

Stronger psychological reaction of patients in depression and remission to the first wave of the COVID-19 pandemic in Poland compared to the non-clinical group

Marlena Sokół-Szawłowska¹, Paweł Mierzejewski²

¹ Outpatient Clinic, Institute of Psychiatry and Neurology

² Department of Pharmacology, Institute of Psychiatry and Neurology

Summary

Aim. The aim of the study was to compare the subjective mental state of patients in an ongoing episode of depression and in remission (clinical group) and the group without depressive disorders and other mental disorders in their life so far (non-clinical group) in the first wave of the COVID-19 pandemic.

Material and methods. During the first economic shutdown in Poland (March 12, 2020–May 3, 2020), using an anonymous online survey, we assessed the subjective mental state of 2,284 people in three groups: with an ongoing depressive episode – 265 patients, in remission – 574 patients, and without mental disorders (including depression) – 1,445 people.

Results. The outbreak of the pandemic had a negative impact on the subjective mental state of the respondents. In the group with depression, stress of varying intensity was experienced by 98.11% of the respondents, in the group in remission by 93.9%, and in the group without depression in the past by 93.43%. Depressed mood was declared by 51.32% of depressed patients, 21.60% of patients in remission and 11.97% of patients without mental disorders. Daily anxiety attacks occurred in 46.42% of patients with depression, in 20.21% of patients in remission and 5.88% of respondents in the non-clinical group.

Conclusions. The results of the survey show that patients with an ongoing episode of depression and remission subjectively felt worse than the non-clinical group in the first wave of the COVID-19 pandemic in Poland. At the same time, previously healthy people also reported unusual intensification of anxiety and depressive symptoms. For this reason it is important to continue the comprehensive treatment of people with depressive disorders and to simultaneously prevent mental disorders in the non-clinical population.

Key words: depression, COVID-19 pandemic, lockdown

Introduction

The first cases of infection with the new SARS-CoV-2 coronavirus were confirmed in December 2019 in Wuhan, China [1]. On March 11, 2020, when infections were already present in about 114 countries, WHO announced a pandemic [2]. In Poland, on the same day, the prime minister announced a plan to shut down most areas of the economy, move to remote working and education. Stringent restrictions were introduced in leaving home and moving around the country. The first lockdown in Poland lasted from 12 March to 3 May 2020 and was described as a collective quarantine (involving all citizens). An exception was made for workers in sectors strategic to national security.

This method of limiting viral infection is enshrined in a centuries-old tradition in Poland (and other countries) of enforced isolation during an epidemic. Before COVID-19, these decisions had never been taken on a mass scale, since it is obvious that quarantine and social isolation restrict mobility, interpersonal relations and the everyday activities of people, triggering serious social consequences in both the short and long term [3].

It is reasonable to say that these sudden and severe restrictions affected mental health [4–6]. It is defined as an internal state of well-being, balance and cognitive and coping abilities, in harmony with those universal social values allowing individuals to work, be active and solve problems [7, 8]. During the pandemic, our work, activities and everyday life changed significantly. Apart from the individual dimension, the pandemic has the dimension of a difficult collective experience and causes justified anxiety to the majority of the world's population [9–11]. Collective quarantine deprived many people of support (family, friends and other important social networks), which could even be perceived as a form of punishment, condemnation, imprisonment [12–14]. Social isolation is also about physical distance and avoiding social contact outside the home. Protective masks cause discomfort related to the inability to read facial expressions. People have been forced to stop participating in social activities with the exception of those related to the fight against COVID-19 [15–21].

Publications on mental health during the pre-COVID-19 quarantine were few and it is difficult to generalize their conclusions. The most common research reviews cover the epidemics of SARS-CoV-1, MERS, Ebola, and influenza. It was found that the groups particularly vulnerable to the psychological consequences of quarantine are people with mental disorders, children and adolescents, women, the elderly, minority groups, and people with a lower socioeconomic status [13, 14]. Assessing the health of people in quarantine prior to the COVID-19 pandemic has highlighted the need for further research. The necessity to assess the mental state, experiences and coping techniques during quarantine was postulated. The conclusions highlighted that quarantine may be a catalyst for mental health problems in people who previously had no psychiatric disorders. The most frequently cited related symptoms were irritability, insomnia, anxiety, depressed mood, anhedonia, hopelessness, frustration, loneliness, symptoms of post-traumatic stress disorder, and emotional exhaustion with a slowdown. Mental well-being deteriorated in people in isolation, and the severity of the mentioned symptoms was individually variable [5, 13, 22–29].

In the first months of 2020, the mental state of people in quarantine was analyzed in several countries, covering short periods and employing a variety of methods. An online method of data collection was adopted, as this was safest during the pandemic. Reports from around the world on the first COVID-19 peak highlighted the need for urgent studies [3, 10, 19–21, 30]. The social groups particularly vulnerable to the negative psychological effects of the COVID-19 pandemic are:

- patients with mental disorders prior to the pandemic (most studies mentioned these first) [31–36];
- children and adolescents, during and after extreme isolation from peer groups [37, 38];
- people after contracting COVID-19 [39–41],
- people grieving COVID-19 fatalities [42, 43],
- workers in medical and other strategic sectors [22, 44, 45]
- people who lost their jobs and/or fell into serious financial difficulties during the pandemic [46–49].

The aim of the study was to compare the subjective mental state of patients in an episode of depression and in remission to people without a diagnosis of depression (and other diagnosed mental disorders) during the first lockdown in Poland in the COVID-19 pandemic.

Materials and methods

The study is part of a large and long-term project covering the next waves of the pandemic in Poland in 2020 and 2021. During the first lockdown, data was collected from 2,284 adults (18 years and older) who completed an anonymous online survey during the period of the most severe social pandemic restrictions in Poland (March 12 to May 3, 2020). The group with depression consists of patients undergoing outpatient treatment at the Institute of Psychiatry and Neurology in Warsaw (Mental Health Outpatient Clinic, Community Psychiatric Treatment Team). After obtaining the consent of the patients, psychiatrists and psychologists, after remote consultations, sent a link to the questionnaire for people during an episode of depression (mild or moderate) and in remission in the course of recurrent depressive disorder. The control group (without depression and other mental disorders) were people who reported and obtained anonymous access to the questionnaire via the website of the Polish Psychiatric Association. The observation work did not require the consent of the local Bioethics Committee, which was informed about the study.

The examined variables were analyzed by comparing the groups with the ongoing episode of depression, remission and without depression and a history of other mental disorders. Demographic questions included: age, gender, place of residence, education. The mental status questions were based on a standard psychiatric study and included psychopathological symptoms related to the response to psychosocial stress. The planning stage took into account the literature from previous epidemics,

clinical experience and recent pandemic observations. A 5-point Likert scale was used to assess the absence or severity of the feature. Descriptive statistical methods were used to analyze the data. The quantitative distribution of responses was analyzed both without subgroups and within selected groups of respondents (in depression, in remission, without a diagnosis of disorders). The distribution of responses between the different groups was compared. The STATISTICA 13.1 program was used for the analysis. Chi² analysis was used to compare the distribution of the examined variables, which was carried out using the online tool: <https://www.socscistatistics.com/tests/chisquare2/default2.aspx>

Results

Visual analysis showed that the participants without depression, in remission, and in an episode of depression during a pandemic clearly differ in the distribution of the responses. Statistical analysis of the distribution of answers to each question was performed using the Chi² test. First, the distribution of responses was assessed for all 3 subgroups (depression during a pandemic, remission, without a diagnosis of depression). When the result was statistically significant, individual subgroups were analyzed by comparing them in pairs. Due to multiple comparisons, the results at $p < 0.001$ were considered significant.

The clinical group included 839 people (265 in depressive episode and 574 in remission). A detailed description of demographic parameters is presented in Table 1.

Table 1. **Respondent demographics**

	Total n = 2284	Depression n = 265	Remission n = 574	No depression n = 1445
Gender				
Female	1340	193	421	726
Male	944	72	153	719
Place of residence				
>300k	1016	126	275	615
100–300k	370	55	96	219
20–100k	427	45	94	288
5–20k	235	11	42	182
village	236	55	67	141
Age [years]				
18–29	520	70	151	299
30–39	605	77	209	319
40–49	604	51	127	426
50–59	301	43	65	193

table continued on the next page

60–69	196	21	17	158
>70	58	3	5	50
Education				
Higher	1269	157	442	670
High school	868	102	115	651
Primary school	22	2	3	103
Other	125	4	14	21

The results of the study showed differences in experiencing limitations associated with the first wave of the COVID-19 pandemic in the studied population and a more difficult psychological reaction in people who had or have suffered from depression in the past (in an episode of depression and remission in recurrent depressive disorder). The obtained results are presented in Table 2.

Table 2. Differences in mental state between the population in depression, in remission (clinical), and without a diagnosis of depressive disorders in the first peak of the COVID-19 pandemic in Poland

	Depression	%	Remission	%	No depression	%	Statistical value	dr – depression vs. remission; dn – depression vs. no depression; m – remission vs. no depression
Change in well-being								
0	7	2.64%	46	8.01%	122	8.44%	chi ² = 47, p < 0.001	dr p < 0.001, dn p < 0.001
1	19	7.17%	62	10.80%	141	9.76%		
2	125	47.17%	287	50.00%	765	52.94%		
3	66	24.91%	118	20.56%	314	21.73%		
4	48	18.11%	59	10.28%	102	7.06%		
Stress level								
0	5	1.89%	35	6.10%	95	6.57%	chi ² = 326, p < 0.001	dr p < 0.001, dn p < 0.001, m p < 0.001
1	25	9.43%	93	16.20%	142	9.83%		
2	125	47.17%	297	51.74%	911	63.04%		
3	74	27.92%	127	22.13%	222	15.36%		
4	36	13.58%	22	3.83%	75	5.19%		

table continued on the next page

Mood								
changeable	95	35.85%	227	39.55%	606	41.94%	chi ² = 250, p < 0.001	dr p < 0.001, dn p < 0.001, m p < 0.001
good and stable	33	12.45%	221	38.50%	661	45.74%		
lowered	136	51.32%	124	21.60%	173	11.97%		
elevated	1	0.38%	2	0.35%	5	0.35%		
Energy level								
good and stable	29	10.94%	203	35.37%	881	60.97%	chi ² = 350, p < 0.001	dr p < 0.001, dn p < 0.001, m p < 0.001
lowered	162	61.13%	181	31.53%	236	16.33%		
changeable	70	26.42%	183	31.88%	315	21.80%		
elevated	4	1.51%	7	1.22%	13	0.90%		
Ease of falling asleep								
yes	144	54.34%	405	70.56%	1275	88.24%	chi ² = 201, p < 0.001	
no	121	45.66%	169	29.44%	170	11.76%		
Wakes up at night								
no	120	45.28%	320	55.75%	1234	85.40%	chi ² = 304, p < 0.001	dr p < 0.01, dn p < 0.001, m p < 0.001
yes	145	54.72%	254	44.25%	211	14.60%		
Experiences nightmares about the epidemic								
yes	57	21.51%	239	41.64%	164	11.35%	chi ² = 234, p < 0.001	dr p < 0.001, dn p < 0.001, rd p < 0.001
no	208	78.49%	335	58.36%	1281	88.65%		
Wakes up before alarm clock								
yes	122	46.04%	194	33.80%	294	20.35%	chi ² = 140, p < 0.001	dr p < 0.01, dn p < 0.001, rd p < 0.001
no	143	53.96%	380	66.20%	1115	77.16%		

table continued on the next page

Concentration/ memory								
no change	119	44.91%	369	64.29%	1153	79.79%	chi ² = 161, p <0.001	dr p <0.001, dn p <0.001, m p <0.001
improved	6	2.26%	15	2.61%	26	1.80%		
deteriorated	140	52.83%	190	33.10%	266	18.41%		
Daily anxiety attacks								
no	142	53.58%	460	80.14%	1360	94.12%	chi ² = 46, p <0.001	dr p <0.001, dn p <0.001, m p <0.001
yes	123	46.42%	116	20.21%	85	5.88%		
Bursts of temper								
no	141	53.21%	363	63.24%	1050	72.66%	chi ² =47, p <0.001	dr p <0.01, dn p <0.001, m p <0.001
yes	124	46.79%	211	36.76%	395	27.34%		
Still enjoys things								
yes	126	47.55%	429	74.74%	1024	70.87%	chi ² = 68, p <0.001	dr p <0.001, dn p <0.001
no	139	52.45%	145	25.26%	421	29.13%		
Intensity of pessimistic thoughts								
0	9	3.40%	100	17.42%	273	18.89%	chi ² = 199, p <0.001	dr p <0.001, dn p <0.001, m p <0.01
1	24	9.06%	113	19.69%	249	17.23%		
2	122	46.04%	262	45.64%	751	51.97%		
3	65	24.53%	78	13.59%	137	9.48%		
4	45	16.98%	21	3.66%	35	2.42%		
Worries about employment								
yes	210	79.25%	389	67.77%	719	49.76%	chi ² = 111, p <0.001	dr p <0.001, dn p <0.001, m p <0.001
no	55	20.75%	185	32.23%	726	50.24%		

table continued on the next page

After the epidemic, my life:								
will change	125	47.17%	211	36.76%	479	33.15%	chi ² = 33, p < 0.001	dr p < 0.001, dn p < 0.001, rd p < 0.01
don't know whether it will change	106	40.00%	255	44.43%	602	41.66%		
will not change	34	12.83%	108	18.82%	364	25.19%		
Total	265	100.00%	574	100.00%	1445	100.00%		

Only three areas did not show statistically significant differences between the depressed and depression-free groups. These were: fear of the impending pandemic, the accumulation of large food stocks, and the acceptance of the Polish government's decision to impose collective quarantine.

Discussion

As far as we know, this is the first study conducted in Poland to compare the psychological responses to the COVID-19 pandemic of patients treated for depressive disorders with those without a history of such disorders.

Despite the growing number of studies devoted to the psychological consequences of the COVID-19 pandemic during the forced closure of economies and collective quarantine, there are still few studies involving the clinical population of patients with mental disorders treated before the pandemic, most of them concern the general population in which particularly vulnerable groups are identified [19, 39]. The research results are difficult to compare due to the different methodology. What they have in common is a subjective mental state assessment through online surveys.

The research results from different countries will be used in the discussion. During the COVID-19 pandemic, it is difficult to find non-affected subpopulations, so by necessity the groups most studied in the First World Wave were general populations subjected to collective psychosocial stress. Due to the lack of specific measures “to assess the psychological response to the COVID-19 pandemic,” experts from the beginning of the pandemic recommended a description of the mental state including cognitive, emotional and behavioral responses to the pandemic [4, 5, 33, 36].

The presented study compares the response to quarantine in a pandemic in the population of patients with depressive disorders (in episode and in remission) with the response of a group that had no previous diagnosis of depressive disorders. The description of the reaction concerns subjective changes in the mental state and the cognitive reaction. The differences had a high statistical significance $p > 0.001$, and exceptions thereto are indicated in parentheses.

The change in well-being in the first weeks of the pandemic occurred in the entire study population, there were differences in the control (non-clinical) and clinical groups. In the population without mental disorders, 28.79% declared that the overall

change of well-being was large and the largest, the clinical groups experienced stronger changes in well-being (43.2% in depression, 30.84% in remission). Such results partially overlap with other reports of a more serious impact of the outbreak of a pandemic on a population with pre-existing mental disorders. In a general population study from China at that time, 53.8% of respondents rated the psychological impact of the pandemic on well-being as moderate or severe [31]. In the case of the study from Germany, 57% of people diagnosed with depression experienced a deterioration in well-being (the strongest compared to the respondents with other mental disorders) [50]. In Spain, people with a history of depressive disorder experienced more severe changes in well-being than patients with BD and other psychoses, and the overall clinical population responded more strongly compared to the healthy control group [51]. On the other hand, the outbreak of the pandemic in Wuhan changed mental well-being to such an extent that 70% of people seeking urgent remote psychological help online were people without mental disorders in the past [52]. Some researchers explain the stronger impact of the pandemic on people with depression forced by even greater (than typical isolation in depression) social distance during the lockdown compared to the population without mental disorders.

Stress is a natural reaction when confronted with an extreme situation. Most often it motivates to action. In the case of the COVID-19 pandemic, stress had to mobilize for “stillness” – as a synonym for collective quarantine. The inability to cope with strong adversities (such as the pandemic and the restrictions associated with it) caused secondary emotions: pessimism, anxiety, sleep disturbances, decreased mood and energy level with a feeling of fatigue [53]. In our study, the group without depressive disorders in the past and patients in remission experienced less stress (20.55% vs. 25.96% – the sum of severe and most severe stress in life) than the group in depression (41.5%). The studied clinical population had subjectively higher levels of stress than the population without depressive disorders. These results are consistent with similar analyzes that showed higher levels of stress at the beginning of a pandemic in a population with mental disorders [31, 50, 53].

In the area of questions based on a standard psychiatric interview, a difference in mood between the three study groups was revealed. Mood volatility/lability was most felt in the control group and in patients in remission compared to the depressed group (41.94% vs. 39.55% vs. 35.85%). Depressed mood was reported by the least of people from the control group as compared to the group in remission and depression (11.97% vs. 21.60% vs. 51.32%). The presence of a subjectively depressed mood with a lower tendency to changeability (visible in the group of patients with depression) confirms the diagnosis of depression in people receiving remote outpatient treatment. Most publications from the pandemic period confirm that a consequence of stress was a lower mood in the general population, but more strongly in the group of people with depressive disorders (rather not severe and treated in a hospital, but in groups with mild and moderate disorders). In China, 28.8% of the general population experienced moderate to severe depressed mood [31]. In a study from Canada, in the population of people with depression during the first months of lockdown, there was an increase in depressive symptoms (including depressed mood in most of the respondents) from

19.3% to 48.7% [54]. The results obtained in the presented study are also similar to those obtained using standardized scales in the general population in Turkey, and in the clinical population of patients with depression in Germany (the mental state of patients with various psychiatric diagnoses was compared), in Spain (stronger depressive symptoms than in people with psychosis) and in the Czech Republic [33, 50, 53, 55].

The subjective energy level in the first weeks of the pandemic was also a factor differentiating the compared populations. In the control group, as many as 60.97% of people had a good level of energy, while in the group with depression this proportion was reversed (!) – as many as 61.13% of people in an episode of depression experienced a reduction in drive. The group of people in remission determined their energy level in the most balanced way (35.37% – good and stable, 31.53% – reduced, 31.88% – variable). Behaviorally, energy levels translate into daily activity. People in depression withdrew from activity, people in remission could maintain their daily activity at an average level, and people in the control group were not disturbed by a low or fluctuating mood in their daily activities. Similar results were obtained in other clinical and non-clinical populations [33, 50, 53].

Sleep problems are a component of psychosocial stress and a symptom of depressive disorders. The analysis carried out in the studied population confirmed the data from the literature from the first weeks of the pandemic. In a study from China, in the general population, sleep problems were reported by 12.5% of respondents [9]. The presented study showed that people from the control group had the least sleep problems in all four parameters (problems with falling asleep, waking up at night, pandemic nightmares, and too early awakening) – the results oscillated around 10%. Similar values were obtained in the group of people in remission in recurrent depressive disorder. On the other hand, subjective sleep assessment was the worst in the population of people during an episode of depression, and in this group the most frequent difficulties were related to problems with falling asleep (45.66%) and awakening at night (54.72%). And then nightmares with content related to the COVID-19 pandemic (21.51%) and waking up too early in the morning (46.04%). The obtained results are in part in line with the results of a large population study from Italy in the first peak of the pandemic. It describes disorders of all sleep phases which positively correlated with the level of depression and anxiety. It describes numerous psychological and biological causes of increased sleep problems. In the first place it is the psychosocial stress caused by a strong threat and the change of lifestyle caused by lockdown [56].

According to a popular opinion, appetite increased in the general population during quarantine. This fact, combined with the immobilization of people in their homes, the closure of sports venues and the increased level of anxiety that causes emotional (comfort, psychogenic) overeating in some of the population can lead to weight gain and, in the long term, other serious health consequences of overweight and obesity. In the presented population, the study groups differed in this area. Most often, during quarantine, people in depression were “eating stress,” and less often people in remission and control groups (12.83% vs. 13.07% vs. 10.73%). Appetite during the pandemic did not change most often in the control group (65.88%) compared to the group in remission (55.40%) and depression (35.85%). More and more studies from different

countries confirm the mechanism of eating more food in patients with depression in order to reduce stress [57–59]. In most studies, the mechanism of emotional eating is associated with higher levels of stress, anxiety, depression, and poorer social relationships during quarantine. The Polish study from the first wave of the pandemic also described this mechanism and its negative consequences [60]. A decrease in appetite may also be an effect of acute stress and a symptom of a depressive episode. In the study population, people with depression most often complained about loss of appetite (20.38%) compared to the group in remission (13.07%) and the control group (7.96%).

Cognitive functions may be impaired under the influence of psychosocial stress. It is usually a temporary phenomenon and may improve in the course of stress and habituation. In the first weeks of the COVID-19 pandemic in Poland, respondents from our study differed in terms of the answers to the questions about concentration and memory. They most often reported deterioration in attention and memory when they were depressed patients (52.83%), compared to patients in remission (33.10%) and groups with no history of mental disorders in the past (18.41%). No comparative literature was found on this subject from the initial period of the pandemic.

The study groups differed in terms of the occurrence of anxiety. Panic attacks in the first weeks of the pandemic occurred in 5.88% of respondents in the control group, 20.21% of respondents in remission and 46.42% in depression. Such a result in the population without a diagnosis of depressive disorders is similar to the results from China, where panic attacks occurred in 6.33% of the general population in the first weeks of the pandemic [32]. On the other hand, high levels in the clinical group confirm the results of studies from other research centers carried out with the use of standardized scales to measure the level of anxiety [50, 51, 54, 56]. Such a high level of anxiety is a symptom of depressive disorders and an overlapping burden, mainly in the form of: being locked in the house, fear of breathing the same air as other people, fear of getting sick. All these objective burdens raise the level of anxiety with cognitive (catastrophic thoughts), emotional-physiological (somatic symptoms of anxiety) and behavioral symptoms (increased avoidance of anxiety situations in a pandemic).

Dysphoria may accompany frustration after finding oneself in a difficult psychological situation, it may be a symptom of depression and it may significantly disturb interpersonal relations in everyday functioning. During the pandemic, people were forced to stay at their place of residence for many hours, which could be an additional factor triggering dysphoric reactions [10, 33]. Quarantine stress creates irritation, explosiveness, and anger that worsen relationships. Stronger feeling of stress results from the nature of depressive disorders [50, 53]. In our study, in the group with an ongoing depressive episode, 46.79% of patients reported outbursts of anger. In the group in remission it was 36.76%, and in the control group 27.34%. These results are not surprising in the clinical population, as the feeling of tension and impulsive reactions to banal situations are common among patients. On the other hand, the high result in the group without depressive disorders is surprising. In almost one third of this population, the consequence of the pandemic and its limitations was dysphoria in everyday life. Unfortunately, the obtained result in the clinical and control population may translate into various forms of domestic violence.

Anhedonia, defined as “not being able to enjoy things that were fun before the pandemic” occurred in 25.26% of people in remission of recurrent depressive disorder, in 52.45% of people with depression, and in 29.13% in the non-clinical group. Research on anhedonia in depression shows that it is an integral part of depressive episodes. However, it can be assumed that entire societies had to give up the activities most often bringing joy: meetings with other people, sports, collective cultural events. And adults locked in apartments for 24 hours a day with children (during remote learning) had to give up sexual intimacy many times. And preparing meals at home, as the only way to entertain people in collective quarantine, was unfortunately associated with the risk of obesity and overweight, and hence the probable feeling of guilt. For this reason, it could arouse ambivalence. It is confirmed by the results of the Spanish study. It asked about “the ability to enjoy your free time in quarantine.” In the population of people with depression, 80% declared it, and in the control group as much as 94% of respondents [51].

Pessimistic thoughts of varying intensity in the first peak of the COVID-19 pandemic in the control group were reported by 81.11% of respondents, in remission – 82.58%, in depression – 96.6%. In this area, extremely high positive responses were obtained, and in other studies the values are lower, but trends in differences between the control and clinical groups are present [50, 51, 55].

The respondents were asked about the assessment of their subjective financial and/or professional situation during the pandemic. People in depression assessed their situation most negatively – 79.25%, then respondents in remission – 67.77%, and in the control group – 49.76%. Oftentimes, a depressive way of thinking is characterized by a lower self-esteem and a subjectively worse assessment of one’s life situation than it actually is. Additionally, most of the available publications on the COVID-19 pandemic with clinical populations emphasize worse baseline adaptive abilities and an objectively worse economic situation of ill people [50, 51, 54, 55]. Therefore, the obtained results are not surprising. However, the result in the control group should be emphasized here: half of people were pessimistic about their financial and/or professional situation during the pandemic. This may indicate the objectively difficult life situation of the respondents at the beginning of the pandemic or its prediction.

In the control group, 33.15% of respondents predicted a change in their life after the pandemic, and in the group with depression it was as much as 47.17%. At the same time, a similar percentage of people from both groups did not know what impact the pandemic would have on their life (41.66% vs. 40.00%). 36.76% of people in remission predicted that their lives would change after the pandemic, and 44.43% admitted that they did not know if their lives would change. In other studies it was found that the intensification of anxiety (worrying about one’s future) is significantly more common in people with depression [50, 55]. The authors explain this for various reasons, but the main ones are the initial worse social situation, smaller social network and, in the first period of the COVID-19 pandemic, a real serious deterioration in direct contact with institutions where the person previously received help (material, social) or treatment (worse access to and handling of new technologies made remote contact difficult) [61].

A change in the value system related to experiences in a pandemic was predicted by only 24.64% in the control group. In the clinical group of patients in remission, such a change was declared by 42.16% of the respondents. During an episode of depression, 48.68% of people predicted changes in their value system. The obtained results are most likely related to the severity of trauma in the studied population. It is a sudden trauma in adult life that changes a person's value system (e.g., finding oneself in a sudden state of imminent threat to one's life: accident, assault, information about a serious condition during a terminal illness, etc.). The fact that almost every second depressed person reported such a strong influence on the value system confirms data from other publications [50, 51].

No statistically significant differences between the studied groups were found in the areas of retrospective fears of the COVID-19 pandemic approaching Poland, the gathering of food supplies and personal consent to decisions about the first collective quarantine may indicate that all respondents reacted similarly to official information and undertook similar protective measures. Thus, it can be concluded that the cognitive and behavioral response in these three areas was independent of the baseline mental status of the clinical population and the control group.

The use of the questionnaire prepared by the authors (it was supposed to fulfill a universal function in the study) with the simultaneous lack of the use of tools with proven psychometric values can be considered a limitation of the work.

Conclusions

Patients in episode and in remission of recurrent depressive disorder more severely experienced the limitations of collective quarantine in the first wave of the COVID-19 pandemic in Poland. This is evidenced by stronger subjective reactions in most of the examined parameters assessing the mental state. Therefore, in the clinical population, it is necessary to continue the comprehensive treatment of mental disorders in subsequent waves of the pandemic and after the pandemic. The results in the group of people without mental disorders (including depressive disorders in the past) may constitute a premise for intensive preventive measures aimed at the general population. Their goal is to prevent acute and chronic mental disorders induced by experiences and overloads during the COVID-19 pandemic. This will be possible thanks to detailed and systematic analyzes of the mental health impact of successive waves of the pandemic.

References

1. Holshue ML, DeBolt C, Lindquist S, Lofy KH, Wiesman J, Bruce H et al.; Washington State 2019-nCoV Case Investigation Team. *First case of 2019 novel coronavirus in the United States*. N. Engl. J. Med. 2020; 382(10): 929–936.
2. WHO, 2020c. *Rolling Updates on Coronavirus Disease (COVID-19)*. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen> (retrieved: 31.03.2020).

3. Hossain MM, Sultana A, Purohit N. *Mental health outcomes of quarantine and isolation for infection prevention: A systematic umbrella review of the global evidence*. *Epidemiol. Health* 2020; 42: e2020038.
4. Brooke J, Jackson D. *Older people and COVID-19: Isolation, risk and ageism*. *J. Clin. Nurs.* 2020; 29(13–14): 2044–2046.
5. Wilder-Smith RE, Freedman D. *Isolation, quarantine, social distancing and community containment: Pivotal role for old-style public health measures in the novel coronavirus (2019-nCoV) outbreak*. *J. Travel Med.* 2020; 27: taaa020.
6. World Health Organization. *Considerations for quarantine of individuals in the context of containment for coronavirus disease (COVID-19): Interim guidance, 19 March 2020 (WHO/2019-nCoV/IHR_Quarantine/2020.2)*. Geneva: World Health Organization; 2020.
7. World Health Organization. *Promoting mental health: Concepts, emerging evidence, practice (Summary Report)*. Geneva: World Health Organization; 2004.
8. Galderisi S, Heinz A, Kastrup M, Beezhold J, Sartorius N. *Toward a new definition of mental health*. *World Psychiatry* 2015; 14(2): 231–233.
9. Roy D, Tripathy S, Kar SK, Sharma N, Verma SK, Kaushal V. *Study of knowledge, attitude, anxiety & perceived mental healthcare need in Indian population during COVID-19 pandemic*. *Asian J. Psychiatr.* 2020; 51: 102083.
10. Filgueiras A, Stults-Kolehmainen M. *The relationship between behavioural and psychosocial factors among Brazilians in quarantine due to COVID-19*. *SSRN Electronic Journal*, April 2020. <https://ssrn.com/abstract=3566245> (retrieved: 1.06.2023).
11. Rubin GJ, Wessely S. *The psychological effects of quarantining a city*. *BMJ* 2020; 368: m313.
12. Usher K, Bhullar N, Jackson D. *Life in the pandemic: Social isolation and mental health*. *J. Clin. Nurs.* 2020; 29(15–16): 2756–2757.
13. Hawryluck L, Gold WL, Robinson S, Pogorski S, Galea S, Styra R. *SARS control and psychological effects of quarantine, Toronto, Canada*. *Emerg. Infect. Dis.* 2004; 10(7): 1206–1212.
14. Perrin PC, McCabe OL, Everly GS Jr, Links JM. *Preparing for an influenza pandemic: Mental health considerations*. *Prehosp. Disaster Med.* 2009; 24(3): 223–230.
15. Valtorta N, Hanratty B. *Loneliness, isolation and the health of older adults: Do we need a new research agenda?* *J. R. Soc. Med.* 2012; 105(12): 518–522.
16. Tanskanen J, Anttila T. *A Prospective study of social isolation, loneliness, and mortality in Finland*. *Am. J. Public Health* 2016; 106(11): 2042–2048.
17. Webster RK, Brooks SK, Smith LE, Woodland L, Wessely S, Rubin GJ. *How to improve adherence with quarantine: Rapid review of the evidence*. *Public Health* 2020; 182: 163–169.
18. Xiao C. *A novel approach of consultation on 2019 novel coronavirus (COVID-19)-related psychological and mental problems: Structured letter therapy*. *Psychiatry Investig.* 2020; 17(2): 175–176.
19. Brooks SK, Webster RK, Smith LE, Woodland L, Wessely S, Greenberg N et al. *The psychological impact of quarantine and how to reduce it: Rapid review of the evidence*. *Lancet* 2020; 395(10227): 912–920.
20. Qiu J, Shen B, Zhao M, Wang Z, Xie B, Xu Y. *A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: Implications and policy recommendations*. *Gen. Psychiatr.* 2020; 33(2): e100213.
21. Pierce M, McManus S, Jessop C, John A, Hotopf M, Ford T et al. *Says who? The significance of sampling in mental health surveys during COVID-19*. *Lancet Psychiatry* 2020; 7(7): 567–568.

22. Bai Y, Lin CC, Lin CY, Chen JY, Chue CM, Chou P. *Survey of stress reactions among health care workers involved with the SARS outbreak*. Psychiatr. Serv. 2004; 55(9): 1055–1057.
23. Cava MA, Fay KE, Beanlands HJ, McCay EA, Wignall R. *The experience of quarantine for individuals affected by SARS in Toronto*. Public Health Nurs. 2005; 22(5): 398–406.
24. Desclaux A, Badji D, Ndione AG, Sow K. *Accepted monitoring or endured quarantine? Ebola contacts' perceptions in Senegal*. Soc. Sci. Med. 2017; 178: 38–45.
25. Jeong H, Yim HW, Song YJ, Ki M, Min JA, Cho J et al. *Mental health status of people isolated due to Middle East respiratory syndrome*. Epidemiol. Health 2016; 38: e2016048.
26. Reynolds D, Garay J, Deamond SL, Moran MK, Gold W, Styra R. *Understanding, compliance and psychological impact of the SARS quarantine experience*. Epidemiol. Infect. 2008; 136(7): 997–1007.
27. Taylor MR, Agho KE, Stevens GJ, Raphael B. *Factors influencing psychological distress during a disease epidemic: Data from Australia's first outbreak of equine influenza*. BMC Public Health 2008; 8: 347.
28. Wu P, Fang Y, Guan Z, Fan B, Kong J, Yao Z et al. *The psychological impact of the SARS epidemic on hospital employees in China: Exposure, risk perception, and altruistic acceptance of risk*. Can. J. Psychiatry 2009; 54(5): 302–311.
29. Sher L. *COVID-19, anxiety, sleep disturbances and suicide*. Sleep Med. 2020; 70: 124.
30. Szczesniak D, Ciulkowicz M, Maciaszek J, Misiak B, Luc D, Wiczorek T et al. *Psychopathological responses and face mask restrictions during the COVID-19 outbreak: Results from a nationwide survey*. Brain Behav. Immun. 2020; 87: 161–162.
31. Wang C, Pan R, Wan X, Tan Y, Xu L, Ho CH et al. *Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China*. Int. J. Environ. Res. Public Health 2020; 17(5): 1729.
32. Wang Y, Di Yu, Ye J, Wei W. *Study on the public psychological states and its related factors during the outbreak of coronavirus disease 2019 (COVID-19) in some regions of China*. Psychol. Health Med. 2021; 26(1): 13–22.
33. Pierce M, Hope H, Ford T, Hatch S, Hotopf M, John A et al. *Mental health before and during the COVID-19 pandemic: A longitudinal probability sample survey of the UK population*. The Lancet Psychiatry 2020; 7(10): 883–892.
34. Jung SJ, Jun JY. *Mental health and psychological intervention amid COVID-19 outbreak: Perspectives from South Korea*. Yonsei Med. J. 2020; 61(4): 271–272.
35. Dong Lu, Bouey J. *Public mental health crisis during COVID-19 pandemic, China*. Emerg. Infect. Dis. 2020; 26(7): 1616–1618.
36. World Health Organization. *Mental health and psychosocial considerations during the COVID-19 outbreak*. Geneva: World Health Organization; 2020.
37. The Lancet Child Adolescent Health. *Pandemic school closures: Risks and opportunities*. Lancet Child Adolesc Health 2020; 4(5): 341.
38. Van Lancker W, Parolin Z. *COVID-19, school closures, and child poverty: A social crisis in the making*. Lancet Public Health 2020; 5(5): e243–e244.
39. Sergeant A, Reekum van EA, Sanger N, Dufort A, Rosic T, Sanger S et al. *Impact of COVID-19 and other pandemics and epidemics on people with pre-existing mental disorders: A systematic review protocol and suggestions for clinical care*. BMJ Open 2020; 10(9): e040229.
40. Kumari P, Rothan HA, Natekar JP, Stone S, Pathak H, Strate PG et al. *Neuroinvasion and encephalitis following intranasal inoculation of SARS-CoV-2 in K18-hACE2 mice*. Viruses 2021; 13(1): 132.

41. Song E, Zhang C, Israelow B, Lu-Culligan A, Prado AV, Skriabine S et al. *Neuroinvasion of SARS-CoV-2 in human and mouse brain*. J. Exp. Med. 2021; 218(3): e20202135.
42. Stroebe M, Schut H. *Bereavement in times of COVID-19: A review and theoretical framework*. Omega (Westport). 2021; 82(3): 500–522.
43. Albuquerque S, Teixeira AM, Rocha JC. *COVID-19 and disenfranchised grief*. Front. Psychiatry 2021; 12: 638874.
44. Silczuk A. *Threatening increase in alcohol consumption in physicians quarantined due to coronavirus outbreak in Poland: The ALCOVID survey*. J. Public Health (Oxf.) 2020; 42(3): 461–465.
45. Maciaszek J, Ciulkowicz M, Misiak B, Szczesniak D, Luc D, Wieczorek T et al. *Mental health of medical and non-medical professionals during the peak of the COVID-19 pandemic: A cross-sectional nationwide study*. J. Clin. Med. 2020; 9(8): 2527.
46. Gunnell D, Appleby L, Arensman E, Hawton K, John A, Kapur N et al., COVID-19 Suicide Prevention Research Collaboration. *Suicide risk and prevention during the COVID-19 pandemic*. Lancet Psychiatry 2020; 7(6): 468–471.
47. International Monetary Fund. *IMF's Georgieva: COVID-19 economic outlook negative, but rebound in 2021*. <https://www.imf.org/external/mmedia/view.aspx> (retrieved: 1.06.2023).
48. Szczesniak D, Gładka A, Misiak B, Cyran A, Rymaszewska J. *The SARS-CoV-2 and mental health: From biological mechanisms to social consequences*. Prog. Neuropsychopharmacol. Biol. Psychiatry 2021; 104: 110046.
49. Misiak B, Szczesniak D, Koczanowicz L, Rymaszewska J. *The COVID-19 outbreak and Google searches: Is it really the time to worry about global mental health?* Brain Behav. Immun. 2020; 87: 126–127.
50. Quittkat HL, Düsing R, Holtmann FJ, Buhlmann U, Svaldi J, Vocks S. *Perceived impact of Covid-19 across different mental disorders: A study on disorder-specific symptoms, psychosocial stress and behavior*. Front. Psychol. 2020; 11: 586246. doi: 10.3389/fpsyg.2020.586246
51. González-Blanco L, Dal Santo F, García-Álvarez L, Fuente-Tomás de la L, Moya Lacasa C, Paniagua G et al. *COVID-19 lockdown in people with severe mental disorders in Spain: Do they have a specific psychological reaction compared with other mental disorders and healthy controls?* Schizophr. Res. 2020; 223: 192–198.
52. Wang S, Wen X, Dong Y, Liu B, Cui M. *Psychological influence of coronavirus disease 2019 (COVID-19) pandemic on the general public, medical workers, and patients with mental disorders and its countermeasures*. Psychosomatics 2020; 61(6): 616–624.
53. Öztürk Çopur E, Karasu F. *The impact of the COVID-19 pandemic on the quality of life and depression, anxiety, and stress levels of individuals above the age of eighteen*. Perspect. Psychiatr. Care 2021; 57(4): 1645–1655.
54. Robillard R, Daros AR, Phillips JL, Porteous M, Saad M, Pennestri MH et al. *Emerging new psychiatric symptoms and the worsening of pre-existing mental disorders during the COVID-19 pandemic: A Canadian multisite study*. Can. J. Psychiatry 2021; 66(9): 815–826.
55. Winkler P, Formanek T, Mlada K, Kagstrom A, Mohrova Z, Mohr P et al. *Increase in prevalence of current mental disorders in the context of COVID-19: Analysis of repeated nationwide cross-sectional surveys*. Epidemiol. Psychiatr. Sci. 2020; 29: e173.
56. Casagrande M, Favieri F, Tambelli R, Forte G. *The enemy who sealed the world: Effects quarantine due to the COVID-19 on sleep quality, anxiety, and psychological distress in the Italian population*. Sleep Med. 2020; 75: 12–20.
57. Cecchetto C, Aiello M, Gentili C, Ionta S, Osimo SA. *Increased emotional eating during COVID-19 associated with lockdown, psychological and social distress*. Appetite 2021; 160: 105122.

58. McAtamney K, Mantzios M, Egan H, Wallis DJ. *Emotional eating during COVID-19 in the United Kingdom: Exploring the roles of alexithymia and emotion dysregulation*. *Appetite* 2021; 161: 105120.
59. Kriaucioniene V, Bagdonaviciene L, Rodríguez-Pérez C, Petkeviciene J. *Associations between changes in health behaviours and body weight during the COVID-19 quarantine in Lithuania: The Lithuanian COVIDiet Study*. *Nutrients* 2020; 12(10): 3119.
60. Błaszczuk-Bębenek E, Jagielski P, Bolesławska I, Jagielska A, Nitsch-Osuch A, Kawalec P. *Nutrition behaviors in Polish adults before and during COVID-19 lockdown*. *Nutrients* 2020; 12(10): 3084.
61. Newby JM, O'Moore K, Tang S, Christensen H, Faasse K. *Acute mental health responses during the COVID-19 pandemic in Australia*. *PLoS One* 2020; 15(7): e0236562.

Address: Marlena Sokół-Szawłowska
Institute of Psychiatry and Neurology
Outpatient Clinic
e-mail: marlenasokolsz@gmail.com