

Research Article

# Impact of the COVID-19 pandemic on the patients' emotional state in general practice in Bulgaria

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## Summary

The study aimed to evaluate and analyze the impact of the COVID-19 pandemic on the emotional state of patients in General Medical Practice in Bulgaria. In July-December 2022, a survey was organized among 306 GPs working in primary health care (PHC) in Bulgaria. They represent about 8% of the country's general practitioners and work in eight regions. An individual self-completion questionnaire was offered. After obtaining permission from the Ethics Committee, respondents were randomly selected. The data was processed with a specialized statistical software package, SPSS 22. The COVID-19 pandemic has increased the number of patients with anxiety and depressive symptoms in the period 2020–2022, according to 95.3% (286) of the GPs surveyed. According to the GPs, the reasons for this were social isolation – 79.4%, negative information from the media – 73.1%, uncertainty – 65%, financial worries – 51.7%, uncertainty about the future – 38.8%, and other – 2.1%. The population of Bulgaria has been greatly affected by the COVID-19 pandemic. The pandemic has increased the number of patients with anxiety and depression in the General Medical Practice for the period 2020–2022. Bulgarians often resort to self-medication despite the easy access to general practitioners and the possibility of consultation with a psychiatrist.

**Key words:** COVID-19 pandemic, depressive disorders, general practice



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## Introduction

In March 2020, the world faced the most serious challenge in modern history – the World Health Organization declared a global COVID-19 pandemic caused by the SARS-CoV-2 virus. The first unclear and confusing data of a new unknown infectious disease, fast-spreading, highly virulent, and with indefinite therapy, came in late 2019 from China, Wuhan City, Hubei province. The pandemic changed the lives of all people around the world (Kupcova et al. 2023). They changed their usual daily routine, limited social contacts, and isolated themselves in their homes. Schools, universities, and institutions were closed. People's freedom to move, communicate, travel, and meet with relatives and friends was reduced to zero due to the governments' anti-epidemic measures. This social distancing, the impossibility of seeing children and parents, the loss of work and business, and the negative daily information in the media seriously

affected the psycho-emotional state of people (Liu et al. 2020). Hospitals were not prepared to adequately deal with the daily increase in infected people and the large number of necessary hospitalizations; there was no information on effective treatment. The staff in health facilities - doctors, nurses, and all health workers were overworked, exhausted, and separated from their families due to the restrictive measures introduced. They, too, had increased levels of anxiety and depression (Trumello et al. 2020; Sahebi et al. 2021).

According to a 2022 WHO report, the Covid-19 pandemic caused a 25% increase in the prevalence of anxiety and depression worldwide. WHO appealed to all countries to strengthen mental health care for their citizens. Young people and women were the most affected.

This study aimed to evaluate and analyze the impact of the COVID-19 pandemic on the emotional state of patients in the General Medical Practice (GMP) in Bulgaria.

## Methods and materials

An empirical sociological survey was conducted among 306 GPs from eight regions of Bulgaria - Pleven, Lovech, Gabrovo, Veliko Tarnovo, Varna, Ruse, Plovdiv, and Stara Zagora. Six of the surveyed physicians did not observe an increased number of anxious and depressed patients in their practice during the follow-up period. Their responses were derived from the statistical processing of the primary information. The total number of respondents represents about 8% of the total number of GPs in the country, which at the time of the survey was 3854, according to National Statistical Institute (NSI) data. A questionnaire was prepared for the purposes of the study. After obtaining permission from the Ethics Commission at the Medical University-Pleven and observing all the principles of autonomy, ethical norms, and rules of conduct, we collected primary information through an anonymous survey. The survey was conducted voluntarily, anonymously, and online from July to December 2022.

Software package for statistical analysis-SPSS-22 was used for statistical processing of the information primarily collected.

The results are presented in tables, graphs, and numerical indicators of structure, frequency, and dependence coefficients between the studied variables. Parametric and non-parametric analysis methods were used; the statistical reliability of the dependencies was evaluated with the following chi-square tests: Pearson - Chi-Square, Fisher's Exact Test, and Likelihood Ratio. Differences were considered significant at the level of  $p < 0.05$ . To measure the strength of the dependencies, we used Cramer's coefficient (Cramer's V), normalized in the range from 0 to 1. It was conditionally accepted that when it was in the range from 0 to 0.3, the relationship was weak, above 0.3 to 0.7 – medium, and above 0.7 – strong. Cramer's coefficient was used only after successfully applying the Chi-square test.

From the statistical processing of the surveyed doctors, it was clear that the ratio of women/men was 2.4:1 in favour of women-GPs, which corresponds to the predominance of the female gender in this profession in the country. Physicians with longer working experience prevailed, given the high average age of doctors working in primary health care. The majority of the respondents - 73%, worked in urban settings, and 80% worked in individual practices. Nearly 90% of

the surveyed doctors had a recognized specialty in General Medicine, and 3.7% were currently involved in specializing studies. Over 50% of the doctors who responded to the survey had more than one recognized specialty. The structure of the surveyed GPs is presented in Table 1.

**Table 1.** Socio-demographic characteristics of GPs participating in the study.

Sign	Number	Relative share (%)
<b>Gender:</b>		
Male	89	29.7%
Female	211	70.3%
<b>Age:</b>		
Under 50 years	68	22.7%
51–60 years	84	28.0%
Over 60 years	64	21.3%
No answer	84	28.0%
<b>Years of professional experience:</b>		
Under 20	42	14.0%
20–30 years	95	31.7%
Over 30 years	163	54.3%
<b>Number of residents of the place where the practice operates:</b>		
Under 5000	43	14.3%
5 000–20 000	30	10.0%
20 001–100 000	79	26.3%
Over 100 000	148	49.3%
<b>Area of work:</b>		
Urban conditions	219	73.0%
Rural Health Service	28	9.3%
Mixed type	53	17.7%
<b>Type of practice:</b>		
Group practice	58	19.3%
Individual practice	242	80.7%

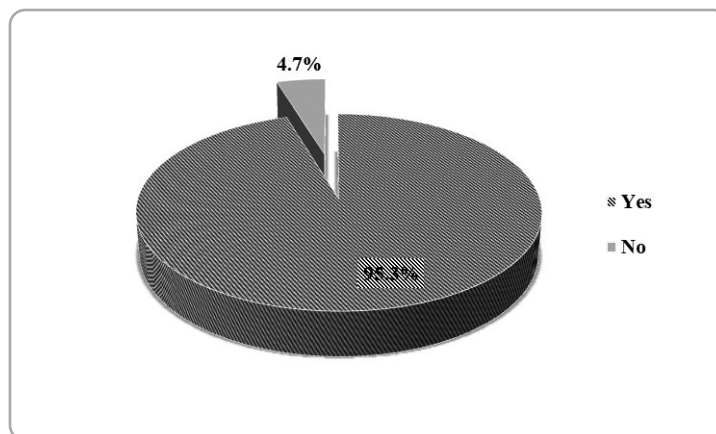
## Results and discussion

The COVID-19 pandemic, the morbidity mortality, the restrictive epidemiological measures introduced, and the social isolation affected the psychological state of every person on Earth, including Bulgaria.

The last research on the global prevalence of depression, which was 3.44 (2–6%), was done in 2017 (Bueno-Notivol et al. 2021; Dattani et al. 2023; Kupcova et al. 2023). During the outbreak of the pandemic, a 7-fold increase in depressive disorders was reported, according to the WHO (Czeisler et al. 2020; WHO 2022; Shetty et al. 2023; Wei et al. 2023). According to data from the literature and studies done on the trajectory of the spread of anxiety and depressive disorders, a sharp increase was reported at the beginning of the imposition of restrictive measures. The increase in the incidence of anxiety and depressive disorders more often affected women and patients at a younger age (Loades et al. 2020). Later, during the pandemic, a slight decrease in prevalence rates was observed, which is attributable to the fact that people began to adapt to the

emergency conditions (Burke et al. 2020; Bueno-Notivol et al. 2021; Fancourt et al. 2021; Feter et al. 2021; Taquet et al. 2021; Akbarpour et al. 2022; Whiting et al. 2023).

According to 95.3% (n = 286) of respondents, the COVID-19 pandemic has increased the incidence of anxiety and depressive disorders in their practices over the past two years, during all restrictive measures. Fig. 1 shows the distribution of the responses of the doctors surveyed.



**Figure 1.** In the last two years, has the number of patients in your practice with depressive symptoms increased in connection with the COVID-19 pandemic?

The surveyed doctors indicated social isolation, negative information from the media, uncertainty about the course of the infection, financial concerns, and uncertainty about the future as leading reasons for the increased incidence of depressive episodes (Fig. 2).

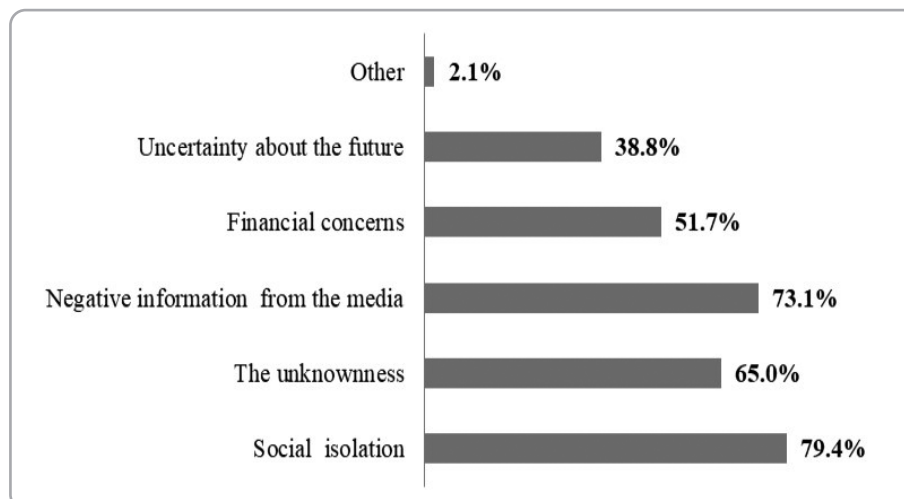
Social isolation is more often cited as the leading reason for the increased number of patients with depressive complaints by GPs working in practices in urban settings, especially in large towns and cities with a population of over 100,000 people ( $p = 0.004$ ), which can be explained by the more painful acceptance of the restrictions related to the pandemic by people living in larger cities and leading a more dynamic lifestyle.

During the COVID-19 pandemic and the subsequent isolation at home, the media and the Internet were the main sources of information for people. According to our respondents, in 73.1% of the cases, information in the media, presented negatively and frighteningly, was the cause of an increase in anxiety and depressive symptoms (Lin et al. 2020; Baerg and Bruchmann 2022).

Uncertainty about the infection – its course, treatment, and complications – was also a serious reason for an increase in depressive symptoms – according to 65.0% of our respondents.

The financial concerns related to the pandemic and the measures to limit it, which led to the limitation and even suspension of work processes and to bankruptcies of companies, were the reason in 51.7% of the cases for the increase of patients with depressive complaints, according to the doctors surveyed.

Uncertainty about the future and all the consequences of the pandemic caused an increase in depressive symptoms in 38.8% of the cases, according to the doctors surveyed. This fact was reported more frequently by younger physicians ( $p = 0.007$ ), which corresponded with less work experience ( $p = 0.014$ ).



**Figure 2.** Reasons for an increase in the incidence of depressive episodes (Respondents have given more than one answer).

Very often, patients with depression do not come with the typical symptoms characteristic of the disease. Primary health care is characterized by the presence of the so-called larval/hidden, masked, somatized depression/. Making a diagnosis of this type of depression presents a serious challenge even to experienced clinicians.

A study by Natsov (2010) found that the most common symptoms reported by patients that cannot be explained by the methods and knowledge of somatic medicine include headache (29.63%), back or lower back pain (24.07%), abdominal pain (22.68%), joint pain (19.9%), discomfort in the heart area (21.76%), impaired coordination (18.98%), shortness of breath (14.35%), and palpitations (20.83%) (Natsov 2012).

We asked the surveyed doctors what the most common complaints of their patients suspected of depression were. The distribution of responses is presented in Fig. 3. Some statistically significant relationships were also found between some demographic characteristics of our respondents - age and years of work experience, size of the place of residence, type of practice, and observed and reported patient complaints. Sleep problems were the leading reason for the visit, according to 92.3% of our respondents. Physicians in the age group 51–60 years ( $p = 0.005$ ) more often reported complaints of insomnia from their patients (Lin et al. 2020).

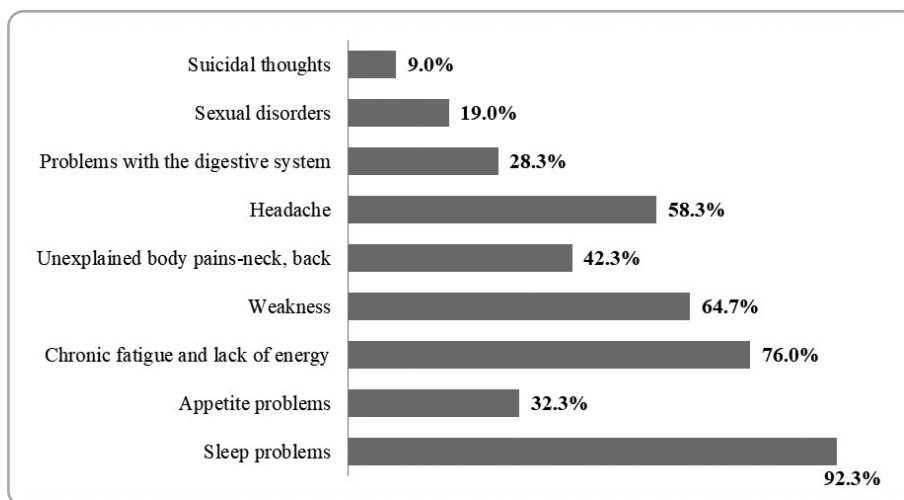
Chronic fatigue and lack of energy in 76% of the cases worried patients in the general medical practice. These symptoms were reported more often by doctors younger than 50 ( $p = 0.006$ ) and, correspondingly, less work experience ( $p = 0.040$ ).

A change in appetite, either increased or decreased, was a reason that made patients visit their GP, according to 32.3% of the doctors surveyed. Such changes were more often observed in practices located in larger cities ( $p = 0.0001$ ).

According to the respondents, Gastrointestinal disorders and other digestive system problems bothered patients in 28.3% of the cases. This complaint was also reported more often by younger family doctors ( $p = 0.002$ ) with less work experience ( $p = 0.023$ ) and working in urban settings ( $p = 0.033$ ).

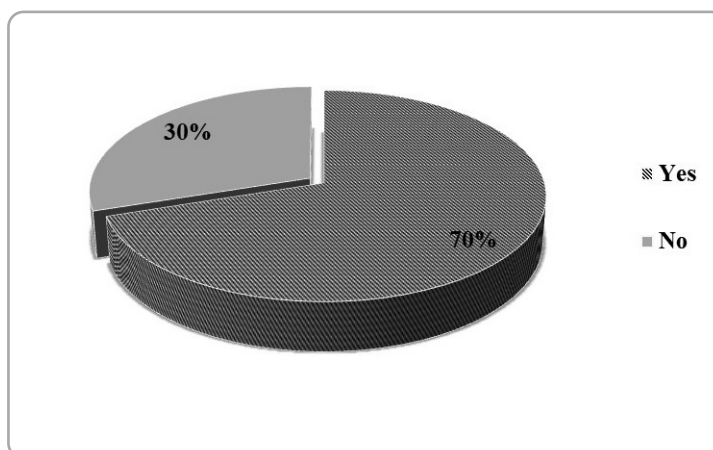
Fatigue (64.7%, headache (58.3%), and unexplained body pain (42.3%) also deserve attention: they were very often the leading reason for patients' visits.

Particular attention was paid to suicidal thoughts, according to 9% of the surveyed doctors. GPs working in rural practices were more attentive ( $p = 0.015$ ) than their colleagues working in urban settings.



**Figure 3.** Most common patient complaints (Respondents have given more than one answer.).

When asked if they had patients who had realized the fact that they needed specialized psychiatric help and had sought it directly from a psychiatrist, 70% ( $n = 210$ ) of the surveyed doctors gave an affirmative answer. The distribution of responses is presented in Fig. 4. Some statistically significant differences were found between the different groups of physicians who gave a positive answer for a realised need by their patients who requested a referral to a psychiatrist by their patients. For example, the larger the number of patients in a general practice and the busier and less accessible the GP was, the more often the patients sought direct help from a psychiatrist. Such findings were most frequent in practices with over 2000 patients ( $p = 0.0001$ ), as well as with family doctors working in group practices ( $p = 0.006$ ) and in urban settings ( $p = 0.003$ ): their patients more often sought help directly from a psychiatrist.



**Figure 4.** Presence of patients in the practice who sought help directly from a psychiatrist.

A study found a positive correlation between self-medication, pharmacist visits, depression, oral pain, and recent hospitalization (Jerez-Roig et al. 2014). This correlation ranged quite widely - between 4%–87%. With more frequent meetings with their GPs, people do not resort to self-medication. However, at the beginning of the pandemic and with the restrictive measures introduced, visits to family doctors were severely limited.

Depression is one of the diseases in which people often resort to self-medication. When asked whether their patients used self-medication before the visit, 75.3% (n = 226) of the surveyed doctors gave an affirmative answer (Fig. 5). It was found that this happened more often among younger family doctors with a correspondingly less work experience (p = 0.009). Their patients more often resorted to self-medication.

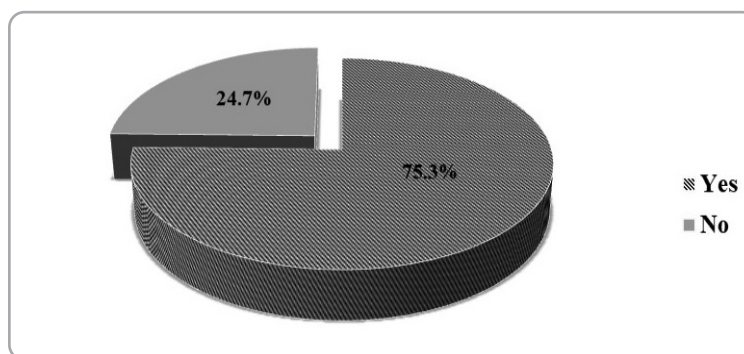


Figure 5. Presence of patients who self-medicated before the visit.

The data from whom patients sought advice when self-medicating is of interest. The largest percentage of patients (60.6%) sought advice about their condition from relatives and friends (Fig. 6). This was found to occur with patients of younger GPs under the age of 50 (p = 0.003), with fewer years of experience (p = 0.002). Many patients relied on their previous experience in solving past health problems. Patients were significantly less likely to seek advice from a medical professional/pharmacist.

The COVID-19 pandemic has made people even more anxious and depressed. In 2021, scientists from Queensland, Australia, found a dramatic increase in anxiety and depressive disorders at the beginning of the pandemic, and even then, they warned of a second wave after the COVID-19 wave - a wave

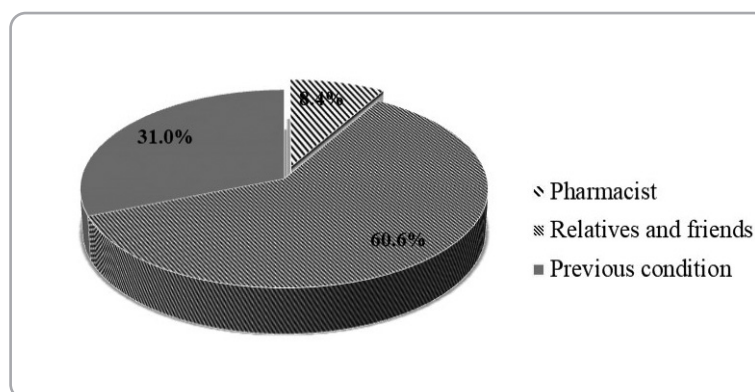


Figure 6. Who was asked for help for applied self-medication.

of depression, fear, anxiety, psychoses, and eating disorders. They analyzed 48 studies from 204 countries and found that severe depression had increased by 28%, with 53 million more patients than before the pandemic (193 million before the pandemic, reaching 246 million during the pandemic). Anxiety disorders had increased by 26%, with 73 million more anxiety patients than before the pandemic (298 million before the pandemic). During the pandemic, they reached 374 million. Women were more affected than men. Scientists explain this with the increased number of household chores and the high risk of domestic violence because of the prolonged stay at home due to the imposed restrictions. The survey among our GPs confirmed these expectations. Another worrying fact is the increased incidence of anxiety and depressive disorders in children and adolescents. Prolonged isolation, closed schools, and lack of meetings and social contact with peers were cited as reasons (COVID-19 Mental Disorders Collaborators 2021).

Mental health appears as a major risk factor that is responsible for a complicated course, prolonged illness from the Covid-infection, and a high percentage of hospitalizations (Shetty et al. 2023).

Bulgaria's population has been greatly affected by the Covid-19 pandemic. The pandemic increased the number of patients with anxiety and depression in General Medical Practice for the period 2020–2022 (Velikova et al. 2020; Marinova et al. 2021; Stoyanova et al. 2021). Given the unique functions and positions of GPs, the COVID-19 - pandemic has led to an increased demand from patients for their help with psychiatric consultations (Carr et al. 2021; Stephenson et al. 2022). The respondents of the present study also confirmed this finding. At the beginning of the pandemic, visits to family doctors were severely limited because of the anti-epidemic bans.

## Conclusion

People perceived the announcement of the pandemic as a serious crisis. Their fears and worries were expressed as an increase in the incidence of anxiety and depressive disorders around the world, including in Bulgaria. Our research studied the impact of the COVID-19 pandemic on the emotional state of patients in the general medical practice, according to the opinion of their family doctors. Our results are comparable with other studies conducted in our country on the degree of anxiety and depression of the Bulgarian population during and after the COVID-19 pandemic (Velikova et al. 2020; Marinova et al. 2021; Stoyanova et al. 2021).

Social isolation, the unknown, the unpredictability of the situation, and the many uncertainties about the course of the infection, the negative information from the media and the Internet have made people more anxious and depressed. Bulgarians often resort to self-medication despite the easy access to general practitioners and the possibility of consultation with a psychiatrist.

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