ORIGINAL ARTICLE

ANALYSIS OF MENTAL HEALTH IN PATIENTS, WHO HAVE HAD SARS COV-2 AT THE PRIMARY LEVEL OF HEALTH CARE

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ABSTRACT

The aim of the study was to evaluate retrospectively the mental state of patients, who have had COVID - 19 at the primary level of health care according to medical documentation.

Materials and methods: 70 outpatient charts of patients aged from 31 to 80 years who have had laboratory-confirmed SARS CoV-2 and received primary health care, were processed. Conducted: assessment for the presence and determination of the severity of depression based on the scale of PHQ 9; screening for post-traumatic stress disorder (PTSD) (Breslau et al., 1999).

Results and conclusions: patients, who have had SARS CoV-2, the moderate severity of depressive syndrome prevailed. The risk of forming of PTSD is most presented in patients who have had severe SARS CoV-2, who had inpatient treatment and combined with low quality of life (QOL) at outpatient treatment as well. The increase of anxiety was found in individuals after outpatient and inpatient treatment, and it was accompanied with low QOL. Patients with complaints about cognitive impairment prevailed after inpatient treatment, and determined their QOL as low, especially in men in 100%. Sleep disturbances were detected in 90.3% of patients with complicated course of SARS CoV-2 during inpatient treatment with low QOL. Tachycardia was detected in 61.7% of patients in group 1 and in 52.2% in group 2, that could be a symptom of increased anxiety and PTSD, but it requires differential diagnosis with cardiac pathology.

KEY WORDS: depression, sleep disorder, SARS CoV-2, primary level of health care, quality of life

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INTRODUCTION

The spread of SARSCoV-2 on the planet has showed uncharacteristic course of the disease in both clinic and terms of recovery.

In July of 2020 in Morbidity and Mortality Weekly Report, it was reported that only 65 % of patients in the health care net of the USA are recovered on 14-21 day after positive test of COVID 19 [1, 2].

British researchers, having analyzed the data of outpatient cards, on the primary level of medical care, have confirmed the delay of recovery after having SARS CoV-2 [3]. They divided the recovered patients conditionally into three main groups: with serious consequences, with special rehabilitation needs, and a group with nonspecific manifestations with a predominance of fatigue.

Exactly the group with nonspecific manifestations needed to study the reasons of delay of recovery of state of heath after having SARS CoV-2. Among the clinical manifestations there was observed an increase in anxiety with various autonomic manifestations, depression, sometimes self-injurious behavior with suicidal thoughts.

After an analysis of mental health after having SARSCoV-2 (Hosseiny M., Kooraki S, Gholamrezanezhad A, Reddy S, Myers L, 2020), pathophysiological similarity was associated with mental disorders, which were set in patients with other coronaviruses. (SARS Co1, MERS), where also described long-term respiratory, musculo-skeletal and neuropsychiatric consequences [4, 5]. It was noted that such patients may have available post-traumatic stress disorder (PTSD).

Complex clinical manifestations of SARSCoV-2, high mortality, vulnerability to the virus, general mental reactions of society and other stressors have formed multiderectional effects on the mental health of both sick and unaffected personsCOVID – 19 [6].

British researchers Matthew J. Carr, Sarah Steeg Roger T Webb et al., after analyzing primary care patients' medical records, regarding the level of state of mental health for the year before COVID 19 and 8 months after the beginning of the pandemic,have found out a decrease in the diagnosis of depression (43%), anxiety (38%) in April of 2020 compared with previous years, and by September these indexes had risen to level, that was before the pandemic [7]. Scientists considered, that such unexpected short-term decreases in mental pathology in the future may lead to an increase in serious mental illness, an increase in self-harm and suicide, and form a long-term instability of mental health. This should mobilize health professionals regarding the control of the mental health of the population.

An online polls of patients, who had SARSCoV-2 in April 2020 was conducted by research group Assaf G, Davis H, McCorkell L, et al. to receive feedback from patients with different course of duration, but most responses came from people with extended recovery period,because of that this

state reduced their quality of life **[8].** One of the aims of the research was to study patients' perceptions of the disease in various aspects, including patient self-assessment of the recovery process, the impact of mental health on the course and duration of recovery, identifying possible causes of mental health deterioration, and the study of triggers of relapse of disorders formed after having had SARS CoV-2 as well.

Important information was the assessment made by patients who have had SARS CoV-2 and were treated on an outpatient basis, regarding the treatment and providing of primary care. In particular, young and middle-aged patients with a mild course of the disease who were diagnosed with SARS CoV-2, a mild form of the disease, considered that doctors treated them as hypochondriac, did not inform them about the possible course of the disease and did not do constantly monitoring of the course of the disease. which caused patients dissatisfaction with providing of medical care.

Accordingly , the perception of the disease by patients requires local study and diagnosis of mental health disorders by primary care professionals for timely adequate assessment and determination of the patient's route for further recovery.

THE AIM

A retrospective analysis of the mental state of patients with having had COVID19 at the primary level of medical care.

MATERIALS AND METHODS

There were 70 outpatient cards (electronic form) of patients aged from 31 to 80 years who received primary care in CPMSD №3 Shevchenkivskyi district of Kyiv, processed, and have had a laboratory confirmed SARS CoV-2.

Conducted:

- assessment for the presence and determination of the severity of depression on a scale of PHQ 9 [9, 10],
- assessment of the risk of post-traumatic stress disorder (PTSD) (Breslau et al., 1999) [11].

Electronic outpatient patient cards were processed for the following subject:

- the presence of complaints about increasing of anxiety;
- subjective sharp disturbance of cognitive functions (decrease in working memory, disturbance of concentration of attention, difficulties in planning and execution of the planned without objective reasons);
- subjective complaints about sleep disorders (falling asleep longer than 30 minutes, frequent waking up and / or insomnia during the night without objective reasons, waking up in the second half of the night, «superficial» sleep);
- complaints about heartneating, which is noted by the doctor in the outpatient card as an increase in heart rate> 90 beats / minute.

To study the quality of life (QOL) was conducted with psychodiagnostic method, according to the questionnaire of the same name, developed by H. Mezzich, Cohen, Ruiperez, Liu & Yoon, 1999, which contains 10 scales, which assesse 10 areas of life: physical well-being, psychological / emotional well-being, self-care and independence in actions, ability to work, interpersonal interaction, socio-emotional support, social service support, self-actualiztion, spiritual realization, general assessment of QOL [12].

Each area was evaluated on a 10-point scale, had a maximum of 100 points. According to the generalized sum of points, patients are divided into two groups according to QOL:

- group with a low level of QOL - less than 50 points,
- group with a satisfactory level of QOL - more than 50 points.

Analysis of the results with taking into account the QOL was carried out:

- in groups of men and women separately,
- in age groups up to 60 years and after 60 years (as a group of increased risk),
- in patients who were treated in different conditions of treatment and care: inpatient or outpatient.

In all patients who were referred to the hospital, a decrease in oxygen saturation below 90%. was recorded in medical documents.

The article is a fragment of the scientific research work "Scientific substantiation of modern approaches to optimization of preventive directions at the primary level of providing medical care"

RESULTS

According to the analysis of medical documentation retrospectively, patients were divided into two main groups:

- Group 1 - patients with having had SARSCoV-2 complicated by pneumonia
- Group 2 - patients with having had SARSCoV-2 without complications.

Group 1 was addtionaly divided into three subgroups for the form of severity of SARS CoV-2:

- 1A subgroup - patients who have had SARSCoV-2 complicated by pneumonia wih severe course, hospitalized patients, the severity of course of SARSCoV-2 is set by the hospital doctor;
- 1B subgroup - patients who have had SARSCoV-2, complicated by pneumonia with moderate course; (inpatient and outpatient patients);
- 1C subgroup - patients who have had SARSCoV-2 complicated by pneumonia with mild course (outpatients).

It was set that in the first clinical group 67.1% of persons, who have had SARSCoV-2 complicated by pneumonia, in the second clinical group 32.9% of persons, who have had SARSCoV-2 without complications (Table I).

Among the patients of group 1, 20% of persons of subgroup 1A with th severe course of the disease, 38.6% of persons of subgroup 1B with a course of average severity, and 8.6% of patients of subgroup 1C with a mild course were found out.

Analysis of a frequency of appearing of depression in patients after having had SARSCoV-2 has set:

Table I. The distribution structure of patients with depressive disorders of different severity and quality of life depending on the form of the course of SARS CoV-2.

The forms of the course SARS CoV-2		N=70	%	The severity of depression					
				Mild "subclinical" (5-9 points)		Moderate (10-14 points)		Average (15-19 points)	
Group 1 SARS CoV-2 with complications(pneumo-nia)	1 A. Severe form	n=14	20,0+4,8	2	14,3+9,3%**	10	71,4+12,1%**	2	14,3+9,3%**
		QOL	<50 points	0	0	1	10%	2	100%
			>50 points	2	100%	9	90%	0	0
	1.B. Average severity	n=27	38,6+5,8*	5	18,5+7,5%**	17	63,0+9,3%**	5	18,5+7,5%**
		QOL	<50 points	0	0	9	52,9%	3	60%
			>50 points	5	100%	8	47,1%	2	40%
	1.C Mild form	n=6	8,6+3,4	4	66,6%	1	16,7%	1	16,7%
		QOL	<50 points	0	0	1	100%	1	100%
			>50 points	4	100%	0	0	0	0
Group 2 SARS CoV-2 without complications QOL		n=23	32,9+5,6	3	13,1%	11	47,8%	9	39,1%
		<50 points	0	0	3	27,3%	7	77,8%	
		>50 points	3	100%	8	72,7%	2	22,2%	
Total		70	100%	14	20,0+4,8	39	55,7+5,9	17	24,3+5,2
		<50 points	0	0	14	35,9+7,7	13	76,5+10,3	
		>50 points	14	100%	25	64,1+7,7	4	23,5+10,3	

Note.: * p<0,001; ** p<0,01; *** p<0,05

Table II. The structure of the distribution of patients with psychovegetative disorders depending on the form of SARS CoV-2.

Indexes	Group 1. SARS CoV-2 with complications (n=47)								Group 2. SARS CoV-2 without complications (n=23)	
	Total (n=47)		Subgroups by the form of course							
			1A. Moderate (n=14)		1B. Average severity (n=27)		1C. Mild (n=6)			
	n	%	n	%	n	%	n	%	n	%
Screening of PTSD	23	48,9	13	92,9*	10	37,0*	0	0	6	26,1
Anxiety	19	40,4	4	28,6	13	48,2	2	33,3	12	52,2
Disorders of cognitive functions	19	40,4	4	28,6	13	48,2	2	33,3	6	26,1
Sleep disorder	30	63,8	13	92,9*	16	59,3	1	16,7*	19	82,6
Tachycardia	29	61,7	10	71,4	16	59,3	3	50,0	12	52,2

Note: * p<0,001; ** p<0,01; **' p<0,05;

- absence of severe depressive syndrome (DS) in all groups,
- in 1A subgroup cases with moderate severity of DS (71.4%) reliably (p <0.01) prevailed over cases with mild (14.3%) and average (14.3%) severity,
- in 1B subgroup also reliably(p <0,01) prevailed cases with moderate severity (63.0%) over cases with both mild (18.5%) and average (18.5%) severity of DS,
- in subgroup 1C in 66.6% of patients, DS of mild 16.7% of moderate and 16.7% of average severity without statistical difference.

The risk of PTSD, as it can be seen from Table II, was found in 48.9% of people in group 1 and in 26.1% - in group 2. Analysis of the risk of PTSD in patients of group 1 showed that the risk of PTSD in subgroup 1A (92.6%) reliably (p <0.001) prevailed over cases in subgroup 1B (43.5%), and in subgroup 1C of patients at risk of PTSD was not detected.

Complaints about increasing of anxiety were found in 40.4% of patients in group 1, with no statistical difference between subgroups IA (28.6%), IB (48.2%), IC (33.3%). In group 2 with complaints about increasing of anxiety detected 52.2% of people.

40.4% of patients from group 1 also complained about cognitive impairment without reliable difference between subgroups 1A (28.6%), 1B (48.2%), 1C (33.3%), and 26.1% of people in group 2.

Complaints about sleep disorder were recorded in 63.8% of patients of group 1 and 82.6% - group 2 without a re-

Table III. Assessment of the quality of life of patients depending on the severity of depression and the presence of psychovegetative disorders in different treatment regimens of COVID 19

Indexes		After inpatient treatment						After outpatient treatment					
				QOL						QOL			
				<50 points		>50 points				<50 points		>50 points	
		n	%	n	%	n	%	n	%	n	%	n	%
Total		31	44,2	20	64,5+8,6	11	35,48+8,6	39	55,8+5,9	7	18,0+6,1	32	82,0+6,1
The severity of the depressive syndrome	Mild n=14	2	6,5+4,4	0	0	2	18,2±11,6	12	30,8+7,4	0	0	12	100%
	Moderate n=39	17	54,8+8,9*	11	64,7+11,6	6	35,3+11,6	22	56,4+7,9	2	9,1+6,1*	20	90,9+6,1*
	Average n=17	12	38,7+8,8**	9	75,0+12,5***	3	25,0+12,5***	5	12,8+5,4	5	100%	0	0
Screening of PTSD n=29		23	74,2+7,9	13	56,5+10,3	10	43,5+10,3	6	15,4+5,8	6	100%	0	0
Anxiety n=31		17	54,8+8,9	15	88,2+7,8*	2	11,8+7,8*	14	35,9+7,7	10	71,4+12,1***	4	28,6+12,1
Disorders of cognitive functions n=25		19	61,3+8,8*	13	68,4+10,6	6	31,6+10,6	6	15,4±5,8*	4	66,7+19,2	2	33,3+19,2
Sleep disorder n=49		28	90,3+5,3*	20	71,4+8,5*	8	28,6+8,5*	21	53,9±8,0*	6	28,6+9,8	15	71,4+9,8
Tachycardia n=41		28	90,3+5,3**	19	67,9+8,8	9	32,1+8,8	13	33,3±7,5**	7	53,8+13,8	6	46,2+13,8

Note: * p<0,001; ** p<0,01; *** p<0,05;

Table IV. Assessment of the quality of life of patients who have had COVID 19, by gender, depending on the severity of depression and the presence of psychovegetative disorders

Indexes		Women						Men					
		n=55		QOL				n=15		QOL			
				<50 points		>50 points				<50 points		>50 points	
Depressive syndrome	Degree of severity	n	%	n	%	n	%	n	%	n	%	n	%
	Mild	10	18,2+5,2*	0	0	10	100,0	4	26,7+11,4	0	0	4	100,0
	Moderate	29	52,7+6,7*	11	37,9±9,0	18	62,1±9,0	10	66,7+12,6*	2	20,0+12,6**	8	80,0+12,6**
	Average	16	29,1±6,1***	13	81,2±9,7*	3	18,8± 9,7*	1	6,7+6,4*	1	100,0	0	0
Screening of PTSD		24	43,6+6,7	15	62,5±9,8**	9	37,5±9,8	5	33,3+12,2	5	100,0**	0	0
Anxiety		23	41,8±6,6	15	65,2±9,9	8	34,8±9,9	8	53,3+12,9	3	37,5+17,1	5	62,5+17,1
Disorders of cognitive functions		21	38,2±6,5	13	61,9±10,6	8	38,1±10,6	4	26,7±11,4	4	100,0	0	0
Sleep disorder		37	67,7+6,3	28	75,7+7,0*	9	24,3+7,0*	12	80,0+10,3	10	77,8+13,8**	2	22,2+13,8**
Tachycardia		33	60,0±6,6	24	72,7±7,7*	9	27,3±7,7*	8	53,3±12,8	7	87,5±11,7***	1	12,5±11,7***

Note: * p<0,001; ** p<0,01; *** p<0,05;

liable difference between them. Sleep disorder in the 1A subgroup (92.9%) reliably (p <0.001) prevailed over this indicator in the 1C subgroup (16.7%).

Unsystematic tachycardia, that, 61.7% of patients in group 1 and 52.2% in group 2, had been complaining about, was confirmed by medical examination and recorded in medical records.

Indicators of the severity of DS and psychovegetative disorders in patients after SARS CoV-2 were compared with self-assessment of patients with QOL and was evaluated with taking into account the following impacts: different conditions of treatment, gender, distribution by age category before and after 60.

Among patients with mild depression, after 4-6 weeks, QOL was defined to be 100% satisfacted, after inpatient and outpatient treatment (Table III).

At moderate depression and inpatient treatment, the group of patients with satisfactory QOL (35.3%) and low

Table V. Assessment of the quality of life of patients who have had COVID 19, by age distribution depending on the severity of depression and the presence of psychovegetative disorders

Indexes		Before 60 years						After 60 years					
		n=57		QOL				n=13		QOL			
				<50 points		>50 points				<50 points		>50 points	
Depression	Degree of severity	n	%	n	%	n	%	n	%	n	%	n	%
	Mild	12	21,1+5,4*	4	33,3± 13,6	8	66,7+13,6	2	15,4±10,0	1	50,0±35,6	1	50,0±35,6
	Moderate	33	57,9+6,5*	9	27,3±7,8***	24	72,7+7,8***	6	46,1±13,8	4	66,7± 19,2	2	33,3±19,2
	Average	12	21,1±5,4*	5	41,7±14,2	7	58,3± 14,2	5	38,5±13,5	3	60,0± 21,9	2	40,0± 21,9
Screening of PTSD		23	40,3+6,5	17	73,9+9,2*	6	26,1±9,2*	6	46,1+13,8	4	66,7± 19,2	2	33,3±19,2
Anxiety		22	38,6+6,5***	9	40,9+10,5	13	59,1+10,5	9	69,2±12,8***	6	66,7±15,7	3	33,3± 15,7
Disorders of cognitive functions		19	33,3±6,5	15	79,0±9,4*	4	21,1± 9,4*	6	46,1±13,8	2	33,3± 19,2	4	66,7±19,2
Sleep disorder		36	63,2+6,4*	20	55,6+8,3	16	44,4+8,3	13	100*	12	92,3+7,4*	1	7,7+7,4*
Tachycardia		37	64,9±6,3	18	48,7±8,2	19	51,4± 8,2	4	30,8±12,7	4	100,0	0	0

Note: * p<0,001; ** p<0,01; *** p<0,05;

QOL (64.7%) did not differ reliably, while in outpatient treatment reliably (p <0.001) patients with satisfactory QOL prevailed (90 , 9%).

With an average severity of DS, 100% of patients after outpatient treatment defined QOL as low, in persons after inpatient treatment also reliably (p <0.05), low QOL (75.0%) was dominated.

It can be assumed that the higher the severity of the DS, the lower the QOL in patients who have had SARS CoV-2.

As, in most cases, the disease SARSCoV-2 is accompanied by a moderate severity of DS, it can be successfully treated by primary care professionals during the recovery period and improve the QOL of patients.

PTSD can deepen mental health disorder and lead to decreasing of QOL. After outpatient treatment, the risk of PTSD was found in 15.4% of patients, all with low QOL. After inpatient treatment, the risk of PTSD was detected in 74.2% of patients, but there no reliable difference in QOL levels was found. Such clinical situations require additional mental diagnosis.

When interviewing patients about the causes of mental discomfort, complaints about increasing of anxiety after inpatient treatment were reported by 54.8% of patients with a reliable (p <0.001) advantage of people with low QOL (88.2%).

After outpatient treatment, anxiety was detected in 35.9% of patients, in which also reliably prevailed (p <0.05) low QOL (71.4%).

Anxiety state maintained mental and physical maladaptation after having had SARS CoV-2, which could prolong the recovery period and lead to the development of asthenia, which is characterized by basic symptoms: a sharp decrease in cognitive functions, persistent sleep disturbance, and autonomic manifestations such as tachycardia, that was also indicated by patients.

61.3% of patients complained about cognitive impairment after inpatient treatment, of which 68.4% identified that they have low QOL. After outpatient treatment, patients with complaints about cognitive impairment (15.4%) were found reliably (p <0.001) less than after inpatient treatment (61.3%).

Sleep disturbance after inpatient treatment bothered 90.3% of patients, which reliably (p <0.001) prevailed the number of patients with sleep disturbance after outpatient treatment (53.9%). Sleep disturbance after inpatient treatment and low QOL reliably (p <0.001) prevailed in 71.4% of patients, whereas after outpatient treatment in 71.4% of patients satisfactory QOL, which significantly (p <0.01) prevailed with low QOL (28.6%). This clinical situation requires a detailed diagnosis of the causes of sleep disorder, including behavioral reactions that lead to disorder in sleep hygiene.

Tachycardia, that had been complaining about by patients and recorded by doctors during the examination, was detected in 90.3% of patients after inpatient treatment, reliably (p <0.01) prevailed in persons with tachycardia after outpatient treatment (33.3%). After inpatient treatment, patients with tachycardia reliably (p <0.01) low QOL was dominated (67.9%).

Considering the gender characteristics, as can be seen from Table IV, women had predominatly the moderate severity of DS (52.7%) over individuals with mild (18.2%) (p <0.001) and avarage (29.1%).) (p <0,05) degrees of severity of depressive syndrome.

With a mild severity of DS in all women there was a satisfactory level of QOL, with average severity - reliably (p <0.001) individuals with low QOL were dominated (81.2%).

In men, the moderate severity of DS (66.7%) was statistically predominant over mild (27.6%, p <0.01) and average (6.7%, p <0.001) severity as well, but individuals

with satisfactory level of QOL (80.0%) were reliably ($p < 0.01$) more. However, all men with average level of DS, QOL had low level. With a mild degree of DS, in women, as well as in men in 100% of cases QOL was satisfactory.

The risk of PTSD in women was found in 43.6% without a reliable difference in the level of QOL, while in 33.3% of men at risk of PTSD had low level of QOL in 100%. Women with low QOL and risk of PTSD (62.5%) were statistically ($p < 0.01$) less than men. This indicates the possibility of increased psycho-emotional stress in men, and may be one of the causes of increased aggression.

41.8% of women and 53.3% of men had complains about anxiety.

Cognitive impairment was reported by 38.2% of women with no reliable difference in QOL levels, and 26.7% of men with 100% low QOL.

Sleep disorder was found in 67.7% of women, which was accompanied by a reliable ($p < 0.001$) advantage of people with low QOL (75.7%). The same trend was observed in 80.0% of men with a reliable ($p < 0.01$) advantage of people with low-level of QOL (77.8%).

Tachycardia, that has been complaining about by women and recorded by doctors during the examination, was detected in 60.0% of cases, accompanied by a reliable ($p < 0.001$) advantage of low QOL in 72.7% of cases. In 53.3% of men with tachycardia also relianbly ($p < 0.05$) low QOL was detected in 87.5% of cases.

Analyzing the indicators of different age groups (Table V) among patients under 60 years found a reliable ($p < 0.001$) advantage of people with moderate depression (57.8%) over such patients with avarage (21.1%) and mild 21.1%) degree of depression. They also detected a statistical ($p < 0.05$) predominance of patients with QOL of satisfactory level (72.7%).

At the same time, among patients at risk of PTSD up to 60 years old (40.3%) there was a reliable ($p < 0.001$) advantage of people with low QOL (73.9%).

Anxiety statistically ($p < 0.05$) prevailed in patients after 60 (69.2%) over persons with age under 60 years (38.6%).

Cognitive impairment was reported in 33.3% of patients under 60 years of age with a reliable ($p < 0.001$) predominance of persons with low QOL (79.0%), and 46.1% of persons over 60 years of age.

63.2% of patients under 60 years of age were diagnosed with sleep disorder, and all patients over 60 years of age (100%) had a reliable ($p < 0.001$) advantage in patients with low QOL (92.3%).

Tachycardia was also detected in 63.2% of patients under 60 years of age. In 30.8% of patients with tachycardia after 60 years, low QOL was detected in 100%.

DISCUSSION

Our study was conducted by primary care professionals to identify mental health issues in patients who have had SARS CoV-2.

After outpatient treatment among patients with moderate DS in 90.9% was found a satisfactory level of QOL, as in all patients with mild DS and after inpatient (6.5%) and after outpatient (30.8%) treatment regimen.

Detected moderate severity of DS, which prevailed in more than half of patients with having had SARS CoV-2 (55.7% of people) indicates a mental health disorder, related to recent depressive events, so the suffered disease could be the reason. After inpatient treatment of SARS CoV-2, more than half of the patients (54.8%) had a moderate severity of DS and low QOL. As QOL is a component of overall human health, these patients needed additional primary care attention not only to physical but also to mental well-being, especially during a pandemic [13].

Analyzing QOL in patients with average severity of DS, it is visible that 75.0% of patients after inpatient and 100% after outpatient treatment low QOL was found out. This may indicate that another mental disorder is added to the depressive disorder or that the DS was formed before SARS CoV-2. It was found that the mental health of patients in our sample before having had SARSCoV-2 was not evaluated, so patients need timely refferal to the secondary level for a specialized professional approach in diagnosis and treatment.

On the basis of gender and age distribution, we did not find a significant difference in the manifestation of DS. Particular attention regarding the mental health requires the establishment of a risk of forming of PTSD, which is found in almost half of patients (48.9%). The highest risk of PTSD was found in subgroup 1A of patients (92.9%), with having had SARSCoV-2, who had breathing problems and were in inpatient treatment.

It is known that the main method of treatment of PTSD is psychotherapy, so to restore mental health and reduce the period of complete recovery after SARSCoV-2, it is needed timely to refer the patient to the appropriate specialists: a psychiatrist and psychotherapist.

Increased anxiety also negatively affected the recovery time after the disease, which was detected in half of the cases after inpatient treatment and was accompanied by low QOL in 88.2%, and in one-third of patients after outpatient treatment with low QOL in 71.4%.

Anxiety can be of different nature. It should be remembered that anxiety can also be an accentuated character trait, increasing maladaptation to changes in internal homeostasis and external information space, currently quite aggressive, which can extend the recovery period, and therefore requires medical and psychotherapeutic correction [14].

Accoding to the clinical course of postcovid syndrome, patients' complaints about cognitive impairment were taken into account, and the indicators of these complaints differ in different treatment regimens. After inpatient treatment, the number of patients with cognitive impairment (61.3%) significantly exceeded the individuals with these disorders after outpatient treatment (15.4%) and mostly of them with low QOL in both groups. These patients required the additional attention of a primary care physician for the timely treatment and referral of patients to specialized care, as cognitive impairment may be caused with both stress and the effects of SARS CoV-2.

Sleep disorder was noted by 63.8% of patients. After inpatient treatment, sleep disorder was detected in 90.3% of patients, and among them 71.4% had low QOL.

There were reliably less patients with sleep disturbance after outpatient treatment, and satisfactory QOL (71.4%), was dominated for them.

Possible cause of sleep disorder can be: DS, PTSD, increased anxiety, asthenia, undiagnosed physical pain of different intensity, disoreder of circadian rhythms subsequently of behavioral reactions, which disrupts the body's adaptation processes after the disease [15]. The primary care physician is obliged to explain this to them and provide recommendations on an appropriate sparing lifestyle.

Tachycardia, that has been complaining about by patients and that was recorded by doctors during the examination, also requires a separate diagnostic approach before treatment, as sometimes treatment of the leading disease, where tachycardia is a concomitant symptom, can give a positive result.

CONCLUSIONS

A retrospective analysis of the mental health of patients, who have had SARSCoV-2 at primary health care showed aspects of formation of mental disorders, which affect the quality of life and require additional diagnostic and treatment measures.

Established:

1. Moderate severity of depressive syndrome (DS) prevailed in patients with having had SARS CoV-2 (55.7%).
2. The risk of forming of PTSD is most pronounced in patients with having had severe SARS CoV-2 (92.9%) who had inpatient treatment.
3. The risk of developing PTSD in patients during inpatient and outpatient treatment was combined with low QOL.
4. Anxiety was detected in 54.8% of people after inpatient treatment, that was accompanied by low QOL in 88.2% of people, reliably ($p < 0.001$) prevailing in people with satisfactory QOL (11.8%). In 35.9% of patients with anxiety after outpatient treatment, low QOL (71.4%) reliably ($p < 0.05$) prevailed over satisfactory QOL (28.6%), which should be considered as the cause of recovery delay.
5. A reliable ($p < 0.001$) advantage of patients with complaints about cognitive impairment after inpatient treatment (61.3%) over such persons after outpatient treatment (15.4%) is detected.
6. Cognitive impairment, detected in male patients (26.7%) is accompanied by a low QOL in 100%.
7. Low QOL reliably ($p < 0.001$) predominates in patients with cognitive impairment under the age of 60 (79.0%) over such individuals with satisfactory QOL (21.1%).
8. Sleep disorder was detected in 63.8% of patients with complicated course of SARSCoV-2, among which 90.3% of patients were treated inpatient and in 71.4% of cases found their QOL as low.
9. During SARSCoV-2 without complications, 82.6% of patients had sleep disorders, 53.9% were persons after outpatient treatment, among of them 71.4% had satisfactory QOL. The results of the study indicate the necessity for correction of sleep hygiene.
10. Tachycardia was detected in 61.7% of patients of group I and in 52.2% - group II, which could be a symptom of anxiety and PTSD, but it requires differential diagnosis with cardiac pathology.

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