

## SELECTED ASPECTS OF MENTAL HEALTH DURING THE COVID-19 PANDEMIC IN POLAND

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**Summary.** This study aims to identify the most common mental health problems due to the COVID-19 pandemic during the final period of the economic freeze in Poland. The survey contained a demographic component and 21 questions, including 10 questions related to mental health. A *chi*-square independence test and logistical regression were applied to perform analyses. The results indicate that a significant portion of respondents felt overwhelmed by negative information about the spread of the coronavirus. Women were more likely to experience mental health problems than men, as well as in people under 30. Respondents with nothing higher than secondary education were more pessimistic about the future. The unemployed were more likely to feel powerlessness than other respondents. Students were more likely to experience exhaustion, felt depressed by the current situation, and were pessimistic about the future. The research results presented in the report indicate that the COVID-19 pandemic is a source of mental health problems.

**Key words:** mental health, COVID-19, Poland, survey

### Introduction

In March 2020, the World Health Organization (WHO) announced an international pandemic, due to the high incidence of SARS-CoV-2 coronavirus (Ghebreyesus, 2020). In addition to the widespread threat to life and health, the pandemic caused significant socio-economic changes.

Increasing numbers of illnesses and deaths necessitated the introduction of a sanitary regime and restrictions in interpersonal contacts. Calls were made to practice social distancing and to minimise meetings with others. The introduction of safety rules has forced many people to change their habits. Recommendations

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for hand washing and disinfection may have exacerbated anxiety, resulting in excessive attention to cleanliness.

The situation of working people changed. Some service establishments suspended their activities, while other enterprises operated only to a limited extent. Many employers reduced wages to maintain liquidity without resorting to redundancies. Regardless, many people lost their jobs. Research shows that a loss of salary continuity or unemployment due to the economy freeze was associated with a greater severity of symptoms in mental disorders. In contrast, there was no deterioration of mental health in people who had a fixed remuneration, worked remotely or had no changes in their professional situation (Gambin et al., 2020; Ueda et al., 2020).

Research conducted during the global economic freeze has confirmed the negative consequences of the COVID-19 pandemic on mental health (Bao et al., 2020; Xiang et al., 2020). An unstable personal, professional and economic situation can cause frustration and emotional exhaustion. Moreover, prolonged psychological distress increases the risk for symptoms of anxiety and depression (Lee, Jobe, Mathis, 2020; Petzold et al., 2020; Solomou, Constantinidou, 2020). Consequently, mental disorders have arisen in healthy people and have increased in psychiatrically treated individuals (Asmundson et al., 2020).

As a result of the COVID-19 pandemic, access to health care services, including psychiatric and psychotherapeutic assistance, was significantly limited. Due to the infection and the related quarantine of healthcare workers, the number of active medical and psychological personnel was reduced. The implemented remote counseling made it difficult to properly diagnose patients. The lack of direct contact made it difficult to establish a bond with the patient and conduct psychotherapy.

The pandemic has affected virtually every person, regardless of their age, gender, place of residence or socioeconomic status. Variable predictions about the development of the pandemic may have caused pessimism and feelings of helplessness.

Healthcare workers, particularly those exposed to coronavirus infection, have risked their health and life by treating COVID-19 patients. The conditions in which healthcare professionals must work have caused symptoms of anxiety and depression (Xiao et al., 2020; Tiete et al., 2021).

The pandemic has caused individuals to be more anxious about people in the immediate vicinity than about their own health (Maaravi, Heller, 2020). Many people have lost their loved ones to the COVID-19 pandemic. The elderly and chronically ill are particularly at risk. Among people aged over 55 years, an intensification of anxiety and depression symptoms is associated with a sense of loneliness, fatigue with the situation and a need for lifestyle changes (Gambin et al., 2020).

Quarantined persons are in a particularly difficult situation. They may experience feelings of loss, lack of support and loneliness. Limiting contact with loved ones may cause strong longing and anxiety about their health. Moreover, quarantine has been shown to adversely affect sleep quality, anxiety and psychological distress (Casagrande et al., 2020).

The pandemic has negatively affected those who have been diagnosed with COVID-19. For a substantial duration, these individuals experience an increased risk to health and life, which may negatively affect their mental health. Studies in this group have revealed a relationship between fear of COVID-19 effects and depression, feelings of lack of social support and suicidal tendencies (Lee, Jobe, Mathis, 2020).

The gradual de-freezing of the economy and the easing of restrictions introduced on 20 April 2020 have positively influenced the situation in Poland. Enterprises started operating in a manner similar to that of the pre-pandemic period. However, the risk of SARS-CoV-2 infection remained, posing a threat to the life and health of many people. A protracted pandemic can adversely affect mental health in a society, fostering a deepening sense of helplessness and increased severity of anxiety and depression.

This study aimed to identify the most common mental health problems in the Polish population 1.5 months after the WHO declared a SARS-CoV-2 pandemic. Poland was in a difficult situation, due to the economic freeze and the introduction of many restrictions. It is fundamental to the research undertaken here to establish a relationship between mental health problems and the following variables: gender, age, education, employment situation and place of residence.

Most studies on mental health were conducted early in the pandemic. Previous reports provide a preliminary overview of the mental disorders symptoms and determinants related to the coronavirus pandemic. Furthermore, the state of mental health is subjective, and disorders symptoms of surveyed individuals or groups may extend beyond those identified in previous research.

These results will enable adequate action in the event of worrying symptoms of emotional disorders or adaptive problems. Information on the mental health problems experienced for each demographic variable is needed to identify target groups in preparing educational and preventive programmes (Pakpour, Griffiths, 2020).

The research results presented herein relate to the selected area of the research project. Analyses of the remaining areas, i.e. anxiety and interpersonal relationships, will be presented in subsequent reports.

## Methods

A survey was conducted in a nationwide sample of 442 people. The survey participants included 332 women (75.1%) and 110 men (24.9%), with 231 people under the age of 30 years (52.3%) and 211 people aged over 30 years (47.7%). Among the respondents, 48.9% had at most a secondary education, with higher education reported for 51.1%. The proportion of participants residing in a village was 54.5%, while 45.5% resided in a town. Among the respondents, 46.2% were working individuals, 45.5% were students, and 8.4% were not workers or students.

The study was conducted between April 14 and 28, 2020. Most people (92%) were examined a week before the introduction of the first stage of de-freezing the

Polish economy. The remaining 8% were examined up to a week after the lifting of restrictions related to the COVID-19 pandemic in Poland.

Due to the restrictions on social contact introduced in March 2020, it was not possible to randomly select a sample. The survey was conducted, therefore, primarily via social media. Instructions with a link to the survey were sent to all respondents, asking them to send an invitation to people who wished to participate in an anonymous survey. Participants were provided with information about the objectives and procedure of the study.

The survey used in this study was constructed in the Google Forms® application, consisted of five demographic questions relating to gender, age, education, employment situation and place of residence. The survey also contained 21 closed questions covering three key areas: 10 related to mental health, 8 questions related to sources of anxiety experienced, 3 related to interpersonal relationships. The last two areas will be analysed in a separate report.

## Results

### Percentage distribution of the results

To determine the mental health during the COVID-19 pandemic, I assessed the percentage of respondents that provided certain answers to individual questions. The data analysis presented in Table 1 shows that the respondents felt overwhelmed by negative information about the spread of SARS-CoV-2 virus (55.2%) and experienced a feeling of powerlessness (43.0%). A smaller group of respondents indicated the negative impact of the epidemic situation on mental health (38%), severe stress (35%), mental exhaustion (34%), pessimistic perception of the future (32.1%) and depression (30.3%). The fewest people agreed that as result of the current epidemic, they consume more alcohol and other psychoactive substances (9.0%).

### Chi-square test of independence

A *chi-square* independence test was applied to assess the relationship between mental health and the various variables of sex, age, education, place of residence and employment situation. The findings indicate an association between mental health and gender. Women had more problems with their mental health than men (more frequent answers "Yes").

Women more often than men agreed with the statement that the current epidemic situation negatively affects their mental health  $\chi^2 (2, N = 442) = 13.894; p = .001$ , experienced a feeling of helplessness  $\chi^2 (2, N = 442) = 13.612; p = .0011$ , mental exhaustion  $\chi^2 (2, N = 442) = 14.916; p = .0006$  and felt depressed  $\chi^2 (2, N = 442) = 12.803; p = .0017$ . Moreover, they had problems with concentration  $\chi^2 (2, N = 442) = 6.684; p = .0354$ , the pandemic situation was stressful for them  $\chi^2 (2, N = 442) = 29.587;$

$p < .0001$ , they were pessimistic about the future  $\chi^2 (2, N = 442) = 13.261$ ;  $p = .0013$  and felt overwhelmed by negative information related to the spread of the coronavirus  $\chi^2 (2, N = 442) = 25.574$ ;  $p < .0001$  (see Table 2).

Table 1. Mental health among respondents – results for individual items

Questions	Yes		Hard to say		No	
	N	%	N	%	N	%
I feel overwhelmed by negative news regarding the spread of the SARS-CoV-2 coronavirus.	244	55.2%	92	20.8%	106	24.0%
Due to the coronavirus pandemic, I am experiencing a feeling of powerlessness.	190	43.0%	73	16.5%	179	40.5%
The current epidemic situation has a negative effect on my mental health.	168	38.0%	99	22.4%	175	39.6%
The current epidemic situation is very stressful for me.	156	35.3%	110	24.9%	176	39.8%
I am experiencing mental exhaustion as a result of a prolonged pandemic.	153	34.6%	81	18.3%	208	47.1%
I am increasingly pessimistic about the future.	142	32.1%	108	24.4%	192	43.4%
The current situation makes me feel very depressed.	134	30.3%	88	19.9%	220	49.8%
I have trouble focusing on things other than the pandemic.	65	14.7%	44	10.0%	333	75.3%
Due to the pandemic, I have trouble falling asleep.	51	11.5%	34	7.7%	357	80.8%
Due to the current epidemic situation, I consume more alcohol or other psychoactive substances.	40	9.0%	15	3.4%	387	87.6%

N: number of people.

The *chi*-square test of independence showed a relationship between mental health and age. People under 30, more often than people over 30, experienced mental exhaustion  $\chi^2 (2, N = 442) = 11.775$ ;  $p = .0028$ , they used alcohol / psychoactive substances more often  $\chi^2 (2, N = 442) = 6.776$ ;  $p = .0338$  and were pessimistic about the future  $\chi^2 (2, N = 442) = 9.354$ ;  $p = .0093$  (see Table 2).

The *chi*-square test of independence showed only one relationship between pandemic-related mental health and education level. People with at most secondary education, more often than people with higher education, were pessimistic about the future  $\chi^2 (2, N = 442) = 6.632$ ;  $p = .0363$  (see Table 3).

Table 2. Mental health versus gender and age

Questions	Answers	Sex			
		Woman		Man	
		N	%	N	%
The current epidemic situation has a negative effect on my mental health.	Yes	135	40.7%	33	30.0%
	Hard to say	82	24.7%	17	15.5%
	No	115	34.6%	60	54.5%
Due to the coronavirus pandemic, I am experiencing a feeling of powerlessness.	Yes	155	46.7%	35	31.8%
	Hard to say	59	17.8%	14	12.7%
	No	118	35.5%	61	55.5%
I am experiencing mental exhaustion as a result of a prolonged pandemic.	Yes	124	37.3%	29	26.4%
	Hard to say	69	20.8%	12	10.9%
	No	139	41.9%	69	62.7%
Due to the pandemic, I have trouble falling asleep.	Yes	43	13.0%	8	7.3%
	Hard to say	28	8.4%	6	5.5%
	No	261	78.6%	96	87.3%
The current situation makes me feel very depressed.	Yes	110	33.1%	24	21.8%
	Hard to say	73	22.0%	15	13.6%
	No	149	44.9%	71	64.5%
Due to the current epidemic situation, I consume more alcohol or other psychoactive substances.	Yes	29	8.7%	11	10.0%
	Hard to say	10	3.0%	5	4.5%
	No	293	88.3%	94	85.5%
I have trouble focusing on things other than the pandemic.	Yes	55	16.6%	10	9.1%
	Hard to say	37	11.1%	7	6.4%
	No	240	72.3%	93	84.5%
The current epidemic situation is very stressful for me.	Yes	131	39.5%	25	22.7%
	Hard to say	93	28.0%	17	15.5%
	No	108	32.5%	68	61.8%
I am increasingly pessimistic about the future.	Yes	114	34.3%	28	25.5%
	Hard to say	90	27.1%	18	16.4%
	No	128	38.6%	64	58.2%
I feel overwhelmed by negative news regarding the spread of the SARS-CoV-2 coronavirus.	Yes	198	59.6%	46	41.8%
	Hard to say	74	22.3%	18	16.4%
	No	60	18.1%	46	41.8%

$\chi^2$ : value of the Pearson independence test,  $p$ : level of statistical significance,  $N$ : number of people.

<i>p</i>	Age				<i>p</i>
	Under 30 years		Over 30 years old		
	<i>N</i>	%	<i>N</i>	%	
$\chi^2 = 13.894;$ $p = .0010$	89	38.5%	79	37.4%	$\chi^2 = .061;$ $p = .9698$
	51	22.1%	48	22.7%	
	91	39.4%	84	39.8%	
$\chi^2 = 13.612;$ $p = .0011$	99	42.9%	91	43.1%	$\chi^2 = 1.097;$ $p = .5777$
	42	18.2%	31	14.7%	
	90	39.0%	89	42.2%	
$\chi^2 = 14.916;$ $p = .0006$	97	42.0%	56	26.5%	$\chi^2 = 11.775;$ $p = .0028$
	39	16.9%	42	19.9%	
	95	41.1%	113	53.6%	
$\chi^2 = 4.030;$ $p = .1333$	25	10.8%	26	12.3%	$\chi^2 = 1.339;$ $p = .5121$
	15	6.5%	19	9.0%	
	191	82.7%	166	78.7%	
$\chi^2 = 12.803;$ $p = .0017$	81	35.1%	53	25.1%	$\chi^2 = 5.685;$ $p = .0583$
	40	17.3%	48	22.7%	
	110	47.6%	110	52.1%	
$\chi^2 = .792;$ $p = .6728$	23	10.0%	17	8.1%	$\chi^2 = 6.776;$ $p = .0338$
	3	1.3%	12	5.7%	
	205	88.7%	182	86.3%	
$\chi^2 = 6.684;$ $p = .0354$	37	16.0%	28	13.3%	$\chi^2 = .706;$ $p = .7026$
	22	9.5%	22	10.4%	
	172	74.5%	161	76.3%	
$\chi^2 = 29.587;$ $p < .0001$	84	36.4%	72	34.1%	$\chi^2 = .26;$ $p = .8783$
	56	24.2%	54	25.6%	
	91	39.4%	85	40.3%	
$\chi^2 = 13.261;$ $p = .0013$	89	38.5%	53	25.1%	$\chi^2 = 9.354;$ $p = .0093$
	49	21.2%	59	28.0%	
	93	40.3%	99	46.9%	
$\chi^2 = 25.574;$ $p < .0001$	131	56.7%	113	53.6%	$\chi^2 = .467;$ $p = .7916$
	47	20.3%	45	21.3%	
	53	22.9%	53	25.1%	

Table 3. Mental health versus education and employment situation

Questions	Answers	Education			
		Secondary or less		Higher	
		N	%	N	%
The current epidemic situation has a negative effect on my mental health.	Yes	77	35.6%	91	40.3%
	Hard to say	44	20.4%	55	24.3%
	No	95	44.0%	80	35.4%
Due to the coronavirus pandemic, I am experiencing a feeling of powerlessness.	Yes	93	43.1%	97	42.9%
	Hard to say	33	15.3%	40	17.7%
	No	90	41.7%	89	39.4%
I am experiencing mental exhaustion as a result of a prolonged pandemic.	Yes	85	39.4%	68	30.1%
	Hard to say	33	15.3%	48	21.2%
	No	98	45.4%	110	48.7%
Due to the pandemic, I have trouble falling asleep.	Yes	26	12.0%	25	11.1%
	Hard to say	17	7.9%	17	7.5%
	No	173	80.1%	184	81.4%
The current situation makes me feel very depressed.	Yes	77	35.6%	57	25.2%
	Hard to say	39	18.1%	49	21.7%
	No	100	46.3%	120	53.1%
Due to the current epidemic situation, I consume more alcohol or other psychoactive substances.	Yes	15	6.9%	25	11.1%
	Hard to say	7	3.2%	8	3.5%
	No	194	89.8%	193	85.4%
I have trouble focusing on things other than the pandemic.	Yes	34	15.7%	31	13.7%
	Hard to say	21	9.7%	23	10.2%
	No	161	74.5%	172	76.1%
The current epidemic situation is very stressful for me.	Yes	79	36.6%	77	34.1%
	Hard to say	44	20.4%	66	29.2%
	No	93	43.1%	83	36.7%
I am increasingly pessimistic about the future.	Yes	82	38.0%	60	26.5%
	Hard to say	49	22.7%	59	26.1%
	No	85	39.4%	107	47.3%
I feel overwhelmed by negative news about the spread of the coronavirus.	Yes	127	58.8%	117	51.8%
	Hard to say	38	17.6%	54	23.9%
	No	51	23.6%	55	24.3%

$\chi^2$ : value of the Pearson independence test,  $p$ : level of statistical significance,  $N$ : number of people.



<i>p</i>	Employment situation						<i>p</i>
	Student		Working		Not working / other		
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	
$\chi^2 = 3.45;$ $p = .1782$	85	42.3%	70	34.3%	13	35.1%	$\chi^2 = 3.589;$ $p = .4645$
	39	19.4%	50	24.5%	10	27.0%	
	77	38.3%	84	41.2%	14	37.8%	
$\chi^2 = .535;$ $p = .7653$	94	46.8%	74	36.3%	22	59.5%	$\chi^2 = 10.799;$ $p = .0289$
	30	14.9%	36	17.6%	7	18.9%	
	77	38.3%	94	46.1%	8	21.6%	
$\chi^2 = 5.135;$ $p = .0767$	86	42.8%	55	27.0%	12	32.4%	$\chi^2 = 16.98;$ $p = .0020$
	31	15.4%	38	18.6%	12	32.4%	
	84	41.8%	111	54.4%	13	35.1%	
$\chi^2 = .132;$ $p = .936$	25	12.4%	20	9.8%	6	16.2%	$\chi^2 = 3.245;$ $p = .5177$
	18	9.0%	15	7.4%	1	2.7%	
	158	78.6%	169	82.8%	30	81.1%	
$\chi^2 = 5.716;$ $p = .0574$	78	38.8%	47	23.0%	9	24.3%	$\chi^2 = 12.836;$ $p = .0121$
	35	17.4%	46	22.5%	7	18.9%	
	88	43.8%	111	54.4%	21	56.8%	
$\chi^2 = 2.344;$ $p = .3097$	20	10.0%	17	8.3%	3	8.1%	$\chi^2 = 1.433;$ $p = .8385$
	5	2.5%	8	3.9%	2	5.4%	
	176	87.6%	179	87.7%	32	86.5%	
$\chi^2 = .367;$ $p = .8325$	40	19.9%	20	9.8%	5	13.5%	$\chi^2 = 9.364;$ $p = .0526$
	22	10.9%	19	9.3%	3	8.1%	
	139	69.2%	165	80.9%	29	78.4%	
$\chi^2 = 4.77;$ $p = .0921$	78	38.8%	65	31.9%	13	35.1%	$\chi^2 = 4.148;$ $p = .3863$
	49	24.4%	55	27.0%	6	16.2%	
	74	36.8%	84	41.2%	18	48.6%	
$\chi^2 = 6.632;$ $p = .0363$	80	39.8%	51	25.0%	11	29.7%	$\chi^2 = 14.661;$ $p = .0055$
	39	19.4%	55	27.0%	14	37.8%	
	82	40.8%	98	48.0%	12	32.4%	
$\chi^2 = 3.119;$ $p = .2103$	122	60.7%	101	49.5%	21	56.8%	$\chi^2 = 5.769;$ $p = .217$
	34	16.9%	50	24.5%	8	21.6%	
	45	22.4%	53	26.0%	8	21.6%	

There was no relationship between the place of residence of the respondents and their mental health, assessed in individual statements.

It was found that there is a relationship between mental health and the employment situation of the respondents. People not working or of a different employment status felt powerlessness more often than the rest of the respondents because of the coronavirus pandemic  $\chi^2 (2, N = 442) = 10.799; p = .0289$ . Students experienced mental exhaustion more often  $\chi^2 (2, N = 442) = 16.98; p = .0020$ , they felt depressed by the current situation  $\chi^2 (2, N = 442) = 12.836; p = .0121$ , they were more pessimistic about the future  $\chi^2 (2, N = 442) = 14.661; p = .0055$  (see Table 3).

### Multinomial logistic regression

In the next step, an attempt was made to standardize the obtained results. For this purpose, a polynomial logistic regression was used. For each of the components of mental health disorders (for each item separately), the values of odds ratios

Table 4. Mental health: a comparison of extreme groups (Yes vs. No) for individual items based on selected independent variables

OR (95% CI); <i>p</i> / Question numbers	Mental health deterioration	Experiencing a sense of powerlessness	Experiencing mental exhaustion	Problems falling asleep
Gender (1 – female, 0 – male)	OR = 2.12; 1.26–3.54; <i>p</i> = .0043	OR = 2.41; 1.44–4.01; <i>p</i> = .0008	OR = 2.22; 1.32–3.74; <i>p</i> = .0028	OR = 1.99; .88–4.5; <i>p</i> = .0969
Age (1 – under 30 years, 0 – over 30 years)	OR = .81; .45–1.46; <i>p</i> = .4872	OR = .84; .47–1.5; <i>p</i> = .5519	OR = 1.8; 1.02–3.2; <i>p</i> = .0439	OR = .58; .26–1.3; <i>p</i> = .1874
Education (1 – at most secondary, 0 – higher)	OR = .54; .32–.91; <i>p</i> = .0219	OR = .75; .45–1.25; <i>p</i> = .264	OR = 1.04; .62–1.74; <i>p</i> = .875	OR = 1.03; .51–2.07; <i>p</i> = .9304
Place of residence (1 – village, 0 – city)	OR = .83; .52–1.32; <i>p</i> = .4292	OR = .78; .49–1.23; <i>p</i> = .2797	OR = .69; .43–1.09; <i>p</i> = .112	OR = .88; .47–1.64; <i>p</i> = .6835
Employment situation (1 – student, 0 – not working / other)	OR = 1.51; .6–3.83; <i>p</i> = .38	OR = .45; .17–1.2; <i>p</i> = .1101	OR = .76; .3–1.93; <i>p</i> = .5695	OR = 1.02; .33–3.13; <i>p</i> = .9695
Employment situation (1 – working, 0 – not working / other)	OR = .77; .33–1.82; <i>p</i> = .5583	OR = .25; .1–.62; <i>p</i> = .0029	OR = .55; .23–1.32; <i>p</i> = .1799	OR = .6; .22–1.66; <i>p</i> = .3215

\* polynomial logistic regression; OR (95% CI): odds ratio with 95% confidence interval.

(ORs) for the occurrence of a given disorder symptom (answer “Yes”) were calculated compared to the lack of such symptom (answer “No”). It was confirmed that the problems related to mental health were mainly related to gender and partially depended on age, education and work situation.

Compared to men, women were three times more likely to believe that the current epidemic situation is very stressful for them (OR = 3.37, 95% CI: 1.96–5.81) and to feel overwhelmed by negative information about the spread of the coronavirus (OR = 3.42, 95% CI: 2.03–5.76). In addition, it was demonstrated that the conviction that the current situation has a negative impact on mental health was more than twice as likely as men (OR = 2.12, 95% CI: 1.26–3.54), of experiencing a feeling of powerlessness (OR = 2.41, 95% CI: 1.44–4.01), mental exhaustion (OR = 2.22, 95% CI: 1.32–3.74) and depression due to the current situation (OR = 2.31, 95% CI: 1.33–3.99). Women were twice as likely to have problems focusing attention on things other than the pandemic (OR = 2.12, 95% CI: 1.01–4.44) and a tendency to pessimistic perception of the future (OR = 2.11, 95% CI: 1.22–3.63).

Feeling down	Consuming alcohol or other psychoactive substances	Problem with focusing on things other than the pandemic	Feeling stressed	Pessimistic view of the future	Overwhelmed with negative news about the coronavirus
OR = 2.3; 1.33–3.99; <i>p</i> = .003	OR = .8; .37–1.71; <i>p</i> = .5605	OR = .12; 1.01–4.44; <i>p</i> = .0458	OR = 3.37; 1.96–5.81; <i>p</i> = .000	OR = 2.11; 1.22–3.63; <i>p</i> = .0071	OR = 3.42; 2.03–5.76; <i>p</i> = .000
OR = .96; .53–1.75; <i>p</i> = .8971	OR = 1.21; .51–2.88; <i>p</i> = .6679	OR = .63; .3–1.33; <i>p</i> = .2262	OR = .82; .45–1.5; <i>p</i> = .5177	OR = 1.47; .81–2.69; <i>p</i> = .2063	OR = .92; .48–1.75; <i>p</i> = .796
OR = 1.3; .77–2.2; <i>p</i> = .3255	OR = .42; .19–.93; <i>p</i> = .0322	OR = .75; .4–1.43; <i>p</i> = .39	OR = .78; .45–1.32; <i>p</i> = .3504	OR = 1.52; .89–2.59; <i>p</i> = .1242	OR = 1.11; .63–1.95; <i>p</i> = .7201
OR = .69; .43–1.11; <i>p</i> = .1248	OR = .84; .42–1.69; <i>p</i> = .6252	OR = .64; .36–1.14; <i>p</i> = .1282	OR = .81; .5–1.3; <i>p</i> = .3779	OR = .87; .54–1.41; <i>p</i> = .5825	OR = .81; .49–1.35; <i>p</i> = .4223
OR = 1.92; .76–4.88; <i>p</i> = .1692	OR = 1.54; .39–6.18; <i>p</i> = .5396	OR = 2.51; .8–7.84; <i>p</i> = .1143	OR = 1.69; .69–4.18; <i>p</i> = .2539	OR = .67; .25–1.77; <i>p</i> = .4148	OR = .96; .35–2.6; <i>p</i> = .9322
OR = 1.08; .45–2.6; <i>p</i> = .8576	OR = .85; .23–3.13; <i>p</i> = .8073	OR = .64; .22–1.88; <i>p</i> = .4183	OR = 1.05; .46–2.4; <i>p</i> = .8992	OR = .65; .26–1.64; <i>p</i> = .3627	OR = .75; .3–1.89; <i>p</i> = .5476

The chance of developing mental exhaustion was greater among people under 30 (OR = 1.81, 95% CI: 1.02–3.2) compared to the elderly. Subjects with at most secondary education experienced the influence of the current situation on their mental health less frequently (OR = .54, 95% CI: .32–.91) and less often used alcohol or psychoactive substances (OR = .42, 95% CI: .19–.93). The feeling of powerlessness was less common in working people (OR = .25, 95% CI: .1–.62) (see Table 4).

## Discussion of the results

This report aimed to establish mental health in the situation of the SARS-CoV-2 coronavirus pandemic, in the final phase of the economic freeze in Poland. The results indicate the most common mental health problems in the study population. A relationship was found between individual mental health problems and the variables studied, i.e. sex, education, age and employment situation. There was no association between the place of residence of the respondents and their mental health.

### General mental health

The analysis of the obtained data shows that due to the pandemic, most respondents (55.2%) felt overwhelmed with negative information about the spread of the SARS-CoV-2 coronavirus. The results of other studies (Gao et al., 2020; Sandín et al., 2020; Trnka, Lorencova, 2020) indicate that the excess of information negatively affects mental health, causing an increase in anxiety and depression symptoms. The critical threshold and 2.5 hours of media exposure, seven times a day, differentiating between mild and moderate symptoms of anxiety and depression (Bendau et al., 2020).

There has been a lot of media activity since the beginning of the pandemic. Most of the information on the current epidemic situation was provided in TV news and radio programs, in the press and social media. Over time, the excess of negative information about the spread of coronavirus could make many people feel overwhelmed.

The survey results showed that a significant proportion of the respondents experienced deterioration of their mental health (38%). As a result of the pandemic, they experienced powerlessness (43%), mental exhaustion (34%), depression (30.3%) and were pessimistic about the future (32.1%). Research conducted in many countries around the world confirms the increased frequency of mental disorders during the pandemic. Anxiety and depressive disorders were the most commonly reported (Lee, Jobe, Mathis, 2020; Petzol et al., 2020; Sandín et al., 2020; Solomou, Constantinidou, 2020). In addition, there were problems related to insomnia, experiencing intense stress and adjustment disorders. Staying in quarantine was associated with more frequent diagnosis of post-traumatic stress disorder, anxiety and adaptive disorders (Rossi et al., 2020).

In this context, it should be meant that the SARS-CoV-2 coronavirus pandemic was a new and unpredictable phenomenon. The spread of the coronavirus resulted in a loss of hope for a quick stabilization of the situation (Hacimusalar et al., 2020). Previous research results indicate groups that are particularly vulnerable to the psychological effects of the pandemic. For example, they indicate a higher level of powerlessness, strong and fear of coronavirus in people diagnosed with COVID-19 (Lee, 2020). They suggest a significant increase in emotional exhaustion among working women, young people and part-time workers (Hwang, Hur, Shin, 2020).

The obtained data show that the epidemic situation was very stressful for some of the respondents (35.3%). This is confirmed by studies conducted in China (Qiu et al., 2020; Wang et al., 2020). About 25% of the general population have moderate or high levels of stress or anxiety. A detailed analysis of the problem indicates that approximately 16% of the US and Canadian populations surveyed overall showed acute symptoms of COVID Stress Syndrome (Taylor et al., 2020).

The main stressors in the pandemic era could be the fear for one's own health and the health of loved ones, as well as the fear of the economic consequences of the pandemic. Mental stress can be triggered by media coverage of collective life and health-threatening situations (Holman, Garfin, Silver, 2014). Moreover, different levels of stress were found depending on demographic variables (Qiu et al., 2020). A higher level of psychological distress was most common in women. It has also been shown that people aged 18–30 or over 60 are more susceptible to stress.

### **Mental health and gender**

Data analysis showed that there is a relationship between some mental health problems and gender. Women more often than men indicated that the current situation has a negative impact on their mental health. Due to the pandemic, they experienced feelings of helplessness, mental exhaustion, and felt depressed. In addition, they had difficulty concentrating, experienced severe stress, were pessimistic about the future, and felt overwhelmed by negative news about the spread of the coronavirus.

The above data are consistent with other reports from empirical studies which indicate that women more often experienced negative, psychological consequences of the risk of becoming infected with the SARS-CoV-2 coronavirus. They exhibited higher levels of both stress, anxiety and depression (Wang et al., 2020). They also showed symptoms of adaptive disorders more often than men (Petzold et al., 2020; Rossi et al., 2020; Solomou, Constantinidou, 2020). Research shows that during the outbreak of the pandemic, women more often reported symptoms of post-traumatic stress (Liu et al., 2020a), reliving the traumatic situation, experiencing over-arousal, negative cognitive changes and mood changes. Moreover, they showed a higher fear of COVID-19 (Rossi et al., 2020).

Increased risk of mental health deterioration in women during a pandemic may result from fulfilled family and professional roles. Women are more likely to bear the burden of caring for children and carry out household chores. Research indicates that the closure of schools and nurseries in the initial period of the pandemic significantly increased the need for childcare. This was a serious problem especially for working mothers (Alon et al., 2020). Moreover, women had a greater risk of losing their jobs than men. This was especially true in the hotel and retail sectors, where mostly women are employed.

### **Mental health and education level**

The mental health among the respondents were analysed in relation to their education level, indicating that people with at most secondary education looked pessimistic about the future more often than people with higher education.

The above data could result from the rapid spread of the SARS-CoV-2 coronavirus and the unstable economic situation in the country and the world. Being overwhelmed by negative news in the media about the economic and health effects of the SARS-CoV-2 coronavirus could, over time, cause pessimism for many people as to the further development of the situation.

The research results presented herein show that people with at least secondary education experienced the impact of the current situation on their mental health less frequently and used alcohol or other psychoactive substances less often. The obtained data may suggest that the pandemic did not significantly affect the mental condition of this group of respondents.

The studies conducted so far do not clearly define the type of relationship between education and mental health. According to some reports (Paulino et al., 2020; Wang et al., 2020), lower educational attainment is associated with higher depression and anxiety as a result of the pandemic. Other research results suggest the opposite relation (Qiu et al., 2020). People with higher education are more prone to psychological distress compared to people with at most secondary education.

Less frequent alcohol consumption in the group of respondents with primary, vocational and secondary education may be caused by the temporary closure of bars and clubs and the introduced restrictions on the number of people staying in shops while shopping.

### **Mental health and age**

The obtained data show that there is a relationship between some mental health problems and age. People under 30 experienced mental exhaustion more often than the elderly, were pessimistic about the future and used alcohol or psychoactive substances. The presented tendency is confirmed by other previous studies. They indicate a higher severity of symptoms of depression and anxiety during

a pandemic among people under 35 compared to the elderly (Huang, Zhao, 2020; Liu et al., 2020b; Qiu et al., 2020). Research conducted in Poland (Gambin et al., 2020) shows that in the 18–34 age group, the highest levels of depression and generalized anxiety symptoms appeared, compared to other age groups. In addition, an increased incidence of suicidal or self-harming thoughts has been shown. The above studies show that the severity of anxiety and depression symptoms in a group of young people was not associated with the sense of threat to their own health and life and that of loved ones, but was positively correlated with limitations in freedom, boredom, difficult family relationships, a sense of loneliness, fatigue, and lack of privacy. These factors may have increased the tendency to reach for alcohol and other psychoactive substances.

### **Mental health and employment situation**

The research results show that there is a relationship between some mental health problems and the employment situation. The unemployed felt helplessness more often than employed and students due to the pandemic. The results of previous studies confirm the negative consequences of COVID-19 for the mental health of the unemployed, who, compared to working people, show a high susceptibility to stress and the highest level of depressive symptoms (Montano, Acebes, 2020; Paulino et al., 2020). This is most likely due to greater exposure to the consequences of the economic crisis related to the pandemic. In connection with the constant increase in infections coronavirus SARS-CoV-2, were introduced restrictions on functioning or temporary closure of institutions and workplaces. Many people have lost their jobs. Lack of steady income makes it impossible to plan and achieve long-term goals. Lack of influence on the situation could intensify the feeling of helplessness.

The obtained data show that students experienced psychological exhaustion more often than employed and unemployed people, felt depressed by the current situation and looked more pessimistic about the future. Research carried out in Poland (Debowska et al., 2020) suggests that students in the 18–24 age group have more symptoms of mental health disorders. They show more symptoms of depression, anxiety and suicidal tendency than older students. Other studies (Son et al., 2020) have identified stressors that contributed to increased levels of stress, anxiety and depressive thoughts in this group. The students showed anxiety for their own health and that of their loved ones. They exhibited problems with concentration and sleep disorders. Less frequently maintained social contacts and showed concern about academic performance.

### **Limitations and implications**

The study presented herein has some limitations. Due to the epidemic, the surveys were conducted among others, via social media. Notably, this kind of research

does not cover all of society. Some people, especially the elderly, rarely use the internet or do not have social media accounts. Non-computer users probably did not participate in the study. All of these factors limit the possibility of generalising these results to the entire population.

Subsequent studies should be performed using a larger, more representative sample, considering age, gender, education level, employment situation and place of residence.

This study did not collect information regarding whether participants or their family members were infected with the coronavirus, were in quarantine or were in isolation. The level of anxiety in such individuals may differ from that of the general population.

## Conclusions

The material collected throughout this research and the subsequent analyses show in the final phase of the economic freeze, the main mental health problems. The persistence of a pandemic over an extended period of time can have a negative impact on many spheres of human life, including mental health.

Due to the dynamic and unpredictable development of the epidemic situation, further studies are recommended. Such data may clarify the psychosocial effects of the COVID-19 pandemic. On this basis, it will be possible to take adequate measures to support specific risk groups, particularly women, students and persons under 30. Action strategies should be tailored to their needs to mitigate the negative effects of the pandemic. Such strategies should focus on preventing mental health issues and minimising anxiety and depression symptoms. It is important to promote pro-health behaviours that enable adaptation to changes caused by the pandemic. It is also advisable to educate people to manage stress effectively, limit reading or viewing news about a pandemic, maintain a daily schedule of the day including routine and regular physical activity, and promote safe means of communication. Social media can be used to maintain contact with loved ones and to reduce loneliness and mental isolation, as these tools allow one to communicate with others via social networks, blogs and message boards. It is essential to improve access to professional psychological and psychiatric care. Appropriate organization of therapeutic and medical support in mental health clinics is needed. People with mental health disorders should be able to benefit from consultations conducted both in a clinic and remotely, and, if necessary, from inpatient psychiatric care.

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## WYBRANE ASPEKTY ZDROWIA PSYCHICZNEGO PODCZAS PANDEMII COVID-19 W POLSCE

**Streszczenie.** Celem badania było zidentyfikowanie najczęstszych problemów zdrowia psychicznego z powodu pandemii COVID-19, w końcowej fazie zamrożenia gospodarki w Polsce. Skonstruowana ankieta zawierała część demograficzną oraz 21 pytań, w tym 10 odnoszących się do stanu zdrowia psychicznego. W celu przeprowadzenia analiz wykorzystano test niezależności *chi*-kwadrat oraz wielomianową regresję logistyczną. Wyniki badań wskazują, że znaczna grupa respondentów czuła się przytłoczona negatywnymi informacjami na temat rozprzestrzeniania się koronawirusa. Problemy dotyczące zdrowia psychicznego częściej pojawiały się u kobiet niż u mężczyzn oraz u osób do 30. roku życia. Respondenci z wykształceniem co najwyżej średnim częściej pesymistycznie patrzyli w przyszłość. Osoby niepracujące częściej od pozostałych badanych odczuwały bezsilność. Studenci częściej doświadczali wyczerpania psychicznego, czuli się przygnębieni obecną sytuacją i pesymistycznie patrzyli w przyszłość. Przedstawione wyniki badań wskazują, że pandemia COVID-19 jest źródłem problemów dotyczących zdrowia psychicznego.

**Słowa kluczowe:** zdrowie psychiczne, COVID-19, Polska, ankieta

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