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Hygienic Condition of the Oral Cavity and Periodontal Tissue in Patients with Psychiatric Pathologies

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Abstarct: **Relevance.** According to the results of the study, epidemiological characteristics were noted psychiatric morbidity (PM) in the Bukhara region. Opit is determined that the study population belongs to a group of patients in a very emotional state; wherein, the authors studied the hygienic state of the oral cavity (OC) and periodontal tissues, it was established that there is a high risk of developing carious lesions of hard dental tissues and their complications, unsatisfactory hygiene of the oral cavity, also, the PR is highrisk of chronic oral sepsis (COS).

Purpose of the study -Assessment of the hygienic state of the oral cavity and periodontal tissue in patients with various types of psychoneurological diseases (PND) in outpatient and inpatient settings.

Material and methods. The study is based on retrospective and prospective data; the dental condition of 850 patients with dental disease (main group - M/G) and 175 patients in the control group (C/G) without dental disease pathology, aged from 18 to 70 years in the example of the Bukhara region, were assessed. In all studied patients with OC, the epidemiological status by region, age and gender was assessed, the intensity of dental damage by caries and its complications, the hygienic state of OC, the condition of periodontal tissue was determined, and the viscosity of the oral fluid (OF) and pH of saliva was also assessed.

Results. Installedhigh incidence rates with a diagnosis of mental illness (17,700), including schizophrenia - 4,455 cases; epilepsy – 1790 cases; oligophrenia - 6606 cases and other forms of psychosis - 4849 cases, whiledisabilities are associated with health problems - 9383 (53%) patients; of them - 7921 patients in group 2; - 609 patients of the 1st group and 125 patients of the 3rd disability group. Also, it was establishedhigh rates of dental caries (20.67±0.82*) in patients with PM; a correlation analysis established between the values of OF parameters, OC hygiene and the intensity of damage to hard dental tissues and periodontal tissues revealed varying degrees of interrelation between these parameters.

Conclusion. Thus, patients with PM are characterized by a high prevalence of periodontal tissue disease - 82%, a direct relationship with a high risk of chronic oral sepsis - 13.3%, while the established results differ significantly from patients with C/G.

Key points: psychoneurological disease, caries and its complications, periodontal tissue, hygienic condition of the oral cavity.

Relevance. As is known, combined diseases of the oral cavity (OC) and internal organs occupy a prominent place in dentistry, since they allow us to reflect the essence of the genesis of many dependent diseases of the OC and outline ways to develop complex preventive measures [1,3,4,6],

including including when the human body is exposed to harmful factors [7,9,10,11]. In the formation of the pathological process, a number of authors see a possible pathogenetic role of dysfunction of the autonomic nervous system (ANS) and the central nervous system (CNS) [12,13].

Today, the state of the dental system (DS) and the provision of comprehensive dental care to mentally ill people (MP) is a poorly studied issue. At the same time, in many countries of the world in recent years there has been an increase in mental illness (PM), there is also information that the dental service of psychiatric hospitals cannot cope with the entire flow of patients and some patients with mental disorders end up in regular dental clinics [5, 15]. It is also knownthat psycho-emotional disorders during a dental appointment can be identified during a survey - when collecting complaints and patient history, as well as using specialized scales and questionnaires [Erilin E. A., 2016]. Thus, assessing the state of the oral cavity (OC) for further planning the provision of dental care to patients with oral cavity is an urgent problem in medicine today.

Purpose of the study -Assessment of the hygienic state of the oral cavity and periodontal tissue in patients with various types of psychoneurological diseases (PND) in outpatient and inpatient settings.

MATERIAL AND METHODS.

This study is based on retrospective and prospective data obtained as a result of observation of patients and their medical records in 2020-2023 with varying severity of psychiatric pathologies, registered at the dispensary “D” of the Bukhara Regional Psychiatric Hospital.

For a dental examination of 1025 patients examined (including 850 patients with mental illness - the main group - M/G of which M/G-1 - schizophrenia; M/G-2 epilepsy; M/G - 3 - oligophrenia and M/G- 4 – other forms of psychosis) and 175 patients as a control group (C/G) without mental health pathology, aged from 18 to 70 years; The intensity of dental caries (DCC) was assessed, the hygienic state of the oral cavity was assessed using the Oral Hygiene Index-Simlified (OHI-S) - a simplified Green-Vermillion hygiene index (IGR-U) (JCGreen, JRVermillion, 1964); determination of supra-gingival and sub-gingival tartar was carried out using a dental probe; the OHI-S hygiene index was used to evaluate the data obtained. The PR OHI-S was carried out by adding the DI-S plaque index and CI-S tartar index. The condition of periodontal tissue was assessed using the Community Periodontal Index of Treatment Needs (CPITN) method recommended by WHO. In order to determine the relationship between foci of chronic infection of OC and general somatic diseases and assess the influence of OC pathology on the severity of the general condition of the body, a modified risk index for chronic oral sepsis (RCOS) OC was used [17].

The determination of saliva viscosity was carried out using a capillary viscometer. A capillary viscometer is a reservoir of a given volume with outgoing tubes of small round cross-section or capillaries. Viscosity was determined with a capillary viscometer relative to distilled water in freshly collected OF samples. Each portion was studied 3 times, and the average value [2,8,14,16,18] was entered into the study card.

Saliva pH measurements were performed using a portable electronic pH meter. Saliva was collected directly from the OC using a removable capillary. The resulting saliva was placed in a cuvette and the results were taken from the pH meter display.

Statistical data processing: using variational statistical methods, the following were calculated: the average value M, standard deviation - σ and arithmetic mean error - m;the data was processed in the Statistica program.

RESULTS DISCUSSION.

An analysis of the data received on psychiatric services in the republic for 2021 shows that doctors in the state are 1399.25; occupied 1195.8; the supply of doctors per 10,000 population is 0.25; number of visits (thousands) 1891363; of which 864,717 were related to the disease; taken for D+C for the first time diagnosed 25060; of which - psychosis - 4001, schizophrenia - 1766, non-psychotic characters - 11008, mental retardation - 6327, including epilepsy 1847: these figures are

for 2022; -1439; -1244; -0.26; -2261245; -801503; -24345; -3635; -2056; -10333; –5995; -2279 resp.

For the Bukhara region, these indicators are for 2021; -65.5; -64.25; -0.25; -107853; -1466; -395, -31, - 684, - 252, -104; 74.2 respectively: for 2022 -64; -61.5; -0.26; -111990; -43478; -1256, -467, -28, -459, -196; 106 accordingly. Also, pretrospective analysis of medical recordsfrom 2020 to the end of 2021, the Bukhara region has established "D" registration with a diagnosis of PM in total - 17,700; of them with diagnoses of schizophrenia – 4455; epilepsy – 1790; oligophrenia -6606; and other forms of psychosis - 4849. If analyzed by district, the leading place is occupied by Bukhara - 1609; Shafirkansky – 1474; Rometansky - 1459; Vobkent - 1433; Zhandar districts – 1310 (Table No. 1, No. 2).

Table No. 1. Characteristics of the "D" accounting of PZs and their nasology in the Bukhara region

No.	Cities and districts	<<D> > controlled patients	Schizophrenia	Epilepsy	Mental retardation	Other psychoses
1	Buhoro d.	1609	348	149	644	468
2	Vobkent d.	1433	423	156	456	398
3	Jondor d.	1310	298	146	533	333
4	Kogon d.	810	130	98	326	256
5	Olot d.	980	191	124	348	317
6	Peshko` d.	1233	255	159	550	269
7	Rometan d.	1459	352	151	618	338
8	Shofirkon d.	1474	467	187	514	306
9	Corakul d.	1277	308	156	465	348
10	Korovulbozor d.	122	28	21	34	39
11	Gijduvon d.	2935	904	190	1089	752
12	Bukhoro c.	2402	634	185	796	787
13	Kogon c.	656	117	68	233	238
By Province		**17700**	**4455**	**1790**	**6606**	**4849**

To assess the dental condition and for the purpose of further dental research, 850 patients with dental disease (main group - M/G) and 175 patients as a control group (C/G) without dental disease pathology, aged from 18 to 70 years, were selected in a prospective plan. who turned to a dentist at their own request. As can be seen from Table No. 2, of the examined patients with mental illness, 52.8% were men, 47.2% were women, while epilepsy accounted for 58.4% among men; schizophrenia - 57.6% among women, and oligophrenia also accounts for 28.8% of cases among the general population examined, regardless of gender. The quantitative and percentage ratio between groups by diagnosis (M/G -1, 2, 3, 4) are more fully consistent for statistical processing and as a comparative group between the main groups. In the C/G there were 56% men, 44% women, which fully meets the requirements for statistical processing as a control group.

The results obtained confirm that the state of the hard tissues of the teeth in PM – M/G revealed multiple lesions of the hard tissues of the teeth by caries and extracted teeth with their complications; KPU-20.67±0.82* of which K-8.02±0.56*; P-3.75±0.44; U-8.75±0.94*, while in patients A/F 21.75±0.48*; 8.35±0.26*; 4.2±0.24; 9.4±0.38*, respectively, when these indicators were determined in patients with C/G - 11.44±0.62 ; 1.64±0.16; 8.42±0.34; 1.02±0.32 resp. Analysis of the results shows that the value of the caries intensity index in all M/G is almost 2 times higher than in C/G ($p < 0.05$). The average value of the KPU index in all groups of patients was significantly higher ($p<0.05$) than in the C/G group.

According to the hygienic characteristics of the condition of periodontal tissue and the hygiene of the OC in the examined patients, it was shown that the teeth of patients with OG are covered with abundant plaque and tartar. At the same time, during the period of aggressive condition of patients, hygienic care for OC is completely absent, because Due to the risk of suicide, personal hygiene

products are not provided to patients. The results obtained were the level of OC hygiene, the gingival index - GI, the CPITN index to determine the condition of periodontal tissues and the RCOS index or the inflammatory process of periodontal tissue. Thus, the average data on the plaque index scale corresponded to the upper limits of satisfactory OC hygiene, the average number of carious teeth in a patient in this group corresponded to 2.02, the average data on the gingival index GI corresponded to the indicators of moderate gingivitis, the average number of teeth with existing apical periodontitis was 2 .46, the average CPITN score for the groups ranged from – 1.84 to 2.04, the average number of pathologically mobile teeth in a patient in the group was 1.94. The totality of the data obtained, shown in made it possible to determine the risk of developing chronic oral sepsis, which affects the development or exacerbation of the patient's general somatic pathology.

Table No. 2 Assessment of the state of OC in patients with PD.

Diagnosis of patients (M/G).	DI-S – dental index flying hours, points	K – teeth affected caries, quantity	GI – chronic gingivitis, points	AP – apical periodontitis, quantity	CPITN – chronic periodontitis, points	PPP – pathological mobile teeth, number	RHOS – risk of chronic oral sepsis
Schizophrenia; M/G-1 n-85/100%	1.1±0.06	1.47±012	1.08±0.07	1.3±0.17	1.14±0.07	0.55±0.15	14.16±1.17
Epilepsy; M/G-2 n-85/100%	0.98±0.06	1.9±0.12	1.02±0.09	1.1±0.22	1.08±0.04	0.35±0.12	12.46±1.22
Oligophrenia; M/G-3 n-105/100%	1.4±0.09	2.44±0.44	1.77±0.33	1.7±0.21	1.4±0.04	0.48±0.22	16.24±1.99
other odds psychosis M/G-4 n-135/100%	1.1±0.04	1.08±0.46	1.24±0.07	1.2±0.17	1.48±0.22	0.35±0.98	12.24±1.22
Total observ.-e for M/G n-410/100%	1.1±0.14	1.05±0.22	1.25±0.07	1.3±0.86	1.24±0.44	0.55±0.94	13.24±1.44
C/G n-90	0.1±0.04	0.4±0.16	0.64±0.02	0.2±0.07	0.68±0.45	0.12±0.34	4.54±0.67

It should be noted that when examining the OC of patients with PM, food remains were observed in the interdental spaces and cervical areas, and a putrid odor emanated from the OC. Hygiene index OC (GI PR) in patients with schizophrenia - 2.88±0.03*; with epilepsy - 2.43±0.08*; oligophrenia - 2.78±0.04*; other odds psychosis - 2.22±0.08*, while K/G -0.46±0.04, between the values of the GI PR index among all M/G examined and C/G participants turned out to be significant ($p<0.05$).

The feeling of dryness in the OC is noted mainly by patients of the first, third and fourth groups, and increased salivation by patients of the second group, less often of the first.

Table No. 3 Characteristics of viscosity and pH environment of gastric cancer in patients with pancreatitis.

Diagnosis of patients (M/G).	Substrates of the organism under study, M±n in %.	
	Oral fluid viscosity	saliva pH
Schizophrenia; M/G-1 n-85/100%	5.086±0.0614	6.964±0.004
Epilepsy; M/G-2 n-85/100%	5.146±0.098*	6.450±0.012
Oligophrenia; M/G-3 n-105/100%	6.578±0.077*	6.252±0.012*
other odds psychosis M/G-4n-135/100%	4.244±0.040*	7.02±0.017*
Total observ.-e for M/G n-410/100%	5.246±0.043	6.638±0.022
C/G n-90	1.922±0.028	7.450±0.04

Based on the results obtained, a correlation analysis was carried out between the values of the parameters of OF, GI-PR and the intensity of damage to hard dental tissues and periodontal tissues.

In the first group of examinees, an average correlation was observed between the value of GC viscosity and the intensity of caries (r = 0.57). As for the components of the CP index, it turned out that in M/G patients there is an average correlation between the number of carious and extracted teeth and the value of OF viscosity (r = 0.51 and r = 0.56, respectively), while There is a weak correlation with the number of filled teeth (r=0.37).

In patients of groups 1 and 3, a strong correlation was found between the pH value and the intensity of caries (r = 0.62). Thus, between the number of carious teeth and the pH value of saliva, except for the 3rd group of those examined, an average correlation is observed (r = 0.56), and for extracted teeth this indicator reaches a high level (r = 0.61). For filled teeth, there is a weak correlation between this indicator and the pH value of saliva (r = 0.24).

When studying the relationship between the GI-PR efficiency index and the intensity of caries in patients of the 1st and 3rd groups, we identified an average correlation between these indicators (r = 0.54). A weak correlation is observed in those examined in this group between the number of filled teeth and the GI-PR effectiveness index (r = 0.21) was noted in the 4th group. For carious and extracted teeth, an average correlation was revealed (r = 0.58 and r = 0.42, respectively).

In the control group, the viscosity value of the OF (1.922±0.028 Sp) was significantly ($p<0.05$) lower than in the M/G. At the same time, in PM the environment-pH of saliva, as it turned out, this indicator is subject to significant fluctuations.

The intensity of damage to periodontal tissues in the O/G of the examined patients has a high correlation with the viscosity value of the gastric mucosa and the OC hygiene index (r = 0.61 and r = 0.67, respectively); a weak correlation was revealed with the pH value of saliva (r = 0.25).

In group 3, there is a strong correlation between the viscosity value of the gastric caries and the intensity of caries (r = 0.61). There is a strong correlation between OC viscosity and the number of carious and extracted teeth (r=0.62 and r=0.61, respectively), as well as a weak correlation with the number of filled teeth (r=0.42).

In patients M/G-2, there is a weak correlation between the pH value of saliva and the intensity of caries (r = 0.17). This is also true in relation to the number of carious, filled and extracted teeth (r=0.21, r=0.11 and r=0.15, respectively).

The intensity of damage to periodontal tissues in M/G-1 of the examined patients has a high correlation with the viscosity value of the gastric mucosa and the hygiene efficiency index OC (r = 0.61 and r = 0.67, respectively); a weak correlation was revealed with the pH value of saliva (r=0.25). In M/G-1, 2, 3 there is a strong relationship between the value of OC viscosity and the intensity of caries (r = 0.61). There is a strong correlation between OC viscosity and the number of

carious and extracted teeth (r=0.62 and r=0.61, respectively), as well as a weak correlation with the number of filled teeth (r=0.42).

In C/G there is a weak correlation between the value of OC viscosity and the intensity of caries (r=0.20). This also applies to all components of the KPU index; for carious, filled and extracted teeth, a weak correlation was also revealed (r = 0.21, r = 0.14 and r = 0.19, respectively).

Analysis of the table results shows that in M/G -1 and -2 surveyed, the prevalence of periodontal diseases was 88%-92%, respectively. Most often, 25.7% of patients in this group have a periodontal pocket of 4 or 5 mm (on average, 1.54 sextants), which is 2.2 times higher than the prevalence of a periodontal pocket with a depth of 6 mm (11.7%). The average intensity of this feature in M/G-1 was 0.7 sextant. Also in this group, we found, on average, 1.44 excluded sextants, which indicates a large number of extracted teeth. The prevalence of this symptom was 24%.

The prevalence of bleeding gums and tartar was 5.3% and 22.6%, respectively. The average number of sextants with these signs of periodontal damage was 0.32 and 1.36. Only 0.64 periodontal sextants remained healthy.

In K/G, the prevalence of periodontal diseases was 76%. Most often, patients in this group observed bleeding gums (28.7%), with an average intensity of 1.72. Dental calculus was detected in 1.54 sextants, the prevalence of this symptom was 25.6%. The average number of sextants with periodontal pockets with a depth of 4-5 mm and 6 or more mm was 0.64 and 0.06, respectively. It should also be noted that in the C/G group only 0.06 excluded sextants were determined. Healthy periodontium was defined as 1.98 sextants.

Table No. 4. Prevalence and intensity of signs of periodontal damage according to the CPITN index in patients with PD.

Group	CODE 0	CODE 1	CODE 2	KODS	CODE 4	KODH
M/G-1	10.8% 0.64	5.1% 0.32	22.6% 1.36	25.7% 1.54	11.7% 0.70	24% 1.44
M/G-2	5.2% 0.32	9.1% 0.56	31% 1.86	31.3% 1.88	7% 0.42	16% 0.96
M/G-3	7% 0.40	21.7% 1.24	27.3% 1.72	14% 0.84	4% 0.24	26% 1.56
M/G-4	20.7% 1.18	22.9% 1.36	24.6% 1.48	19% 1.14	3.4% 0.20	10.7% 0.64
Total observ.-e for M/G n-410	10.92%	14.5%	26.5%	22.5%	6.5%	19.25%
Control	33% 1.98	28.7% 1.72	25.6% 1.54	10.7% 0.64	1% 0.06	1% 0.06

As for bleeding, the values of this indicator are statistically significantly lower ($p<0.05$) in all patients with M/G compared to C/G. Gum bleeding in C/G is 23.4% higher than this indicator compared to M/G-1 and by 9.3%, 8% and 6% relative to M/G -2, 3, 4, respectively. In patients M/G -1 and 3, the values of this indicator were significantly lower ($p<0.05$) than in M/G -2 – and -4. In patients with M/G-1, this indicator is 1.75 times lower ($p<0.05$) than in those examined with M/G-2.

The presence of tartar or other factors that delay dental plaque in M/G patients is from 8.4% to 15% higher than in those examined in C/G ($p < 0.0001$).

The presence of a periodontal pocket with a depth of 4 or 5 mm in patients M/G-1 is 1.4 times lower ($p < 0.01$) than M/G-2, and also 1.5, 1.6 and 2.2 times higher ($p < 0.0001$) compared to C/G ratio. In patients M/G-2 this indicator is 2.2 times higher ($p < 0.0001$) than in M/G-4 1.6 and 2.9 times higher than this indicator compared to C/G ($p <0.0001$). The presence of a periodontal pocket with a depth of 6 mm or more among M/G was significantly more common ($p < 0.0005$) than among those examined in C/G. So in patients M/G-1 and M/G-3 this indicator is higher than M/G-2 and M/G-4 and several times with C/G ($p < 0.0005$).

Excluded sextants are more common among M/G patients than in C/G patients ($p < 0.0001$), which is explained by the large number of extracted teeth in the study groups. Thus, in the examined C/G this indicator is 4 times lower than in M/G-1, and also 6 times than in M/G-2. The intensity of

damage to periodontal tissues in the examined C/G has a low correlation with the viscosity of the oral cavity and with the pH value of saliva (r = 0.31 and r = 0.4, respectively) and an average correlation with the index of effectiveness of OC hygiene (r = 0. 59).

Characteristics of viscosity and pH environment of gastric cancer in patients with pancreatitis. Based on the results obtained, a correlation analysis was carried out between the values of the parameters of OC, GI-PR and the intensity of damage to hard dental tissues and periodontal tissues. In almost all subgroups of the M/G subjects examined, an average correlation is observed between the value of OC viscosity and the intensity of caries (r = 0.57). As for the components of the CP index, it turned out that in M/G patients there is an average correlation between the number of carious and extracted teeth and the value of OC viscosity (r = 0.51 and r = 0.56, respectively), while There is a weak correlation with the number of filled teeth (r=0.37).

CONCLUSIONS:

1. Thus, the results of a retrospective analysis in the Bukhara region revealed a high incidence rate with a diagnosis of mental illness, including schizophrenia - 4455 cases; epilepsy – 1790 cases; oligophrenia - 6606 cases and other forms of psychosis - 4849 cases, while a high prevalence is noted among the population of the Bukhara region (1609 patients); Shafirkan district (1474); Rametansky district (1459); Vobkent district (1433) and Dzhandar district (1310).
2. The dental status of patients with dental caries is characterized by a high intensity of dental caries (20.67±0.82*); including; with diagnoses of schizophrenia - 21.52±0.98*; epilepsy - 22.86±0.94*; oligophrenia – 19.64±0.78*; - other mental illnesses – 18.66±0.98*; at the same time, the examined C/G was 11.44±0.62 due to the large number of carious and extracted teeth.
3. The state of OC in patients with PM is characterized by a high prevalence of periodontal tissue disease - 82% (with an aggressive form 94%); high risk of chronic oral sepsis – 13.3% (with A/F PM – 17.7%), poor oral hygiene; DI-S plaque index - 1.1±0.14 points; GI-chronic gingivitis – 1.25±0.07*; apical periodontitis - 1.3±0.86; CPITN – chronic periodontitis - 1.24±0.44*; PPV - pathological mobility of teeth – 0.55±0.94*; Also, all of the above results differ significantly from patients with C/G.

BIBLIOGRAPHY.

1. Combined diseases of the oral mucosa and internal organs // About the book 1970. page-190 // Banchenko G.V.
2. Changes in the oral cavity of workers in the oil refining industry and the population before and after health-improving measures. 2013// pp.72-74//O.A.Razhabov, M.A. Ataeva, O.M. Astanov, S. Davletova, M. Suyunova.
3. Individualized treatment of patients with periodontitis depending on salivary pH// Med. magazine of Uzbekistan. 2003 // pp. 42-44 // Kh.P. Kamilov, Zh.A. Rizaev, S.S. Gulyamov.
4. Dental status of workers in the main industries of Uzbekistan// Monograph. National Encyclopedia of Uzbekistan//2006-S.A. Gafforov, S.Sh. Olimov, A.A. Saidov.
5. Medical tactics in providing dental care to deaf and mute patients// Moscow//2003//Evgeniy Anatolyevich Solovykh.
6. Clinical status of teeth and teething in children and adolescents with cerebral palsy. 2022//pp.371-379//S.A.Gafforov,F.S.Khamroev,V.B.Kuldasheva,N.S.Madaminova.
7. Analysis of functional and structural changes in oral tissue in furan compound chemical plant workers//“Dentistry” Central Asian scientific and practical journal. 2004 // pp. 27-30 // S.A. Gafforov.
8. Clinical diagnostic features and their protection in patients with dysfunction of the maxillary joint without pathology of inflammatory-dystrophic origin// Int. J. Progressive Science Technologies//2020. pp.36-43//G.S. Amrulloevich, A.A. Mirdjonovic.

9. Orthopedic treatment of patients with deformation of the maxillofacial region, complicated by partial edentulous teeth.2018//page 49-51//N.H. Aliev, Sh.M. Bokiev, A.Sh. Rakhimov, F.I. Ibragimova.
10. Autoclave processing of low-grade zinc concentrates // Russian Acad. Sciences 2006//S. B. Sadykov.
11. Non-carious lesions of hard dental tissues and the harmful effects of working conditions on workers in the dyeing and bleaching shop // Journal of Theoretical and Clinical Medicine. 2007 // pp. 125-127 // S.A. Gafforov, A.A. Saidov, G.E. Idiev.
12. Immunity, typical forms of its violation and principles of correction Method. manual on pathol. Physiology and Immunology: (For students, subordinates and doctors of medical and dental faculties.) // Moscow. honey. dentist Institute named after N. A. Semashko. - Moscow: Insoft.1995//A. I. Volozhin, T. I. Sashkina, Z. I. Savchenko.
13. Special characteristics of the skull bones and deformations of the dental system in children with cerebral palsy//"Medical Journal of Young Scientists". 2022//p. 88-96 // N.S. Madaminova S.A. Gafforov.
14. Chin-The algorithm of diagnosis in pathologies of lower jaw activity and the effectiveness of complex treatment methods// Middle European scientific bulletin. Czechia_16, 2021//page:106-118 //SA Gafforov, OM Astanov, GE Idiev.
15. Modern approach to substantiation and treatment of temporomandibular joint dysfunction, with unilateral chewing in adolescence// Research Journal of Trauma and Disability Studies//page:142-147//Astanov Otabek Mirjonovich.
16. Mental state of patients examined for the purpose of differential diagnosis of patients with pathologies of the facial-maxillofacial system// Amaliy va tibbiyot fanlari ilmiy jurnali 2 (11), 2023-y//page: 46-49//OM Astanov.
17. Radioisotope study of the permeability of tooth enamel//Moscow Medical Dental Institute - Moscow//1970//Leus Petr Andreevich.
18. Method of Prosthetics in the case When Special Examination and Determined Data are based on Painful Pathologies in the Event of a Violation of the Function of the Temporomandibular Joint Jaw Caused by a Defect of the Tooth Row//Journal of Integrity in Ecosystems and Environment //page: 13-16//2023 AO Mirjonovich