diseases [1-7].

Aim of the study

To identify specific morbidity of shipbuilding and ship repair workers. The tasks included analysis and assessment of morbidity in shipbuilding and ship repair enterprises, the determinants of morbidity.

In the work nonparametric statistics methods were used.

Results of the study

The study of the morbidity of workers in shipbuilding and ship repair enterprises was carried out according to the data of preventive medical examinations and the data of the request to the clinic. As a result of preventive medical examinations of shipbuilders and ship repair workers, a two-fold, statistically significant ($p < 0.05$) increase in the incidence rate from 3680% in 2015 to 6,254.5% in 2017 was revealed. In the structure of pathological involvement of shipbuilding and ship repair workers in 2015–2017, the first place was occupied by diseases of the circulatory system (25.4%), the second — diseases of the digestive



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system and symptoms and signs of deviation from the norm (16.9% respectively), the third — diseases of the musculoskeletal system and connective tissue (11%), the fourth — diseases of the eye and its adnexa and endocrine system diseases (10% respectively), the fifth — diseases of the genitourinary system (9.8%). The total hospitalized morbidity of workers in shipbuilding and ship repair enterprises of the city of Astrakhan had a negative trend with a significant increase from 75.3% in 2015 to 134.1% in 2017. In the structure of the incidence of men, the first place was occupied by the IX Class of the ICD-10 Diseases of the circulatory system (I00-I99), accounting for 36%, the second place — XI Class Diseases of the digestive system (K00-K93) — 23.1%, the third place — XIII Bone diseases (M00-M99) — 22.5%, fourth place — VI Class Diseases of the nervous system (G00-G99) — 6.9%, fifth place — V Class Mental and behavioral disorders (F00-F99) — 5.8%, sixth place — XVIII Class Symptoms, signs

and abnormalities detected in clinical and laboratory studies are not classic (R00-R99) — 1.2%, seventh place - III Class Diseases of the blood, blood-forming organs and certain disorders involving the immune mechanism (D50-D89) and X Class Diseases of the respiratory system (J00-J99) — according to 0.6%. The increase in the incidence of shipbuilders and ship repairers occurred both in the time interval from 2015 to 2017, and in the age intervals of workers, taking into account the length of professional activity.

With the help of the correlation analysis, it was possible to identify a direct statistically significant relationship between the frequency of registration of pathology and the length of service at the shipbuilding and shiprepairing enterprise ($r = 0.68$ with a significance level of difference from zero of more than 95%, $p < 0.05$). The incidence among employees with experience in the profession more than 20 years in 2016 and 2017 was 120% 0 and 130% 0, respectively, and was significantly higher ($p < 0.05$) than among workers of lesser experience: 15–20 years — 60% 0 in 2015 and 40% 0 in 2016 and 2017, 10–14 years — 29% 0 in 2015 and 45.5% 0 in 2016 and 2017, 5–9 years — 13.9% 0 in 2015, 15, 2% 0 in 2016 and 17.0% 0 in 2017, less than 5 years — 7.3% 0 in 2015, 11.5% 0 in 2016 and 14.5% 0 in 2017. The indicator of the number of days of temporary labor deprivation combined with the incidence also reflected the dynamics of the increase in the incidence in the studied interval, increasing 3.5 to 2 times according to the dynamics of morbidity. The number of cases of temporary disability per 100 employees in 2015 ranged from 7.5 to 8.4 and was 2 times less than in 2017 and 3 times less than in 2016. The incidence of disability in 2015 was 0.2, rising to 0.9 by 2016 and decreasing to 0.6 in 2017.

The length of stay in the hospital did not depend on the length of service, but was determined by the standards and was due to the diagnosis of the disease, the severity of the patient's condition and the effectiveness of treatment. Workers applied for medical assistance more often in the spring and summer, at the height of the increased production activity and, accordingly, the more intensive impact of aggressive production factors. In fact, the seasonality indexes also reflected the seasonality of the work. Reducing the length of stay of patients in the hospital in 2015–2017 caused a significant reduction in the proportion of people discharged to work: from 64.8% in 2015 to 1.6% in 2017 and the corresponding increase in the proportion of outpatients prescribed for outpatient care: from 35.2% in 2015 to 98.4% in 2017. Similar trends persisted in the trainee groups in each year: an increase in the proportion of outpatients prescribed for outpatient care and a decrease in the proportion

of those who were prescribed for labor from each previous group to each subsequent trainee group. The events that occurred are due to the statistically significant impact of production factors on the health of shipbuilding and ship repair workers. That is why shipbuilders and ship repairers with a long work history needed longer treatment.

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