SARS-COV-2 VIRUS PANDEMIC AND ITS IMPACT ON THE MENTAL HEALTH OF PSYCHIATRIC PATIENTS COMPARED TO MENTALLY HEALTHY PEOPLE

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Abstract: Introduction/Objective. Data on the psychological consequences of social isolation imposed by the global public health threat of the SARS-CoV-2 viral pandemic are limited. Mentally healthy people and psychiatric patients react to stress in different ways. This study aims to examine the impact of the SARS-CoV-2 viral pandemic on the mental health of psychiatric patients compared to mentally healthy people. Methods. The study is designed as a cross-sectional study. It was conducted during April, May and June 2020 at the end and immediately after the first wave of the SARS-CoV-2 viral pandemic in Serbia. Participants were divided into two groups - a clinical group of patients with mental disorders and a control group composed of healthy volunteers. A self-assessment questionnaire was used to collect data on the presence of anxiety and symptoms of depression and behavioral disorders that indicate increased levels of stress - such as insomnia, sedative abuse. Results. Anxiety, fear, panic attacks (80%), depressive symptoms (70%), sleep problems (81%) and sedative abuse (82%) were the most commonly reported psychiatric symptoms in the study group. Healthy subjects in the control group had statistically significantly less frequent presence of symptoms and signs associated with mental problems, although in this group the prevalence of symptoms of mental disorders is not negligible(anxiety, fear, panic attacks (40%), depressive symptoms (22%) and sedative abuse (10%).Conclusion. The results support the negative impact of the SARS-CoV-2 viral pandemic on the mental health of psychiatric patients. It can be expected that the most pronounced effects of the pandemic on mental health in the general population will be visible in the future.

Keywords:Covid-19; Mental health; Mentally ill; Public health.

Introduction

According to experiences from previous epidemics and pandemics of infectious diseases around the world, restrictive epidemiological measures in the form of restriction of movement, social isolation and distancing and prevention of physical contact, although effective in reducing transmission and infection rates, cause a state of increased collective psychological tension, fear (1-3). The most stressful aspects of such public health crises are their unpredictability, as well as uncertainty regarding disease control and assessment of the degree and severity of health risks. Uncertainty, constant challenges and stress in crisis situations such as epidemics and pandemics of infectious diseases can negatively affect mental disorders by inducing them and complicating their course and outcome (4).

The SARS-CoV-2 virus pandemic itself as well as all epidemiological measures introduced to curb it pose a psychological burden on the population, disrupting the personal, family and social functioning of the individual, especially in vulnerable social groups such as psychiatric patients, margins of society (5).

The negative consequences of the SARS-CoV-2 virus pandemic on the mental health of the population around the world are already visible. According to expert estimates, they will reach their peak in the coming period and will very likely survive the current pandemic for a long time (6). Research by Brooks et al points out that periods of self-isolation, restrictions on social contacts and quarantine, even shorter than 10 days, can have long-term consequences with the presence of mental disorders up to 3 years later (7).

Studies have appeared primarily by Chinese authors that note the negative impact of the SARS-CoV-2 viral pandemic on mental health, and especially on the growing anxiety and depression among Chinese health workers, in

the general population, but also in the group of psychiatric patients.

Therefore, this study aims to compare the mental health effects of the SARS-CoV-2 viral pandemic on patients with psychiatric illness compared to previously mentally healthy individuals, and thus to contribute to the general knowledge of the overall consequences of SARS-CoV-2 viral pandemic.

Material and methods

The study is designed as a cross-sectional study. It was conducted during May and June 2020 at the end and immediately after the first wave of the SARS-CoV-2 viral pandemic in Serbia. Participants were divided into two groups - a clinical group of patients with mental disorders and a control group composed of the general population who had no previous mental disorders. Participants for the clinical group were recruited within the outpatient-specialist psychiatric service, and for the control group, students filled out the same questionnaire in online form. The basic criterion for inclusion of subjects in the clinical group was the presence of a mental disorder from before, while the control group was composed of selected subjects without pre-existing mental disorder. Data were collected through a specially designed questionnaire for self-assessment of the existence and intensity of mental symptoms in respondents. The questionnaire first contained a set of general questions about sociodemographic characteristics and the previous existence of a psychiatric disorder. Then, questions were created about the existence of fear, mental tension, irritability, anxiety, the appearance of panic attacks, and the overall level of anxiety and feelings of uncertainty. Then there follows a series of questions that aim to record the symptoms from the depressive spectrum, especially with reference to anhedonia, loss of emotions, pleasure, the appearance of feelings of sadness and depression. Then there is the question of sleep and sleep problems as the symptom that is most indicative of the appearance of a certain psychological distress. There are also direct questions about suicidal thoughts and intentions. The main reason for the generalized feeling of fear and uncertainty are questions about the fear of losing a job, poverty and misery, and a possible decline in the quality of life due to material difficulties that arose during the SARS-CoV-2 viral pandemic. Also, the unavailability of adequate health care due to the state of emergency and restrictive measures was stated as a contributing factor of uncertainty and concern. As a form of self-help and human defense mechanisms against the current stressful situation, the need for the use / increased use / abuse of psychopharmaceuticals is assumed, and on the other hand, man's attempt to improve his lifestyle and overcome the crisis by his own efforts and struggles. The SPSS for Windows 20 program, which runs under the Microsoft Windows environment, was used for data processing. The results are shown tabularly.

In order to compare the group of respondents with mental disorders and those without a diagnosis in terms of sociodemographic characteristics and questions from the questionnaire on mental disorders, the χ^2 test was applied.In addition to the statistical significance, the differences in the prevalence of individual psychological symptoms among the examined groups in this study were compared semiquantitatively according to the following scale: frequency up to 10% was considered insignificant, 11% to 20% was considered moderate, and 21% to 40% % of frequency of psychological symptoms was considered high, while frequency of over 41% was determined to be extremely high.

Results

A total of 200 subjects participated in the study, half of whom had a mental disorder, while the other half of the subjects had no mental disorders.

Table 1. Sociodemographic characteristics on the whole sample (N = 200) and according to the presence of a mental disorder

	Total (%)	Mental disorder	
		Present (%)	Not present (%)
Gender			
Male	26,0	27,0	25,0
Female	72,0	73,0	71,0
Diagnosis			
Nonpsychotic disorder	34,0	67,0	1,0
Psychotic disorder	10,0	20,0	0,0
Other psychiatric disorder	6,0	12,0	0,0
No answer	50,0	1,0	99,0
Age			
18-24	5,0	9,0	1,0
25-34	17,5	14,0	21,0
35-44	25,0	11,0	39,0
45-54	23,0	20,0	26,0
55-64	13,0	26,0	0,0
=>65	13,5	20,0	7,0
Occupation			
Unemployed	14,0	19,0	9,0
Student	4,0	7,0	1,0
Employed	57,5	37,0	78,0
Retired	22,0	37,0	7,0
No answer	2,5	0,0	5,0
Professional qualifications level			
None	2,0	3,0	1,0
Secondary education	43,5	71,0	16,0
High education	52,0	26,0	78,0
No answer	2,5	0,0	5,0

Table 2. Comparison of two groups of respondents (with and without mental disorders) regarding the questions from the questionnaire on mental state

Menthal Disorder	**N**	**My ability to deal with the "current" situation (in the midst of a pandemic) has weakened, I have been less and less interested in encouraging myself and the people around me.**			χ^2	**p**
		Yes (%)	**Sometimes (%)**	**No (%)**		
es	89	32 (36)	55 (62)	2 (2)	119,749	0,000

No	96	26 (27)	0 (0)	70 (73)	
Total	185	58 (31)	55 (30)	72 (39)	

Mental Disorder	N	**I have often had attacks of fear, panic attacks, anxiety in recent months.**		χ^2	p
		Yes (%)	**No (%)**		
Yes	89	71 (80)	18 (20)		
No	99	40 (40)	59 (60)	28,436	0,000
Total	188	111 (60)	77 (40)		

Menthal Disorder	N	**In recent months, I have had to increase the dose of sedatives more often on my own initiative.**			χ^2	p
		Yes (%)	**No (%)**	**Sometimes (%)**		
Yes	89	31 (35)	16 (18)	42 (47)		
No	99	7 (7)	88 (88)	4 (3)	96,135	0,000
Total	188	38 (20)	104 (56)	46 (24)		

Mental Disorder	N	**In recent weeks, in fact, since the beginning of the epidemic, I have been crying more often, I am sad, I can't be happy about anything.**		χ^2	p
		Yes (%)	**No (%)**		
Yes	89	63 (70)	26 (30)		
No	100	22 (22)	78 (78)	43,340	0,000
Total	189	85 (45)	104 (55)		

Mental Disorder	N	**I'm worried about how to get an examination and get prescription drugs.**		χ^2	p
		Yes (%)	**No (%)**		
Yes	98	77 (78)	21 (22)		
No	97	1 (1)	96 (99)	118,917	0,000
Total	195	78 (40)	117 (60)		

Mental Disorder	N	**Since the epidemic lasts, I am more irritable, everything bothers me, I am tense, I often make plans, I shout out.**	χ^2	p

		No(%)	Sometimes(%)	Often (%)	Allmost every day(%)		
Yes	100	10 (10)	54 (54)	22 (22)	14 (14)		
No	96	44 (46)	39 (40)	12 (13)	1 (1)	37,969	0,000
Total	196	54 (27,5)	93 (47)	34 (18)	15 (7,5)		

Mental Disorder	N	**Since the beginning of the epidemic, my sleep has been disturbed, I have difficulty falling asleep, I often wake up, I wake up early.**				χ^2	p
		No(%)	**Sometimes(%)**	**Often (%)**	**Allmost every day(%)**		
Yes	100	19 (19)	42 (42)	16 (16)	23 (23)		
No	96	47 (49)	36 (37,5)	12 (12,5)	1 (1)	33,011	0,000
Total	196	66 (34)	78 (40)	28 (14)	24 (12)		

Mental Disorder	N	**I am worried about the future, I am afraid of losing my job, poorer quality of life, shortages.**				χ^2	p
		No(%)	**Sometimes(%)**	**Often(%)**	**Allmost every day(%)**		
Yes	100	5 (5)	39 (39)	31 (31)	25 (25)		
No	96	46 (48)	39 (40)	8 (8)	3 (4)	63,756	0,000
Total	196	51 (26)	78 (40)	39 (20)	28 (14)		

Mental Disorder	N	**I no longer find satisfaction in activities, society bothers me, I like being alone the most, more pronounced than before.**			χ^2	p
		No(%)	**Sometimes(%)**	**Often(%)**		
Yes	100	14 (14)	56 (56)	30 (30)		
No	96	51 (53)	37 (39)	8 (8)	37,614	0,000
Total	196	65 (33)	93 (47)	38 (20)		

Mental Disorder	N	**I wish "I weren't alive", that everything was over, I can't go on.**				χ^2	p
Mental Disorder		**Never(%)**	**I easily dismiss such thoughts (%)**	**Often(%)**	**Almost every day(%)**		
Yes	98	29 (30)	52 (53)	16 (16)	1 (1)	76,299	0,000

No	96	87 (90)	9 (10)	0 (0)	0 (0)	
Total	194	116 (60)	61 (31)	16 (8)	1 (1)	

Mental Disorder	**N**	**I make plans how to live "normally", I try to improve my lifestyle, to feel better, more cheerful.**			**χ^2**	**p**
		I have no strength(%)	**Sometimes(%)**	**I work hard every day(%)**		
Yes	98	15 (15)	63 (63)	20 (22)		
No	96	8 (8)	17 (18)	71 (74)	57,148	0,000
Total	194	23 (12)	80 (41)	91 (47)		

Discussion

The aim of this study was to compare the state of mental health in psychiatric patients with previously mentally healthy people during and after the first wave of the SARS-CoV-2 viral pandemic in Serbia. The results of this study suggest that all the observed symptoms are far more frequent and more pronounced in the population of patients previously suffering from psychiatric diseases compared to healthy subjects. Anxiety-depressive symptoms dominate in the form of more frequent panic attacks, feelings of inability to cope with the current crisis situation, irritability, tension and constant worries about the future regarding their own health and uncertain financial situation and future quality of life, and feelings of loss of satisfaction and depressed mood. Then there is the concern about the lack of adequate health care during curfews and lockdowns, and self-initiated use / abuse of psychopharmaceuticals. Also, problems with sleep and sleep in the form of insomnia, difficulty falling asleep, intermittent and easy sleep are much more common in the group of mentally ill people. Also, the presence of suicidal thoughts is also more common in subjects with mental disorders. Among the respondents from general population without pre-existing mental disorder, ie. among the respondents from the control group there was a statistically significantly lower presence of symptoms and signs related to mental problems, although in this group the percentage of symptoms of mental disorders is not negligible (anxiety, fear, panic attacks (40%), depressive symptoms. However, this group of respondents (92%) is of the opinion that it is necessary to fight to overcome the current crisis, to do their best to "live normally, feel happier and better. Despite all the hardships and troubles, these results show a significantly higher incidence of anxiety and depressive symptoms among the general population in Serbia compared to most similar studies around the world related to the first outbreak of the SARS-CoV-2 virus pandemic Namely, the percentage of anxiety and depression among general population during the first attack of the SARS-CoV-2 virus pandemic is 26% and 17% in China, 21% and 18% in Italy, 22% and 19% in Spain, and Saudi Arabia and 24% and 29% (8-11). This discrepancy in the results between our and world studies is a consequence of cultural differences, but also of the efficiency of the public health authorities of our country in suppressing the first wave of the epidemic, but also in the strictest measures to suppress the epidemic, such as state of emergency and total social restriction.

In the initial wave of the SARS-CoV-2 viral pandemic in Serbia, there were no more than 400 infected per day and the mortality rate was up to 1%. With timely public health intervention, the epidemic was effectively and relatively quickly contained (12).However, the strictest epidemiological measures, such as the absolute ban on movement during the state of emergency in our country, have left a significant

mark on the mental health of the general population, which is reflected in significantly higher rates of tension, anxiety and fear among our general population which are almost twice as high than in European countries such as Italy and Spain, and the countries of the Middle and Far East such as Saudi Arabia and China. The rate of depression among the general population is within the world average.

On the other hand, paradoxically, all these factors have contributed to the majority of the healthy population mobilizing their defense mechanisms, to awaken empathy, care for the general safety and health of vulnerable groups of people. Morality and fighting spirit were at the highest level, and therefore the psychopathological phenomena examined were not significantly examined, but the values obtained are by no means negligible, especially in terms of the frequency of anxiety.Most people have found additional sources of psychic energy and strength to cope with a stressful situation and not succumb to psychopathological manifestations in the first place (13). Taking the above into account, it can be expected that the most pronounced effects of a pandemic on mental health in the general population will be visible only after the situation has calmed down, when the overstretched healthy defense mechanisms in humans subside, for which high prevalence of fear, anxiety and tension among the general population are a sure pre-sign. Patients with mental illness certainly represent a vulnerable social group that is particularly sensitive to each new crisis and stressful situation, which further worsens their already fragile mental health.This was once again confirmed by the results of our study. Certainly, the capacities for healthy overcoming of crisis situations due to mental illness in patients with psychiatric disorders have been reduced. The results of our study support such attitudes. For psychiatric patients, social interactions of crucial importance for their rehabilitation are of particular importance. And as quarantine and physical distancing measures are in place in a pandemic, psychiatric patients are prevented from continuing with daily group rehabilitation treatments and therapeutic group activities. Such circumstances often leave psychiatric patients alone with enough time to ruminate their psychopathological contents, which inevitably manifests itself through anxiety and tension, and a depressed mood with all its other correlates (14). In addition to the general feeling of fear and uncertainty, among psychiatric patients, there is a particular concern about the availability of medical care in terms of prescribing drugs that patients use regularly. Namely, over three quarters of the participants in the study with a mental disorder stated that they were concerned about the availability of doctors and medical care, especially in terms of prescribing prescriptions for psychopharmaceuticals. In our study, respondents (statistically significantly increased number of former psychiatric patients) stated that due to growing anxiety and worry, they need to increase the dose of tranquilizers on their own initiative. From these facts, a clear conclusion follows that most psychopharmaceuticals were procured illegally, without a doctor's prescription, which is still possible in our country. Although it is also clear that the word is primarily about benzodiazepines, as the most common sedatives and sleeping pills. A study by Chinese authors, on the other hand, notes that a significant number of psychiatric patients stopped using psychopharmaceuticals during the epidemic, because it was not possible to obtain them through a doctor's prescription (15). As around the world, there are several reasons in Serbia for mental health care to be relegated to the background. In the first place, of course, is the care for the physical health due to the SARS-CoV-2 viral pandemic and the protection of the population from infectious diseases. Also, health systems have largely reoriented themselves to providing assistance to patients with Covid 19. All other patients, including psychiatric ones, have been advised not to see the doctor unnecessarily, in order to reduce the pressure on the health system. On the other hand, the patients themselves avoided visiting the doctor for fear of becoming infected (16). Emergency psychiatric care was also provided to a much lesser extent both in Serbia and around the world, as evidenced by the results of a study by Italian authors (17). Regarding suicide in the first wave of the SARS-CoV-2 viral pandemic , according to the results of our study in the total sample, about a third of the respondents had suicidal thoughts. There is a statistically significant difference in the two examined groups in relation to the occurrence of sicidal thoughts. Far more respondents of psychiatric patients (approximately 66%) in the conditions

of the SARS-CoV-2 viral pandemic, stated that on a number of occasions they thought of taking their own lives. For the sake of comparison, in the control group of mentally healthy people, the rate of suicidal thoughts is about 9%. Certainly, the frequency of suicidal ideation correlates positively with the increase in the intensity of mental symptoms in the group of psychiatric patients compared to mentally healthy controls. There is little data on suicide rates at the time of the SARS-CoV-2 viral pandemic . The data available to us are from a study by authors from Bangladesh where it is stated that the incidence rate of suicidal thoughts and thinking in the general population is about 6% at the beginning of the SARS-CoV-2 viral pandemic (18). In this study, as well in as several others, loneliness, social isolation, depressed mood, and fear are highlighted as leading risk factors for suicidal ideation and attempts. The most susceptible to such phenomena are medical workers who participate in the treatment of infected patients, but also the infected patients themselves (19,20). In European countries, there has been a significant decline in the number of suicides during the first "lockdown" period, according to prominent news agencies, although these data still need to be scientifically substantiated (20).There are no clear data in the world regarding the occurrence of suicide in psychiatric patients at the time of the SARS-CoV-2 viral pandemic. Most authors who touch on this topic only state that the presence of a mental disorder and the SARS-CoV-2 viral pandemic represent "double-susceptibility" to suicide (21). Suicide rates are expected to decrease during the stressful situation of a large number of people as they focus on maintaining both their own health and the health of others (22). Only after the action of the stress factor, after the defense mechanisms have subsided, does a person turn to thinking about himself and his own re-examination, which is a suitable ground for the appearance of suicidal thoughts and behaviors.

Conclusion. We found that the SARS-CoV-2 viral pandemic after its first outbreak in Serbia left double consequences on the mental health of the healthy population and those previously suffering from psychiatric illnesses. Namely, psychiatric patients responded to the first wave of the SARS-CoV-2 viral pandemic and all the restrictive measures that followed it with a significant worsening of psychopathological symptoms. Anxiety and depressive symptoms, as well as sleep disorders, but also the presence of suicidal thoughts and thoughts are mostly recorded. While, on the other hand, mentally healthy participants in the control group had a statistically significantly lower presence of symptoms and signs associated with mental problems, although in this group the percentage of symptoms of mental disorders is not negligible, which supports the thesis that mental retardation The CoV-2 virus brought with it, especially in the long run, leads to serious mental disorders, which is predicted by world experts in the field of mental health (7).These results clearly show once again that psychiatric patients represent a vulnerable social group, whose mental health should not be neglected under any circumstances, and especially in stressful situations such as the SARS-CoV-2 viral pandemic . Our findings can be used to plan public health interventions in the field of mental health targeting both general and vulnerable populations combined with efforts to respond to certain future pandemics in their early stages, with the aim of to obtain a comprehensive response in which even mental health will not be neglected. Limitations of the study This study may be limited by its design (cross-sectional study), as well as the method of data collection (independent and online completion of self-assessment questionnaires), also by the fact that standardized psychiatric-psychological questionnaires were not used to assess mental health. It is possible to assess the intensity of psychopathological symptoms. These limitations may methodologically weaken the study. However, despite the possible limitations of the study, it provides new and interesting data on different psychological responses to the SARS-CoV-2 viral pandemic in two groups of people who are different by the presence/absence of a mental disorder, and is therefore unique in the area, wherethere is a lack of information on global level.

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