American Journal of Medicine and Medical Sciences 2023, 13(12): 1890-1894
DOI: 10.5923/j.ajmms.20231312.15

Determination of Dental Diseases Among Industrial Production Workers

Masharipova Nasiba Ataboevna[1], Khabibova Nazira Nasullaevna[2]

[1]Department of Therapeutic Dentistry of the Tashkent Medical Academy, Urgench Branch, Urgench
[2]Department of Therapeutic Dentistry Doctor of Medical Sciences, Bukhara State Medical Institute, Bukhara

Abstract Emphasizing the expansion of light industry enterprises over the years of independence, the implementation of fundamental reforms in the industry, the increase in employment at these enterprises, it is important to protect the health of workers in this industry. Expansion of silkworm production, especially in developed countries, including automation of technological processes and information technology at industrial production enterprises. Their use minimizes direct contact between the processors and the chemicals used in the process, but their impact remains the same. It is also worth noting the unfavorable working conditions in the production process.

Keywords Light industry enterprises, Dental examinations, Oral mucosa, Symptoms, Somatic diseases

1. Relevance of the Topic

The increase in the economic potential of our country, the influx of large amounts of investment, and the establishment and operation of many enterprises, including chemical industry enterprises. Scientific and technical development requires the introduction of various chemical compounds in order to increase the quantity, quality, and variety of the produced products, and to reduce their cost. This situation also applies to industrial enterprises.

In the years of our country's independence, the expansion of light industrial enterprises, the implementation of fundamental reforms in the sector, the increasing employment of the population in these enterprises, and the protection of the health of workers employed in this sector are important tasks.

All over the world, especially in developed countries, the automation of technological processes and the widespread use of information technology in textile, including chemical industries, have minimized direct contact between workers and chemical agents used in the technological process, but their influence still remains. It is also worth noting the unfavorable working conditions in the production process.

From this point of view, in all enterprises, including industrial enterprises where chemical compounds are used in the technological process, great work is being done to reduce unfavorable factors in the production environment, to properly organize work and to strengthen the health of workers. However, in the origin of occupational diseases and dental diseases related to the production environment in industrial enterprises, the appearance of various combinations of various chemicals, the increase of their harmful effects, the complexity of production technologies, the opinion that the production of industrial products plays an important role in the production of industrial products is becoming more and more clear and evidenced by the researchers . is reported based on.

When analyzing the next 20 years of scientific work of researchers from far and near foreign countries, the level of general somatic diseases, especially dental diseases, among workers of various industrial enterprises, including various chemical industries, the factors affecting its increase, the diagnosis and treatment of diseases and it became known that there are scientific sources on partial prevention. The scientific works dealing with the dental aspects of the problem were published mainly by the researchers of the CIS countries, in particular, the Russian Federation, Ukraine, and Belarus. These works are also few in number and do not belong to recent years. These studies have been limited to focusing on the medico-social, economic, hygienic and clinical aspects of the issue.

It is known that health protection of workers of various industrial enterprises is one of the priorities facing every country. The successful solution of these issues not only preserves the health of workers, but also keeps them capable of working for a long time, which in turn increases production productivity and increases the company's income.

In such cases, the health of workers and the level of their labor productivity, the identification of factors that have a negative impact on labor productivity, and preventive measures in order to reduce their negative impact on workers

Received: Nov. 21, 2023; Accepted: Dec. 5, 2023; Published: Dec. 6, 2023
Published online at http://journal.sapub.org/ajmms

are of great importance in production enterprises. In order to plan and implement preventive measures, it is important to perform a hygienic assessment of the working conditions of the main professional groups and to determine the health status of the workers. Maintaining workers' health, ability to work, labor productivity in unfavorable conditions of production is urgent and has not lost its necessity. One of such production enterprises is "textile finance X orazm" LLC.

It is known that all systems and organs, tissues of the human body face various pathological conditions as a result of negative production factors, which have a negative impact on life activities. One such system is the oral cavity.

It is known that the mucous membrane of the mouth, teeth and other tissues, as well as the normal microflora of this biotope, the state of local immune factors are sensitive to external environmental factors, one of such external factors is negative factors of production, unfavorable production conditions. As well as other production enterprises, chemical industry enterprises have different factors that negatively affect workers, depending on their workplaces and stages of production technological processes.

2. The Goal

The purpose of this study is to analyze the dental diseases and dental treatment of workers of industrial enterprises living in ecologically unfavorable conditions in the city of Shavot, to identify dental diseases among the workers of the enterprise, to determine the negative impact on the oral cavity, and to develop an assessment of their condition.

3. Material and Methods

In order to carry out scientific research, the health and dental status of workers operating in the industrial enterprise " Textile Finance X orazm " LLC, located in the city of Shavot, was studied and evaluated.

4. Research Material and Methods

350 workers working in this enterprise were involved in research, they are of working age (25-52 years old), they were formed as the main group.

In order to compare the obtained results, local residents living in the neighborhoods around this enterprise formed a control group. 100 residents aged 25-52, who do not work at the industrial enterprise "T extile Finance X orazm " LLC, were recruited into this control group. In both groups, there were more women than men - the number of employees of the industrial enterprise "T extile Finance X orazm " LLC (n=350) 200 were women (58.0±0.9%) and 150 were men (41.4±1.4%). It was 1:1.33 in the community living around the enterprise and 1:1.32 in the control group. It can be seen that the gender difference is the same, which indicates that the study groups are representative of each other.

The age distribution of examiners in the studied research groups is presented in Table 1.

As can be seen from the given table 1, the examined groups are evenly distributed according to the level of work ability. The statistical closeness of the numbers between the two groups proved the presence of representativeness among the compared groups. A large number of able-bodied persons were found among both groups.

Table 1. Comparative indicators of the age distribution of the studied contingent

Young	Workers of Textile Finance Khorezm LLC	Residents who do not work in this enterprise
25-29 years old	200 / 58.0±0.9	58
30-39 years old	81 / 24.6±1.4	33
40-52 years old	69 / 18.4±1.31	9
Total	350 / 100.0	100/ 100.0

Note: absolute numbers in the picture, relative (%) numbers in the denominator.

The criteria for inclusion of the studied contingent into groups (main, control) were as follows:

to work at the LLC "T extile Finance X orazm enterprise, to be in the age range of 25-52, to agree to be involved in research;

- inclusion in the control group - does not work in the studied enterprise, is in the age range of 25-52 years, lives permanently near this enterprise, agrees to be involved in research.

Both comparison groups were representative of each other and differed only in whether they worked in the aforementioned enterprise or not. In the process of doing scientific work, attention was paid to the randomization of studies.

In order to study the dental status of the workers of the T extile Finance X orazm LLC and the population living around this enterprise, the medical cards of the workers and the population were studied, and a medical examination was conducted.

Dental examinations were studied using traditional methods, the condition of the bite, teeth, and mucous membrane of the oral cavity of the subjects involved in the study was compared, and all the obtained results were entered into cards specially made for these studies.

For the statistical processing of the obtained results, generally accepted variational statistics methods (Student's and Fisher's method) were used. Arithmetic average quantity (M), average quantity error (m), and reliability criterion (t) were determined in it. All examinations were carried out on personal computers with a "Pentium-IV" processor using the special program "Excel" for medical and biological examinations. The principles of evidence-based medicine were strictly followed in the organization and conduct of research.

5. Results Obtained and Discussion

Among the studied contingent, the distribution of the working contingent for the study of dental diseases by seniority is of great importance. Therefore, the enterprise was divided according to the seniority of the employees.

Most of those involved in the research (n=63) were workers with 1 to 10 years of work experience, followed by workers with 10 to 20 years of work experience (n=90), as well as those with 20 years of work experience and more (n=197). busy.

The period of work experience is of great importance in the formation and development of dental diseases, because the period of exposure to unfavorable factors in working conditions also depends on this condition.

In order to compare the obtained results, the duration of residence of people living in the neighborhoods around the enterprise was considered.

According to the duration of their stay, they were placed as follows:

from 1 to -10 years n=15,

10 to 20 years n=30,

20 years and more - n=55,

The study of dental status began with the study and assessment of patient complaints. In order to ensure the accuracy of the obtained results, the indicators of the main and control groups were compared (Table 2).

As can be seen from the given table 2, in 8 out of 9 indicators determined and analyzed as a result of the dental examination (88.9%), the parameters of the main group were statistically significantly higher than those of the control group (R<0.05 - R<0.001).

According to the results of the research, it was shown that the identified symptoms are more common among the workers of the enterprise among the population who do not work in this enterprise, and it was determined and proven that some symptoms of the studied dental diseases are convincingly different among the workers compared to the representatives of the population who do not work in this field (R<0.05).

Differences between the main and control groups in the detection of symptoms among enterprise workers were shown as follows:

- increased tooth sensitivity under the influence of food - 7.6 times (10.7±1.8% vs. 1.4±0.5%);
- oral cavity discomfort - 7.4 times (38.2±3.0% vs. 6.2±1.1%);
- bleeding gums - 6.2 times (11.1±1.9% versus 1.5±0.6%);
- increase in tooth sensitivity under the influence of sweets - 6.1 times (2.8±3.7% vs. 3.6±0.9%).

Similar results were found for other parameters. It is noteworthy that the pain from mechanical and thermal effects was higher in the control group compared to the parameters of the workers in the main group.

So that It was found that among the workers working in the industrial enterprise "T extile Finance X orazm" LLC, the incidence of the main symptoms of dental diseases is higher than in the population living in the area where the enterprise is located, but not working in the enterprise. 8 out of 9 indicators were found to be 1.5-7.6 times more frequent in workers. Symptoms that differ significantly and require attention in planning preventive measures include increased tooth sensitivity due to food and sweets (7.6 and 6.1 times), bleeding gums (6.2 times), discomfort in the oral cavity (7.4 times).

When the rate of inflammatory diseases of the dental-jaw system was comparatively studied, dental diseases such as pulpitis and periodontitis were mainly diagnosed in all respondents: 24.7±3.0% (n=97) and 31.1±2.6% (n=118) against 20.17± 2.4% (n=79) and 17.4±1.4% (n=56).

Table 2. Comparative indicators of the occurrence of symptoms of dental diseases in representatives of the main and control groups

Symptoms	Control group, n= 100		Main group, n= 350	
	Absolutely	%	Absolutely	%
Pain from mechanical and thermal effects	87	87	30	9.3±0.7* ↓
Teeth grinding Level I	48	48	100	27.5±1.0* ↑
Bleeding gums	26	26	100	27.5±1.0*
Increased tooth sensitivity under the influence of sweets	15	15	57	17.8±1.5* ↑
Bleeding during tooth brushing	38	38	40	12.8±1.3* ↑
Oral discomfort	4	4	29	7.54±0.7* ↑
Hypersensitivity due to food	6	6	28	8±1.1* ↑
Decay of front teeth	25	25	23	6.57±0.9* ↑
Stains on the teeth	0	0	3	0.85±0.6 ↑

Note: * - the reliability of the differences of the indicators of the main group compared to the control group; ↑, ↓ - directions of changes.

Table 3. *Of the LLC "Textile Finance Xorazm " enterprise and the residents of this area*

Diseases of the mucous membrane of the oral cavity	LLC "Textile Finance Xorazm " enterprise		People living in this area	
	Absolutely	%	Absolutely	%
No signs of damage (healthy individuals)	241	69.1±3.4* ↓	86	85.7±2.1
Gingivitis	26	7.6±1.6* ↑	4	4.0±0.9
Stomatitis	16	4.6±1.2* ↑	2	2.1±0.6
Candidiasis	11	2.7±1.1* ↑	5	0.5±0.3
Others	56	16.0±2.3* ↑	3	3.0±1.3

Note: * - sign of a reliable difference between workers and population groups; ↓, ↑ - directions of changes.

The obtained results show that there is no significant difference between the given parameters (R>0.05), which indicates that there is practically no difference in the diagnosis of dental diseases between employees and non-employees of this enterprise.

When the residents and workers are under the dispensary control for dental diseases, it was found that 64.5±3.1% of the workers (n=169) are on such a list, while for the population, this indicator was found to be 4.4 times lower - 21.02±1.7%. n=23 (R<0.001).

In our opinion, preventive measures aimed at reducing somatic diseases as well as dental diseases in the enterprise, including keeping workers as an organized group under dispensary control, have been found to be effective, but it is evident that there are difficulties in establishing dispensary control among the population, interpreted as an unorganized group.

Among those examined at the next stage, anomalies of tooth-jaw development and malocclusion were studied. It was found that against the background of no teeth-jaw anomalies in workers of the enterprise (0%), malocclusion was detected in 16.0±2.3% (n=42) cases, normal development of the tooth-jaw system was determined in 84.0±2.3% cases.

As can be seen from the given table 3, OSHQ diseases were reliably detected among workers (R<0.05 - R<0.001).

Among the workers, 2/3 (69.1±3.4%) of all those involved in the examination did not have pathological changes in the OSHQ layer, while among the population (control group) this indicator was 5/6 (85.7±2.1%) did When comparing the incidence of OSH diseases, it was observed that they were statistically different among workers (main group) (R<0.05 - R<0.001), including gingivitis among workers 1.9 times (7.6±1.6% against 4,0±0.9%), stomatitis increased by 2.2 times (4.6±1.2% vs. 2.1±0.6%), candidiasis increased by 5.4 times (2.7±1.1 % against 0.5±0.3%) was found to be more common.

In our opinion, the high occurrence of OSH diseases among workers against the background of other dental diseases is related to the harmful factors encountered in production, and the reduction of the influence of these harmful factors creates the basis for the reduction of the mentioned dental diseases.

The main reason for reaching such a conclusion is that workers are always under the control of the dispensary, undergo a medical examination once a year, taking into account that the treatment of identified diseases, including dental diseases, has a negative effect on the productivity of workers, and it shows that preventive measures should be focused on reducing this condition.

In the study of the state of dental hard tissues, attention was mainly paid to the level of enamel hypoplasia (spot on teeth). The obtained results showed that there were no practically different convincing changes among the compared groups in terms of enamel hypoplasia detection parameters - respectively, this indicator was 1.1±0.6% in workers (n=2), and 1.7±0.6% in the population. % was (n=4).

According to the given information, enamel hypoplasia is rare among workers, regardless of length of service. We believe that there is no need to carry out special preventive measures aimed at strengthening the hard tissues of the teeth, it is enough to follow generally accepted preventive measures that ensure the health of the oral cavity and teeth.

During the research, it was found that even if the dental service is provided among the employees of the enterprise, it is implemented chaotically and does not meet today's requirements.

6. Conclusions

1. It was found that among the workers working in the industrial enterprise "T extile Finance X orazm" LLC, the incidence of the main symptoms of dental diseases is higher than in the population living in the area where the enterprise is located, but not working in the enterprise. 8 out of 9 indicators were found to be 1.5-7.6 times more frequent in workers. Symptoms that differ significantly and require attention in planning preventive measures include increased tooth sensitivity due to food and sweets (7.6 and 6.1 times), bleeding gums (6.2 times), discomfort in the oral cavity (7.4 times).
2. Among the workers, 69.1% of all those involved in the examination did not have pathological changes in the thoracic cavity, while among the population, this indicator was 85.7%. OSA diseases were observed to be statistically different among workers, including gingivitis was recognized to be 1.9 times more common among workers, stomatitis 2.2 times, and OSA

candidiasis 5.4 times more common among workers. Against the background of other dental diseases, the high occurrence of OSHK diseases among workers is related to harmful factors encountered in production.

3. Pulpitis and periodontitis were diagnosed as inflammatory diseases of the dental-jaw system (20.17±2.4% and 17.4±1.4% against 24.7±3.0% and 31.1±2.6% of factory workers). There is no convincing difference between the mentioned parameters. Against the background of the absence of TJA in workers of the enterprise (0%), malocclusion was detected in 16.0±2.3% of cases, normal development of the tooth-jaw system was determined in 84.0±2.3% of cases.
4. There were no practically reliable changes among the compared groups on the parameters of enamel hypoplasia detection - respectively, this indicator was 1.1±0.6% among workers and 1.7±0.6% among the population. We believe that enamel hypoplasia is rare among workers, regardless of length of service, so there is no need to take special preventive measures aimed at strengthening dental hard tissues, it is enough to follow generally accepted preventive measures that ensure the health of the oral cavity and teeth.

REFERENCES

[1] Analysis of the petrochemical development strategy until 2015 / A.V. Artemov, A.V. Barykin, M.I. Ivanov [etc.] // Russian culture. magazine – 2008 – But. 4. - P.4. 14.

[2] Early diagnosis and prophylasty of dental diseases among workers in the production of chlorphenoxyherbitsides / O.A. Gulyaeva, T.S. Chemikosova, A.B. Bakirov, R.T. Bulyakov. - Ufa: State Unitary Enterprise IPK of the Ministry of Internal Affairs for the Republic of Belarus "Typography named after F.E. Dzerzhinsky", 2008. - 128 p.

[3] Averyanov S.V. The influence of harmful factors of the rubber industry on the periodontal status of workers // Periodontology. - 2016. - But. 4. - P.47-52.

[4] Agayeva D.F., Ibragimli H.I. Cause-and-effect relationship between dental morbidity and harmful chemical factors of production // International medical journal. - 2010. - But. 2. - P.97-100.

[5] Agafonov A.A. Dental morbidity among thermal power plant workers depending on length of service // Fundamental Research. - 2012. - But. 12. - P.211-214.

[6] Khabibova N.N., Vakhidova M.A. Эvaluation of the protective system of the mucous membrane of the oral cavity in chronic relapsing aphthous stomatitis// Vestnik TMA. -2019. - No. 3. - S. 131-133.

[7] Razikova D.K. Evaluation of the effectiveness of hepona and complex therapy in patients with red flat lichen with lesions of the mucosal layer of the rta // Modern medicine: new approaches and actual research. Moscow. – 2019. – No. 8 (24). - S. 262-263.

[8] Khabibova N.N., Saidova N.A., Norova M.B. The use of interactive teaching methods in universities and features of their application // Current state of medical education, problems and prospects - 2020. Materials of the third international educational online conference. Bukhara. - 2020. – P. 83.

[9] Tailakova D.I. The influence of pesticides and industrial vibrations on the course of non-carious lesions of hard dental tissues in children // Scientific and practical conference with international participation. Current question with dentist. – 2018. September 10.

[10] Kurbanova N.I. Dental prevention of morbidity in silk-welding workers // Academicia: An International Multidisciplinary Research Journal. -2020. – VoL 10. Issue 5 May. - P. 1667-1669.

[11] Kurbanova N.I., Khabibova N.N. Prophylaxis of stomatological diseases and workers' shelkomotalnogo proizvodstva // Novyy den v meditsine. - 2020. 2 (30). - C. 250-253.

[12] Kurbanova N.I., Khabibova N.N. Optimization prevention of dental diseases among workers of silk-reeling production // New day in medicine. - 2020. 3 (31). - pp. 574-576.

[13] Kurbonova N.I., Khabibova NN The results of the working conditions of workers in the silk industry // Journal For Innovative Development in Pharmaceutical and Technical Science. - Volume: 4, Issue: 3, Mar: 2021. - P. 35-37.

[14] Kurbonova N.I. Optimization of prevention of dental morbidity in workers of the production of cholomatic production // Journal For Innovative Development in Pharmaceutical and Technical Science. - Volume: 4, Issue: 3, Mar: 2021. - P. 15-17.

[15] Kurbanova N.I., Khabibova N. N., Ikhtiyarova G. A. Hygienic Condition Of The Oral Cavity And The Level Of Hygienic Knowledge Of Silk Motor Workers // European Journal of Molecular & Clinical Medicine, 2020, Volume 7, Issue 3, Pages 3027-3033.

[16] Khabibova N.N. Characteristic features of free-radical processes and antioxidant protection in the oral cavity during chronic recurrent aphthous stomatitis // European Science Review. - 2018. - P. 191-193.

[17] Khabibova N.N. Characteristic features of the biochemical indicators of mixed saliva in patients with chronic recurrent aphthous stomatitis// Global Science Research Journals. - 2019. - Vol. 7 (8). - P. 521-526.