

Tokar O.M.

assistant professor of Dental Therapy Department, Higher State Educational Establishment of Ukraine "Bukovinian State Medical University", 2 Marka Vovchka str., Chernivtsi, Ukraine, olga.tokar92@gmail.com

EVALUATION OF THE PARADONTAL STATUS OF EMPLOYEES OF THE PRIMARY WOODWORKING ENTERPRISE, DEPENDING ON THE LENGTH OF EMPLOYMENT

Abstract. *This article summarizes the data on the condition of periodontal tissues in the workers of the primary woodworking industry, taking into account the influence of unfavorable factors of the work environment. We evaluated the influence of these factors on the occurrence, course and need for treatment of periodontal tissue diseases. A stable tendency was found to worsen the condition of periodontal tissues with an increase in the length of employment at the enterprise of the primary woodworking industry. In addition, the severity of periodontal tissue diseases was significantly higher among workers who for a long time were under the influence of three or more unfavorable work environmental factors in comparison with those surveyed who do not have the affect of these factors.*
Key words: *paradontal status, woodworking, human.*

Introduction. The woodworking industry is a part of the timber industry complex of Ukraine and takes a direct part in the forest management process, which consists in the seizure and use of forest resources, their reproduction and improvement [1]. Levels of occupational morbidity are the main indicators of the state of professional safety in a particular industry in the region or in the country as a whole. Today's state of it trade unions assess as critical [2]. According to several studies, a complex of occupational factors contributes to the development of chronic diseases of the oral cavity, in particular, inflammatory diseases of the mucous membrane, periodontal tissues, carious and non-carious lesions of hard tooth tissues have been identified [3]. Woodworking of the wood industry belongs to the sector of industries with a high risk of occupational diseases [4]. The harmful factors of the industrial environment of the woodworking enterprises include noise from the operation of equipment, wood dust air pollution, prolonged unilateral workforce stress, in some cases unfavorable microclimatic conditions, overstrain of individual organs and systems (physical, static and dynamic overload of the locomotive system, muscles, nervous system, organs of vision, hearing, etc.), as well as chemical substances in the result of application of lacquers, resins, paints, adhesives [5]. The degree of influence of each source of harmful production factors depends on the duration of their direct impact on those who work in their workplace [6].

The purpose of the study: to assess the periodontal status of employees of primary

woodworking industry enterprises and determine its dependence on the influence of harmful factors of the working environment and work experience in this industry.

Materials and methods. We surveyed 111 workers of the primary woodworking industry. To determine the periodontal status of workers, we used a papillary-marginal-alveolar index - PMA (according to Schour, Massler in the modification of Parma). To determine the need for treatment of periodontal disease, the CPITN (Community Periodontal Index of Treatment Needs) index was determined. Depending on the length of employment at the primary woodworking industry, all those surveyed were divided into 4 groups: the first group: work experience up to 5 years, the second: 6-10 years, the third: 11-25, the fourth: more than 26. For a detailed comparison of the harmful factors of the production environment affect on the condition of periodontal tissues all the examined workers were divided into the main and control groups. The main group consisted of 78 people, including 59 men (75.6%) and 19 women (24.4%), who for a long time were under the influence of three or more harmful production factors. The control group comprised 33 persons, 21 of them men (63.6%) and 12 women (36.4%), who do not have long-term contacts with unfavorable production factors.

Results of the study. After assessing the periodontal status and statistical processing of the results, we found an increase in the PMA index with an increase in work experience ($P < 0.001$). In addition, the CPITN index reflected an increase in

Table 1

The value of periodontal indices in workers, depending on the length of service

Periodontal indices	Work experience (years)				Significance value between groups, p
	Group 1 to 5 (n=32)	Group 2 6-10 (n=25)	Group 3 11-25 (n=32)	Group 4 26 and more (n=22)	
Index_CPITN	1,56 [^] (1,175 to 1,76)	1,76 (1,472 to 2,113)	1,725 (1,49 to 1,98)	1,87* (1,66 to 2,14)	0,01
Index_PMA	44 ^{#^} (33,0 to 52,45)	56,3* (46,4 to 70,075)	48,8 (46,15 to 67,25)	64* (54,1 to 75,0)	<0,001

the need for treatment of periodontal tissue diseases with an increase in work experience at the primary woodworking industry (P = 0.01).

Analyzing the indices of the papillary-marginal-alveolar index (PMA), we found that in the main group its indices are much higher and have a pronounced tendency to increase with increasing work experience at the primary woodworking industry enterprise (Fig. 1).

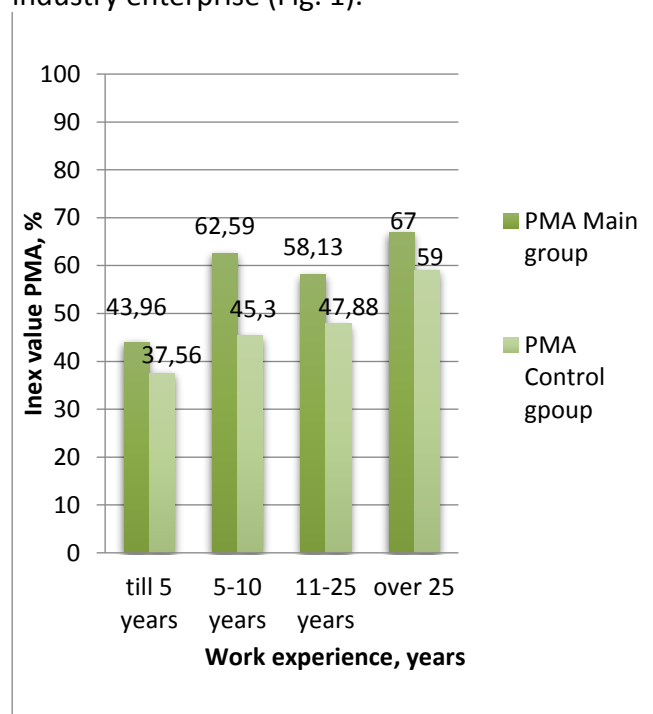


Fig.1 PMA index value depending on service experience

To study the need for the treatment of periodontal tissue diseases, we analyzed the values of the CPITN index (Fig. 2). We found that the need for treatment of periodontal tissue diseases in the main group with a work experience of up to 25 years is significantly higher than in the control group and has a pronounced tendency to increase. However, with a work experience of more than 25 years, the values of the CPITN index in the main and control groups were practically the same.

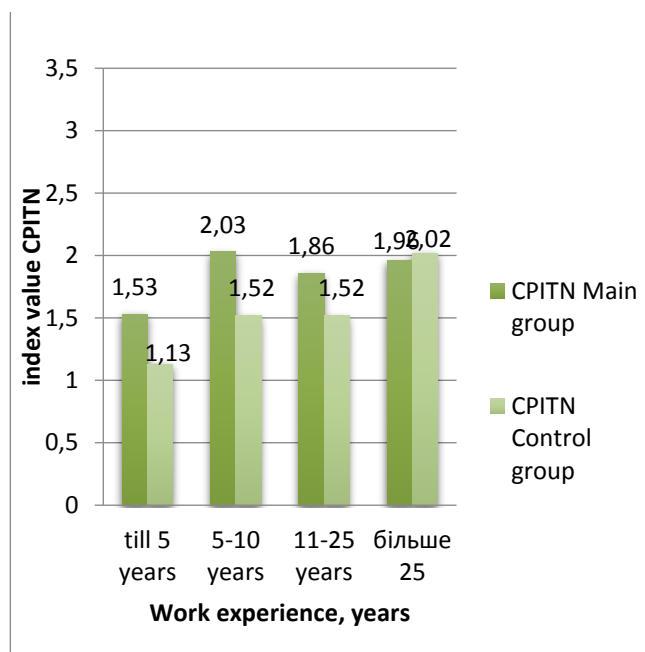


Fig.2 CPITN index value depending on service experience

Discussion. The received results reveal the deterioration of a periodontal tissue condition with increase in the work experience at the enterprise of primary woodworking. High PMA indices in the main survey group and a pronounced tendency to their growth allow to assess the influence of unfavorable factors of the production environment on the condition of periodontal tissues in workers who have been under their influence for a long time. The increase in the need for treatment of periodontal tissue in the surveyed workers of the main group with an increase in the length of service compared to the control group of the survey also proves the adverse effect of production factors on the dental health of workers.

Conclusions. With an increase in the length of employment at the primary woodworking industry in the case of prolonged contact with unfavorable factors of the production environment, the severity of periodontal tissue

diseases increases as well as the need for their treatment.

Prospects for further research. Effective prevention and early detection of diseases of periodontal tissues can significantly improve the dental health of workers in the primary woodworking industry. Prospects for our further research are the development, implementation and evaluation of individual schemes for the prevention and treatment of inflammatory diseases of periodontal tissues.

References:

1. Boyda SV. *Areas of formulation and implementation improvement of the strategic potential of wood processing enterprises in chernivtsi region. Investytsiyi: praktyka ta dosvid*. 2013;19: 80-4.

2. Levchuk KO, Kopyl OV. *Vyrobnychi travmatyzm v Ukraini: prychny ta shliakhy zapobihannia [Occupational injuries in Ukraine. Ways of prevention]. Zbirnyk naukovykh prats Dniprodzerzhynskoho derzhavnoho tekhnichnoho*

universytetu. Tekhnichni nauky. 2016;1: 208-14 [in Ukrainian].

3. Wilmsen C, Bush D, Barton-Antonio D. *Working in the Shadows: Safety and Health in Forestry Services in Southern Oregon. Journal of Forestry*. 2015 May; 113(3): 315–24.

4. Albizu-Urionabarrenetxea P, Tolosana-Esteban E, Roman-Jordan E. *Safety and health in forest harvesting operations. Diagnosis and preventive actions. A review. Forest Systems*. 2013; 22(3):392-400.

5. Suchomel J, Belanova K, Stollmann V. *Analysis of Occupational Diseases Occurring in Forestry and Wood Processing Industry in Slovakia. Wood Industry/Drvna Industrija*. 2011; 62(3): 219-28.

6. Löfstedt H, Hagström K, Bryngelsson I.L, Holmström M, Rask-Andersen A. *Respiratory symptoms and lung function in relation to wood dust and monoterpene exposure in the wood pellet industry. Upsala journal of medical sciences*. 2017;122(2):78-84.