



QUALITY OF LIFE IN PATIENTS WITH GOUT

Gafforov Xudoyor Xudoyberdiyevich

Khusainova Munira Alisherovna

Toirov Doston Rustamovich

Kamolova Diyora Djamshedovna

Samarkand State Medical University

ABSTRACT

The aim is to identify factors associated with poor quality of life (QOL) in patients with gout.

Material and methods. The study included 35 patients (31 men and 4 women) with a reliable diagnosis of gout. The average age of patients was 48.0 ± 12.3 years, the median duration of the disease was 5.7 [3.0; 12.3] years, the number of arthritis attacks per year was 3 [1; 5], the average serum uric acid level (MC) was 510 ± 120 mmol/l. 31.4% of patients took allopurinol, 40.5% had chronic arthritis, 36.5% — subcutaneous tofuses, 23% — coronary heart disease (CHD), 76% — arterial hypertension (AH), 15.4% — type 2 diabetes mellitus (DM), 10.2% — chronic kidney disease (CKD) with glomerular filtration rates < 60 ml/min, 56% — obesity, 5.1% — chronic heart failure (CHF), 9.1% — a history of vascular catastrophes. To identify correlations between the indicators of QL according to the questionnaires EQ-5D, SF-36v1, functional status (FS) according to HAQ and clinical characteristics of the disease, as well as comorbid diseases, a correlation analysis according to Pearson and Spearman was carried out. Multiple regression analysis was used to identify factors that worsen QOL.

Results and discussion. Negative correlations were found between the indicators of QL according to SF-36 and age, duration of the disease, serum MC level, the presence of chronic arthritis, tofuses, taking allopurinol, diuretics, alcohol, as well as hypertension, coronary heart disease, obesity, vascular catastrophes, CKD and CHF. After conducting a multiple regression analysis, a direct relationship was revealed between the deterioration of FS in HAQ and the female sex, old age, the number of inflamed joints and the frequency of arthritis attacks, the multiple determination coefficient (R^2) was 0.41. QL according to EQ was inversely correlated with age, the number of inflamed joints, the frequency of arthritis attacks, taking diuretics and obesity ($R^2 = 0.33$). A decrease in the physical health component of the SF-36 questionnaire correlated with an increase in age, the number of inflamed joints, the frequency of arthritis attacks and the presence of CKD ($R^2 = 0.3$), a weak association was noted between the deterioration of the psychological component of health and the female sex, an increase in the number of inflamed joints, vascular catastrophes ($R^2 = 0.1$).

Conclusion. A decrease in QL in gout is independently associated with an increase in the number of inflamed joints, the frequency of arthritis attacks, old age, female sex and comorbid diseases (CKD, obesity, vascular catastrophes).

Keywords: gout, hyperlipidemia, uric acid, monaurate, quality of life; comorbid diseases.



INTRODUCTION

Gout is a disease characterized by the deposition of sodium monaurate crystals in various tissues and organs and developing inflammation in connection with this, in persons with hyperuricemia (GU) caused by external environmental and/or genetic factors. The predominant defeat of gout in middle-aged men suffering from gluttony and wine drinking was first noted by Hippocrates in the VI century BC. The pathogenetic role of elevated uric acid (UA) in the development of gout was determined only in the middle of the XIX century by the English therapist A.V. Garrod. For centuries, gout It was described as a disease characteristic of men in middle age, but currently its frequency is rapidly increasing in the older age group. However, despite the increased interest in the problem of gout in the elderly in recent decades, the number of studies aimed at comparative analysis of the disease in different age groups is limited and is reduced to the description of individual clinical cases. The question remains open, what contributes to the growth of gout

in elderly and senile people, the features of its debut in these patients are not clearly defined. Also, the clinical and economic aspect of the gout problem has not been covered in domestic studies before. Obesity is one of the important risk factors for gout, along with Hypertension and hyperlipidemia (HL). Gout begins at an earlier age in the presence of obesity, and it is more pronounced among young

gout patients suffering from metabolic syndrome. The average weight of adipose tissue and adipose tissue in the trunk area in 107 men with gout in the study of H.H. Dao and co-authors significantly exceeded these indicators in representatives of the control group, compared by age: 20.9 and 13.3 kg; 11.4 and 6.1 kg, respectively.

Gout, of course, is a socially significant disease. According to population studies, in the United States, up to 6% of total health care costs are accounted for by patients with chronic gout. It can be assumed that this percentage will increase, given the increase in the incidence of gout in recent decades. In the work of C.F. Kuo et al. It is reported that by 2012, the prevalence of gout in the UK reached 2.49%, while the number of newly reported cases of the disease was 1.77 per 1000 population. These indicators have become higher by 63.9 and 29.6%, respectively, compared with the data of 1997. At the same time, patients with gout visit the doctor many times more often than patients with systemic lupus erythematosus (SLE), rheumatoid arthritis (RA), various types of cancer, liver and kidney diseases. According to N.L. Edwards et al., a patient with gout due to illness misses an average of 25 working days a year. It is quite natural that the relevance of studying the factors that worsen the quality of life (QOL) and reduce the performance of patients with gout, acquires special importance in this context. In recent years, many studies have appeared demonstrating that the QOL indicators of patients with gout are significantly inferior to the population ones [5-8], including in the. The significance of this fact is also evidenced by the fact that the data on QOL and functional status (FS) are recognized by the OMERACT gout outcome study group as mandatory components for evaluating the effectiveness of gout therapy. At the same time, the decrease in QL may be due to both the underlying disease (acute attack of arthritis or chronic tofus gout) and comorbid diseases, the frequency of which is very high in gout. A.A. Reidel et al. On average, five different concomitant diseases were detected in each patient with gout. According to V. Strand



et al., QOL in gout is comparable to that in other severe rheumatic diseases, such as active RA and SLE, but worse than in osteoarthritis (OA). It is known that a decrease in QOL in RA patients is associated primarily with activity, with OA — with the stage of the disease, with SLE — with the degree of organ damage. For gout, the leading cause of the decrease in QOL has not yet been sufficiently studied, and we evaluated the potential contribution to the reduction of QOL of both clinical manifestations of gout and comorbid diseases.

The purpose of this study is to identify factors associated with low QOL in patients with gout.

MATERIALS AND METHODS

41 patients with gout who were observed in 2021-2022 in the 1st clinic of the Samarkand State Medical University were invited to participate in a one-stage study, 35 (85%) of whom (31 men and 4 women) agreed. Informed consent was signed by all participants of the study. The criteria for inclusion in the study were a reliable diagnosis of gout, verified in accordance with the criteria of S. Wallace, and age over 17 years. All patients underwent examination of synovial fluid or the contents of subcutaneous tofus by polarization microscopy in order to detect sodium monaurate crystals. The study did not include patients with other inflammatory rheumatic diseases, oncological pathology. Patients filled out questionnaires to assess QOL and FS: Short Form-36 v1 (SF-36), EuroQool-5D (EQ-5D), Health Assessment Questionnaire — Disability Index (HAQ). After filling out questionnaires, patients with gout were prescribed or adjusted therapy for the first time according to management standards and clinical recommendations. Three questionnaires were excluded from processing, in which there were missing answers to questions. The age of patients at the time of inclusion in the study averaged 48.0 ± 12.3 years (from 17 to 77 years). The median [25th; 75th percentile] duration of the disease is 5.7 [3.0; 10.6] years. At the time of inclusion in the study, 21 (59%) patients had a recurrent course, 14 (41%) — chronic arthritis (chronic arthritis was considered with its continuous course > 3 months). The frequency of arthritis attacks for the calendar year preceding the study, the presence of subcutaneous tofuses, and comorbid diseases were evaluated. Diagnoses of arterial hypertension (AH), coronary heart disease (CHD), chronic heart failure (CHF) were established in patients in accordance with the criteria of the All-Russian Scientific Society of Cardiology (2009). Patients who received antihypertensive drugs at the time of inclusion in the study were also diagnosed with hypertension. The diagnosis of type 2 diabetes mellitus (DM) was carried out in accordance with the criteria of the World Health Organization. Chronic kidney disease (CKD) was recorded with a drop in glomerular filtration rate (GFR) below 60 ml/min (stage II and higher according to the K/DOQI classification, 2002). Anthropometric parameters were also evaluated, the value of the body mass index (BMI; Quetelet index, kg/m²) was determined. With a BMI > 30 kg/m², obesity was diagnosed. All clinical and laboratory research methods were carried out in the laboratory 1-clinic of the Samarkand State Medical University. Statistical processing of the obtained results was carried out using the Statistica 8.0 application software package (StatSoft Inc., USA). Simple descriptive statistics and nonparametric correlation analysis using the Spearman and Pearson method were used. To identify the most significant factors associated with low QL, multiple regression analysis was used to determine the coefficient of determination (R²),



indicating the proportion of the explained variance of the dependent indicator. The higher the coefficient of determination, the more significant the influence of the selected factors on the change in the dependent indicator.

RESEARCH RESULTS AND THEIR DISCUSSION

The clinical characteristics of 35 patients included in the study are given in Table. 1. Men predominated in this group (87.4%). Slightly more than half of the patients had subcutaneous and intraosseous tofuses, hypertension was noted in 76% of cases, obesity (56%) and coronary heart disease (23%) were the most common among other comorbid diseases, every seventh was diagnosed with type 2 diabetes, every tenth had CKD.

Table 1 Characteristics of patients (n=35)

INDICATOR	VALUE
Women, n (%)	4 (12.6)
Men, n (%)	31 (87.4)
Age, years, M±δ	48.0±12.3
Duration of the disease, years, [25th; 75th percentile]	5,7 [3,0; 10,6]
Course of the disease, n (%):	
• recurrent	21 (59.4)
• chronic	14 (40.5)
Uric acid, mmol/l, M±δ	510.5±120.4
Normuricemia (MK<360 mmol/L), n (%)	16 (9)
Allopurinol intake, n (%)	11 (31,4)
The average dose of allopurinol, [25th; 75th percentile]	200 [50; 350]
Topuses, n (%)	13 (36,5)
Comorbid diseases, n (%):	
• AG	27 (76)
• vascular catastrophes	3 (9.1)
• Type 2 diabetes	5 (15.4)
• CKD (GFR<60 ml/min)	3 (10.2)
• Coronary heart disease	8 (22.8)
• CHF	2 (5.1)
• obesity	20 (56)

When conducting a simple correlation analysis, direct and inverse correlations were found between QOL indicators and parameters such as gender, age, duration of illness, serum uric acid (MC), the presence of chronic arthritis, tofuses, taking allopurinol, diuretics, alcohol, as well as with comorbid diseases. The EQ-5D index was inversely correlated with the presence of chronic arthritis, CHVS and the age of patients. The HAQ index correlated with CHVS, the presence of chronic arthritis and tofuses. A negative correlation was observed between CHVS, the presence of chronic arthritis, tofuses and FKZ of the SF-36 questionnaire, the values of the PKZ scales of the SF-36 questionnaire were influenced by the gender of patients. At the same time, the female sex was associated with lower indicators of QOL than men. The deterioration



of the FCZ of the SF-36 questionnaire was associated with clinical manifestations of gout, as well as the presence of hypertension, CHD, CKD and vascular catastrophes in patients. To identify the most significant factors that worsen QOL in patients with gout, a multiple regression analysis was performed (Table 4). It turned out that the QOL of patients with gout was influenced primarily by the clinical manifestations of the disease itself: CHVS and the frequency of arthritis attacks, — and an independent correlation of QOL with these indicators was noted when using all included in the analysis of questionnaires. The role of comorbid diseases should not be underestimated either: for example, QL according to SF-36 was significantly lower in the presence of CKD and vascular catastrophes, and QL according to EQ-5D was negatively affected by obesity (see Table 4). A decrease in QL according to the HAQ, EQ-5D questionnaires, the total SF-36 scales was associated with an increase in age, female sex and taking diuretics. Despite a large number of studies on the efficacy and safety of medicines for gout, our work is the first in the Russian Federation conducted to identify the main causes of a decrease in QOL in patients with gout. Unlike most similar studies, in our study the proportion of patients who agreed to take part in it was extremely high — 85%. For comparison: in the study of E. Roddy et al., it was only 23%. All the patients who took part in this study had a reliable diagnosis of gout, confirmed by the detection of sodium monaurate crystals, which is also an undoubted advantage of our work. In addition, all our patients were examined and examined in detail, unlike many studies where materials from common databases were used to assess the effect of gout on QOL. Thus, in the study of E. Roddy et al., only 82% of patients were examined by a doctor, presumably diagnosed with gout according to the questionnaire. The disadvantages of our work include the fact that the study is one-time and does not allow us to assess the effect on QOL of the dynamics of clinical indicators and drug therapy of gout. In our work, we used several QOL research tools at once. In addition to the HAQ questionnaire, which evaluates the FS of patients and is most often used to study QOL in patients with gout, we used the general SF-36 and EQ-5D questionnaires due to the possibility of using them both in population studies and in patients with any nosological forms, as well as in cases of a combination of several somatic diseases at once, which is especially important for gout. As in some other works, in our study, the quality of life of patients with gout was influenced primarily by the clinical manifestations of the disease itself: CHVS and the frequency of arthritis attacks, the presence of subcutaneous tofuses. An independent relationship between QOL and these indicators was observed for all questionnaires included in the analysis. In a number of modern works, attempts are being made to identify predictors of deterioration of QOL in patients with gout. In particular, a group of Italian scientists led by C.A. Scire performed a series of studies aimed at determining the effect of clinical manifestations of gout and concomitant diseases on the outcomes of gout. The authors identified 10 clinical indicators of prognostically severe disease. It turned out that the decrease in QL according to the FCZ was associated primarily with clinical manifestations of the disease, among which were the duration of the disease over 5 years, the presence of oligoiliarthrititis, subcutaneous tofuses, arthritis attacks over the past year and over the last month. In contrast to our work, the authors revealed a relationship between the level of MC and a decrease in QL according to FKZ, as well as a deterioration in FS according to HAQ,



however, this dependence was manifested only when the serum level of MC was higher than 7 mg/dl. At the same time, the indicators of HAQ and the total components of SF-36 were not affected by urate-lowering therapy. Unlike our study, the authors did not take into account the presence of specific comorbid diseases. The results of their work showed the relationship between the deterioration of the FS according to HAQ and the PKZ according to SF-36, and the FCZ was not associated with the FS according to HAQ. In addition, it should be noted the identification in the cited work of an independent relationship between the presence of obesity and the deterioration of FKD (in our case, when conducting multiple regression analysis, this relationship was lost), the presence of obesity negatively affected the value of the HAQ index. At the same time, our use of another QL index (EQ-5D) in the analysis also showed the presence of a similar independent association. This fact may indicate the need to create unified methods for assessing QOL in gout.

CONCLUSIONS

Thus, our study demonstrates that gout is a disease that reduces QOL, and this effect "outweighs" the influence of comorbid diseases (such as hypertension, coronary heart disease, CHF). Further studies are required to assess the prognostic value of the adverse factors identified by us and the effect of therapy on QOL indicators in gout.

LITERATURE

1. Alisherovna, K. M. (2022). PSYCHOSOMATIC CHARACTERISTICS OF PATIENTS WITH RHEUMATOID ARTHRITIS AND GOUT. *Galaxy International Interdisciplinary Research Journal*, 10(5), 665-671.
2. Alisherovna, K. M. CYSTATIN C IS AN EARLY MARKER OF DECREASED KIDNEY FUNCTION.
3. Erkinovna, K. Z., Alisherovna, K. M., Davranovna, M. K., & Nizamitdinovich, K. S. (2022). Correction of Cytokine Imbalance in the Treatment of Stable Angina Pectoris. *The Peerian Journal*, 11, 64-70.
4. Jamshedovna, K. D., Alisherovna, K. M., Davranovna, M. K., & Xudoyberdiyevich, G. X. (2022). Epidemiology And Features Of Essential Therapy Hypertension In Pregnant Women. *Web of Scientist: International Scientific Research Journal*, 3(5), 606-611.
5. Jamshedovna, K. D., Alisherovna, K. M., Erkinovna, K. Z., & Davranovna, M. K. (2022). LEFT VENTRICULAR SYSTOLIC DYSFUNCTION IN PREGNANT WOMEN WITH PRE-ECLAMPSIA WITHOUT PROTEINURIA. *Spectrum Journal of Innovation, Reforms and Development*, 10, 135-140.
6. Khusainova, M. A. (2023). CYSTATIN C IS AN EARLY MARKER OF DECREASED KIDNEY FUNCTION. *Oriental renaissance: Innovative, educational, natural and social sciences*, 3(1), 485-490.
7. Nizamitdinovich, K. S., & Alisherovna, K. M. (2022). Quality of Life in Patients with Chronic Heart Failure, After Cardiac Resynchronization Therapy. *Texas Journal of Medical Science*, 14, 168-173.



8. Rustamovich, T. D., Alisherovna, K. M., Baxtiyorovich, U. J., & Abdurakhmonovich, M. M. (2022). Painless Cardiac Ischemia in Women with Rheumatoid Arthritis. *Texas Journal of Medical Science*, 13, 95-98.
9. Rustamovich, T. D., Alisherovna, K. M., Djamshedovna, K. D., & Nizamitdinovich, K. S. (2023). Features of the Psychoemotional Status of Patients with Rheumatoid Arthritis. *Miasto Przyszłości*, 32, 23-30.
10. Rustamovich, T. D., Alisherovna, K. M., Nizamitdinovich, K. S., & Djamshedovna, K. D. (2022). Gastrointestinal Conditions in Rheumatoid Arthritis Patients. *Texas Journal of Medical Science*, 15, 68-72.
11. Toshtemirovna, E. M. M., Alisherovna, K. M., Erkinovna, K. Z., & Xudoyberdiyevich, G. X. (2022). DIAGNOSIS OF CIRRHOTIC CARDIOMYOPATHY. *Spectrum Journal of Innovation, Reforms and Development*, 10, 141-147.
12. Toshtemirovna, E. M. M., Alisherovna, K. M., Totlibayevich, Y. S., & Muxtorovna, E. M. (2022). Hearts In Rheumatoid Arthritis: The Relationship With Immunological Disorders. *Spectrum Journal of Innovation, Reforms and Development*, 4, 34-41.
13. Toshtemirovna, E. M. M., Alisherovna, K. M., Totlibayevich, Y. S., & Xudoyberdiyevich, G. X. (2022). Anxiety Disorders and Coronary Heart Disease. *The Peerian Journal*, 11, 58-63.
14. Toshtemirovna, E. M. M., Alisherovna, K. M., Totlibayevich, Y. S., & Duskobilovich, B. S. (2022). THE VALUE OF XANTHINE IN CHRONIC HEART FAILURE. *Spectrum Journal of Innovation, Reforms and Development*, 4, 24-29.
15. Totlibayevich, Y. S., Alisherovna, K. M., Xudoyberdiyevich, G. X., & Toshtemirovna, E. M. M. (2022). Risk Factors for Kidney Damage in Rheumatoid Arthritis. *Texas Journal of Medical Science*, 13, 79-84.
16. Xudoyberdiyevich, G. X., Alisherovna, K. M., Davranovna, M. K., & Toshtemirovna, E. M. M. (2022). FEATURES OF HEART DAMAGE IN PATIENTS WITH VIRAL CIRRHOSIS OF THE LIVER. *Spectrum Journal of Innovation, Reforms and Development*, 10, 127-134.
17. Xudoyberdiyevich, G. X., Alisherovna, K. M., Toshtemirovna, E. M., & Jamshedovna, K. D. (2022). Features of portal blood circulation and echographic structure of the liver in patients with chronic heart failure. *Web of Scientist: International Scientific Research Journal*, 3(5), 576-581.
18. Xudoyberdiyevich, G. X., Alisherovna, K. M., Toshtemirovna, E. M. M., & Totlibayevich, Y. S. (2022). Characteristics Of Neuropeptides-Cytokines in Patients with Cardiovascular Pathology Occurring Against the Background of Anxiety and Depressive Disorders. *The Peerian Journal*, 11, 51-57.
19. Yarmukhamedova, S., Nazarov, F., Mahmudova, X., Vafoeva, N., Bekmuradova, M., Gaffarov, X., ... & Xusainova, M. (2020). Features of diastolic dysfunction of the right ventricle in patients with hypertonic disease. *Journal of Advanced Medical and Dental Sciences Research*, 8(9), 74-77.



20. Zikiriyayevna, S. G., Makhmudovich, A. S., Fakhriddinovich, T. S., & Muxtorovna, E. M. (2022). NON-ALCOHOLIC FATTY LIVER DISEASE. *Web of Scientist: International Scientific Research Journal*, 3(10), 414-422.
21. Zikiriyayevna, S. G., Muxtorovna, E. M., Jurakulovich, U. I., & To'raqulovna, Q. S. (2022). PAINLESS CARDIAC ISCHEMIA IN WOMEN WITH RHEUMATOID ARTHRITIS. *Web of Scientist: International Scientific Research Journal*, 3(10), 397-405.
22. Zikiriyayevna, S. G., Muxtorovna, E. M., Mamadiyarovich, S. A., & Jurayevich, M. E. (2022). EVALUATION OF 12-WEEK URATE-REDUCING THERAPY WITH ALLOPURINOL IN COMBINATION WITH THE NONSTEROIDAL ANTI-INFLAMMATORY DRUG MELOXICAM IN PATIENTS WITH GOUT. *Galaxy International Interdisciplinary Research Journal*, 10(6), 140-148.
23. Ибадова, О. А., & Шодиккулова, Г. З. (2022). РОЛЬ СУРФАКТАНТНОГО ПРОТЕИНА А (SP-A) В ПРОГНОЗЕ ПРОГРЕССИРОВАНИЯ И ИСХОДА НЕСПЕЦИФИЧЕСКОЙ ИНТЕРСТИЦИАЛЬНОЙ ПНЕВМОНИИ. *Достижения науки и образования*, (1 (81)), 66-72.
24. Ибадова, О. А., Курбанова, З. П., & Шодиев, О. О. (2021). ФАКТОРЫ РИСКА В ПРОГРЕССИРОВАНИИ НЕСПЕЦИФИЧЕСКОЙ ИНТЕРСТИЦИАЛЬНОЙ ПНЕВМОНИИ. *Достижения науки и образования*, (8 (80)), 101-107.
25. Ибадова, О., Махматмурадова, Н., & Курбанова, З. (2020). ПОТЕНЦИАЛЬНЫЕ ФАКТОРЫ РИСКА В РАЗВИТИИ И ПРОГРЕССИРОВАНИИ НЕСПЕЦИФИЧЕСКОЙ ИНТЕРСТИЦИАЛЬНОЙ ПНЕВМОНИИ. *Журнал кардиореспираторных исследований*, 1(1), 72-76.
26. Махматмурадова, Н., Ибадова, О., & Закирьяева, П. (2020). ДИФФЕРЕНЦИАЛЬНАЯ ДИАГНОСТИКА НЕСПЕЦИФИЧЕСКОЙ ИНТЕРСТИЦИАЛЬНОЙ ПНЕВМОНИИ. *Журнал кардиореспираторных исследований*, 1(2), 50-52.
27. Назаров, Ф. Ю. (2021). КОРРЕКЦИЯ ГЕМОДИНАМИЧЕСКИХ НАРУШЕНИЙ У БОЛЬНЫХ ВНЕБОЛЬНИЧНОЙ ДВУСТОРОННЕЙ ТОТАЛЬНОЙ ПНЕВМОНИЕЙ. *Scientific progress*, 2(3), 832-836.
28. Назаров, Ф. Ю., & Азизова, Ш. К. (2022). ТИЧЕНИЕ ВИРУСНОЙ ПНЕВМОНИЕ COVID-19 У БОЛЬНЫХ С ВРОЖДЕННЫМ ПОРОКА СЕРДЦА У МОЛОДЫХ ЛИЦ. *Scientific progress*, 3(2), 891-894.
29. Назаров, Ф. Ю., & Ярмухамедова, С. Х. (2022). Медико-социальные аспекты профилактики среди студенческой молодежи в условиях пандемии COVID-19. *Science and Education*, 3(12), 256-263.
30. Самиев, У. Б., Ярмухамедова, С. Х., Гаффоров, Х. Х., Назаров, Ф. Ю., & Камолова, Д. Ж. (2019). Инфаркт миокарда в пожилом и старческом возрасте. Особенности клинического течения и диагностики. *Достижения науки и образования*, (12 (53)), 103-106.
31. Хусаинова, М. (2021). Chronic Heart Failure In Patients With Early Rheumatoid Arthritis. *Журнал кардиореспираторных исследований*, 2(4), 67-69.



32. Хусаинова, М. А. (2022). OZONETHERAPY IN RESTORATIVE TREATMENT PATIENTS WITH CORONARY HEART DISEASE. *Журнал кардиореспираторных исследований*, 3(4).
33. Ярмухамедова, С. Х., Вафоева, Н. А., & Норматов, М. Б. (2020). Особенности клинической картины хронического пиелонефрита у женщин. *Молодой ученый*, (28), 65-67.
34. Ярмухамедова, С., Назаров, Ф., Махмудова, Х., Вафоева, Н., & Норматов, М. (2020). ДИАСТОЛИЧЕСКАЯ ФУНКЦИЯ ПРАВОГО ЖЕЛУДОЧКА У БОЛЬНЫХ С РАЗЛИЧНЫМИ СТАДИЯМИ ГИПЕРТОНИЧЕСКОЙ БОЛЕЗНИ ПРИ ПРИСОЕДИНЕНИИ СЕРДЕЧНОЙ НЕДОСТАТОЧНОСТИ. In *Colloquium-journal* (No. 24-1, pp. 34-36). Голопристанський міськрайонний центр зайнятості= Голопристанский районный центр занятости.