Electronic Journal of General Medicine
2022, 19(1), em337
e-ISSN: 2516-3507
https://www.ejgm.co.uk/

MODESTUM

Original Article

OPEN ACCESS

The Impact of the COVID-19 Pandemic on the Mental Health of the General Population and the Population of Psychiatric Patients

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Citation: Kuljancic DP. The Impact of the COVID-19 Pandemic on the Mental Health of the General Population and the Population of Psychiatric Patients. Electron J Gen Med. 2022;19(1):em337. https://doi.org/10.29333/ejgm/11399

ARTICLE INFO

Received: 1 Jul. 2021

Accepted: 4 Nov. 2021

ABSTRACT

Background: Data on the psychological consequences of social isolation imposed by the global public health threat of the COVID-19 pandemic are limited. Mentally healthy people and psychiatric patients react to stress in different ways.

Goal: To examine the impact of the COVID-19 pandemic on the mental health of the general population and the population of psychiatric patients in Vojvodina.

Material and 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 COVID-19 epidemic in Serbia on the territory of Novi Sad. Participants were divided into two groups - a clinical group of patients with mental disorders and a control group composed of the 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 (50%), depressive symptoms (42%), sleep problems (30%) and sedative abuse (25%) were the most commonly reported psychiatric symptoms. Healthy subjects did not show a statistically significant presence of any symptoms and signs associated with mental problems.

Conclusion: The results support the negative impact of the COVID-19 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: mental health, COVID-19 pandemic, public health, affective symptoms, anxiety

INTRODUCTION

Looking forward to 2020, few could have guessed that an unknown virus pandemic would occur and change all the established patterns by which the world has been functioning for decades. It's like a script from the famous Hollywood horror movies, but that's exactly what happened this 2020 with the COVID-19 pandemic. At the beginning of the year, we were informed through media reports about the existence of this new virus, which appeared as if it was supposed to "somewhere in faraway China." However, most people in the "western part of the world" did not seem to be interested in the news of the dangerous infection. Nobody paid attention to them because it happens somewhere far away, on the other side of the world. The beginning of the current year passed quite normally, peacefully and with stable dynamics in Serbia and this part of the world. However, in late February and early March, with the appearance of the first cases of COVID-19 infection in our country as well as in Europe, a series of events took place dizzyingly, which will lead us into the world's largest acute public health crisis known in modern history. The introduction of various restrictive restrictions on movement, freedoms, behavior, new rules concerning each and every aspect of our lives, followed by daily intense, offensive media reports about the "Crown" - the number of newly infected, the number of dead, seriously ill, overcrowded hospitals, disturbing pictures of crowds of dead people that there are so many that no one buries them for days "because there is no place in cemeteries", very quickly introduced this part of the world to the real state of the COVID-19 epidemic, but also produced a state of collective psychological tension and reminded each individual, lulled into all the comforts of life in the developed part of the world to its own finality, which gave rise to fear primarily of disease and death. Residents of Serbia soon began living in a state of emergency. Most companies have stopped production, workers have been sent on forced collective vacations, state and public services have suspended their activities, schools and colleges have been disbanded, pupils and students have been sent home, student dormitories have been disbanded, most students have been displaced. at one point, the army and police patrolled the streets as if in a state of war, the elderly were completely forbidden to move. Citizens panicked and bought basic necessities of life, making stocks. General uncertainty, insecurity, unknown at every step followed each of the workers, employers, peasants, students.

There is limited data on the consequences of self-isolation, social isolation, imposed by the global public health threat in the form of the COVID-19 pandemic. Due to the relatively short duration of this pandemic, few papers on mental health problems have been published so far. There are data on the state of mental health of the population during SARS infection in 2007, which show an increase in the occurrence of mental disorders such as anxiety, stress and PTSD. Studies by primarily Chinese authors have emerged that record the negative impact of the COVID-19 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 COVID-19 epidemic on patients with psychiatric illness compared to previously mentally healthy individuals, and thus to contribute to the general knowledge of the overall consequences of COVID-19.

MATERIALS 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 COVID-19 pandemic in Serbia on the territory of Novi Sad. 200 subjects participated in this study and they were divided into two groups - a clinical group of patients with mental disorders and a control group composed of the general population- students who had no previous mental disorders based on their medical record. Participants for the clinical group were recruited within the outpatient-specialist psychiatric service. For the control group, students who visited general practitioner for an annual check-ups, and based od their medical records, did not have mental illness till that moment were asked to fill out the same questionnaire in the same time period. 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 selected subjects without pre-existing mental disorder. Data were collected through an originally designed questionnaire by the researcher for self-assessment of the existence and intensity of mental symptoms in respondents during the COVID-19 pandemic. The questionnaire consisted of a total of 16 multiple-choice questions where only one answer could be selected. The questions were divided according to the symptoms recorded in a total of four categories - general sociodemographic data and data on previous psychiatric illnesses; issues related to general anxiety, tension and fear; questions about depressive symptoms including a direct question about suicidal thoughts; as well as a group of questions on sleep hygiene and the use / abuse of psychopharmaceuticals / psychoactive substances.

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. The statistically significant probability level was $p < 0.01$.

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

		Mental disorder	
	Total (%)	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			
Non	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

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 disorder. About 30% of respondents believe that their ability to cope with the current situation weakened during the pandemic. Just over half of the respondents admit that they often have attacks of fear and panic. A fifth of the respondents claim that since the biginning of the pandemics they have increased the dose of tranquilizers more often. In the total sample, 42.5% of respondents claim that they cry more often and are sad since the beginning of the epidemic. About 40% of respondents express concerns about scheduling examinations and obtaining prescriptions. Almost half of the respondents claim that they are sometimes more irritable since the beginning of the epidemic. Observed at the level of the total sample, one third of the respondents do not have problems with sleep disorders during the epidemic. Sleep problems are more common in subjects with a previous mental disorder. Only a quarter of all respondents have no worries or fears about the future. At the level of the total sample, every fifth respondent claims that they often do not find satisfaction in everyday activities. In the total sample, 30% of the respondents have some kind of suicidal thoughts. While in the sample of respondents with previous mental disorders, the presence of suicidal thoughts is more common, in the second group of respondents it is rare - it occurs in just 9% of them.

Table 2. Clinical characteristics on the whole sample (N = 200) and according to the presence of mental disorder

	Total (%)	Menthal Disorder	
		Present (%)	Not present (%)
Since the beginning of the epidemic, my ability to deal with the "current" situation has weakened, I have been less and less interested in encouraging myself and the people around me.			
Yes	29.0	32.0	26.0
Sometimes	27.5	55.0	0.0
No	36.0	2.0	70.0
No answer	7.5	11.0	4.0
Since the beginning of the epidemic, I often have attacks of fear, panic attacks, anxiety.			
Yes	55.5	71.0	40.0
No	38.5	18.0	59.0
No answer	6.0	11.0	1.0
Since the beginning of the epidemic, I have to increase the dose of sedatives more often on my own initiative.			
Yes	19.0	31.0	7.0
Ponekad	23.0	42.0	4.0
No	52.0	16.0	88.0
No answer	6.0	11.0	1.0
Since the beginning of the epidemic, I have been crying more often, I am sad, I can't be happy about anything.			
Yes	42.5	63.0	22.0
No	52.0	26.0	78.0
No answer	5.5	11.0	0.0
Since the beginning of the epidemic, I'm worried about how to get an examination and get prescription drugs.			
Yes	39.0	77.0	1.0
No	58.5	21.0	96.0
No answer	2.5	2.0	3.0
Since the beginning of the epidemic, I am more irritable, everything bothers me, I am tense, I often plan, I shout.			
No	27.0	10.0	44.0
Sometimes	46.5	54.0	39.0
Often	17.0	22.0	12.0
Almost every day	7.5	14.0	1.0
No answer	2.0	0.0	4.0
Since the beginning of the epidemic, my sleep has been disturbed, I have difficulty falling asleep, I often wake up, I wake up early.			
No	33.0	19.0	47.0
Sometimes	39.0	42.0	36.0
Often	14.0	16.0	12.0
Almost every day	12.0	23.0	1.0
No answer	2.0	0.0	4.0
Since the beginning of the epidemic, I am worried about the future, I am afraid of losing my job, poorer quality of life, shortages.			
No	25.5	5.0	46.0
Sometimes	39.0	39.0	39.0
Often	19.5	31.0	8.0
Almost every day	14.0	25.0	3.0
No answer	2.0	0.0	4.0
Since the beginning of the epidemic, I no longer find satisfaction in activities, society bothers me, I like being alone the most, more pronounced than before.			
No	32.5	14.0	51.0
Sometimes	46.5	56.0	37.0
Often	19.0	30.0	8.0
No answer	2.0	0.0	4.0
Since the beginning of the epidemic, I have a wish "that I am not there", that everything is over, I can't go on.			
Never	58.0	29.0	87.0
Easily I stop thinking about this	30.5	52.0	9.0
Often	8.0	16.0	0.0
Almost every day	0.5	1.0	0.0
No answer	3.0	2.0	4.0
Since the beginning of the epidemic, I plan how to live "normally", I try to improve my lifestyle, to feel better, more cheerful.			
I have no strenght to go on	11.5	15.0	8.0
Sometimes	40.0	63.0	17.0
I work hard every day	45.5	20.0	71.0
No answer	3.0	2.0	4.0

Table 3. Comparison of two groups of respondents (with and without mental disorders) regarding the questions from the questionnaire on mental state

Menthal Disorder	N	Question				χ^2	p
		Since the beginning of the epidemic, my ability to deal with the "current" situation has weakened, I have been less and less interested in encouraging myself and the people around me.					
		Yes	Sometimes	No			
Yes	89	32	55	2			
No	96	26	0	70		119.749	0.000
Total	185	58	55	72			
		Since the beginning of the epidemic, I often have attacks of fear, panic attacks, anxiety.					
		Yes		No			
Yes	89	71		18			
No	99	40		59		28.436	0.000
Total	188	111		77			
		Since the beginning of the epidemic, I have to increase the dose of sedatives more often on my own initiative.					
		Yes	No	Sometimes			
Yes	89	31	16	42			
No	99	7	88	4		96.135	0.000
Total	188	38	104	46			
		Since the beginning of the epidemic, I have been crying more often, I am sad, I can't be happy about anything.					
		Yes		No			
Yes	89	63		26			
No	100	22		78		43.340	0.000
Total	189	85		104			
		Since the beginning of the epidemic, I'm worried about how to get an examination and get prescription drugs.					
		Yes		No			
Yes	98	77		21			
No	97	1		96		118.917	0.000
Total	195	78		117			
		Since the beginning of the epidemic, I am more irritable, everything bothers me, I am tense, I often plan, I shout.					
		No	Sometimes	Offtenly	Allmost every day		
Yes	100	10	54	22	14		
No	96	44	39	12	1	37.969	0.000
Total	196	54	93	34	15		
		Since the beginning of the epidemic, my sleep has been disturbed, I have difficulty falling asleep, I often wake up, I wake up early.					
		No	Sometimes	Offtenly	Allmost every day		
Yes	100	19	42	16	23		
No	96	47	36	12	1	33.011	0.000
Total	196	66	78	28	24		
		Since the beginning of the epidemic, I am worried about the future, I am afraid of losing my job, poorer quality of life, shortages.					
		No	Sometimes	Offtenly	Allmost every day		
Yes	100	5	39	31	25		
No	96	46	39	8	3	63.756	0.000
Total	196	51	78	39	28		
		Since the beginning of the epidemic, I no longer find satisfaction in activities, society bothers me, I like being alone the most, more pronounced than before.					
		No	Sometimes	Offtenly			
Yes	100	14	56	30			
No	96	51	37	8		37.614	0.000
Total	196	65	93	38			
		Since the beginning of the epidemic, I have a wish "that I am not there", that everything is over, I can't go on.					
		Never	Easily I stop thinking about this	Offtenly	Allmost every day		
Yes	98	29	52	16	1		
No	96	87	9	0	0	76.299	0.000
Total	194	116	61	16	1		
		Since the beginning of the epidemic, I plan how to live "normally", I try to improve my lifestyle, to feel better, more cheerful.					
		I have no strenght	Sometimes	I work hard every day			
Yes	98	15	63	20			
No	96	8	17	71		57.148	0.000
Total	194	23	80	91			

Note: N - number of respondents, χ^2 - statistical, p - statistical significance ($p<0.01$)

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 COVID-19 epidemic 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 locks, 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 the general population, without a pre-existing mental disorder, there is no statistically significant presence of the examined symptoms of mental health disorders. In that group of respondents, there is an opinion that it is necessary to fight in order to overcome the current crisis, to do our best to "live normally, to feel brighter and better" despite all adversity and trouble. These results are in contrast to most similar research around the world related to the first outbreak of the COVID-19 epidemic. Namely, the percentage of anxiety and depression among the general population during the first attack of the COVID-19 pandemic ranges from 7-12% in China to 25% in Italy, Spain and Saudi Arabia [1-4]. The discrepancy in the results between our and world studies is primarily a consequence of cultural differences, but also of the efficiency in suppressing the first wave of the epidemic. In the initial wave of the COVID-19 epidemic 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 [5]. Reasons for the higher prevalence of psychopathological manifestations in our population, when compared with other COVID-19-affected countries, could be explained by the additional stress that comes with lower income, potential instability of the region, general uncertainty, and relatively recent historical turmoil [6]. Therefore, it is necessary to recognize and examine people's mental states in this unprecedented time [6]. Although levels of psychopathological manifestations in our study population were prevalent during the state of the emergency, the study of Ocal et al. showed that Serbian respondents had higher resilience to COVID-19 than those from other countries (Lebanon, Portugal, and Italy), shown in the total emotional reactions scores as well as in the anxiety, stress, and depression dimensions [7]. A possible explanation for these findings could be specific socio-cultural reasons, such as previous experience with the Yugoslav War period [7]. During the last three decades, our country has faced similar situations many times, but they were imposed only when necessary, for short periods of time, they were not obligatory and not related to an outbreak since the smallpox epidemic in 1972 [8]. Taking into account all the above-mentioned facts and peculiarities of the history and culture of the inhabitants of Serbia, it can be said with certainty that the cultural peculiarities of our society, which are primarily a consequence of the recent painful past, have significantly contributed as protective factors against psychological problems related to the COVID-19 pandemic.

All these factors have contributed to the majority of the healthy population mobilizing their defense mechanisms, to awakening empathy, concern for the general safety and health of vulnerable groups of people. Morale and fighting spirit were at the highest level, therefore, the significantly examined psychopathological phenomena are not recorded. 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 [9]. However, it can be expected that the most pronounced effects of a pandemic on mental health in the general population both in Serbia and in other countries around the globe will be visible after the condition has calmed down, when the overstretched healthy defense mechanisms in humans subside.

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. 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 [10]. 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 more 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 benzodiazepines are primarily in question, 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 [11]. 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 COVID-19 infection 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 psychiatrists, have been advised not to see a 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 [12]. 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 [13]. Regarding suicide in the first wave of the COVID-19 epidemic, according to the results of our study in the total sample, about a third of the respondents encountered 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 COVID-19 epidemic stated that at some frequency of occurrence they are thinking 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 COVID-19 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 COVID-19 pandemic [14]. In this study, as well 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 [15,16]. In European countries, there has been a significant decline in the number of suicides during the first "lock-in" period, according to prominent news agencies, although these data still need to be scientifically substantiated [17]. There are no clear data in the world regarding the occurrence of suicide in psychiatric patients at the time of the COVID-19 pandemic. Most authors who touch on this topic only state that the presence of a mental disorder and the COVID-19 epidemic represent "double-susceptibility" to suicide [18,19]. 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. 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 COVID-19 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 COVID-19 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 study participants did not notice the appearance of any examined symptoms of mental health disorders that would be statistically significant. 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 COVID-19 pandemic. As for the general population, the higher resilience to psychological problems during the COVID-19 pandemic can certainly be attributed to the consequences of the recent painful past. During the last three decades, our country has faced similar situations many times (Yugoslav Wars, socioeconomic instabilities, poverty). Those cultural features can be considered as the protective properties against psychological problems during the COVID-19 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 (self-assessment questionnaires), also by the fact that standardized psychiatric-psychological questionnaires were not used to assess mental health. Therefor, it is not 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 the different psychological response to the COVID-19 pandemic in two groups of people who differ in the presence/absence of mental disorder, and is therefore unique. The strength of this study could be the timing of data collection relative to lockdown restrictions in Serbia, Vojvodina.

Author contributions: All authors have sufficiently contributed to the study, and agreed with the results and conclusions.

Funding: No funding source is reported for this study.

Declaration of interest: No conflict of interest is declared by authors.

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