

## METHODOLOGICAL APPROACHES TO ASSESSING THE ASSOCIATION BETWEEN DENTAL HEALTH AND QUALITY OF LIFE IN WOMEN EMPLOYED IN THE CHEMICAL INDUSTRY

*Ibragimova Feruza Ikromovna*

*Bukhara State Medical Institute*

**Abstract.** Today, the study of people's quality of life is one of the important parts of medical research. It is known that society is constantly changing, and at the same time, people's attitudes towards health and health care are also changing. At the heart of this is the understanding of the social consequences of the disease on the one hand, and on the other hand the realization that medical treatments are aimed at prolonging human life and improving the quality of life. Therefore, the quality and efficiency of health care work is evaluated according to its impact on the quality of life of patients.

**Keywords.** Chemical agents, tooth enamel, dentin, prevention, treatment optimization

According to the experts of the World Health Organization (WHO), quality of life is an integrated description of physical, social, mental or emotional functioning based on a person's subjective perception.

The patient's subjective assessment of his quality of life shows his psychological status, the effectiveness of treatment measures, and allows determining the impact of the disease and treatment on the patient's condition. Subjective information about the patient's quality of life, together with the doctor's objective conclusion, makes it possible to create a complete clinical picture of the disease [1].

In dentistry, a new look at human teeth as a factor of quality of life allows a new look at the treatment and prevention of dental diseases, and the organization of dental services for the population. Dental quality of life is defined as a subjective assessment of the oral cavity and determining the function of the pathology in it and the impact on the social and mental status of a person [3].

Assessment of dental quality of life includes the identification of clinical indicators and social complications, the dental condition leads to changes in the body's normal functions, social status and behavior, as a result of which the ability to work and productivity decreases, preoccupation with household concerns and disruption to the educational process. [2,8].

In recent years, many questionnaires and scales have been developed to assess dental quality of life. These methods are used to determine the effectiveness and efficiency of medical interventions, to evaluate the quality of medical care, to assess the medical and sanitary needs of the population, to understand the causes and

complications of various dental diseases, and to improve clinical decision-making.

According to the results of many studies, the following indices are most commonly used to assess the quality of life of dental patients today: Oral Health Impact Profile (OHIP), Dental Impact on Daily Living (DSDL), Oral Health-related Quality of life (OHR QoL).

In the following years, the validated version of the OHIP-14 index in Russian is used in the Russian Federation (RF) [3]. In Uzbekistan, the OHRQoL questionnaire was used in a modified version. [Yarieva O.O., 2019; Bakaev J.N., 2020].

Assessment of dental quality of life includes the identification of clinical indicators and social complications, the dental condition leads to changes in the body's normal functions, social status and behavior, as a result of which the ability to work and productivity decreases, preoccupation with household concerns and disruption to the educational process. [4,5,9].

In recent years, many questionnaires and scales have been developed to assess dental quality of life. These methods are used to determine the effectiveness and efficiency of medical interventions, to evaluate the quality of medical care, to assess the medical and sanitary needs of the population, to understand the causes and complications of various dental diseases, and to improve clinical decision-making.

According to the results of many studies, the following indices are most commonly used to assess the quality of life of dental patients today: Oral Health Impact Profile (OHIP), Dental Impact on Daily Living (DSDL), Oral Health-related Quality of life (OHR QoL).

In the following years, the validated version of the OHIP-14 index in Russian is used in the Russian Federation (RF) [7]. In Uzbekistan, the OHRQoL questionnaire was used in a modified version.

**The purpose of the study** was to develop a method of studying the relationship between dental health and quality of life among women workers of chemical industry enterprises.

**Material and methods.** There were 715 people aged 19-55, of which 353 ( $49.37 \pm 1.87\%$ ) were from rural areas and 362 ( $50.63 \pm 1.87\%$ ) were urban residents. Also, women employed in production were divided according to the length of service in this enterprise. All studied persons ( $n=715$ ) were divided according to work experience as follows: up to 5 years - 133 people ( $18.60 \pm 1.46\%$ ); from 5 to 10 years - 146 ( $20.42 \pm 1.51\%$ ); from 10 to 20 years - 275 people ( $38.46 \pm 1.82\%$ ); 20 years and over - 161 people ( $22.52 \pm 1.56\%$ ).

When their life anamnesis was studied, only the diseases experienced by them in childhood and later attracted attention. The obtained results revealed that  $14.97 \pm 1.33\%$  of the studied subjects had experienced diseases, but this does not indicate the level of morbidity among the population, because no chronic diseases were identified from the

women involved in the research, and if there was an anamnesis of life, it was not aggravated. The selection of women according to these criteria was carried out in order to achieve the purity of the study, its randomization, and the representativeness of the study groups.

It is known that it is important to identify co-morbidities along with studying and evaluating the dental status of workers, because these diseases can be associated with diseases of the oral cavity. Taking this into account, co-morbidities occurring in women employed in production were determined as a result of a survey, as well as the inclusion of answers to questionnaires and preventive medical examinations. The obtained results showed that various levels of anemia were detected in female workers engaged in production ( $23.22 \pm 1.58\%$  of all examined,  $n=166$ ). It was found that 333 ( $46.58 \pm 1.87\%$ ) of the working women involved in the research had diseases of various organs and systems and today they are present in these women, and the remaining 382 ( $53.42 \pm 1.87\%$ ) women did not have any related diseases. . It turned out that at the time of the study, all women were able to work, most of them had a period of remission of the disease, some of them continued preventive treatment.

The Oral Health Related Quality of Life (OHRQoL) questionnaire was used to determine and evaluate the relationship between the quality of life and dental health of those employed in production, and to make reasonable conclusions based on subjective and objective indicators. This questionnaire was published in 1996 by Kressin N. et al. recommended by the parties. There are 10 questions in total, each with 5 answers, it is recommended to mark the answers as follows: never, very rarely; rarely less; often; very often.

Each answer is rated from 0 to 4 points: "never" - 0 points; "very rarely" - 1 point; "rarely" - 2 points; "often" - 3 points; "very often" - 4 points. Respondents were asked to select only one answer for each question. Scores for each respondent ranged from 0 to 40, but total scores ranged from 0 to 40 because of the variability in responses to each question.

In order to evaluate the received answers, we recommended the following gradations:

- 0-10 points - dental health is normal, quality of life is high, there is a strong "physiological connection" between dental health and the respondent's quality of life;
- 11-20 points - dental health is normal, the quality of life is partially reduced due to stress and anxiety, the "physiological connection" between dental health and the respondent's quality of life is of moderate strength;
- 21-30 points - dental health is alarming, quality of life is reduced, "physiological connection" between dental health and quality of life is weak, there is "pathological connection" (weak and medium strength);
- 31-40 points - dental health is alarming, the quality of life is sharply reduced,

there is no "physiological connection" between dental health and the respondent's quality of life, "pathological connection" is strongly developed.

The statistical processing of the received material was carried out using the Excel program using traditional variational statistical methods. The statistical processing of the obtained data was carried out by calculating the following parameters: the arithmetic mean size (M), the arithmetic mean error (m), the significance of the differences was determined by the Fisher-Student test (P). Differences between means were considered reliable if the probability level was  $P < 0.05$ . The principles of evidence-based medicine were used in the organization and conduct of research.

**Results and their discussion.** Respondents When the answers given by working women ( $n=715$ ) working at JSC "Navoiyazot" were analyzed, the results for each working woman were evaluated, then these results were summarized and presented for this group of working women, at the end of this analysis, dental health and quality of life of working women brought according to seniority.

Respondents answered the question "How often do you feel discomfort in the oral cavity, teeth and jaw?": "never" -  $49.09 \pm 1.87\%$  ( $n=351$ ); "very rarely" -  $21.26 \pm 1.53\%$  ( $n=152$ ); "rarely less" -  $19.02 \pm 1.47\%$  ( $n=136$ ); "often" -  $7.27 \pm 0.97\%$  ( $n=52$ ); very often -  $3.36 \pm 0.67\%$  ( $n=24$ ).

It can be seen that practically half of the respondents (49.09%) said that such a situation was not observed in them. This showed that they have normal dental health and high quality of life (Figure 1). It can be concluded that these working women have high work capacity and productivity based on these indicators. If we take into account that 21.26% of working women are very rarely bothered by the above discomfort, the above conclusion applies to them as well.

It is worth noting that 7.27% and 3.36% of the studied, respectively, reported feeling discomfort in the oral cavity and its organs "often" and "very often". This indicates that they have dental health problems and that they have a high need for dental professionals.

Problems in dental health, in turn, have been proven to reduce work capacity and productivity, as well as to reduce the quality of life. All of them ( $n=76$ , 10.63%) were included in the group of working women with "worry dental health, reduced quality of life" from the first question and were taken into control.

The second question that was asked to the female workers involved in the research, based on this questionnaire, was called "How often do you experience difficulties when consuming cold and hot drinks as a result of dental problems?", and the results of the answers to it were as follows "never" -  $46.99 \pm 1.87\%$  ( $n=336$ ); "very rarely" -  $20.70 \pm 1.52\%$  ( $n=148$ ), "rarely" -  $15.94 \pm 1.37\%$  ( $n=114$ ); often -  $11.05 \pm 1.17\%$  ( $n=79$ ), "very often" -  $5.32 \pm 0.84\%$  ( $n=38$ ).

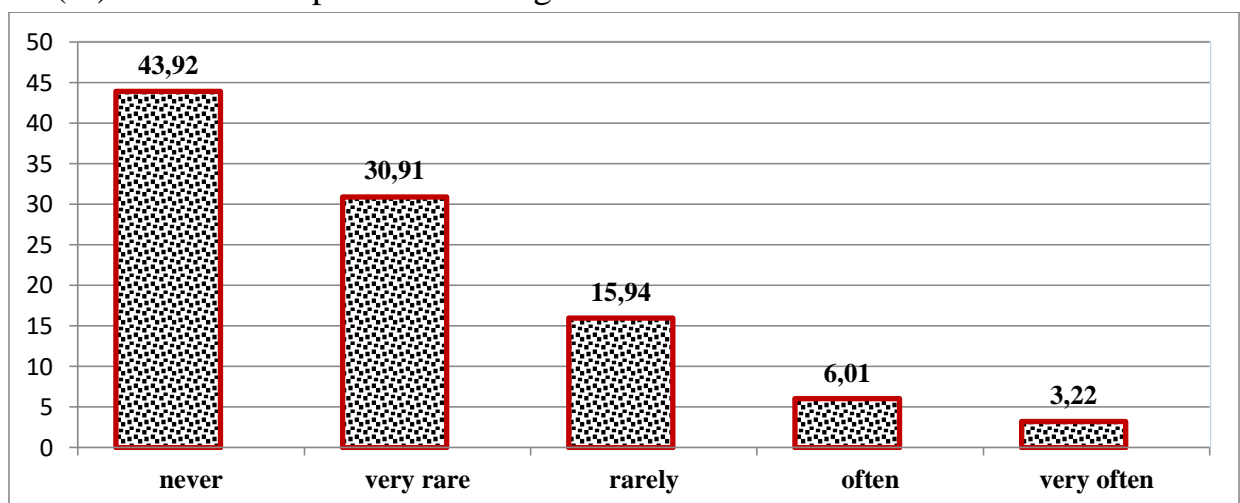
It can be seen that in 68.95% of cases, the respondents did not complain about

dental health, there was no change in life itself. It is noteworthy that 13.01% (n=93) of working women said that this discomfort is often bothersome, and objective examination methods also confirmed their discomfort and indicated the presence of dental problems in the oral cavity.

Thus, it was found that those who complained of discomfort were the same for all three questions. It is worth noting that dental problems such as teeth and jaw discomfort, hot-cold sensation, oral discomfort during eating are found in 10.63-16.37% of cases, it is found that the dental health of these working women is alarming and the quality of life is reduced, dental health and life. It was proved that the relationship between the quality of life has weakened and the "physiological connection" between them has disappeared, and a "pathological connection" has appeared. It has been proven that the criteria such as "physiological connection" and "pathological connection" recommended by us to describe the relationship between dental health and quality of life can be practically used in assessing the quality of life of working women.

Based on the results of the analysis of the above-mentioned clinical part of the questions in the questionnaire, we moved on to the next part of the questions - the individual-psychological part. The three questions presented here assessed the impact of dental problems on the psychological status of working women and their impact on quality of life. The analysis was based on the written answers to the questions of the respondents.

All respondents (n=175) gave different answers to the question "How much sleep did you have because of dental problems?" The results of the responses in absolute and relative (%) numbers are presented in Figure 2.



**Figure 2. The results of the answers about the sleep disturbance of the respondents due to dental problems, %**

The obtained results showed that such a problem was never observed ( $43.92 \pm 1.86\%$ , n=314) and very rarely detected ( $30.91 \pm 1.73\%$ , n=221) among working



women among all women involved in the study. made up  $\frac{3}{4}$ , if we include the contingent of women who were rarely bothered by this problem ( $15.94 \pm 1.37\%$ ,  $n=114$ ), 9 out of 10 working women denied this problem.

Only 9.23% of respondents (respectively, often  $6.01 \pm 0.09\%$ ,  $n=43$  very often  $3.22 \pm 0.66\%$ ,  $n=23$ ) reported that dental problems bothered them and disturbed their sleep. . 9.23% of working women whose quality of life decreased due to dental health concerns were women included in the risk group according to previous studies. It has been confirmed that there are changes in the individual psychological state of working women who are worried about their dental health, as determined clinically, subjectively and objectively.

The next question answered by the respondents in the questionnaire was called "How affected are you by dental problems?", and the results of the responses are presented in Table 3.

**Table 3**

**Parameters of respondents' impression level due to dental problems**

Answers	In absolute numbers	Relative (%) in numbers
Never	386	$53,99 \pm 1,86$
Very rare	128	$17,90 \pm 1,43$
Rarely	121	$16,92 \pm 1,40$
Often	51	$7,13 \pm 0,96$
Very often	29	$4,06 \pm 0,74$

1/10 of the respondents gave a positive answer to this question, that is, dental problems affected them, made them psychologically unbalanced, increased their sensitivity, which, in turn, interfered with communication with those around them. If 51 respondents ( $7.13 \pm 0.95\%$ ) indicated that they are often affected, as a result of which jizzaki appears, 29 working women ( $40.6 \pm 0.74\%$ ) said that such situations occur very often. have passed In other cases, working women were either not bothered by these problems at all ( $67.83 \pm 1.75\%$ ,  $n=485$ ) or, if bothered, very rarely ( $13.15 \pm 1.26\%$ ) and rarely ( $8.95 \pm 1.05\%$ ,  $n=64$ ) occurred.

It is noteworthy that hesitance to communicate due to dental problems is "very rarely" ( $21.12 \pm 1.53\%$ ,  $n=151$ ), "rarely" ( $14.13 \pm 1.30\%$ ,  $n=101$ ) in addition to the occurrence of this problem "frequently" ( $2.65 \pm 0.60\%$ ,  $n=19$ ) was less manifested.

The percentage of those who answered positively to the previous three questions in the questionnaire (clinical characteristic) differed significantly ( $R < 0.001$ ) from the number of those who answered positively to daily life (psychological characteristic - social activity).

In our opinion, the clinical features related to dental problems that destroy the

body's life activities disturbed working women more than the social activity (psychological feature). The reason for this is, firstly, that the clinical features negatively affect work activities, changes in habits related to daily life, and secondly, that they are also interested in social activity, which shows that the sense of critical look at their appearance is not sufficiently formed.

Thus, the analysis of the answers to the questions related to all three psychological characteristics shows that from a total of 7.55% to 11.23% of the respondents involved in the research (n=715) answered the questions positively, which means that they are worried about their dental health, which showed that the quality of life decreased as a result. As a result, the "physiological connection" between dental health and quality of life has disappeared, and a "pathological connection" has appeared. These criteria indicate the need for a new approach to the primary prevention of dental diseases for this category of individuals. The mentioned criteria and the used questionnaire allow not only an accurate assessment of dental health among working women, but also the degree of its impact on the parameters of their quality of life, the degree of interdependence between these indicators, and also the basis of clearly planned primary prevention based on them, having a positive effect on the lifestyle of working women. also increases labor productivity.

The next 4 questions in the questionnaire are related to characteristics such as treatment efficiency and family budget, "Do you and your family members feel depressed about your dental diseases and dental problems related to their treatment?" started with answers to the question (Table 4).

The tendency of the responses obtained in the questionnaires conducted in order to clarify the previous clinical and social issues was also observed in these responses, that is, a part of the respondents involved in the survey answered positively ("often" -  $8.11 \pm 1.02\%$ , n=58) and "very often" -  $1.12 \pm 0.39\%$ , n=8). Previous positive responses (from 7.55% to 11.23%) revealed that all clinical, psychological, treatment effectiveness, and family budget concerns are practically the same and interrelated.

**Table 4**

**Answers on the impact of dental problems on the mood of the person and his family members**

Answers	In absolute numbers	Relative (%) in numbers
Never	365	$51,05 \pm 1,87$
Very rare	164	$22,94 \pm 1,57$
Rarely	120	$16,78 \pm 1,40$
Often	58	$8,11 \pm 1,02$
Very often	8	$1,12 \pm 0,39$

Regarding the answer to this question, 9.23% (n=64) of the respondents gave a positive answer (frequently and very often depressed), indicating that they have dental health concerns as well as decreased quality of life. This response was also consistent with previous findings that dental health and quality of life are closely related, with poor dental health leading to lower quality of life.

Most of the respondents involved in the research said that dental problems never negatively affected their mood ( $51.05 \pm 1.87\%$ , n=36), a certain part rarely ( $22.94 \pm 1.57\%$ , n=164) and rarely ( $16.78 \pm 1.40\%$ , n=120) reported that it was affected. It was recognized that their quality of life did not decrease because their dental health was alarming, so the correlation between the level of dental health and quality of life of these working women was interpreted as a "physiological link".

The obtained results showed that the majority of the respondents (73.01%) did not consider themselves guilty of dental problems, nor did their family members feel guilty. The responses of never ( $44.90 \pm 1.86\%$ , n=321) and very rarely ( $28.11 \pm 1.68\%$ , n=201) were not because working women did not have dental problems, but because they did not expect this question to be asked in the questionnaire.

In the process of filling out the questionnaire, it was revealed that their children felt guilty about their dental problems. The respondents pointed out that they did not talk to their children about oral hygiene, tooth care, and did not teach them how to clean teeth with toothpaste and a toothbrush, but they did not think about themselves.

In our opinion, if conversations about dental diseases and their primary prevention are held both in the enterprise and in the neighborhood, if written promotional materials are distributed, if there is information about this in the QVP and family polyclinics, if trainers are trained for primary prevention of dental diseases among family polyclinic doctors and medical staff, then this diseases would be prevented, and the number of people with dental health concerns and the associated reduced quality of life would be dramatically reduced, including women.

Given the high attention given to the neighborhood institution, it is convenient to carry out primary prevention of dental diseases through patronage medical workers who enter every family, because the women working in the enterprise are primarily citizens of the neighborhoods.

Primary prevention of dental diseases among employees, including working women, in chemical production enterprises is secondary and serves to strengthen acquired dental knowledge and skills.

Between 80 and 98% of the total study participants (n=578) reported no absence from work due to dental problems, and there was no absence from work due to dental problems in family members (Table 5).



Table 5

**Analysis of the results of absenteeism due to dental problems**

Answers	In absolute numbers	Relative (%) in numbers
Never	443	61,96±1,82
Very rare	136	19,02±1,47
Rarely	79	11,05±1,17
Often	44	6,15±0,90
Very often	13	1,82±0,50

It should be noted that in 7.97% of cases (n=57) one of the main reasons for absenteeism was the dental problems of the working woman herself or their family members. When this question is analyzed in more depth, only 8 (14.04%) of 57 working women who gave a positive answer were absent from work due to their own dental disease, and in other 49 cases (85.96%) were absent from work due to their children's dental disease.

In addition to the questionnaire, when the respondents were asked whether they had thought about this question before, whether they had paid attention to this problem before, all the working women involved in the survey said that they had not even thought about this issue, and they had no idea that dental problems depend on the quality of life.

It is noteworthy that these 57 identified respondents were those in the risk group who answered positively to the previous questions. The quality of life of working women who are worried about their dental health has been determined for this factor as well.

As it can be seen from the obtained results, there were cases where the family budget was damaged for the treatment of these diseases, while the main part of the studied did not encounter such problems at all.

Summarizing the results of the study, among all working women (n=715) who answered the questions in the questionnaire, subjective parameters were also divided into risk groups based on the results of objective observation. The responses to our modified OHRQoL questionnaire were practically identical to the subjective parameters and objective observational results.

Although the indicators of positive answers to the given questions are different, all working women who gave such answers belong to the "risk group", depending on the amount of positive answers given and their intensity, to determine the level of connection between dental health and quality of life, based on this, to determine the

primary prevention of various dental diseases among working women. the development becomes easier, the development and implementation of concrete measures becomes easier, as a result, the prevention of dental diseases is optimized, as a result, dental health improves, and in turn, these working women lead to an improvement in the quality of life.

### **Conclusions**

1. A modified OHRQoL questionnaire was recommended to study the relationship between dental health and quality of life in women workers in chemical industry. For the assessment of the dental health of working women, 4 gradations based on points were recommended - 0-10 points; 11-20 points; 21-30 points; 31-40 points. Based on these gradations, risk groups were distinguished and it was recommended to develop appropriate primary preventive measures;

2. In order to optimize the assessment of the connection between the dental health and quality of life of working women and to determine the degree of change, the concepts of "physiological connection" and "pathological connection" were introduced, which were expressed in the form of weak, medium and strong physiological connection and weak, medium and strong pathological connection. .

3. A total of 16.36% of all studied subjects (n=715) had a worrying dental health, and it was found that the quality of life decreased, when the relationship between dental health and quality of life was studied, the "physiological connection" was weak or non-existent and the "pathological connection" appeared. it is determined to be moderately strong or strong.

4. A register of working women whose dental health is alarming and included in the risk group was created, and the dentists of the chemical industry production enterprise were given constant control and timely treatment recommendations. These events, which were carried out by the "risk group", led to a high level of quality of life, and in turn, an increase in labor productivity.

### **References:**

1. Alimovich E. V. Comparative character of osteomyelitis' microbial landscapes studied depending on age of patients, forms and causes of the disease //European science review. – 2017. – №. 7-8. – C. 79-83.
2. Khabibova N. N. Evaluation of vascular tissue disorders and regional bleeding under chronic reduced preparative atphosis //Proceedings of The ICECRS. – 2019. – T. 4.
3. Khabibova N. N. Local humoral factors of the immune protection in patients with cras //International Scientific Review. – 2019. – №. 1. – C. 39-41.

4. Khabibova N. N. Studying of biochemical and cytokine markers of inflammation in the oral liquid and blood in patients with cras //european research: innovation in science, education and technology. – 2019. – С. 39-41.
5. Уринов М. Б., Ахророва Ш. Б., Рахматова С. Н. Сроки восстановления лицевого нерва при параличе Белла в зависимости от стороны поражения и пола //Психическое здоровье. – 2014. – Т. 12. – №. 10. – С. 67-69.
6. Gaffarova V. F. et al. Clinic-eeg Correlation Somatogenous of Conditioned Febrile Seizures in Children //International Journal of Human Computing Studies. – 2021. – Т. 3. – №. 1. – С. 114-116.
7. Mukhsinova L. A. et al. Cytokine Profile in Patients with Congenital Cleft Upper Lip and Palate //European Journal of Research Development and Sustainability. – Т. 2. – №. 4. – С. 91-93.
8. Anvarovna M. L. Early Diagnosis of Pathologies at the Exit of Teeth in a Young Child and its Peculiarities //Central Asian Journal of Medical and Natural Science. – 2022. – Т. 3. – №. 5. – С. 286-289.
9. Olimova N. I. Analysis of the somatic and reproductive history of women with genital inflammatory diseases due to hiv infection //АКТУАЛЬНЫЕ ВОПРОСЫ ЭКСПЕРИМЕНТАЛЬНОЙ МИКРОБИОЛОГИИ: ТЕОРИЯ. – 2022. – Т. 1. – №. 2. – С. 30.
10. Ibragimova F. I., Idiev G. E. The effect of sodium hypochlorite (an ingredient in synthetic detergents) on the activity of redox enzymes and its correction by the introduction of herbal preparations in the experiment." Problems of Biology and Medicine //International Scientific Journal.-Samarkand. – 2017. – №. 4.1. – С. 98.
11. Ikromovna I. F. Prevalence and character of the oral cavity mucosa in the workers of the manufacture of the synthetic detergents //European science review. – 2016. – №. 3-4. – С. 178-179. 15. Ibragimova F. I. et al. Zh. The use of low-frequency ultrasound in the complex treatment of leukoplakia of the oral mucosa." Problems of Biology and Medicine //International Scientific Journal.-Samarkand. – 2013. – №. 4.1. – С. 78.
12. Ibragimova F. I., Idiev G. E. Evaluation of the parameters of the oral cavity in workers of a chemical enterprise." HERALD. Problems of Biology and Medicine" Ukrainian Academy of Sciences. – Ukraine, 2013.