

The occurrence of anxiety disorders among Poles during the COVID-19 pandemic

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Summary

Aim. The aim of the study was to assess anxiety among Poles between the 35th and the 42nd day after the introduction of the state of epidemiological threat, and to compare the obtained results with global reports and the pre-pandemic state.

Materials and methods. The study was conducted on 2,457 respondents from Poland. The research methods comprised an original survey questionnaire, distributed via the Internet from 17 to 24 April 2020, assessing the sociodemographic state, and standardized psychometric tools: the Beck Depression Inventory, Generalized Anxiety Disorder Questionnaire (GAD-7) and Manchester Short Assessment of Quality of Life.

Results. The results of 71% of the respondents indicated the presence of anxiety symptoms with various degrees of severity. In 45% of the respondents, the total score was ≥ 10 points, indicating signs of Generalized Anxiety Disorder. Female respondents scored significantly higher than men. Place of residence, marital status and the type of performed work had no statistically significant impact on the level of anxiety.

Conclusions. The COVID-19 pandemic significantly affected the mental condition of Poles, resulting in increased anxiety, fear and concerns regarding the future. 71% of the respondents showed different degrees of anxiety severity, and 44% of them scored at least 10 points in the GAD-7 scale, which indicates the presence of signs of Generalized Anxiety. There is a great need to provide Poles with mental support during the COVID-19 pandemic.

Key words: COVID-19 pandemic, anxiety disorders, mental health

Introduction

The lives of people across the globe have drastically changed over the last few months. Within days, they were forced to change their daily behaviors and habits. The phenomenon is caused by the state of pandemic, introduced by the WHO due to the spread of a new pathogen causing COVID-19. The virus belongs to the coronavirus group and was first identified in December 2019 in a Chinese province, Wuhan.

The course of the disease may vary from asymptomatic to acute respiratory distress syndrome (ARDS) in the course of viral pneumonia [1, 2]. Scientists all over the world are trying to find an effective treatment and prevention method that will protect us from SARS-CoV-2. However, all the existing methods are at the stage of clinical trials.

Changes introduced in a short period of time through restrictions, isolation of many people in their homes, limitation of civil liberties as well as direct encounter with an ‘enemy’ against whom there is no effective method of defense may lead to significant changes in human psyche, among other things, development of signs of anxiety, panic disorder, generalized anxiety, and depression. Analyzing the experiences from the MERS epidemic of 2012–2013, scientists clearly confirmed that these kinds of events have significant impact on the mental health of both healthcare workers and the general population. Based on the obtained results we can speculate that the current pandemic will also have a significant impact on our mental health [3, 4].

Studies aimed at assessing the impact of COVID-19 on the mental health of populations are being conducted worldwide. Surveys conducted so far among the Chinese and Iranian populations [5–7] confirm that the pandemic has a significant impact on human psyche and, consequently, our daily functioning and quality of life.

Aim of the study

The aim of the study was to assess the level of anxiety in the Polish society during the COVID-19 pandemic, compare the obtained results with studies conducted before the pandemic as well as present them against the background of other countries.

Materials and methods

Methodology

The survey was conducted on the basis of an original questionnaire, distributed via the Internet through a social networking site between 17 and 24 April 2020; it began 35 days after the state of epidemiological threat was introduced in Poland and 37 days after the pandemic was announced, when the number of infected people in Poland – according to the official data – amounted to 8,379 people, and 332 deaths due to SARS-CoV-2 infection were reported. The daily increase in the number of infections ranged from 263 to 460, and the daily number of deaths ranged from 18 to 40. On the day of the end of the survey, the number of infected people was 10,892 and 494 deaths were reported [8].

The questionnaire consisted of three parts. The first part contained sociodemographic questions regarding age, sex, place of residence, education, work performed, history of mental illness and medication taken, as well as questions assessing the level of concern regarding contracting COVID-19.

Further parts contained standardized psychometric tools:

- a) the Generalized Anxiety Inventory Questionnaire (GAD-7) – a 7-item scale based on the 4-point Likert scale, used to assess the level of anxiety as well as the risk of developing general anxiety disorder (GAD). The questions contained in the survey enabled the respondents to self-assess the sense of anxiety, tension, nervousness, and ability to control these feelings, assess how easily they appeared, as well as the occurrence of problems with relaxing. In each item, the respondents could score from 0 to 3 points, depending on the frequency with which a given phenomenon occurred (0 – not at all; 1 – several days; 2 – more than half the days; 3 – nearly every day) within the last 14 days. The score of 5, 10 or 15 points, respectively, indicated mild, moderate or severe anxiety. The score of at least 10 points indicated high probability of generalized anxiety disorder [9].
- b) the Beck Depression Inventory – a tool consisting of 21 items, in which respondents self-assess the severity of symptoms on a scale from 0 to 3 points in a way that best describes the way they have been feeling within the last 14 days. In order to interpret the results, the following cut-off points have been applied: 0–11 points – lack of depression; 12–26 points – mild depression; 27–49 – moderate depression; 50–63 – severe depression. The tool is frequently used as a screening test, performed especially by general practitioners in order to make a preliminary diagnosis of depression [10, 11].
- c) the Manchester Short Assessment of Quality of Life (MANSA) – a 16-item scale for subjective evaluation of respondent's quality of life and various aspects thereof. Most items are based on the seven-point Likert scale, except for items which refer to the confirmation or negation of a given phenomenon. The maximum number of points which can be scored in the test is 92. The tool was created on the basis of the Lancashire Quality of Life Profile (LQLP) and constitutes a condensed alternative to it, while maintaining its psychometric parameters [12, 13]. The Questionnaire is designed for population studies without precise determination of the quality of life assessment in particular diseases. The Polish version of the tool was developed in the year 2000 by the Wrocław Medical University.

The study participants were recruited via questionnaire distributed on the portal www.facebook.pl. The survey was voluntary, fully anonymous, addressed to all Polish citizens with Internet access who have an account on the aforementioned social networking site. The respondents had the right to discontinue completion of the survey at any time. Before starting the procedure the respondents gave their consent to participate therein.

The article presents results of an analysis of the answers given in the General Anxiety Questionnaire (GAD-7). Analysis of the remaining questionnaires goes beyond the subject matter of this article and will be presented in a separate paper.

Material

The study involved 2,457 respondents residing in Poland. The mean age in the study group was 32 years (min. 16, max. 83; SD 10.67). Women constituted the majority of the respondents (82%). Detailed description of the study group is presented in Table 1.

Table 1. **Characteristics of the study group**

Sex				
Female 82%		Male 18%		
Place of residence				
Countryside 19%	City of up to 50,000 residents 15%	City of 50,000–250,000 residents 18%	City of above 250,000 residents 48%	
Marital status				
Single 36%	Partnership 23%	Married 35%	Divorced 5%	Widow(er) 1%

Professionally active healthcare workers constituted 26% of the respondents, with doctors (52%) and nursing staff (26%) being the most numerous group. The remaining respondents were students, university students, employees of other professional groups as well as pensioners and disability pensioners. 604 people (25% of the respondents) stated that they were deprived of their income opportunities as a result of the COVID-19 pandemic.

21% of the respondents declared that they had sought the help of a psychiatrist/psychologist in the past, and 18% of the respondents are currently treated with psychiatric drugs. The most commonly mentioned diseases were as follows: depressive disorders – 287 people (12%), anxiety disorders – 139 (6%), sleep disorders – 26 (1%), addictions – 11 (0.5%), schizophrenia spectrum disorder – 4 (0.2%).

Individual experiences of the respondents with COVID-19 are presented in Table 2.

Table 2. **Individual experience with COVID-19**

	Yes	No
Suspicion of COVID-19	3%	97%
Quarantine imposed by the Sanitary and Epidemiological Station	3%	97%
Home isolation/sick leave	18%	82%
COVID-19 diagnosis	0.2%	99.8%
Diagnosis of COVID-19 in a family member/friend	5%	95%

Statistical methods

Statistica 13.3 software by Statsoft was used to formulate the results. The analyzed variables were of dichotomous, interval and ordinal nature. The chi-square test was used for dichotomous variables. Correspondence analysis was also used to determine the correlation between the variables. Basic descriptive statistics were used in the analysis of interval results. Statistical significance was determined with the use of the Mann Whitney U test and Kruskal-Wallis test. Statistical significance level was established at $p < 0.05$ for each test.

Results

77% of the respondents admitted that they felt anxious about contracting COVID-19, and 26.5% stated that the level of anxiety felt by them was greater than in the case of other illnesses, for example, heart diseases. During the study, the respondents were asked to assess (using the ten-point VAS scale) the level of anxiety/fear in situations involving the disease and quarantine among people closest to them. The results are presented in Table 3 and Figure 1.

Table 3. Sense of anxiety/fear related to COVID-19

	Mean score (scale 1–10)	SD
Fear of contracting COVID-19	5.50	2.63
Feeling anxious due to neighbor being under quarantine	4.62	2.76
Feeling anxious due to neighbor being diagnosed with COVID-19	5.73	3.01

The respondents most frequently indicated “1” with regard to their anxiety concerning their neighbor being under quarantine, while the answer to the question concerning their neighbor being diagnosed with COVID-19 was most often equivalent to 10 points, which proves great stressogenic potential of SARS-CoV-2.

In the analysis of the Generalized Anxiety Disorder Questionnaire (GAD-7) the average number of scored points was 9.11 (min. 0; max. 21; *SD* 6.17). In 71% of the respondents, the total score indicated the presence of anxiety symptoms, varying in terms of severity, and 44% of the respondents scored at least 10 points, based on which generalized anxiety disorder can be suspected. Detailed results are presented in Table 4 and Table 5.

Table 4. Distribution of GAD-7 Questionnaire interpretation

	Percentage [%]
No anxiety	29
Mild anxiety	27

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Moderate anxiety	21
Severe anxiety	23
≥ 10 points (Generalized Anxiety)	44

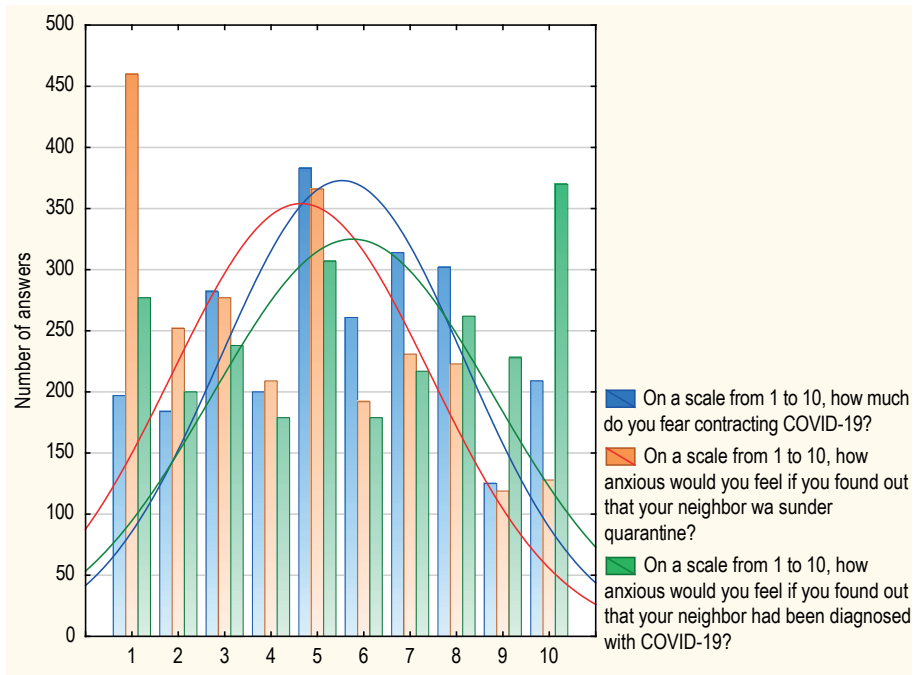


Figure 1. Assessment of the level of fear of COVID-19

Table 5. Distribution of results of individual questions in the GAD-7 Questionnaire

	Not at all	Several days	Over half the days	Nearly every day
Feeling nervous, anxious, or on edge	14%	39%	20%	27%
Not being able to stop or control worrying	30%	33%	20%	17%
Worrying too much about different things	28%	31%	22%	19%
Trouble relaxing	27%	30%	22%	21%
Being so restless that it's hard to sit still	42%	29%	16%	13%

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Becoming easily annoyed or irritable	25%	32%	22%	21%
Feeling afraid as if something awful might happen	33%	32%	19%	16%

Within the 14 days preceding the survey, 86% of the respondents felt nervous, anxious or on edge, and one in four experienced such state nearly every day. In addition, a significant percentage (21%) of the respondents experienced difficulties in daily relaxation.

Analysis of factors influencing the sense of anxiety

A strict correlation between experiencing anxiety and sex was determined during the analysis. Women scored significantly higher in the GAD-7 questionnaire than men (74% vs. 50%). A similar correlation was observed with regard to limited income opportunities. Economic uncertainty significantly affected the level of felt anxiety. People whose income opportunities were significantly limited scored on average 1.31 points higher than working people. It should be emphasized that in this group of respondents 1 in 3 people showed signs of severe anxiety. Detailed description is presented in Table 6.

With regard to the age of the respondents, the correlation coefficient was $r = -0.048$, $p = 0.00$.

Individual experiences with COVID-19 had a significant impact on the total number of points scored in the GAD-7 questionnaire. Home isolation/sick leave had a statistically significant impact on the average results scored in the GAD-7 questionnaire. Detailed distribution of responses is presented in Table 7.

44% of the respondents scored ≥ 10 points on the GAD-7 scale, which is the basis for suspecting the presence of generalized anxiety disorder. However, in order to make a complete diagnosis it is necessary to compare the results scored in the questionnaire with a clinical examination of the patient.

Table 6. Simultaneous analysis of factors influencing the sense of fear/anxiety

Variable	Number of respondents (%)	No anxiety (%)	Level of anxiety (%)			p	Mean	SD
			Mild	Moderate	Severe			
Sex	p < 0.000							
Female	2,027 (82)	535 (26)	549 (27)	436 (22)	507 (25)		9.49	6.18
Male	430 (18)	174 (40)	111 (26)	82 (19)	63 (15)		7.30	5.81

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Place of residence	p = 0.8141							
Countryside	463 (19)	133 (29)	116 (25)	97 (21)	117 (25)		9.25	6.19
City of up to 50,000 residents	376 (15)	108 (29)	113 (30)	71 (19)	84 (22)		9.03	6.16
Cities of between 50,000 and 250,000 residents	443 (18)	138 (31)	100 (23)	98 (22)	107 (24)		8.99	6.26
Cities > 250,000 residents	1,175 (48)	330 (28)	331 (28)	252 (21)	262 (23)		9.13	6.15
Marital status	p = 0.22							
Single	894 (36)	250 (28)	232 (26)	197 (22)	215 (24)		9.31	6.15
Partnership	563 (23)	155 (28)	146 (26)	129 (23)	133 (24)		9.27	6.17
Married	863 (35)	255 (30)	254 (29)	164 (19)	190 (22)		8.84	6.14
Divorced	107 (5)	35 (33)	25 (23)	21 (20)	26 (24)		9.20	6.55
Widow(er)	29 (1)	14 (48)	3 (10)	7 (24)	5 (17)		7.41	6.39
Healthcare worker	p = 0.7797							
Yes	639 (26)	173 (27)	201 (31)	125 (20)	140 (22)		9.00	5.98
No	1,818 (74)	536 (30)	459 (25)	393 (22)	430 (23)		9.14	6.24
Deprivation of income opportunities	p = 0.000006							
Yes	604 (25)	143 (24)	156 (26)	127 (21)	178 (29)		10.10	6.28
No	1,853 (75)	566 (31)	504 (27)	391 (21)	392 (21)		8.79	6.10

Table 7. Analysis of individual experience with COVID-19 in relation to GAD-7 results

Variable	Total quantity	No anxiety	Level of anxiety			P	Mean	SD
			Mild	Moderate	Severe			
Suspected COVID-19	$p = 0.4377$							
Yes	78 (3)	19 (24)	21 (27)	18 (23)	20 (26)		9.63	6.12
No	2,379 (97)	690 (29)	639 (27)	500 (21)	550 (23)		9.09	6.18
Confirmed COVID-19	$p > 0.05$							
Yes	5 (0.2)	1 (20)	3 (60)	1 (20)	0 (0)		7.60	3.64
No	2,452 (99.8)	708 (29)	657 (27)	517 (21)	570 (23)		9.11	6.18
COVID-19 confirmed in a family member/ close friend	$p = 0.061$							
Yes	119 (5)	27 (23)	35 (29)	27 (23)	30 (25)		10.08	5.96
No	2,338 (95)	682 (29)	625 (27)	491 (21)	540 (23)		9.06	6.18
Mandatory quarantine	$p = 0.957$							
No	2,373 (97)	681 (29)	641 (27)	501 (21)	550 (23)		9.11	6.16
Yes, I was under quarantine	60 (2)	22 (36)	12 (20)	10 (17)	16 (27)		9.13	7.02
Yes, I am under quarantine	24 (1)	6 (25)	7 (29)	7 (29)	4 (17)		8.67	5.47
Isolation at home/ sick leave	$p = 0.0038$							
No	2,021 (86)	599 (30)	554 (27)	418 (21)	450 (22)		8.97	6.16
Yes, I was under home isolation/on a sick leave	141 (6)	29 (20)	39 (28)	31 (22)	41 (30)		10.49	6.12
Yes, I am under home isolation/on a sick leave	187 (8)	48 (26)	36 (20)	48 (26)	53 (28)		9.80	6.10

Discussion

Studies conducted so far among populations affected by the pandemic unambiguously indicate that its impact on the mental health of societies is significant. The main aim of the study was to assess the sense of fear and anxiety in the Polish society during the COVID-19 pandemic and search for its main causative factors. The results of the questionnaire unambiguously indicate signs of anxiety of various severity levels in almost 3 out of 4 people participating in the survey; the results of as many as 23% of the respondents indicate severe anxiety disorder. 44% of the respondents showed signs of generalized anxiety disorder. Such a high percentage of positive results can be caused by the current restrictions, including social restrictions, as well as the sense of helplessness and powerlessness in the battle against the coronavirus. Direct people-to-people contacts – which, according to specialists, are necessary to maintain mental balance – have been significantly reduced [14, 15].

Epidemiological reports from before the pandemic estimate that signs of generalized anxiety disorder occur in approximately 1% of the population, significantly more often in women than men [16]. Throughout life, in the conditions before the pandemic, 5–9% of the population may experience generalized anxiety attacks [17]. The state of pandemic is a specific time which has led to a significant increase in the percentage of people showing signs of general anxiety disorder.

Global reports concerning the prevalence of anxiety among populations severely affected by the COVID-19 pandemic, like Poland, indicate a significant increase compared to the state before the year 2019. In an analysis of the GAD-7 questionnaire, 25% of Chinese students obtained results indicating various degrees of anxiety symptoms [18]. A study conducted among 1,210 respondents living in China indicates that anxiety symptoms occur in 36% of respondents [19]. 51% of Iranians are showing features of anxiety during the COVID-19 pandemic [7].

It should be taken into account that the obtained results can be overestimated with respect to entire population assessment due to the significant prevalence of women – who more often show tendencies to develop anxiety disorders – in all cited studies [7, 16, 18, 19].

The method of collecting data, i.e., a survey distributed online, constitutes a limitation of the study. This research method, however, has been gaining increasing recognition due to the possibility of collecting data quickly and in a short period of time as well as complete anonymity of respondents. Studies suggest that people feel more comfortable during online surveys [20]. The study conducted by Australian researchers proved that a higher number of young respondents confirmed experiencing distress in an online survey than in a survey conducted with the use of the CATI (computer-assisted telephone interviewing) method [21, 22]. It should be also noted that, due to social isolation, it is virtually the only available survey method during the pandemic.

Due to the form and nature of the collected data, the authors of the paper are unable to offer psychological support to the respondents. Thanks to the participation in the study, the respondents may reflect more deeply on their own mental state, and their awareness regarding the necessity of seeking specialist advice may increase.

Analyzing the results of the study, the authors proved that the COVID-19 pandemic affects the mental state of the Polish society, causing anxiety. The main stressors include economic uncertainty and significant limitation of everyday functioning. Unstable situation and concerns regarding its impact on the future lead to increasing uncertainty, frustration and fear concerning the quality of life after the pandemic. It should be taken into account that the period of the pandemic is a specific time for everyone, and joint actions of the government, healthcare system and law enforcement services should lead to alleviating the sense of uncertainty and anxiety experienced by Polish people. Social support is an essential aspect of slowly returning to normal life. If the symptoms are particularly severe and persistent, psychiatric advice should be sought.

Conclusions

1. The COVID-19 pandemic has significantly affected the mental state of Poles, causing increased fear and anxiety as well as concerns regarding the future.
2. 71% of the respondents showed different degrees of anxiety severity, and 44% of them scored at least 10 points in the GAD-7 scale, which indicates the presence of signs of generalized anxiety.
3. During the COVID-19 pandemic women tend to develop anxiety disorders significantly more often than men.
4. There is a need to provide Poles with mental support during the COVID-19 pandemic.

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