International Journal of
Health Systems and Medical Sciences

ISSN: 2833-7433
Volume 2 | No 7 | Jul -2023

Relationships between the Components of the Metabolic Syndrome and Risk Factors in the Elderly and Old Population

Razhabova G. H. [1]

[1] Bukhara State Medical Institute

Abstract: Obesity is currently one of the most serious medical, social and economic problems of modern society. Over the past 40 years, there has been an increase in the number of overweight and obese people [1-3]. SinghG.K. and so on., Analyzing data from 1976-2008, it showed that in the older age of the American population (≥18 years old), excess weight increased from 36.9% to 62%, obesity increased from 8.7 to 27.4% [1]. A. Berghöfer and others. In 2008, he published a systematic review of the prevalence of obesity in Europe, summarizing data from the end of 1980 to 2005. In Portugal, Poland, the Czech Republic, Romania and Albania, the obesity of the population of the countries of Eastern Europe and the Mediterranean was higher than in the countries of Western and Northern Europe [4].

Relevance About 30% of the world's population (1.7 billion people) are overweight. It is known that the abdominal type of obesity is considered one of the main components of the metabolic syndrome and increases the complications of cardiovascular diseases: coronary heart disease increases by 2-4 times, myocardial infarction - by 6-10 times, stroke - by 4 times. -7 times. Mortality at this age increases by 2-3 times. WHO experts have described the metabolic syndrome as a "pandemic of the 21st century".

Studies have shown that the incidence of metabolic syndrome increases with age, with a sharp increase in people over 50 years of age. In men, with age, its frequency is 20-40%, and the increase reaches a maximum level at 60-69 years. The incidence of metabolic syndrome continues to increase in the elderly and senile group of people, stopping at about the age of 74 years. Currently, MS is classified as an age-related disease.

The purpose of the study was to study the level of occurrence of metabolic syndrome components and risk factors in elderly and senile residents of Bukhara.

To study the indicators of physical growth of the elderly and senile population, taking into account the lifestyle, 943 people with abdominal obesity aged 60-89 years old, living in the city of Bukhara, were selected.

The measurements were carried out using the following equipment: medical scales, height meter, centimeter tape.

To study the lifestyle of people, the questionnaire on epidemiological monitoring of risk factors for noncommunicable diseases (STEPS WHO, 2014), developed by WHO, was used.

The criterion for excessive alcohol consumption is the consumption of more than 20 g per day from pure alcohol;

To estimate the consumption of alcoholic beverages (in terms of pure ethanol), the following mass concentration of ethanol was used:

- for beer – 0.04 g of ethanol/ml of drink;
- for dry wine (champagne) - 0.0927 g of ethanol/ml of drink;
- for fortified wine - 0.1227 ethanol/ml of drink;
- for strong alcohol (vodka, cognac, etc.) - 0.3227 g of ethanol / ml of drink.
- WHO criteria were used to assess smoking:

This factor was also considered present if one cigarette (one puff) was smoked per day.

- Criteria for assessing physical activity were based on:
- Physically inactive persons - people who mostly stay at home or do not engage in physical activity were accepted;
- Persons with low levels of physical activity (LF) - mostly one

Walk 30 to 60 minutes a day and exercise throughout the day

persons who are not engaged in activities are accepted;

- Intermediate JF people accepted - mostly people who walk 60 to 90 minutes a day or lift and carry light weights;
- JF high-level individuals - mostly people who walk more than 90 minutes a day or are physically active;
- From anthropometric tests:
- Body weight - measured with an accuracy of 0.1 kg on conventional medical scales. In this case, the subject was dressed in light clothing, stood freely and motionless in the center of the scale.
- Height - measured by a stadiometer (stadiometer) with an accuracy of 0.5 cm. The subject stands on the platform for measuring height and stands up straight, leaning back against a vertical support. At the same time, the back of the head, between the shoulder blades, hips and heels, touched the back. The movable horizontal indicator was lowered carefully, without strong pressure, until it reached the head. Altitude measurement was carried out strictly in the morning.

Body mass index (BMI = body weight, kg/height, m2) was determined according to the WHO classification (1997) and was assessed as follows: BMI < 18.5, low body weight; With I MT 18.6-24.9 body weight is normal, with BMI 25.0-29.9 - overweight; BMI 30-34.9 - obesity of the 1st degree; BMI - 35.0-39.9 - obesity of the II degree; BMI > 40 - obesity of the III degree.

- Waist circumference - measured to the nearest 0.5 cm using a measuring tape. At the same time, clothing that interferes with the measurement of waist circumference was removed. The waist measurement is the thinnest area above the hips and below the base of the bust, often at or just above the navel. A centimeter tape was applied to the umbilical region and rotated from the waist, allowing the subject to stand straight and breathe freely. They made sure that the centimeter tape was even, horizontal, and touched the skin.

When assessing the waist circumference (WC) in men, up to 94 cm is considered the norm, 95-102 cm - overweight, 103 cm or more - abdominal obesity.

When assessing the waist circumference (WC) in women, up to 80 cm was considered the norm, 81-88 cm - overweight, 89 cm or more - abdominal obesity.

- The circumference of the thigh was measured to the nearest 0.5 cm using a (measuring tape). The legs are paired. Since the hip circumference is considered the widest part of the body below the waist, one end of the centimeter tape was placed in this area, and the other side was wrapped along the hip. The number is taken at the point of intersection with the initial part. Make sure the measuring tape is flat and in contact with the skin.

- The ratio of waist circumference (WT) to hip circumference (OH) was considered normal for men if it was up to 1.0, and for women up to 0.85. A higher than normal ratio of waist circumference (WT) to hip circumference (HB) was considered a sign of abdominal obesity.

Results and analysis:

Metabolic syndrome should be considered as a syndrome that develops in response to the action of one or more risk factors for CVD / non-infectious pathologies [Pinkhasov B.B., Lutov Yu.V. et al., 2017; Drapkin O.M., 2018; Yurepko A.V., Antonov M.V. et al., 2010; Egamberdieva D.A., 2019].

The development of MS is influenced by such factors as smoking, hypertension, BMI, alcohol consumption (AA), physical inactivity, and low consumption of vegetables and fruits (VFOF). These factors were also subjected to epidemiological study in our studies and analyzed jointly with other colleagues, participants in a comprehensive program of population-based CVD research in Bukhara. It turned out that these risk factors in the conditions of the arid zone of Bukhara have high prevalence levels: NPF - 50.7%, physical inactivity - 90.8%, UA - 22.4%, smoking - 11.1%, obesity - 33, 6: BMI - 42.6% and hypertension - 54.0%.

Therefore, in order to develop effective strategies for the prevention of MS and its components, it seems appropriate to identify significant regional common risk factors in the formation of the metabolic syndrome among the population, including the population of elderly and senile age. We can assume the possible role of the above factors in the development and progression of MS and its main components in the conditions of Bukhara. This requires an analysis of the frequency of occurrence and indicators of the values of the main risk factors for CVD in the population of elderly people with MS and its components, which we did in this study. We analyzed the relationship between the frequency of occurrence of the main risk factors (polyfactoriality) of CVD in the population with the metabolic syndrome and its components. Polyfactoriality (PFT) was assessed and divided according to the average number of risk factors (the presence of several factors): 1) a population with a low (1-2FR) degree of polyfactoriality (PnsNFT); 2) a population with an average (3-4 RF) degree of polyfactoriality (PssPFT); 3) a population with a high (5 RF or more) degree of polyfactoriality (PvsPFT).

Table 1 presents the prevalence of mild multifactorial disease depending on abdominal obesity, the main component of the metabolic syndrome in the surveyed population.

Table 1. Distribution of the population according to the frequency of mild polyfactoriality due to the main component of MS - abdominal obesity

Structure of PnsPFT	Population groups				
	PPW		PPsV		WPW
	J., abs . number(%)	M., abs . Number (%)	J., abs . number(%)	M., abs . Number (%)	Abs . number (%)
PFR $_1$	480(68.4)*	265(48.2)	42(38.9)	75(54.3)*	887(59.2)
P < 0.001 _		< 0.001	< 0.001	< 0.001	< 0.001
PFR $_2$	40(5.7)	28(5.1)	3(2,1)	6(5,6)**	74(4.9)
PFR $_3$	40(5.7)	28(5.1)	3(2,1)	6(5,6)**	74 (4.9)
P < 0.05 _ _		< 0.05	> 0.0 5	< 0.0 5	< 0.0 5
PFR $_4$	320 (45 , 6) *	164(29.3)	58(42.0)	28(25.9)	612(40.9)
P < 0.05 _ _		< 0.05	< 0.0 5	< 0.0 5	< 0.0 5
PFR $_5$	251(35.8)	156(28.4)	48(34.8)	32(29.6)	487(32.5)
P < 0.05 _ _		> 0.05	> 0.0 5	> 0.0 5	> 0.0 5
PFR $_6$	494(33 , 0)	259(47.1)	94(68.1)	45(41.6)	892(59.6)
P < 0.001 _		< 0.001	< 0.001	< 0.001	< 0.001
PFR $_7$	76(10.8)	40(7.3)	6(4,3)	15(13.9)	137(9.2)

Note: R - reliability of differences to the PFR group $_1$; PFR $_1$ - compatibility "AO + AG", PFR $_2$ - "AO + GGA"; PFR $_3$ - "" JSC + GGvpv "; PFR $_4$ - "JSC + State Tretyakov Gallery; PFR $_5$ - “JSC + HSLP; PFR $_6$ - "AO + hypo-HSLVP"; PFR $_7$ - "JSC + NTG".

The most common and important factors among the surveyed population that contribute to the development of MS are low-severity polyfactoriality [PnsTFT]. PnSPT occurred in six variants, and they were registered in connection with the main component of the metabolic syndrome - abdominal obesity in various levels of prevalence.

Thus, PFR $_1$ was registered among the population of elderly and senile age (PPzhsV) in 59.2% of cases; more often in women than in men. In the population of elderly women (PPJV) was noted significantly more often than in the population of men of the same age (68.4 and 48.2%, respectively, $P < 0.05$). Among the elderly population (PPsV), the prevalence of PFR $_1$ was also significantly higher in women than in men (54.3 and 38.9%; $P < 0.05$).

The prevalence of PFR $_2$ in connection with the components of MS among the elderly and middle-aged population was detected in 8.7% of cases; for women and men, 9.3% and 9.4% ($P>0.05$), for PPsV , 2.1% and 9.3% each and ($P < 0.001$), respectively. Detection frequency mild polyfactoriality in the third variant (PFR $_3$) in the general population with MS was equal to 4.9% of cases; among women and men , it was 5.7% and 5.1% each ($P>0.05$), and among PPsV it was 2.1% and 5.6%, respectively ($P<0.001$). The frequency of detection of PFR $_4$ in connection with MS (incomplete) among the general population of elderly and senile age was recorded in 40.9% of cases; in the examined PPsV - by 43.6 and 29.9% ($P < 0.05$), and in the PPsV group - by 42.0 and 25.9% ($P < 0.05$).

In connection with MS, the detection rate of PFR $_5$ in the PPJsV group was 32.5%, including 35.8% and 28.4% each ($P < 0.05$) in elderly women and men, 34.8 and 29% each. .6% ($P>0.05$) - in elderly people, respectively.

The results of the analysis also showed (Table 1.) that in connection with MS, the prevalence of PFR $_6$ in the general population is recorded in 59.6% of cases; in women and men , PPsV were 33.0% and 47.1% each ($P<0.05$), and in PPsV , 68.1% and 41.6%, respectively ($P<0.05$). PFR $_7$ in connection with MS was registered in the PPzhsV population in 9.2% of cases; in the group of elderly women and men - by 10.8 and 4.7% ($P> 0.05$), among women and men of senile age - by 4.3 and 13.9%, respectively ($P <0.01$).

The data obtained indicate the following population patterns in relation to the main risk factors, polyfactoriality with MS among the elderly and senile population of the studied region: with the highest frequency, mild polyfactoriality is determined in the form of PFR $_1$ - 59.2%; compared with them, PFR $_2$ - 8.7% ($P<0.001$), PFR $_3$ - 4.9% ($P<0.001$), PFR $_4$ - 40.9% ($P<0.05$), PFR $_5$ -32.5% ($P<0.05$), and PFR $_7$ - 9.2% ($P<0.001$); the highest prevalence of all polyfactorial variants of mild severity in MS was found in PFR $_6$ - 59.6% (in women and men, PPiV - 33.0% and 47.1% $P<0.05$; in PPsV - 68.1 each % and 41.6%, respectively, $P<0.05$).

Our studies have shown that one of the leading causes of the development of the main components (AO) of the metabolic syndrome in elderly and senile people is the high incidence of polyfactoriality with moderate severity among the examined (a combination of mild polyfactoriality with a salt load factor). Data in this regard are shown in Table 2.

Table 2. Distribution of the population according to the frequency of polyfactoriality of moderate severity in connection with AO - the main component of MS

PssTFT indicators	Groups of surveyed									
	PPW				PPsV				WPW (n =943	
	F, n =506		M, n =343		F, n =47		M, n =47		n	%
	n	%	n	%	n	%	n	%		
PssPFT	325	64.2*	201	58.6*	12	(25.5)	14	(29.5)	552	(58.5)*
PssPFT "----"	181	35.8	142	41.4	35	(74.5)	33	(70.2)	391	(41.5)

Note: here and in other tables: F - females, M - males, PPJV - elderly population, PPsV - senile population, PPsV - elderly and senile population, PssPFT - polyfactoriality of moderate severity.

In the sample of the population of elderly and senile age, polyfactorial severity of moderate severity (PssPFT) depending on MS was recorded in 58.5% of cases, 2.2 times more often in the elderly population than in the senile population.

In the group of elderly women and men, PssTFT was detected in 64.2% and 58.6%, respectively (P < 0.05). And among the population of women and men of senile age, this variant of polyfactoriality was determined, in connection with MS, at the levels of prevalence - 25.5 and 29.5%, respectively (P> 0.05).

Table 3. Distribution of the population according to the frequency of severe polyfactoriality due to AO - the main component of MS

PvsPFT indicators		Groups of surveyed									
		PPW				PPsV				PLwsW (n =943)	
		F, n =506		M, n =343		F, n =47		M, n =47		n	%
		N	%	n	%	n	%	n	%		
PvsPFT " + " (1)		445	87.9* nd	298	86.9 nd	42	89.4 n.d.	41	87.2	826	87.6
PvsPFT " - " (2)		61	12.1	45	13.1	5	10.6	6	12.8	117	12.4
R	< 0.05	-		-		-		-		-	
	< 0.01	-		-		-		-		-	
	< 0.001	1-2		1-2		1-2		1-2		1-2	

And so, we can conclude that as a significant factor in the development of M C polyfactoriality with moderate severity is observed with a high frequency: almost every 6th out of 100 elderly people had this form of multifactoriality (Table 3).

Further, the next stage was the study of the prevalence of polyfactoriality with a high degree of severity due to the metabolic syndrome among the surveyed population of women and men of elderly and senile age (Table 4.).

The analysis of the obtained data also allows us to detect an unfavorable epidemiological trend in the frequency values of the main components of MS (due to high-severity polyfactoriality (PvsPFT). The prevalence of PvsPFT in the general population was 87.6%, it was recorded almost with the same frequency in women and men. 9 and 86.9%; P>0.05) and PPsV, respectively (for women of senile age - 89.4%, for men - 87.2

Thus, there was a high frequency of detection polyfactoriality with a high degree of severity (polyfactoriality of a mild degree + salt load + insufficient consumption of vegetables (“due to the presence of MS in the examined population (its main component, AO, i.e. “incomplete MS”)). A more pronounced incidence of PvsPFT occurs in groups of men and women aged 75-89 (Fig. 4.) - 89.7 and 87.2% each (P> 0.05), as well as in women (87.0%) and men (86.9%) elderly (P>0.05).

Table 4 shows the distribution of the surveyed population according to the frequency of rational nutrition in the group of people with metabolic syndrome.

Table 4. Distribution of the population according to the frequency of rational nutrition in groups examined with metabolic syndrome

Groups of surveyed	Age, abs . population number	The use of "healthy" vegetable fats abs.number (%)	The use of "harmful" animal products, abs . number (%)
1	2	3	4
WHEP	60-74 years old,506	445 (87.9)*	61 (12.1)
	P > 0.05		> 0.05
	75-89 years old, 47	41 (87.2)***	6 (12.8)

	60-89 years old, 553	486 (87.9)***	67 (11.1)
PIPSV	P > 0.05		> 0.05
	60-89 years old, 390	323 (82.8)**	67 (17.2)
	60-74 years old, 343	286 (83.4)***	57 (16.6)
	P > 0.05		> 0.01
	75-89 years old, 47	37 (78.7)***	10 (6.4)
General population	60-74 years old, 849	731 (85.6)	118 (14.4)
	P > 0.05		> 0.05
	75-89 years old, 94	78 (83.0)***	16 (17.0)
	60-89 years old, 943	809 (86.9)***	124 (13.1)

An inverse relationship was observed between the rationality of nutrition and the prevalence of MS and its components among the unorganized male and female population of elderly and senile age in Bukhara.

In the sample of the general population, the prevalence of the use of "healthy vegetable" fats (HgF) was recorded with a high frequency - in 86.9% of cases, and the factor of consumption, "harmful" animal products (HbF) was found in 13.1% of cases (P < 0.001) . These data are shown in Table 4. These factors were recorded in the group of people 60-74 years old - 85.6% and 14.4% each (P < 0.001); in 75-89 years old - 83.0% and 17.0% each (P < 0.001).

The prevalence of UPV and UPvZhP in the AFLD group was 87.9% and 11.1% (P < 0.001); 87.9% and 12.1% each were found in the age group of 60-74 years (P<0.001); and among the examined women of senile age were registered at the levels of 87.2 and 12.8% (P<0.001).

In the male population aged 60-89 years, the prevalence of UPrZh and UPvZHP was found with a frequency of 82.8 and 17.% (P<0.001); more often in men aged 60-74 years (83.4 and 16.6% each, P<0.001) than in men of senile age (78.7 and 6.4%, respectively; P<0.001).

In our study, indicators of physical activity - TFN, EFN, NFN and TNF among the elderly and senile population were recorded in 31.2% of cases, as well as in levels - 33.1%, 23.9% and 11.8%, respectively (Table 5).

Table 5. Distribution of the population according to the physical activity of those surveyed with MS components.

Physical activity indicators	**Population groups**				
	PPW		**PPsV**		**WPW**
	J., abs . number(%)	**M., abs . number(%)**	**J., abs . number(%)**	**M., abs . Number (%)**	**Abs . number (%)**
1	**2**	**3**	**4**	**5**	**6**
TFN	111 (21.9)	183(53.4)*	0.0	0.0	294(31.2)
UFN	P < 0.05	< 0.01	< 0.01	< 0.01	< 0.05
	212 (41.9)*	78(22.7)	9(19.1)	13(27.7)*	312(33.1)
NFN	P > 0.05	< 0.01	< 0.01	< 0.01	
	118(23 , 3)	64(18.7)	21(44.7)	22(46.8)	225(23.9)
TNF	P < 0.05	< 0.0 01 _	< 0.01	< 0.01	
	65 (12 , 8)	18 (15.3)	17(36.2)	12(25.5)	112(11.8)
Total;	506 (53.7)	343(36.4)	47(4.9)	47(4.9)	943(100.0)

Note: the table shows the significance of differences relative to the group with TFN; TFN - heavy physical activity, UFN - moderate exercise, NFN - low exercise; TNF - no physical activity.

The prevalence of TF in the groups of women and men of the elderly was 21.9 and 53.4%, respectively (P < 0.01), and among the population of PPsV , it was not recorded, UF in women and men of the elderly was observed in 41.9 and 22.7% of cases (P<0.05), and in the population of women and men of senile age - 19.1 and 27.7%, respectively (P<0.05). In the population of PPsV of women and men, NFN was determined with a prevalence of 23.3 and 18.7%, and in the PPsV group , 44.7 and 46.8%, respectively (P>0.05).

Lack of physical activity was recorded at the following levels among the surveyed: • in the population of elderly women and men - 12.8% and 15.3% each (P>0.05); • in the population of men and women of senile age - 25.5% and 36.2% each (P <0.05). These data are shown in Table 5.

The study indicates the priority importance in the primary and secondary prevention of the metabolic syndrome in elderly and senile people, primarily monitoring its components and indicates the possibility of improving the "epidemiological prognosis" of life in patients with MS by influencing the polyfactoriality of mild, moderate and high severity. .

Literature

1. Ражабова, Г. Х., & Рузикулов, Х. Ж. У. (2021). Инновационные алгоритмы первичной и вторичной профилактики метаболического синдрома среди населения пожилого и старческого возраста г. Бухары. *Биология и интегративная медицина*, (2 (49)), 51-63.
2. Ражабова Г. Х., Рузикулов Х. Ж. У. Инновационные алгоритмы первичной и вторичной профилактики метаболического синдрома среди населения пожилого и старческого возраста г. Бухары //Биология и интегративная медицина. – 2021. – №. 2 (49). – С. 51-63.
3. Бадритдинова, М. Н., Жураева, Х. И., Аслонова, Ш. Ж., & Ражабова, Г. Х. (2015). Распространенность абдоминального ожирения среди населения как основной критерий метаболического синдрома. *Новый день в медицине*, (4), 56-59.
4. Раджабова Г.Х., Джалилова У.Дж. и Нурова Н. (2022). Неинвазивная инструментальная диагностика фиброза печени у пациентов с гепатитом В и С. *Американский журнал экономики и управления бизнесом* , *5* (8), 228-234.
5. Раджабова Г.Х., Джалилова Ю.Дж., Нурова Н. Неинвазивная инструментальная диагностика фиброза печени у больных гепатитом В и С //American Journal of Economics and Business Management. – 2022. – Т. 5. – №. 8. – С. 228-234.
6. Kh R. G. Shilajit in medicine (Literature review) //Electronic scientific journal" Biology and Integrative Medicine. – 2017. – №. 3. – С. 131-143.
7. Kh, R. G. (2017). Shilajit in medicine (Literature review). *Electronic scientific journal" Biology and Integrative Medicine*, (3), 131-143.
8. Dzhumaev K. S., Razhabova G. K. Comparative analysis of the relationship of abdominal obesity with physical activity in elderly and senile women //British Medical Journal. – 2022. – Т. 2. – №. 1.
9. Dzhumaev, K. S., & Razhabova, G. K. (2022). Comparative analysis of the relationship of abdominal obesity with physical activity in elderly and senile women. *British Medical Journal*, *2*(1).
10. Sh, D. K., Razhabova, G. H., & Soliev, A. U. (2020). Features of the clinical course and treatment of chronic heart failure in the elderly. *Asian Journal of Multi-Dimensional Research*, *9*(2-P), 112-119.
11. RAZHABOVA, G. K., DZHUMAEV, K. S., ODILOVNA, K. B., AXMEDOVA, G. I., & DZHUMAEV, K. (2020). Metabolic syndrome: methods of prevention and treatment. *arterial hypertension*, *7*(6).

12. Ражабова, Г. Х., Джумаев, К. Ш., & Шавкатова, Л. Ж. (2022). Немедикаментозная Профилактика Бронхиальной Астмы И Сахарного Диабета 2 Типа. *INTERNATIONAL JOURNAL OF HEALTH SYSTEMS AND MEDICAL SCIENCES*, *1*(4), 387-392.
13. Джумаев, К. Ш. (2012). Биоклиникоритмопатогенетические аспекты профилактики хронической сердечной недостаточности. *Врач-аспирант.-2012*, *3*(3), 52.
14. Раджабова Гулчехра Хамраевна, Бадритдинова Матлюба Нажмитдиновна, & Джумаев Каромат Шойимович (2020). МЕТАБОЛИЧЕСКИЙ СИНДРОМ: МЕТОДЫ ПРОФИЛАКТИКИ И ЛЕЧЕНИЯ. Биология и интегративная медицина, (5 (45)), 28-42.
15. Раджабова Гулчехра Хамраевна, Джумаев Каромат Шойимович, & Олтибоев Равшан Отабекович (2019). Изучение объема и характера обращений сельского населения в сельские врачебные пункты по поводу неврологических проблем. Биология и интегративная медицина, (3 (31)), 29-36.
16. Dzhumaev, K. S., & Razhabova, G. K. (2022). Comparative analysis of the relationship of abdominal obesity with physical activity in elderly and senile women. *British Medical Journal*, *2*(1).
17. Khamroevna, R. G., & Shoyimovich, D. K. (2018). Ways of the organization of the preventive service of HIV/aids and STIs among young people in the primary health care. *Биология и интегративная медицина*, (3), 5-10.
18. Djumayev, K. S. (2022). Relationship Of Abdominal Obesity With Physical Activity In Elderly And Senile Men. *Journal of Pharmaceutical Negative Results*, 1661-1664.
19. ТЕШАЕВ, Ш. Ж., ДЖУМАЕВ, К. Ш., & РАЖАБОВА, Г. Х. (2022). ВЛИЯНИЕ ОБРАЗА ЖИЗНИ НА ФИЗИЧЕСКОГО РАЗВИТИЯ ЛИЦ ПОЖИЛОГО И СТАРЧЕСКОГО ВОЗРАСТА (обзор). *ЖУРНАЛ БИОМЕДИЦИНЫ И ПРАКТИКИ*, *7*(1).
20. Джумаев, К. Ш., & Ражабова, Г. Ҳ. (2021). КЕКСА ЁШ ВА АЛКОГОЛ. *октябрь-декабрь*, 12.
21. Teshaev, S. Z., Dzhumaev, K., & Razhabova, G. (2021). Impact of lifestyle on the physical development and health of elderly and old age people. *ACADEMICIA: An International Multidisciplinary Research Journal*, *11*(5), 208-215.
22. Razhabova, G. K., & Dzhumaev, K. S. (2021). Prevalence of lipid and glycemic components of metabolic syndrome in the population of elderly and old age in Bukhara. *ACADEMICIA: An International Multidisciplinary Research Journal*, *11*(9), 47-50.
23. Teshaev, S. Z., Dzhumaev, K. S., & Razhabova, G. K. (2021). Peculiarities of morphometric characteristics of physical development of elderly and old age persons. *ACADEMICIA: An International Multidisciplinary Research Journal*, *11*(9), 68-72.
24. Тешаев, Ш., Джумаев, К., & Ражабова, Г. (2021). ZARARLI ODATLAR VA JISMONIY FAOLLIKNING KEKSA VA QARI YOSHLI AHOLI GURUHIGA TASIRI. *Журнал кардиореспираторных исследований*, *2*(2), 43-46.
25. Ражабова, Г., & Джумаев, К. (2020). METABOLIC SYNDROME: CURRENT ISSUES, THE CHARACTERISTICS OF MANIFESTATIONS IN DIFFERENT ETHNIC GROUPS. *Журнал вестник врача*, *1*(2), 159-162.
26. Ражабова, Г., & Джумаев, К. (2020). МЕТАБОЛИК СИНДРОМ ЮРАК ҚОН ТОМИР ВА СУРУНКАЛИ БУЙРАК КАСАЛЛИГИ УЧУН ХАВФ ОМИЛИ СИФАТИДА. *Журнал вестник врача*, *1*(3), 152-154.
27. Jumaev, K. S., Rajabova, G. X., & Soliev, A. U. (2020). Features of the clinical course and treatment of chronic heart failure in the elderly. *Asian Journal of Multidimensional Research (AJMR)*, *9*(2), 94-111.

28. Джумаев, К. Ш. (2016). Исследование риска развития и профилактика гастродуоденальной патологии у подростков в поликлинических условиях Улугбек Сайфуллаевич Абдуллаев. *Заместитель председателя оргкомитета*, 18.

29. Djumaev, K. S., & Rajabova, G. H. THE INFLUENCE OF HARMFUL HABITS ON PHYSICAL GROWTH INDICATORS OF ELDERLY MEN.

30. Jumaev, K. S., Rajabova, G. X., & Soliev, A. U. (2020). Features of the clinical course and treatment of chronic heart failure in the elderly. *Asian Journal of Multidimensional Research (AJMR)*, *9*(2), 94-111.

31. Ражабова, Г. Х., Кароматов, И. Д., & Хошимова, Н. (2017). Тыква как лечебное растение и перспективы его применения в клинике внутренних болезней. *Биология и интегративная медицина*, (3), 144-155.

32. Ражабова, Г. Х., Хошимова, Н., & Амонов, М. К. (2017). Мумиё в медицине (обзор литературы). *Биология и интегративная медицина*, (3), 130-143.

33. Ражабова, Г. Х. (2017). Мордовник как лечебное средство. *Биология и интегративная медицина*, (5), 126-131.

34. Раджабова Г.Х., Джалилова У.Дж. и Нурова Н. (2022). Неинвазивная инструментальная диагностика фиброза печени у пациентов с гепатитом В и С. *Американский журнал экономики и управления бизнесом* , *5* (8), 228-234.

35. Раджабова, Г. Х., Джумаев, К. Ш., & Олтибоев, Р. О. (2019). Изучение объема и характера обращений сельского населения в сельские врачебные пункты по поводу неврологических проблем. *Биология и интегративная медицина*, (3 (31)), 29-36.

36. Ражабова, Г. Х., & Рузикулов, Х. Ж. У. (2021). Инновационные алгоритмы первичной и вторичной профилактики метаболического синдрома среди населения пожилого и старческого возраста Г. БУХАРЫ. *Биология и интегративная медицина*, (2 (49)), 51-63.

37. Ш, Д.К., Ражабова, Г.Х., и Солиев, А.У. (2020). Особенности течения и лечения хронической сердечной недостаточности у пожилых. *Азиатский журнал многомерных исследований* , *9* (2-P), 112-119.