**MEDICAL UNIVERSITY - PLEVEN**

FACULTY OF PUBLIC HEALTH

DEPARTMENT OF GENERAL MEDICINE, FORENSIC MEDICINE AND DEONTOLOGY

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# DEPRESSIVE EPISODE IN GENERAL MEDICAL PRACTICE – SIGNIFICANCE OF THE PROBLEM AND BEHAVIOURAL ALGORHITHM

**ABSTRACT**

of dissertation work for awarding the educational and scientific degree

**“DOCTOR”**

Doctoral programme General Medicine

Academic advisor:

**Assoc. Prof.Tsvetelina Valentinova,**

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The dissertation contains 205 standard pages, including 17 tables, 39 graphs and 4 appendices.

The bibliography contains 336 literary sources, 30 of which are in Cyrillic and 306 in Latin alphabet.

Appendices include: No 1– A questionnaire card for GPs; No 2 – A questionnaire for the conducted semi-structured interview with psychiatrists; No 3 – A sample programme for training GPs; No 4 – An algorithm of behaviour in General Medical Practice when a depressive episode is suspected.

3 full-text publications and 3 scientific presentations at national forums were made in connection with the dissertation work.

The dissertation work has been approved and submitted for public defense by extended Departmental Council of the Department of General Medicine, Forensic Medicine and Deontology, Faculty of Public Health, at Medical University-Pleven, held on 3rd July, 2024.

The official defense of the dissertation will take place on 1st October, 2024 at 11.30 a.m. in "Ambroaz Pare" hall in Medical University, Pleven according to the regulations on the terms and conditions for acquiring scientific degrees and holding academic positions at the Medical University-Pleven and based on **Rector's Order No2058/24** before a scientific jury composed of:

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The defense materials have been published on the website of the Medical University-Pleven:
http://www.mu-pleven.bg/index.php/bg/

CONTENT:

**ABBREVIATIONS USED:**

| | |
|---|---|
| CTFPHC | Canadian Task Force on Preventive Health Care |
| EAAD | European Alliance Against Depression |
| EURACT | European Academy of Teachers in General Practice and Family Medicine |
| SARS-CoV-2 | Severe Acute Respiratory Syndrome Coronavirus |
| WONCA | The European Society of General Practice/ Family medicine |
| BPAD | Bipolar Affective Disorder |
| GDP | Gross Domestic Product |
| BMA | Bulgarian Medical Association |
| BPHA | Bulgarian Public Health Association |
| MDD | Major Depressive Disorder |
| DE | Depressive episode |
| DSM | Diagnostic and Statistical Manual of Mental Disorders |
| EC | European Commission |
| EU | European Union |
| IHD | Ischemic heart disease |
| REC | Research Ethics Committee |
| ICD | International Classification of Diseases |
| MU | Medical University |
| NHIF | National Health Insurance Fund |
| NSI | National Statistical Institute |
| NCPHA | National Center for Public Health and Analysis |
| GM | General Medicine |
| GMP | General Medical Practice |
| GP | General Practice |
| GP | General Practitioner |
| PMDD | Premenstrual dysphoric disorder |
| PHC | Primary health care |
| PMS | Premenstrual syndrome |
| PTSD | Post-traumatic stress disorder |
| USA | The United States of America |
| WHO | World Health Organization |
| WPA | World Psychiatric Association |
| CVDs | Cardiovascular diseases |
| UMPHAT | University Multi-profile Hospital for Active Treatment |

# I. INTRODUCTION

***"When mental health is ultimately recognized as essential to physical health, not an extraneous element of it, then we will have access to true, complete, modern medicine."***

***John Campo, 2017.***

Depression is a disease characterized by high incidence and social significance. Diagnosing it is a complex, difficult and responsible process. WHO ranks depression in the first place among diseases causing disability and loss of working capacity.

Since the Covid-pandemic, the incidence of anxiety and depressive disorders has increased. The European Union clearly declares its concern about the mental health of its citizens. In an opinion dated 29.09.2023, the EU outlines its recommendations and guidelines for work in the direction of early diagnosis of anxiety and depressive disorders, for their appropriate therapy and social rehabilitation. Mental health should be a priority in all EU member countries. The approach must be **coordinated, multidisciplinary, comprehensive and person-centred.**

Vulnerable groups are children, adolescents and the elderly. A person's mental health is influenced by many factors: biological, psychological, educational, social, economic, occupational, cultural and environmental factors.

The GP is the first point of contact and the link between patients with depressive disorders and the country's healthcare system. The GP has an important role in recognizing and managing the problem.

Various factors act as barriers to the doctor and the patient in the process of consultation and sharing of mental health problems. The question is whether the generally valid barriers are identical for Bulgarian physicians and patients, how they can be regulated in the General Medical Practice setting and how the process of recognizing depressive disorders by GPs can be optimized.

Another question that has to be answered is what diagnostic approaches are used by family doctors when diagnosing a "depressive episode" and related somatic diseases, as well as what diagnostic tools and methods are used in the PHC setting in Bulgaria.

The GPs' behaviour, their behavioural algorithm, the use of screening scales or other types of tests when diagnosing depression still remains unexplored in the real practice of GPs in our country.

Depression precedes, accompanies or leads to many socially significant diseases in the field of endocrinology /diabetes, hypothyroidism/, urology (erectile dysfunction), neurology (epilepsy, stroke, multiple sclerosis, Alzheimer's disease, Parkinson's disease), pulmonology /bronchial asthma, chronic obstructive pulmonary disease/, cardiology and rheumatology /arterial hypertension, ischemic heart disease, myocardial infarction, rheumatoid arthritis, chronic pain/, oncology.

In Bulgaria, the question of whether, in the presence of the above- listed diseases, GPs actively look for the presence of depressive symptoms in these patients, or a large percentage of the cases remain undiagnosed, is poorly researched.

It is a fact that depressive disorders are one of the most common mental health disorders worldwide, affecting more than 300 million people around the world. In the context of all these factors, depression represents a serious public health challenge. The increasing morbidity and incidence and the need for long-term treatment define depression as one of the most important diseases of modern society.

Non-recognition and gaps in the diagnosis and treatment of depression have serious economic and social consequences for the individual and the society as a whole.

## II. AIM, OBJECTIVES AND HYPOTHESES

### 1. Aim of the study

**The aim of the present study is to investigate the knowledge, attitude and behaviour of General Practitioners with patients with a depressive episode in General Medical Practice and, based on the results, to analyze the possibilities for optimizing the work with these patients.**

### 2. Objectives of the study

***To achieve these aims, the following tasks were set:***

1. To examine and evaluate the knowledge and skills of GPs and their application in the general practice in the management of DE patients in the PHC setting.
2. To examine the GPs' attitude and confidence to communicate with this group of difficult patients in the PHC setting.
3. To examine the barriers to doctors and patients that have an impact on sharing problems related to the person's mental state.
4. To study the willingness of family doctors regarding the necessary forms of training for work with depressed patients.
5. To analyze the possibilities for optimizing the work with depressed patients in general practice and to use the obtained results as a basis for developing a behavioural algorithm adapted to the GMP setting.

### 3. Hypothesis

**Working hypothesis:** At each stage of the consultation, a number of factors influence the recognition and diagnosis of patients with a depressive episode and the diseases comorbid with depression. GPs have difficulties in the process of diagnosing and management of a patient with a depressive episode in GMP and some of the decisions they make are not optimal. The GP must have the relevant knowledge, skills, attitudes to form the right behaviour and attitude towards patients with depression. Training is a key point in this process.

## III.MATERIALS AND METHODS

### 1. Subject of the study

The subject of the research is the GPs' behaviour and attitude in the consultation process for active search, correct diagnosis and possible therapy of patients with depression and related diseases and conditions.

### 2. Units of observation

**Technical units of observation:**

The technical units of the study are the Primary Care Clinics - individual and/or group practices located on the territory of the Republic of Bulgaria.

**Logical units of observation**

The logical units of observation are GPs, organized in individual or group practices, working on the territory of the Republic of Bulgaria.

**3. Signs of the units of observation:**

The following factorial and results signs were used for each unit of observation:

**Factorial signs:** gender, age, years of medical experience, acquired specialty or specialties, specialization in GM, number of residents of the place where the general practice operates, an urban or rural health service, number of patients served by the practice, type of practice - group or individual, focus of the practice – people under/over 18 years, position in the practice – titular or a hired physician, employed personnel - number, type of employed personnel – physician, nurse, midwife, technical assistant or others.

**Results signs**:

- Criteria and indicators for determining the specific features of GMP and how they influence the discussion of mental health problems, including depressive complaints and their diagnosis.
- Criteria and indicators for determining the barriers and stimulating factors for patients to reveal mental health problems, reported by their GPs.
- Criteria and indicators for determining barriers and stimulating factors for doctors to discuss problems related to depression and its comorbid somatic diseases in their patients
- Criteria and indicators for determining the gradation of GPs' priorities in the consultation process, depending on the health problems presented to them.
- Criteria and indicators for determining the GPs' approaches in diagnosing and prescribing therapy for patients with depression. Used tools, rating scales, screening in this process. Recognition of depressed patients with a leading somatic disease occurring with depressive symptoms.
- Criteria and indicators for determining the necessity and the physicians' willingness to participate in training on depression. Preferences regarding the form of the training organization.

**4. Research methodology**

**4.1. Methods of collecting the information - sociological methods**

**- Documentary method**

An analysis of 336 Bulgarian and foreign language literary sources relevant to the present work has been made. The normative documents in the country, regulating the organization of activities in GMP, psychiatric care and the completion of medical documentation have also been analyzed. The data available in PUBMED were used during the research.

**- Direct individual survey among GPs**

The survey method was implemented using an individual anonymous questionnaire sent via the Google forms platform to a sample of General Practitioners. The questionnaire was approved by the Ethics Committee of the Scientific Research Activity at the Pleven Medical University with Protocol/ Decision No. 680-ECSRA/ 03.06.2022.

The questionnaire is divided (**Appendix 1**) into two sections:

- The first part contains **socio-demographic data** of the surveyed doctors: gender, age, years of professional experience, information on professional qualification and realization, data on the structure of the practice.
- **The special, second part** contains questions regarding the presence of depressed patients in the practice, leading complaints and symptoms, knowledge, skills, attitudes of GPs when working with these patients in certain situations. The first group of questions in the special

part are about the epidemiology of depression in general practice - gender, age of onset, seasonality, as well as the presence or the absence of additional training in Psychiatry. The second group of questions is about the GPs' attitude and behaviour when working with depressed patients. This is followed by questions about barriers and stimulating factors for both the physician and the patient in the consultation process and questions related to mental health. The survey finishes with questions about the need for additional training modules on difficulties and coping with them when working with depressed patients.

**Inclusion criteria:**

-a contract with the NHIF for the provision of Primary Health Care

- presence of patients with a depressive episode in the practice

- voluntariness

**Exclusion criteria:**

-persons' refusal

-absence of patients with a depressive episode in the list

**-A semi-structured interview among doctors with specialty "Psychiatry"**

The study, conducted in the form of a direct semi-structured interview, was carried out among 34 specialists in psychiatry from the regions of Pleven and Lovech, who work in both outpatient practices and hospitals and who were randomly selected. Each of the interviewed psychiatrists, after giving their consent, was invited to participate in an interview. They were provided with uniform standardized information about the aims, objectives and nature of the study and they gave informed consent for the conversation to be recorded. When conducting the interview, the lead researcher asked standard and uniform for all interviewees protocol questions. If additional information was needed, additional clarifying questions were asked. The interviews were conducted in an informal setting. The conversations were recorded using the voice recorder function of a mobile phone. After the final completion of the interviews with all 34 psychiatrists, the responses were transcribed and analyzed by the interviewer. Interviews were conducted until saturation.

The conducted interview is conditionally divided into two parts **(Appendix 2).** The first part contains questions concerning the demographic characteristics of the respondents. The second part contains questions about the factors which, in their opinion, limit GPs from referring their patients for psychiatric consultation, how often and when patients with a depressive episode are referred by GPs for consultation, whether a therapy has been prescribed and, if so, what and by whom, what the most common leading complaints are. The second part contains questions about the barriers to patients to directly seek specialist help from a psychiatrist and whether GPs need additional training to work with patients with a depressive episode and how these training meetings should be organized.

**Inclusion criteria:**

-a contract with the NHIF for the provision of specialized psychiatric care and/or employment in a hospital

-voluntariness

**Exclusion criteria:**

-people's refusal

**-The method of "focus groups" or group discussion.**

The qualitative research method, which was used, aimed to investigate the opinion of a focus group of 14 GPs regarding the applicability of the developed behavioural algorithm in GMP during a depressive episode. Two moderators were used in the discussion, with one moderator trying to keep the session running smoothly and the other one trying to cover all topics. 7 issues related to the application of the algorithm in GMP were discussed.

**Inclusion criteria:**

-employment as a doctor in GMP

- voluntariness

**Exclusion criteria:**

-people's refusal

## 5. Data processing methods - statistical methods

The collected primary information was checked, coded, entered and rechecked into the computer database for statistical processing, recoding and analysis.

The processing of the data obtained during the research was carried out with a specialized statistical software package SPSS 22 and EXCEL for Windows.

The results are presented in tables, graphs and numerical indicators of structure, frequency and dependence coefficients between the studied variables.

The collected primary information was analyzed using the following statistical analyses:

- In the analysis of the results, since almost all the studied variables are qualitative and are presented on the weak scales (nominal/ordinal), in order to test hypotheses and study a statistically significant relationship between any two variables of interest, the **non-parametric test $\chi^2$, test (Chi-square analysis),** was mainly applied. When the conditions for the application of this method were not met, which are expressed in that no more than 20% of the cells in the crossed table have theoretical values below 5, **Fisher's exact test** was used if the table is 2x2 and **Likelihood Ratio** was used in larger tables, which are obtained when at least one of the crossed variables has more than 2 possible meanings (values).
- The significance of the results and conclusions was determined at a risk of error $\alpha$=0.05. This value was used to test the hypotheses. Using the statistical package SPSS for fast and accurate data processing, if when conducting Chi-square, Fisher's exact test or Likelihood Ratio, the obtained level of significance **Asymp. Sig. (2-sided)** was less than the risk of error ($\alpha$=0.05), the null hypothesis was rejected and the alternative was accepted as true, i.e. this is what is actually of interest for deeper observation and analysis - the presence of a statistically significant relationship.
- To measure the strength of the dependencies, we used **the Cramer's coefficient (Cramer's V**), which is normalized in the range from 0 to 1. It is conditionally accepted that when it is in the range from 0 to 0.3, the relationship is weak, above 0.3 to 0.7 - medium, and above 0.7 - strong. Cramer's coefficient is used only after successful application of the Chi-square test.

## 6. Place and time of the survey, stages.

**Stages of implementation**

- A literature review on the topic was made

- A questionnaire was prepared
- A permission to start the study was received from the Ethics Committee of the Medical University - Pleven Protocol/ Decision No. 680-KENID/ 03.06.2022
- 1,000 survey cards were randomly distributed through Google forms in eight districts of the country. The study was conducted until saturation. We received completed questionnaires from 306 GPs from the regions of Pleven, Lovech, Gabrovo, Veliko Tarnovo, Varna, Ruse, Plovdiv and Stara Zagora. Six of the physicians surveyed had no patients with a depressive episode in their practice during the follow-up period. Their answers were excluded from the statistical processing of the primary information. The survey was conducted voluntarily, anonymously and online for the period July-December 2022.

  In the statistical processing, 6 (2%) of the returned questionnaires were excluded due to lack of depressive episodes in the respective practice. According to NSI data, there were 3,854 GPs at the time of the study. Based on this, the required number of respondents was calculated - 8% of all GPs in the country.
- The interview with the specialists in psychiatry was conducted in the period January-March 2023. A group of psychiatrists, randomly selected from Pleven and Lovech regions, was formed.
- The method "focus groups" or group discussion. A study was conducted with a small focus group of 14 GPs on the applicability of the developed behavioural algorithm for suspected depressive episodes. 7 questions related to the proposed algorithm were discussed.
- The study was planned, organized and conducted personally by the researcher.

### 7. Limitations of the collected information

The study examined family physicians' perceptions of barriers and stimulating factors in the consultation process. The obtained results are the result of their self-assessment, and whether this coincides with the actual behaviour in the consultation process can only be assumed.

Regarding the barriers and stimulating factors for patients, as a drawback it can be pointed out that this is the doctor's judgment about them, not the patients'. On the other hand, some patients categorically refuse to participate in studies, precisely because of the presence of barriers, and their behaviour remains unexplored and unknown.

## IV. RESULTS

### 1. Demographic characteristics of the surveyed groups.

#### 1.1. GPs-Demography

The socio-demographic characteristics of the studied group of GPs and the main characteristics of the practices in which they work are presented in **Table 1** and **Table 2**, respectively.

**Table1. Socio-demographic characteristics of GPs participating in the study**

| SIGN | NUMBER (n), RELATIVE SHARE (%) Base n=300 |
|---|---|
| **Gender** | |
| Male | 89 (29,7%**)** |
| Female | 211 (70, 3%) |
| **Age groups** | |
| Under 50 years | 68 (22, 7%) |
| 51 – 60 years | 84 (28, 0%) |
| Over 60 years | 64 (21, 3%) |
| No response | 84 (28, 0%) |
| Average age | **54, 29** |
| **Years of professional experience** | |
| Under 20 years | 42 (14, 0%) |
| 20 – 30 years | 95 (31, 7%) |
| Over 20 years | 163 ( 54, 3% ) |
| **Recognized medical specialty*** | |
| General medicine | 265 (88,3% ) |
| Currently specializing in General Medicine | 11 ( 3,7% ) |
| Internal diseases | 92 (30,7% ) |
| Pediatrics | 60 ( 20, 0% ) |
| Other specialties | 15 ( 5, 0% ) |
| Other qualifications | 21 ( 7,0 % ) |
| * *The surveyed doctors have given more than one answer* | 154, 7% |

Most of the surveyed physicians are women, which corresponds to the predominance of the female gender in this profession on the territory of the country. The female/male ratio is 2.4:1 in favour of female GPs. The gender distribution is presented in **Fig. 1.**

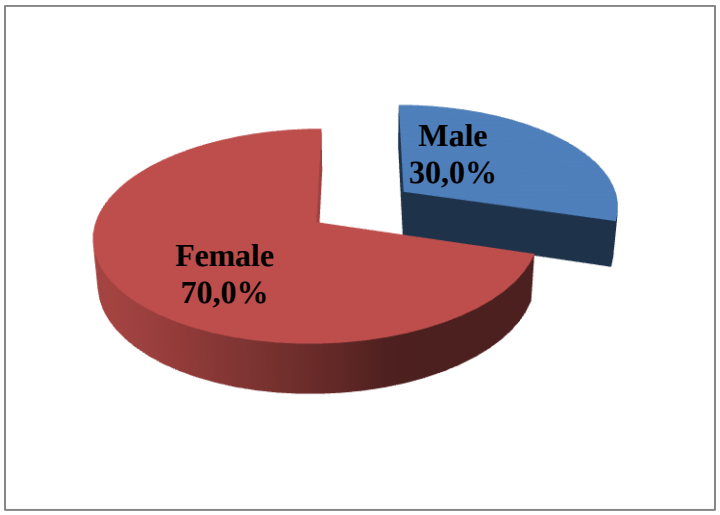



**Fig. 1. Distribution by gender**

Doctors were divided into four age groups as follows: under 50 years old - 22.7%, 51-60 years old - 28.0%, over 60 years old - 21.3%, and 28.0% did not wish to specify exactly their age when completing the questionnaire. The data convincingly prove one of the serious problems of General Medical Practice in Bulgaria - the aging of the physicians working in it. For this reason, more than half of the respondents have professional experience of more than 20 years. The distribution by age is presented in **Fig. 2.**

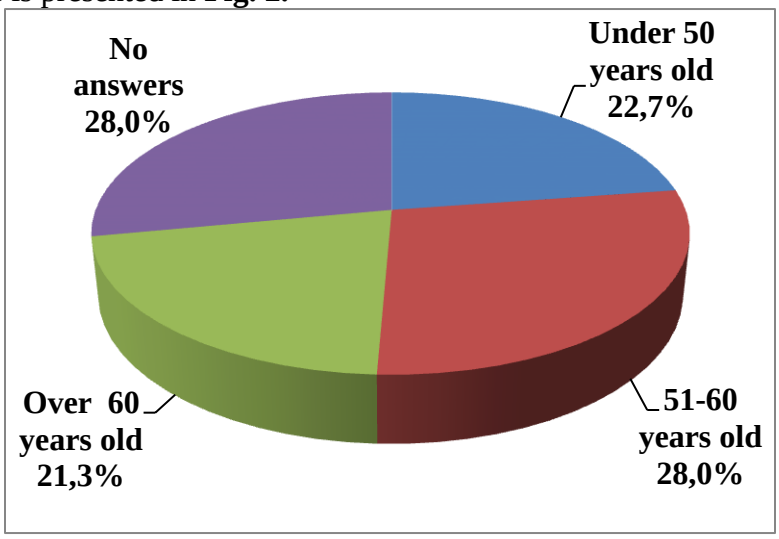



**Fig. 2. Distribution by age groups**

Regarding the specialization, it is noticeable that a very large part of the doctors - 88.3% had a recognized specialty in General Medicine, and 3.7% were currently specializing in this specialty. More than half of the doctors also had a second recognized specialty in pediatrics or internal medicine.

**Table 2** presents the main characteristics of the practices where the physicians participating in the study work.

**Table 2 Characteristics of Primary Health Care practices**

| SING | NUMBER (n), RELATIVE SHARE (%) Base n=300 |
|---|---|
| **Size of the work area with number of residents** | |
| Under 5, 000 | 43 (14,3%) |
| 5, 000-20, 000 | 30 (10,0%) |
| 20, 001- 100, 000 | 79 (26,3%) |
| Over 100, 000 | 148 (49,3%) |
| **The practice works in:** | |
| City, town | 219 ( 73,0%) |
| Village | 28 (9,3%) |
| Mixed type | 53 (17,7%) |
| **Type of practice:** | |
| Group practice | 58 (19,3%) |
| Individual practice | 242 ( 80,7%) |
| **Number of patients in the practice:** | |
| Under 500 | 3(1,0%) |
| 500-1, 000 | 39(13,0%) |
| 1,001-1,500 | 85(28,3%) |
| 1,501-2, 000 | 54(18,0%) |
| Over 2, 000 | 119(39,7%) |
| **Practice focus:** | |
| People under 18 years | 38 (12,7%) |
| People over 18 years | 85 (28,3%) |
| Mixed type | 177 (59,0%) |

The following **Fig. 3** shows in detail the distribution of practices in towns/cities by number of inhabitants. It can be seen that half of the practices work in big cities and the other half in villages and small towns. We have assumed a conditional number of 100,000 inhabitants to distinguish between a city and a town.

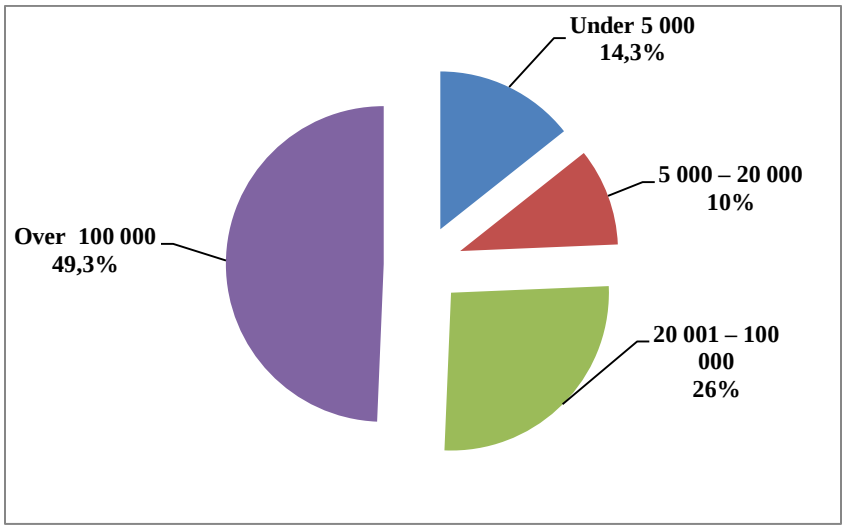



**Fig. 3. Type of place (town/city) where the practice operates**

With regard to the staff structure of the practice - as size and number - it was found out that 76% of the practices had employed nursing staff, 16.3% had employed midwives, and 55.6% had other technical or support staff – **Fig. 4**. It is striking that there are practices that continue to operate without health care professionals - nurses or midwives. The share of individual practices prevails significantly - more than 80% over that of group practices - something also quite typical for Bulgaria.

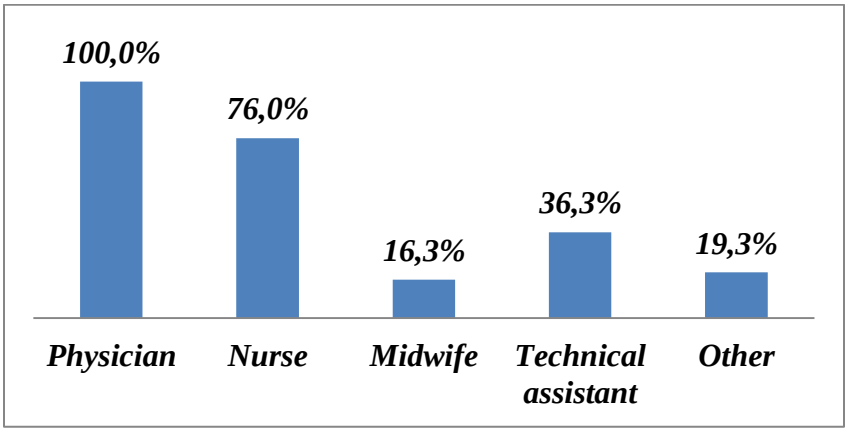



**Fig. 4 Structure of the staff in the practice /including the titular doctor/**

### 1.2. Psychiatrists-demographics

The demographic characteristics of the interviewed group of psychiatrists are presented in **Table 3.**

34 specialists from Pleven and Lovech regions were surveyed. In both regions the distribution by gender is even. The majority are doctors over 55 years old and, accordingly, with a longer working experience – more than twenty years. All the respondents have a specialty in Psychiatry, and two doctors from the Pleven region also have a specialty in child psychiatry.

**Table 3. Demographic characteristics of psychiatrists**

| Specialists in Psychiatry | | NUMBER(n) RELATIVE SHARE (%) Base n=34 |
|---|---|---|
| **Gender** | Female | 50,0% **(n=17)** |
| | Male | 50,0% **(n=17)** |
| | | ***100,0%*** ***(n=34)*** |
| **Age** | Up to 50 | 29,4**%** **(n=10)** |
| | Over 50 | 70,6% **(n=24)** |
| | | ***100,0%*** ***(n=34)*** |
| **Average age** | 51, 85 години | |
| **Years of professional experience** | Under 10 years | 5,9% **(n=2)** |
| | 10-20 years | 11,8**%** **(n=4)** |
| | 21-30 years | 55,9**%** **(n=19)** |
| | Over 30 years | 26,5**%** **(n=9)** |
| | | ***100,0%*** ***(n=34)*** |
| **Recognized medical specialty in:** | Psychiatry | 100,0**%** **(n=34)** |
| | Child psychiatry | 5,9**%** **(n=2)** |
| | | ***100,0%*** ***(n=34)*** |

**2. Epidemiology of DE in GMP - gender, age, seasonality.**

Of all the GPs who responded to the survey, it was found that 98 (n=300) had patients with DE, and of those 300 GPs who confirmed the presence of patients with DE in their practice, an extremely large number - 96.3% (n=289) reported having patients **with more than one depressive episode**. Only 3.7% (n=11) reported observing only one episode in their patients – **Fig. 5.**

The reported results are not affected by the distribution by age groups, years of professional experience, number of residents in the place where the practice operates and the type of practice - group or individual.

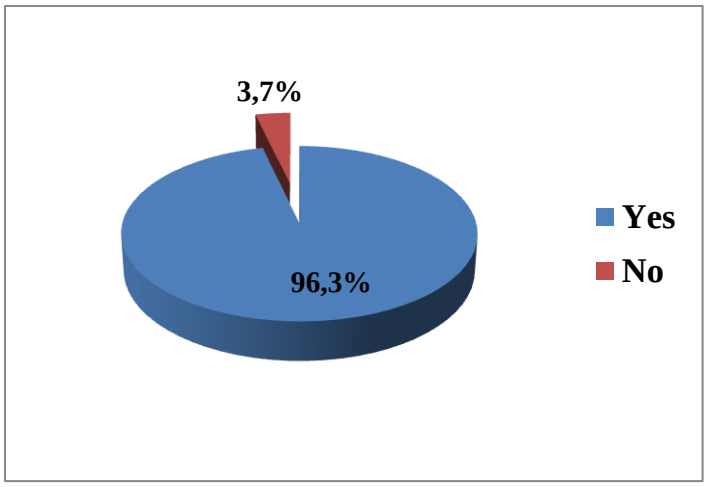



**Fig. 5. Presence of patients with more than one depressive episode**

In terms of observed seasonality in the exacerbation of depressive symptoms, the distribution of responses is presented in **Fig. 6.** According to 97.3% (n=292) of GPs, seasonality was observed in the exacerbation of their patients' symptoms.

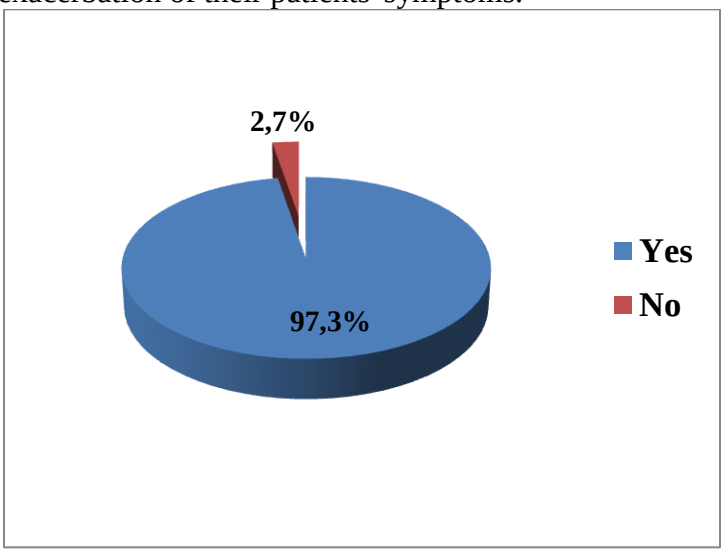



**Fig. 6. Is there seasonality in the exacerbation of depressive symptoms?**

Regarding the season in which there is a more frequent exacerbation of depressive symptoms, the surveyed GPs indicated more than one answer, presented in **Fig. 7**. Leading is the autumn period, according to 73.3% of the respondents and the winter period – according to 51% of them. The rarest exacerbation occurs in the summer - 4.1%. A connection with the autumn-winter season is more often observed and reported by doctors with a longer working experience - over 30 years (X2=9.500; df=2; p=0.009, Cramer's V=0.180), as well as by doctors specializing in internal medicine (X2=5.207; df=1;p=0.022, Cramer"s V=0.134) or pediatrics (X2=14.937; df=1; p=0.000, Cramer"s V=0.226 ) working in a mixed practice type (X2 =5.464; df=1; p=0.019, Cramer's V=0.137)) with more than 2,000 patients (X2=11.453; p=0.022, Cramer's V=0.198). These groups of doctors are more convincing in their knowledge about seasonality in the exacerbation of depressive symptoms.

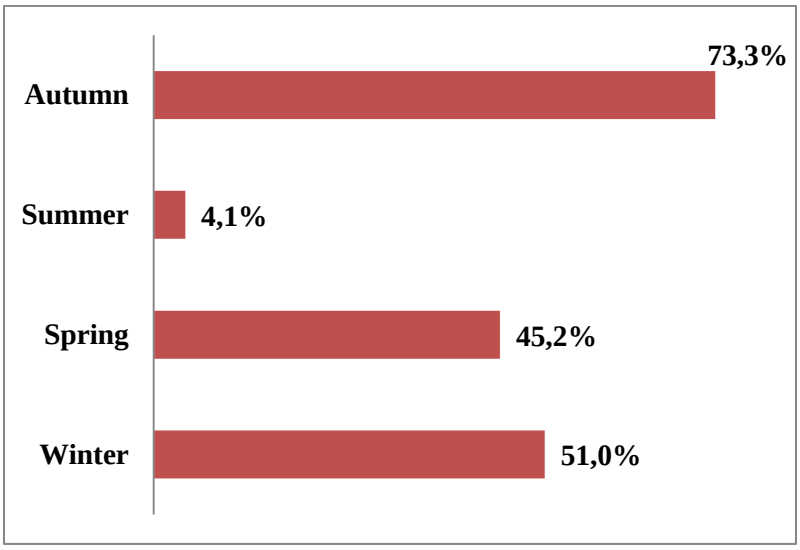



**Fig. 7. Observed seasonality in exacerbation of depressive symptoms**

A number of data from the literature review made on the subject shows that **women** suffer from depression twice as often as men (48,82,127,128,161,220,240,246,247,266). In 91.3% of the cases (n=274) the surveyed doctors confirmed this observed trend. Interesting is the fact that younger colleagues under the age of 50 report a significantly higher percentage of depressed men in their practice -11.8%, compared to their older colleagues, where the percentage is 1.6% for the male gender (p=0.004), which was precisely determined with the Likelihood Ratio test. A likely explanation is that younger colleagues are more attentive and more actively looking for symptoms of depression in their male patients.

Data from the literature review show conflicting data regarding the lack of dependence between the incidence of depression and the social status of patients, but social status influences the strength of manifestation of depressive symptoms (97, 319). We went further and looked for a relationship, according to our respondents, between **the patients' level of education** and the manifestation of depressive symptoms, and respectively the help sought. 72.3% (n=217) of the surveyed GPs answered that they did not establish such a connection. The results of psychiatrists' responses are similar – **Fig. 8.** They also found no relationship between the patients' education, the manifestation of depressive symptoms and the direct search of specialized psychiatric care - 50% (n=17).

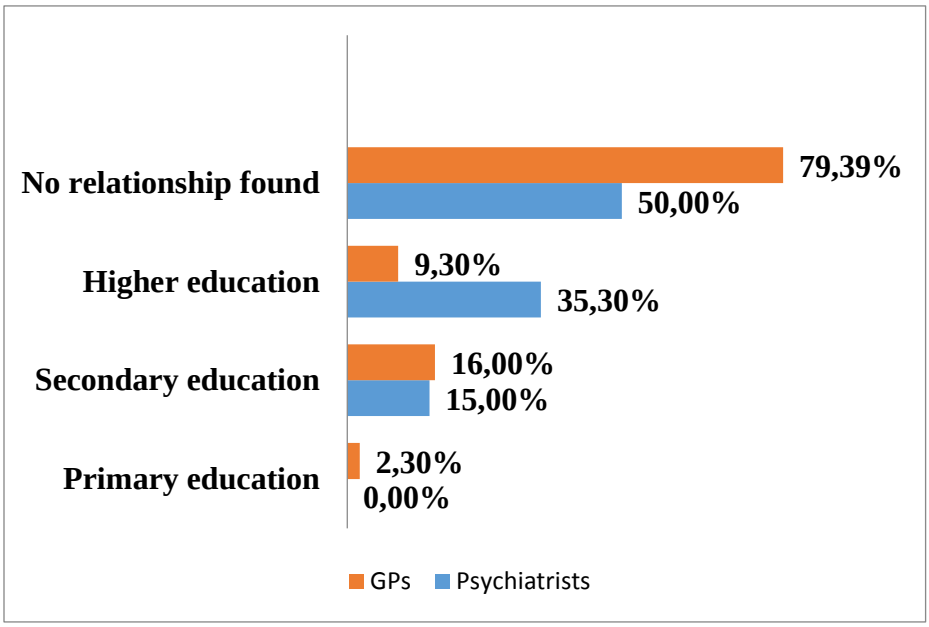



**Fig. 8. Relationship between patients' education and the manifestation of depressive symptoms**

After reviewing the topic, and according to the studies conducted on **first onset of** depression, most people have their first depressive episode between the ages of 30-40, after which there is a small peak in incidence between the ages of 50-60 (5,6,8 ,9,11,15,319). **Fig. 9** presents the distribution of the responses of the surveyed GPs regarding the age of their patients at onset of a depressive episode. According to 62.3% (n=187) of our respondents, their patients are most often in the 46-65 age group, followed by the 18-45 age group - according to 22.7% (n=68), and 14% (n=42) of general practitioners rank patients over 65 years of age in third position.

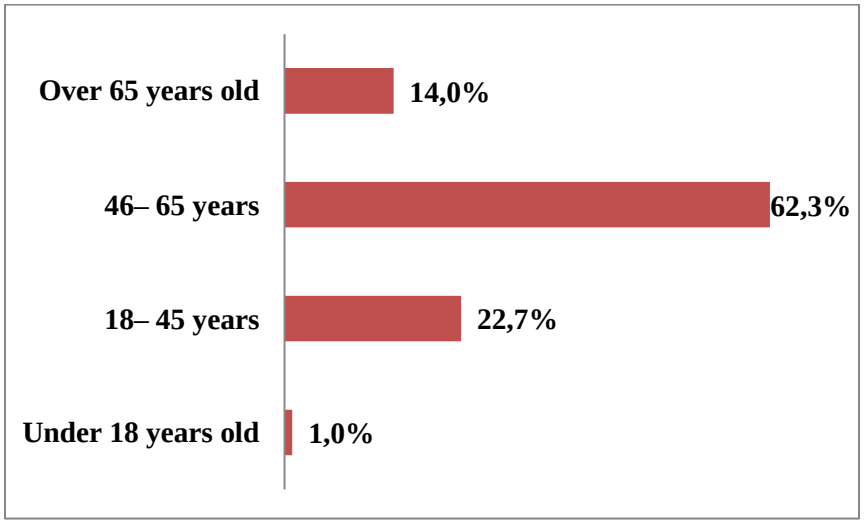



**Fig. 9. Age of patients with a depressive episode**

Considering the fact that depression with a pronounced classic clinical picture is rarely encountered in general practice and somatic complaints are more often the leading complaints that bother patients and because of which they seek medical help, we asked our respondents what, in their opinion, **was the percentage in which depression was the main reason for a patient to seek them out**. The distribution of responses is presented in **Fig. 10**. 23.7% of the surveyed doctors answered that for more than 10% of their patients, depression was the main reason for seeking medical help. This was found to be more common among male GPs compared to female GPs (X2=6.000; df=2;p=0.005; Cramer"s V=0.141).

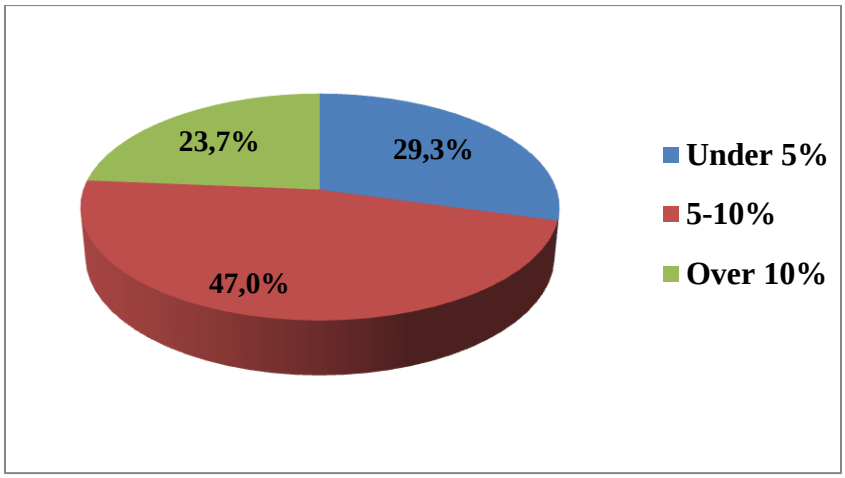



**Fig. 10. What do you think is the percentage in which depression is the main reason for the patient to seek medical help?**

The most common complaints presented by patients in General Medical Practice where depression is suspected were studied – **Fig. 11.** Some statistically significant relationships were established between individual demographic characteristics of the surveyed GPs, including age, years of working experience, size of the town/city, type of practice and the type of complaints shared by the patient. Our respondents could give more than one answer when completing the questionnaire.

Sleep problems are the leading reason for the visit according to 92.3% of our respondents. Physicians in the age group 51-60 years more often reported complaints of insomnia from their patients (X2=12,850; df=3;p=0,005; Cramer"s V=0,207).

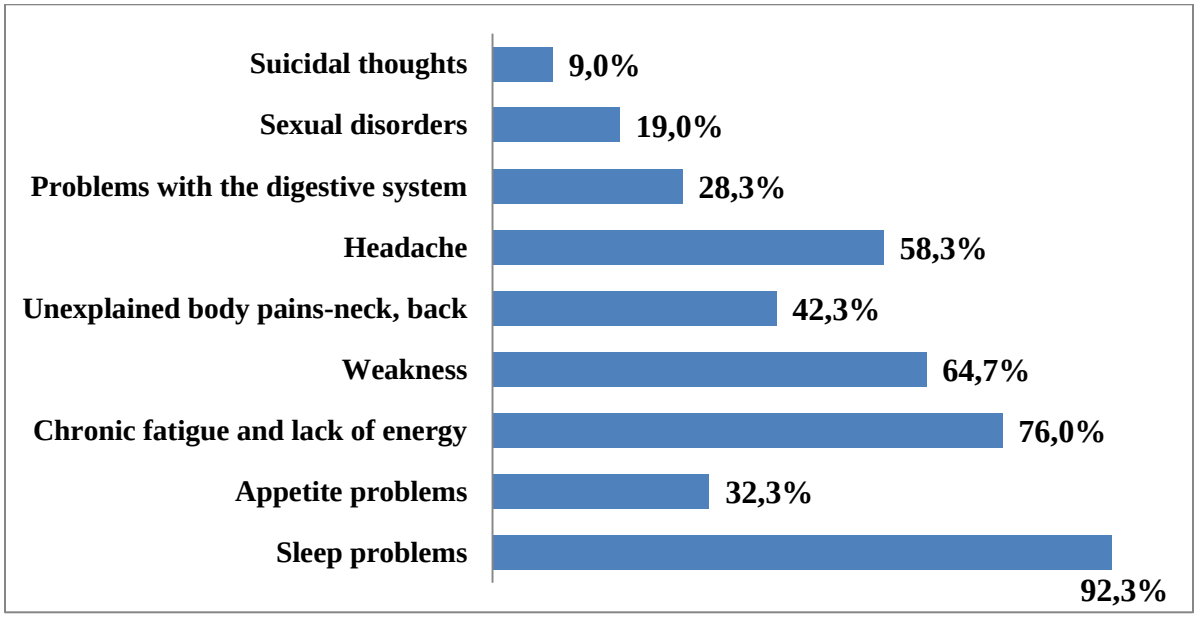
The lack of energy accompanied by chronic fatigue worries patients in 76% of cases and makes them visit the general practitioner's office, according to the surveyed GPs. These symptoms were reported more often by doctors at a younger age, under 50 years (X2=12,554; df=3; p=0,006; Cramer"s V=0,205).

A change in appetite / increased or decreased / is a reason that makes patients visit their GP, according to 32.3% of the surveyed physicians. This is more often observed in practices located in larger cities (X2=16,092; df=2;p=0,0001; Cramer"s V=0,232).

Gastrointestinal disorders and other problems with the digestive system bother patients in 28.3% of the cases, according to the respondents. This complaint was also reported more often by younger family doctors (X2=15,172; df=3;p=0,002; Cramer"s V=0,225), with less professional experience (X2=7,552; df=2;p=0,023; Cramer"s V=0,159), working in urban settings (X2=6,883; df=2;p=0,033; Cramer"s V=0,151).

Unexplained body pain - 42.3%, headache - 58.3%, fatigue - 64.7%, also deserve attention and are very often the leading reason for patients' visits.

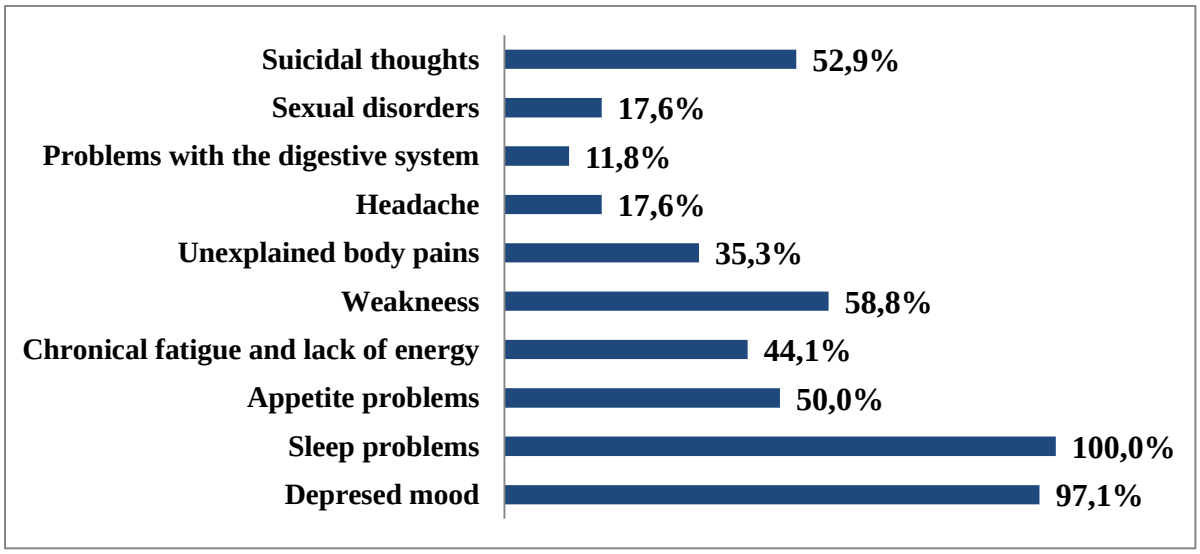
Particular attention must be paid to suicidal thoughts, according to 9% of the surveyed doctors. GPs working in rural practices are more attentive in this respect (X2=5,963; df=1;p=0,015; Cramer"s V=0,141), compared to their colleagues working in urban settings. All colleagues who question patients in more detail about the presence of suicidal thoughts have a long-term recognized specialty in General Medicine (p=0.0001), which was precisely determined with Fisher's Exact Test.




/Respondents have given more than one answer/

**Fig.11 Most common patient complaints, according to GPs' responses**

We asked the same question when conducting the direct interview with the psychiatrists – **Fig. 12**. Our aim was to determine and compare the leading complaints, according to the two groups of surveyed doctors - GPs and psychiatrists. Psychiatrists' opinion was leading for us and we used it as a basis, because they are the specialists in mental health.




/respondents have given more than one answer/

**Fig. 12. Patients' most common complaints according to psychiatrists' responses**

We compared the main reasons according to GPs and Psychiatrists in **Table 4:**

**Table 4. Comparison of the most common complaints according to GPs and psychiatrists**

| **Leading symptom** | **According to GPs** | **According to psychiatrists** |
|---|---|---|
| Sleep problems | 92,3 % | 100% |
| Chronical fatigue and lack of energy | 76,0% | 44,1% |
| Weakness | 64,7% | 58,8 % |
| Headache | 58,4% | 17,6% |
| Unexplained body pains – neck, back | 42,3% | 35,3% |
| Appetite problems | 32,3% | 50,0% |
| **Suicidal thoughts** | **9,0%** | **52,9%** |

No significant differences were found in most of the leading and most common complaints with which patients present to the GP and to the psychiatrist, but a significant difference was observed in the sharing of **suicidal thoughts and intentions.** This can be explained by the fact that GPs work with symptoms of varying severity and they have the main task when working with depressed patients, at the slightest suspicion of suicidal thoughts, to necessarily refer the patient for a specialized consultation with a psychiatrist, who will decide on the further behaviour towards this patient. The more pronounced and serious cases are dealt with by the psychiatrists, rather than GMP. The higher percentage of suicidal risk reported by psychiatric specialists is also explained by the specialist's relevant knowledge and skills to recognize and diagnose it.

**3. Attitudes and behaviour of GPs when working with patients with a depressive episode - influence of the specific features of the practice on the consultation process.**

The second group of questions from the special part, which we asked the surveyed doctors, aimed to investigate the physicians' attitudes and behaviour when working with patients with depressive symptoms, as well as the corresponding approach they take after the consultation when depressive symptoms are dignosed: wait-and-see behaviour, appointment of medication and/or referral for specialized consultation with a psychiatrist.

It was important for us to study **what percentage of DE patients who visit the GP need mandatory medication**. According to 41.3% (n=124) of family physicians, more than 50% of DE cases require medical therapy. The distribution of responses is presented in **Fig. 13**. Of interest is the relationship found between this response and the demographic characteristics of physicians. The dependence observed by gender is well defined (X2=29.675; df=3; p=0.0001; Cramer's V=0.315). Male family physicians (53.9%), compared to female GPs (36%), more often believe that patients with a depressive episode should necessarily be prescribed a therapy. Doctors working in individual practices are twice as likely to prescribe medical therapy - 45.9%, compared to doctors working in group practices -22.4% (X2=14.636; df=3; p=0.002; Cramer's V =0.221). GPs working in rural areas also significantly more often reported that a therapy appointment was necessary - 67.9% (X2=19.535; df=9;p=0.021; Cramer"s V=0.147), compared to 37.4% of their colleagues working in urban settings. It is likely that GPs working in group practices located in larger cities feel more relaxed about their patients with depressive complaints and prefer a wait-and-see attitude or referral to a specialist instead of prescribing medication themselves.

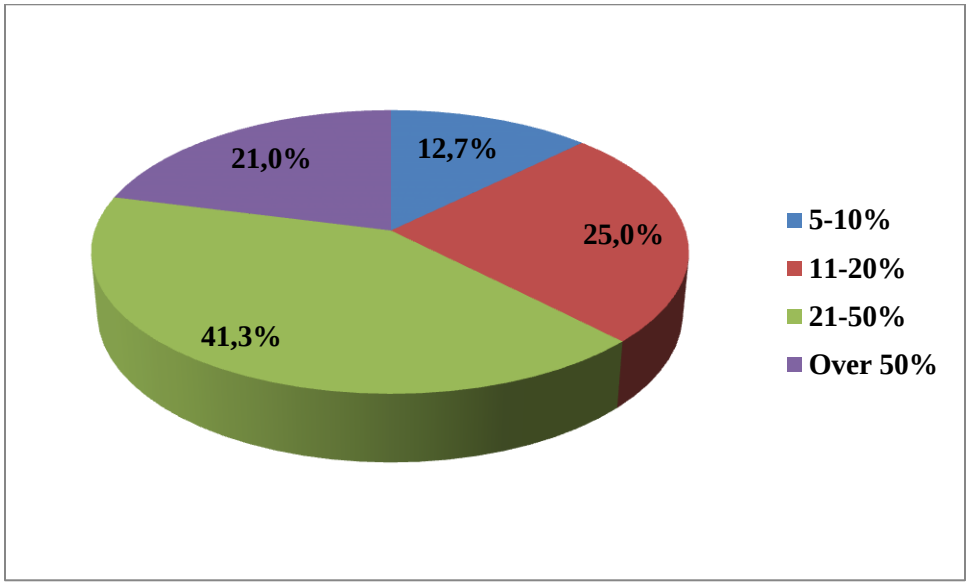



**Fig. 13. What percentage of patients with a depressive episode need medication?**

It is interesting that depression is one of the diseases in which people very often resort to self-medication. When asked whether their patients had used self-medication before the visit, 75.3% (n=226) of the surveyed physicians gave an affirmative answer. It was found that this happened more often among younger family doctors with a correspondingly less working experience (X2=9,385; df=2;p=0,009; Cramer"s V=0,177). It is likely that these physicians are more willing to discuss this problem with patients and therefore report it more often.

It is also interesting from whom **an opinion and help was sought for the applied self-medication.** The largest percentage of patients - 60.6% - sought advice about their condition from relatives and friends. This is again reported by younger doctors - under 50 years of age (X2=20.051; df=6; p=0.003; Cramer's V=0.211). A large number of patients, 31%, relied on their previous experience of solving past health problems. Significantly less often, patients sought advice from a medical professional/pharmacist - in 8.4% of cases.

The doctors' answers to the question: **"What percentage of your patients with depressive symptoms need a specialized consultation with a psychiatrist?",** are presented in **table 5**. Mandatory consultation with a psychiatrist is considered necessary in 21-50% of cases, according to 34.3% (n=103) of the surveyed family doctors. Male GPs - 39.7% slightly outnumber female GPs - 32.2%. Male GPs are more likely to think that depressed patients need mandatory psychiatric consultation. Increasing age and years of professional experience also significantly influence the GP's need to consult their patients with depressive symptoms with a psychiatrist (X2=39.381; df=9;p=0.0001; Cramer's V=0.209).

**Table 5 "What percentage of your patients with depressive symptoms need a specialized consultation with a psychiatrist?"**

| What percentage of your patients need a specialist psychiatric consultation? | Number (n) | Relative share (%) |
|---|---|---|
| 5-10 % | 57 | 19, 0% |
| 11-20% | 59 | 19, 7% |
| 21-50% | 103 | 34, 3% |
| Over 50% | 81 | 27, 0% |

For comparison, we also asked the psychiatrists what percentage of their patients were referred by their GPs for a consultation with a psychiatrist - **Table 6.** The psychiatrists' answers show that in up to 50% of the cases, DE patients were referred by the GP for a specialized consultation with a psychiatrist. From these responses it appears that probably a large number of DE patients visit a psychiatrist without first consulting a GP.

**Table 6 "What percentage are referred by their GPs for psychiatric consultation".**

| What percentage of your patients with a depressive episode are referred by their GP to consult you? | Number (n) Base - 34 | Relative share (%) |
|---|---|---|
| Under 10 % | 4 | 11,8% |
| 11-30% | 13 | 32,2% |
| 31-50% | 17 | 50,0% |
| Over 50% | 0 | 0% |

In this regard, we asked GPs if they had patients with a depressive episode who sought help and consultation **directly from a psychiatrist**. 70% (n=210) of the surveyed physicians gave a positive answer. This trend is more pronounced among GPs working in large towns/cities and large group practices with over 2,000 patients. This is probably due to the fact that doctors in large practices are busier and have a serious shortage of time and medical referrals on the one hand, and, on the other hand, patients in large places have easier access to a specialist, they are

better informed about socially significant diseases, they are aware of the need for specialized help and do not worry about seeing a psychiatrist.

86.3% (n=259) of the surveyed doctors have prescribed **primary therapy** to their patients – **Fig. 14.** It is interesting to note that when prescribing primary therapy for depressed patients, male GPs - 93.3% are more confident than their female colleagues - 83.4% (X2=5.143; df=1; p=0.023; Cramer ”s V=0.131).

Family physicians working in practices with smaller number of patients - under 500 - are three times more likely to avoid prescribing primary therapy for their patients with depressive disorder (X2=12.412; df=4;p=0.015; Cramer's V=0.203) compared to doctors with large practices.

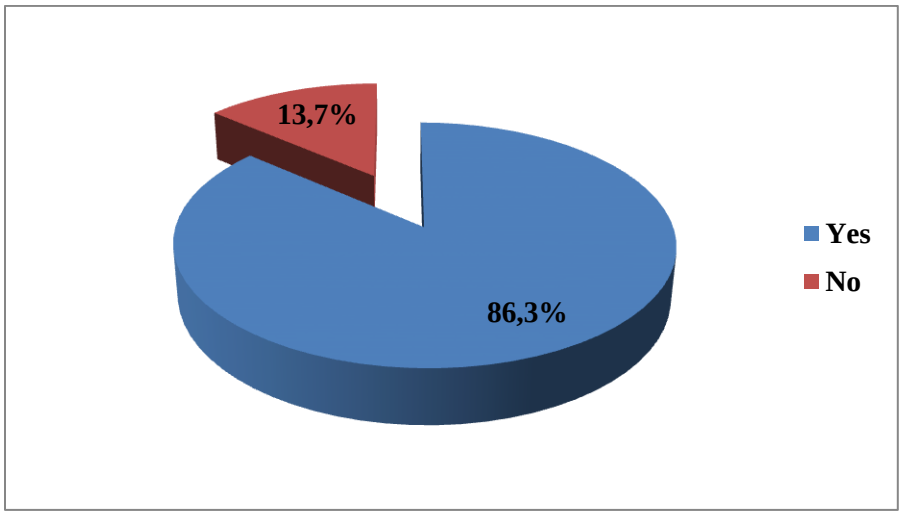



**Fig. 14. Have you prescribed primary therapy for patients with a depressive episode?**

We asked the same question to the specialists in psychiatry. **Do patients with already prescribed therapy from their GPs visit them?-Fig. 15.** They answered positively in **88%** of cases. Again, the responses of the two groups of doctors correspond.

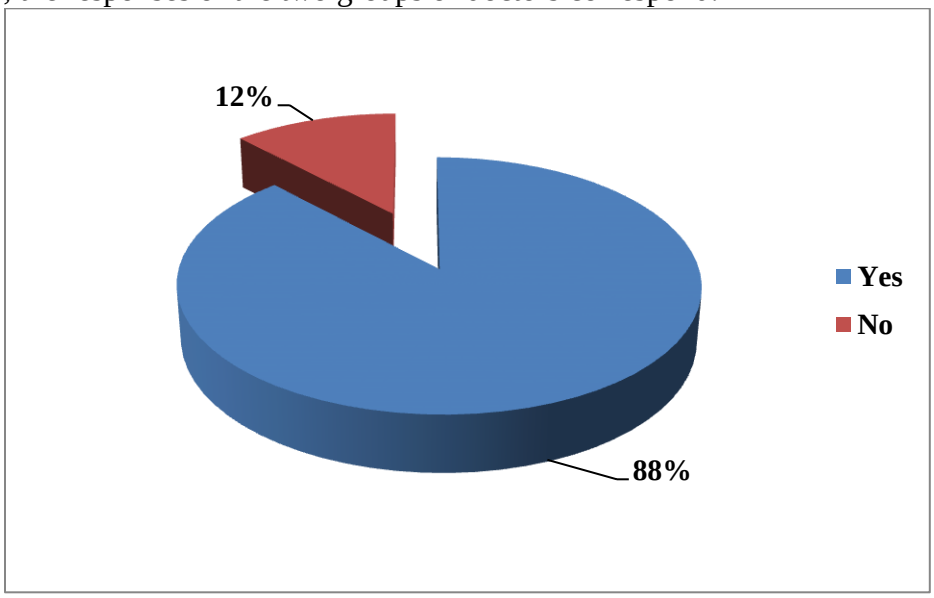



**Fig. 15. Do patients with already prescribed therapy from their GPs visit you?**

Of particular interest is **the choice that the GP makes for prescribing primary therapy**. The distribution of responses is presented in **Fig. 16**. The survey conducted among GPs shows that they prefer the antidepressant group. In 74.1% of cases, GPs prescribe antidepressants as primary therapy. Their second choice are benzodiazepines - 45.2%. Homeopathic products are the least frequently used - in 37.8% of cases. GPs working in urban settings - 75.4%, or in mixed type practices - 81.8%, are more likely to work with the antidepressant group, compared to doctors in villages - 50.0% (X2=8.804; df=2 ;p=0.012; Cramer's V=0.184). Antidepressants are also preferred by physicians working in large practices with over 2,000 patients (X2=25.218; df=4;p=0.0001; Cramer's V=0.312). More confident in the use of antidepressants are GPs who, in addition to a specialty in GM (X2=4.082; df=1;p=0.043; Cramer's V=0.126), have acquired a second specialty in internal medicine (X2=8.865; df =1;p=0.003; Cramer"s V=0.185), or pediatrics (X2=4.157; df=1;p=0.041; Cramer"s V=0.127).

Male GPs prefer treatment with benzodiazepines - 56.6% (X2=6.469; df=1; p=0.011; Cramer's V=0.158), the same preferences have doctors in the age group over 60 (X2=8.823; df= 3; p=0.032; Cramer's V=0.185).

In the group of GPs who prefer to start the treatment with homeopathic products, women (X2=5.326; df=1;p=0.021; Cramer"s V=0.143) and doctors specializing in pediatrics (X2=15.236; df=1; p=0.0001; Cramer's V=0.243) predominate.

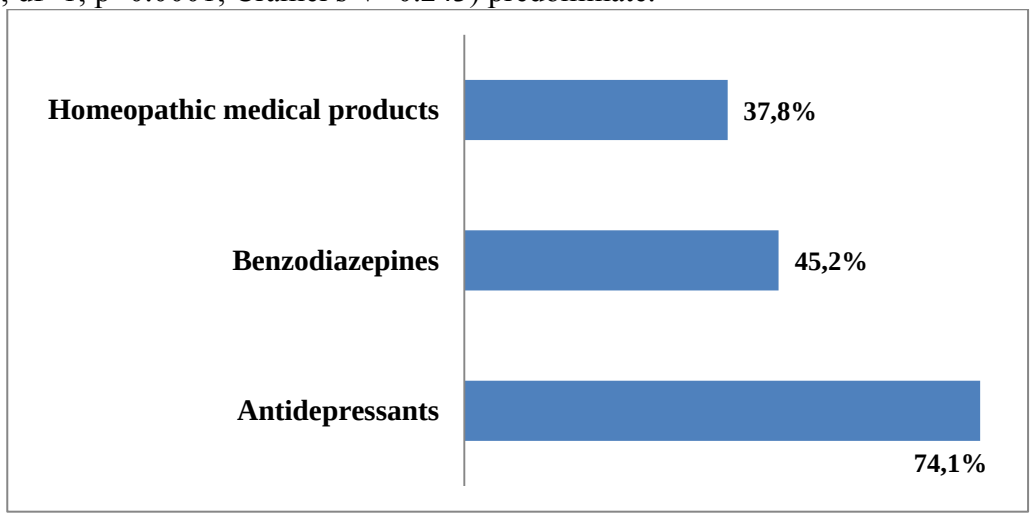



**Fig. 16. Prescribed product groups for primary therapy by GPs**

When conducting the interview with psychiatrists, we asked them the same question: **What is the most common therapy prescribed by GPs that patients come to see them with?** In terms of homeopathic products, the answers of the two groups of doctors, GPs and psychiatrists, are very similar - 37.8% for GPs and 33.3% for psychiatrists. There is a serious discrepancy in the responses regarding benzodiazepines and antidepressants – **Fig. 17.** According to the GPs, the main choice for a depressed patient is an antidepressant, while psychiatrists claim that 60% of patients referred by their GP for consultation come with a primary prescription of benzodiazepine therapy**.**

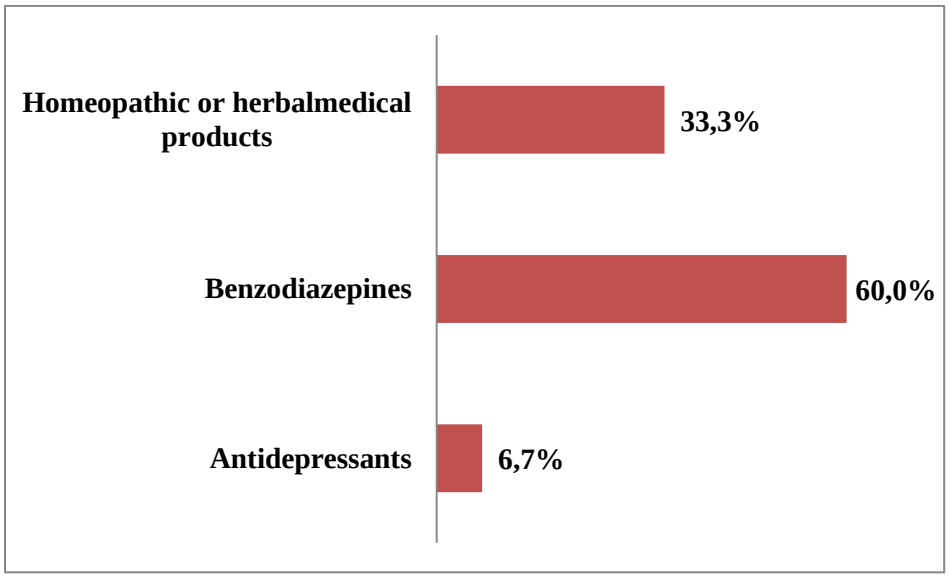



**Fig. 17. The most common therapy prescribed by GPs with which patients come to see a psychiatrist**

Next, we investigated our respondents' behaviour with patients by asking them whether they gave them information about the course of the disease, duration, prognosis, therapy options and the risk associated with therapy discontinuation. The distribution of responses is presented in **Fig. 18** and GPs could give more than one response. All surveyed doctors confirmed that they informed their patients about all the listed indicators- course, duration, therapy. Regarding the explanations and information provided on the problem of duration and prognosis, it was found that male GPs (X2=5.813; df=1;p=0.016; Cramer"s V=0.139) and doctors working in larger towns/cities (X2=8.928; df=3;p=0.030; Cramer"s V=0.173) more often gave comprehensive information and explanations to their depressed patients. Regarding the information about the applied therapy and the risks when stopping it, doctors in the age group between 51-60 years (X2=10.262; df=3;p=0.016; Cramer"s V=0.185) and doctors having a second specialty or another acquired qualification (X2=11.375; df=1;p=0.001; Cramer's V=0.195) are more likely to explain this.

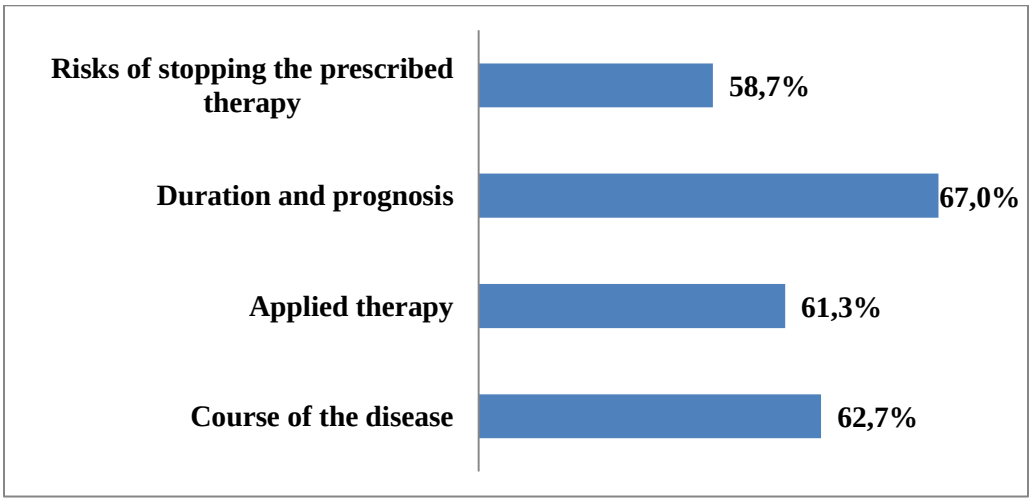



**Fig. 18. Giving information by GPs about prognosis, duration and therapy** */more than one answer indicated/*

The GPs' behaviour regarding the use of validated depression screening questionnaires was investigated in the course of the questionnaire study – **Fig. 19.** It was found that 99.3% (n=298) had never used validated questionnaires. Only 0.7% (n=2) - only two male GPs under the age of 30 -had used the questionnaires in the diagnostic specification of their patients.

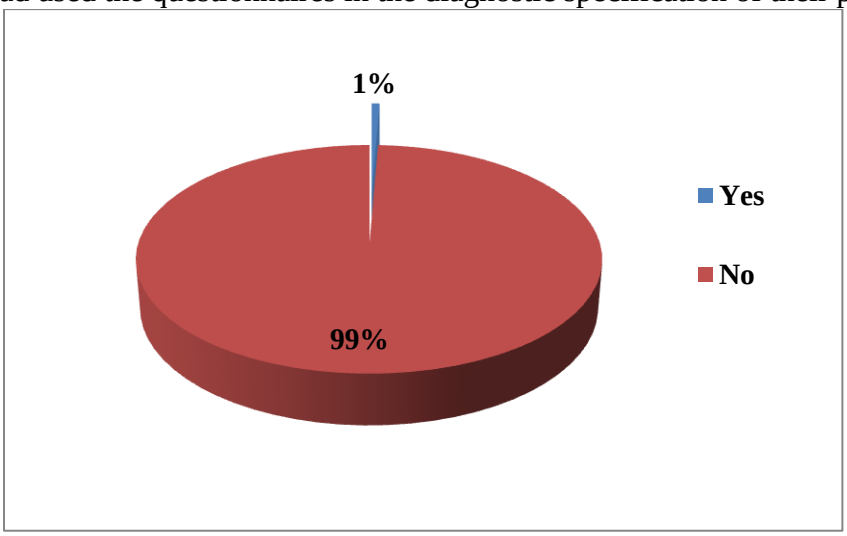



**Fig. 19. Use of validated depression screening questionnaires**

The distribution of reasons that **prevented them from using validated depression screening questionnaires** is shown in **Fig. 20.** A large part of GPs - 53.7% (n=160) indicated as the main reason the fact that the tests required additional time for their implementation. This fact is more pronounced among GPs working in urban settings and in practices with a pediatric focus. Only 7% (n=21) shared that the tests were difficult to perform. Lack of access to tests or ignorance of their existence are causes with a very low frequency of occurrence.

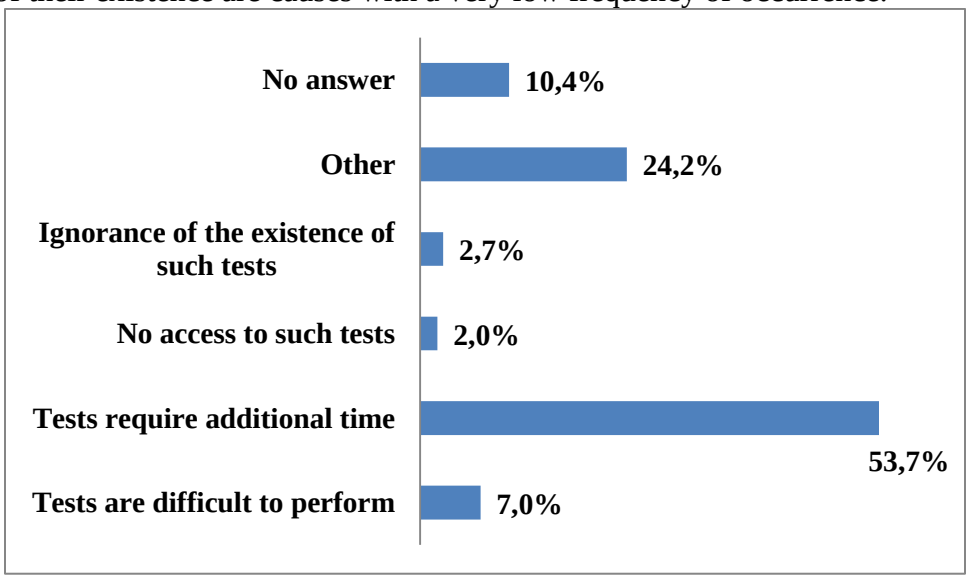



**Fig. 20. Main reasons for not using validated depression screening questionnaires in GMP**

## 4. Barriers and stimulating factors for patients to seek medical help and treatment

At the next stage of the conducted study, we proceeded to identify the barriers and, respectively, the stimulating factors for doctors and patients in the consultation process for DE detection.

At the first stage in this section, we asked GPs **whether, in principle, their patients tended to share their mental health problems with them– Fig. 21.**

Over the years, long-term relationships of trust, cooperation and assistance have been built between doctor and patient in general practice. These positive relationships, according to 85% (n=255) of GPs, help the patient to share mental health issues more calmly and without worry. The relationships built over the years act as a stimulating factor for the patient, according to their GP. Only 8 GPs gave a negative answer - according to them, the patients definitely do not share mental health problems.

When asked which gender was more likely to share, the respondents were unanimous - 95.3% (n=286) answered that female patients were always more willing to talk and share problems about their mental health. Only 6 male GPs answered that men were more likely to share.

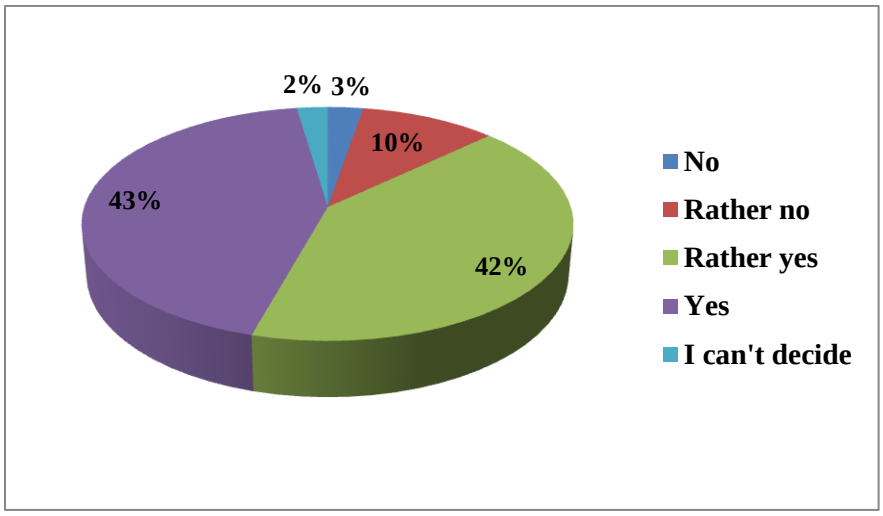
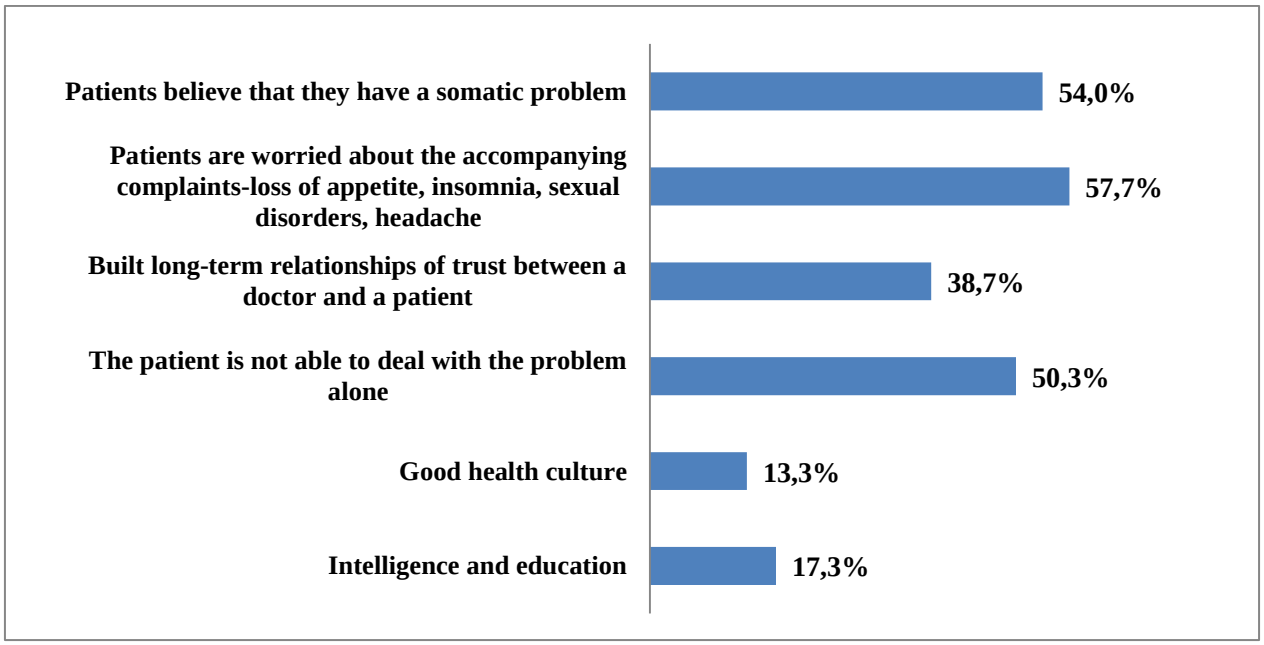



**Fig. 21. Are your patients willing to share their mental health issues with you?**

The main reasons, according to GPs, for a patient to seek help or the patient's stimulating factors **(Fig. 22)** are:

- ✓ Symptoms accompanying depression (57.7%) - loss of appetite, insomnia, headache, sexual problems. Usually, this is more often reported by older doctors - over 60 years old (X2=11.098; df=3; p=0.011; Cramer"s V=0.192) and with a recognized specialty in General Medicine (X2=6.837; df=1; p=0.009; Cramer's V=0.151).
- ✓ Patients believe that the problem is somatic (54%).
- ✓ Patients' inability to deal with this problem on their own (50.3%)
- ✓ Built long-term relationships of trust and cooperation (38.7%). This is more clearly reported by female GPs (X2=7.305; df=1;p=0.007; Cramer's V=0.156).
- ✓ Intelligence and education (17.3%) and good health culture (13.3%) are factors that can also make the patient seek medical help.




*/Respondents have given more than one answer/*

**Fig. 22. Reasons for the patient to seek medical help and share their mental health concerns with the GP**

In the chronology of the survey, we asked our respondents "Why do most people worry about seeing a psychiatrist?" The distribution of responses is presented in **Fig. 23**. It turns out that in our society the stigma attached to mental diseases continues to dominate among the general population, according to 29.3% (n=88) of GPs. According to more than half of the surveyed doctors from PHC, 56.7% (n=170), patients associate the word "psychiatrist" with a madhouse. The remaining 14% (n=42) reported that patients feared that if society found out about their mental health problems, it would reject them.

Older doctors - over 60 years of age (X2=15.708; df=6; p=0.015; Cramer's V=0.162) and, accordingly, with longer working experience (X2= 15.094; df=4; p=0.005; Cramer's V=0.159) are more likely to notice and account for the above reasons. The "stigma" of mental illnesses is less often reported by younger doctors, with fewer years of working experience.

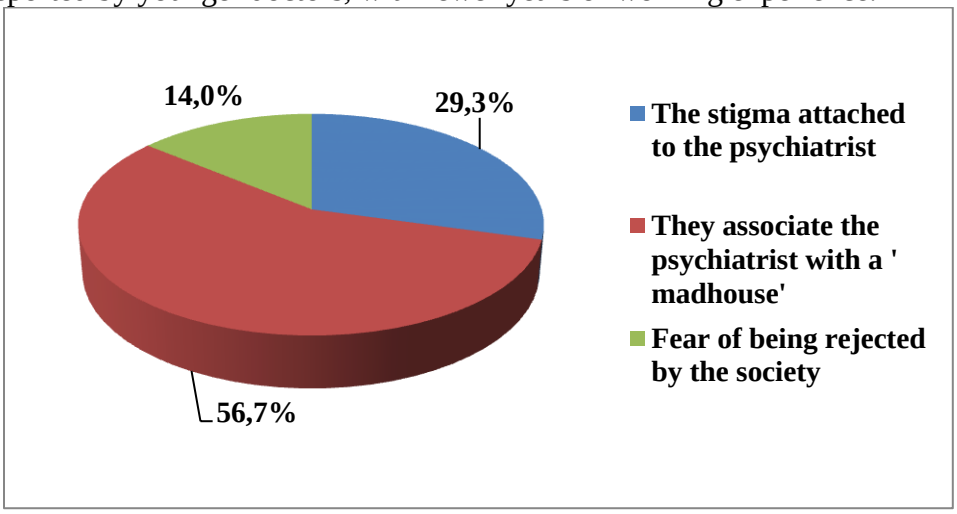


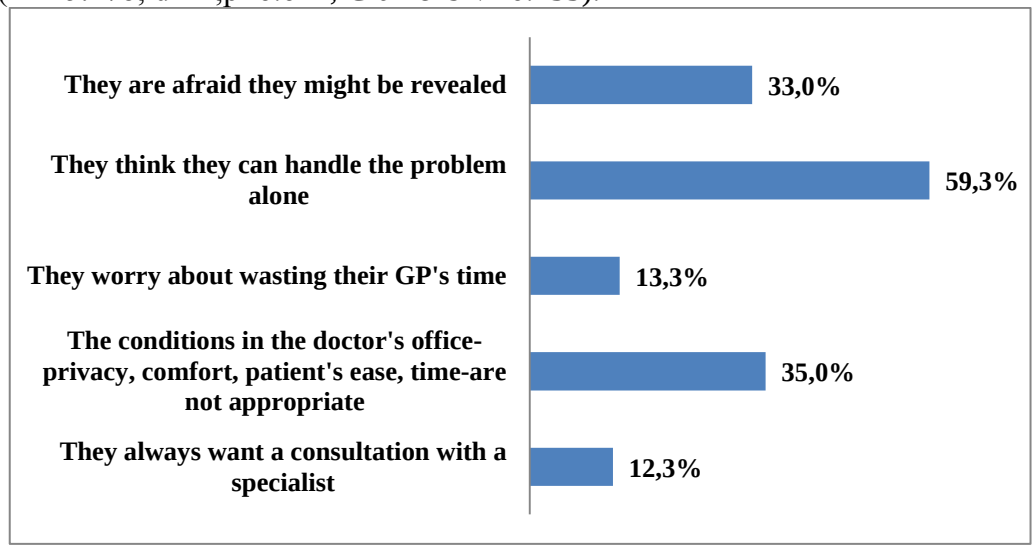

**Fig. 23. Why do most people worry about seeing a psychiatrist?**

In this regard, we sought an answer to the question "**Why are patients reluctant to comment on their mental health problems?" – Fig. 24.** GPs gave more than one answer: 59.3% of them answered that the patients in these cases thought they could handle the problem themselves. A connection is established between the given answer and doctors with less working experience.

According to 35% of the respondents, the conditions in the doctor's office, such as privacy, comfort and patients' ease, are inappropriate, and in smaller practices (with fewer patients < 500) this reason is more significant (X2=11.126; df= 4; p=0.025; Cramer's V=0.193).

According to 33% of the surveyed doctors, patients are worried about the disclosure of them having a mental health problem. This relationship is particularly significant among GPs working in mixed practices - over 49% (X2=9.461; df=2;p=0.009; Cramer's V=0.178).

According to 12.3% of doctors, in the presence of DE, patients always want a consultation with a psychiatrist. Consultation with a psychiatrist was found to be more desired by patients in larger towns/cities (X2=10.339; df=3;p=0.016; Cramer"s V=0.186), as well as by those served by female GPs (X2=5.278; df=1;p=0.022; Cramer's V=0.133).




*/respondents have given more than one answer/*

**Fig. 24. Reasons why patients are reluctant to discuss mental health problems with the general practitioner /according to GPs/**

**5. Barriers and stimulating factors for doctors in the process of consultation of DE patients and questions for active search and detection of mental health problems.**

The next part of the conducted study aimed to identify the barriers as well as the stimulating factors for doctors to detect and address DE in the consultation process.

Patients have free access to their GP. During the years of long-term care for the patient in the GMP, good relationships of trust and cooperation are built, affecting both sides - doctor and patient. The GP knows the whole family and, accordingly, the family psychoclimate of the people they care for. In this regard, we asked GPs whether all the factors listed above **helped the patient** to calmly share their concerns about their mental health. We asked GPs whether these factors also **helped the doctor** discuss the same problems with their patients. It was confirmed that all above-mentioned circumstances played the role of conversation-stimulating factors for both doctor and

patient. The positive role of long-term relationships was positively assessed by over 90% of our respondents – **Fig. 25.**

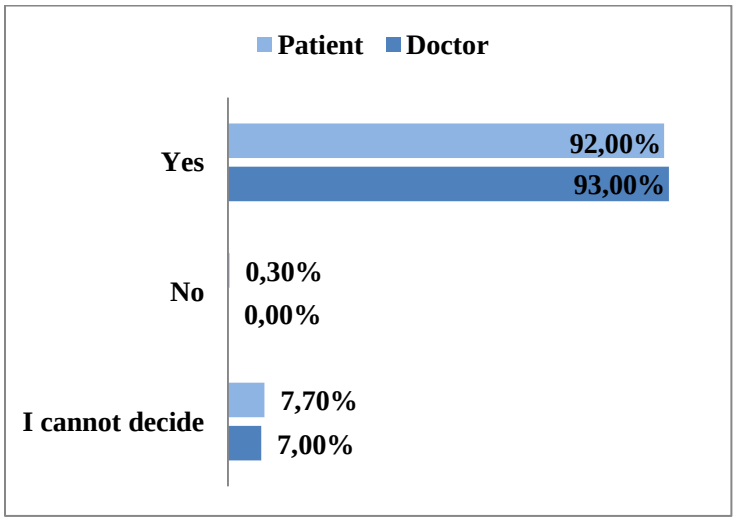



**Fig. 25. Closer relationships help both doctor and patient – comparing the responses**

Then we asked GPs when and how they discussed with their patients questions about their condition when recognizing depressive symptoms and what the **barriers** to doctors in the consultation process were.

At the two poles of the question **"When do you comment?"** are respectively the **answers** "I do not comment" - in 2% (n=6) of cases and "I insist on commenting" - in 9% (n=27) of cases. The most numerous answers are in the middle - **Table 7.**

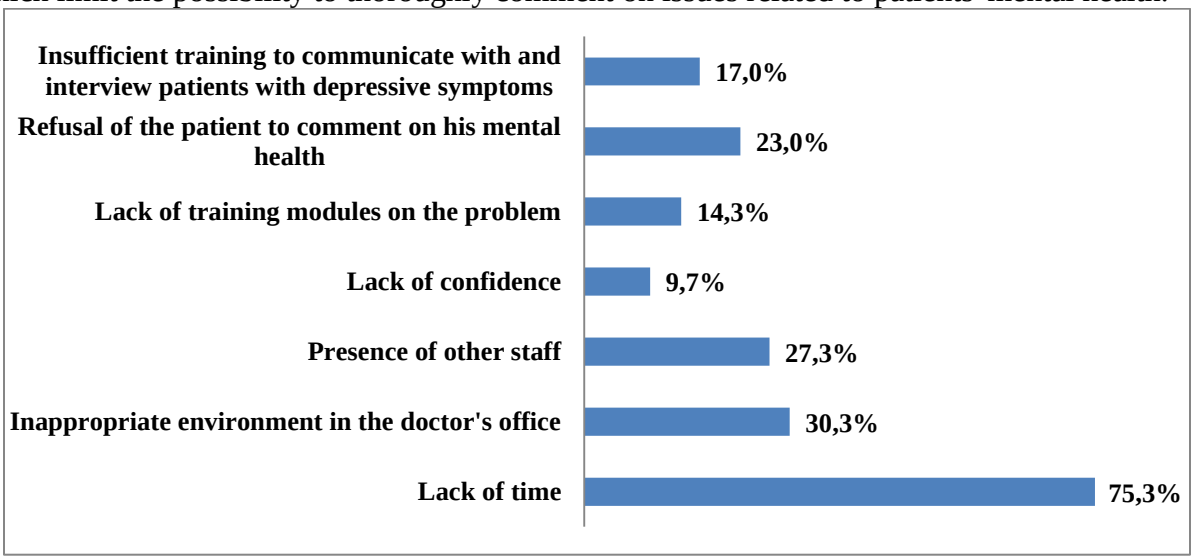
**Table 7. When do you discuss the subject with your patients?**

| When do you discuss the subject with the patient if you have established that they are having a depressive episode? | Number (n) Base - 300 | Relative share (%) |
|---|---|---|
| I do not discuss | **6** | **2 %** |
| I discuss if the patient shares problems related to changes in sleep and appetite, headaches, sexual problems and others | **160** | **53,3 %** |
| I encourage the patient to talk about the subject | **107** | **35,7 %** |
| I insist on always discussing problems with the patient | **27** | **9 %** |

Of interest is the group of GPs - 53.3% (n=160), who are particularly attentive to the non-specific complaints of their patients, related to changes in sleep and appetite, unexplained headaches or sexual disorders. No significant differences were observed in terms of gender, age, years of professional experience of the doctors, but a connection was established between the

given answer and some specific features regarding working conditions - type of place (village/town/city), rural/urban practice, group/individual practice and number of patients in the practice. GPs working in urban settings (p=0.003) (Likelihood Ratio) and in larger towns/cities with a larger number of inhabitants (p=0.0001) (Likelihood Ratio), working in individual practices (p=0.014) (Likelihood Ratio) and with a second specialty or other additional classifications (p =0.006) (Likelihood Ratio) are more searching in terms of non-specific complaints of their patients.

As the main **barriers** in their work with patients with depressive symptoms the surveyed GPs indicated the lack of time, inappropriate environment in the doctor's office and very often the presence of other support staff – **Fig. 26.** All of the listed reasons fall into the group of factors which limit the possibility to thoroughly comment on issues related to patients' mental health.




*/Respondents have given more than one answer/*

**Fig. 26 Reasons which make it difficult for GPs to comment on issues related to their patients' mental health**

A considerable part of the surveyed GPs (3/4) indicated the lack of sufficient time as the main limiting reason. With this dominant factor that limits them, a statistically significant difference was found between the shares according to the doctor's age (X2=20.659; df=3; p=0.0001; Cramer"s V=0.262), as well as a dependence according to the number of patients in the GP's list (X2=10.922; df=4;p=0.027; Cramer"s V=0.191. As the doctor's age and the number of patients in their practice increase, the lack of time also significantly increases.

The inappropriate environment in the doctor's office is the second main reason that limits GPs-30.3%.

The third reason, according to family doctors, is the presence of other staff who make it difficult for patients to freely share mental health issues. This barrier is more pronounced in practices located in rural health services and among GPs with longer working experience (X2=7.936; df=2;p=0.019; Cramer's V=0.163).

Another major problem, according to 23% of our respondents, is the refusal of the patients themselves to comment on their mental health.

17% of GPs shared that they were insufficiently trained to conduct a consultation and an interview with patients with depressive symptoms. Lack of training modules was cited as a

reason by 14.3% of our respondents. It was found that this fact was observed among younger colleagues (X2=9.413; df=3; p=0.024; Cramer"s V=0.177), respectively with a shorter professional experience (X2=23.032; df=2; p=0.001; Cramer's V=0.277).

The lack of confidence to actively seek and be able to deal with the problem was indicated by 9.7% of the surveyed doctors. It is established more often among colleagues at a younger age (X2=30.745; df=3; p=0.0001; Cramer"s V=0.320), and accordingly, with shorter professional experience (X2=17.440; df= 2; p=0.0001; Cramer's V=0.241). The diverse clinical picture and the presence of comorbid conditions and diseases make it difficult to recognize and diagnose depression.

In **Table 8**, we have summarized the main barriers that doctors face in the work process. The first three reasons - lack of time, inappropriate environment in the office and the presence of another person/other staff are factors that can be corrected.

The other reasons – patient's refusal, lack of training in communication skills, lack of experience and confidence – are of interest. We believe that these four causes /4-7 Table 14/ are interrelated and can be changed through training. For example, a patient's refusal to comment could be handled after appropriate training in overcoming resistance and acquiring communication skills for dealing with difficult patients. After learning to overcome resistance, acquiring better communication skills and completing relevant training modules on depression, the doctor will also gain confidence, which in time will lead to accumulated experience and increasingly easier recognition of depressive symptoms.

**Table 8. Limiting factors for doctors**

| № | Reasons for a doctor to avoid discussing mental health issues with their patients | N | % |
|---|---|---|---|
| **1.** | Lack of time | **226** | **75,3%** |
| **2.** | Inappropriate environment in the office | **91** | **30,3%** |
| **3.** | Presence of other staff or a third person | **82** | **27,3%** |
| **4.** | Patient's refusal | **69** | **23%** |
| **5.** | Lack of training in communication skills for dealing with difficult patients | **51** | **17%** |
| **6.** | Lack of experience with DE patients | **43** | **14,3%** |
| **7.** | Lack of confidence | **29** | **9,7%** |

## 6. Impact of the Covid-pandemic on the emotional state of patients

We asked both groups of doctors who participated in our study, GPs and psychiatry specialists, whether they noticed **an increase in the number of patients with depressive**

**symptoms in connection with the epidemic of Covid-19, specifying the question** for the period of the previous two years - from the outbreak of the Covid- pandemic up to 2 years after it started.

GPs and psychiatrists strongly confirmed the increase they observed, with GPs' responses approaching the absolute maximum of 95.3% (286). Psychiatrists also categorically confirmed in 85.3% of cases an increased incidence of anxiety and depressive disorders in their practices in the last two years, during all restrictive measures - **Table 9.**

**Table 9. In the last two years, in connection with the Covid-pandemic, has the number of patients with depressive symptoms in your practice increased?**

| **GPs** | Relative share(%) | **Psychiatrists** | Relative share (%) |
|---|---|---|---|
| YES | **95,3%** | **YES** | **85,3%** |
| NO | **4,7 %** | **NO** | **14,7%** |

In the group of GPs, there was a more distinct observation of an increase in anxious and depressed patients by GPs working in practices in large towns/cities with more than 100,000 residents, (p=0.013) with the Likelihood Ratio test, mixed type practices (p= 0.033) with the Likelihood Ratio test, and individual practices, where doctors work individually (p=0.001) with the Fisher's Exact Test.

As main reasons for this, GPs and psychiatrists pointed to factors such as: social isolation, negative information from the media, uncertainty about the course of the infection, people's financial worries, and uncertainty about the future. We asked the two groups of specialists to rank the leading symptoms according to the complaints their patients present with- **Fig. 27**.

GPs indicated social isolation as the leading cause with an adverse effect on patients, resulting in an increase in depressive symptoms in 79.4% of cases. There was an advantage in the responses of GPs working in urban settings, especially in large towns/cities with more than 100,000 residents (X2=13.297; df=3;p=0.004; Cramer's V=0.216), which can be explained with the more painful acceptance of the restrictions related to the pandemic by people living in larger cities and leading a more dynamic lifestyle.

Another reason with a negative impact on the population and leading to the deterioration of mental health, according to the interviewed GPs, is the negative information in the media, which in this period was the main source of information. It is mentioned as a reason in 73.1% of cases.

Uncertainty about the disease is the next reason for the increase in anxiety and depressive disorders in the population, according to 65.0% of the surveyed family doctors. Here, too, a relationship was established for practices located in large towns/cities with more than 100,000 residents (X2=16.019; df=3;p=0.001; Cramer"s V=0.237) and physicians working in urban settings (X2=13.505; df=2; p=0.001; Cramer's V=0.217).

Financial worries and all the related consequences arising from the restrictive measures were cited by 51.7% of the surveyed doctors as the reason for the increased incidence of anxiety and depressive disorders.

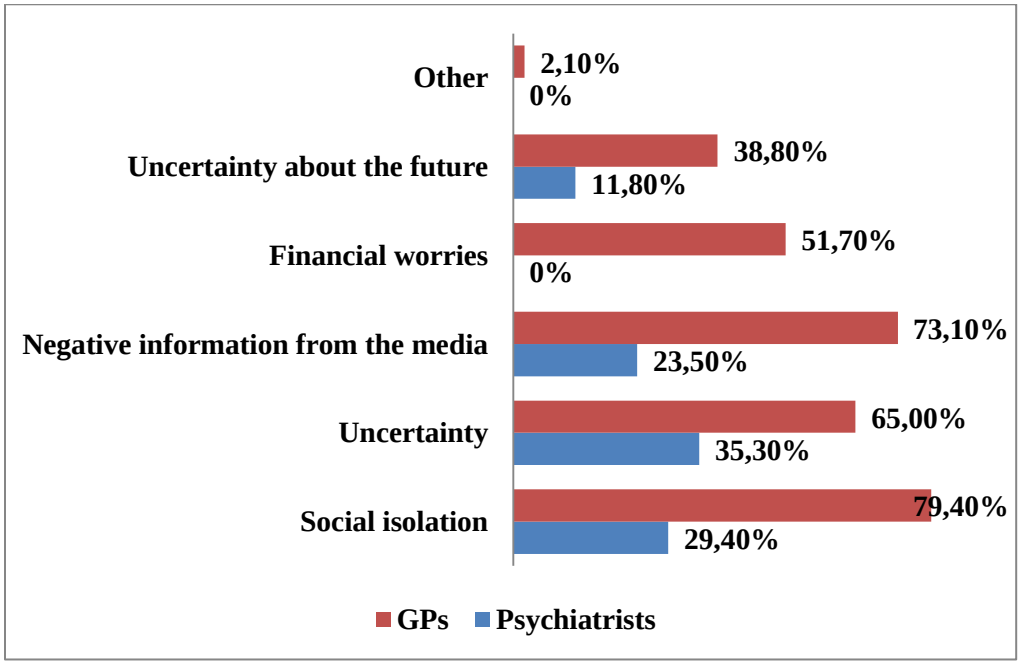
Uncertainty about the future and all the consequences of the pandemic are the reason, according to 38% of the surveyed doctors, for the increased incidence of depressive symptoms.

Younger doctors (X2=12.182; df=3;p=0.007; Cramer"s V=0.206), respectively, with fewer years of experience (X2=8.566; df=2;p=0.014; Cramer"s V=0.173), (p=0.014) give greater weight to the uncertainty factor.

We also asked psychiatric specialists about the leading reasons for the increase in depressive symptoms as a result of the Covid-pandemic. The factors indicated by them coincide with the leading ones according to the GPs, but ranked in the following order:

- Uncertainty -35.3%
- Social isolation - 29.4%
- Negative information from the media - 23.4%

Financial concerns are missing from their answers, probably because patients more often talk about their social and financial problems with the GP, feeling closer to them than to other doctors.




*/Respondents have given more than one answer/*

**Fig. 27. Reasons for the increase in the incidence of depressive episodes according to GPs and psychiatrists**

**7. Willingness and preferred forms of training for working with patients with mental health problems.**

Of interest to us was the question of whether the surveyed GPs had ever completed a **training module** in psychiatry including the topic of depressive disorders and to what extent such training would change their attitudes and behaviour. The distribution of physicians' responses is presented in **Fig. 28.** More than half of them - 54% (n=162) indicated that this had happened during the training module in Psychiatry, within their specialization in General Medicine.

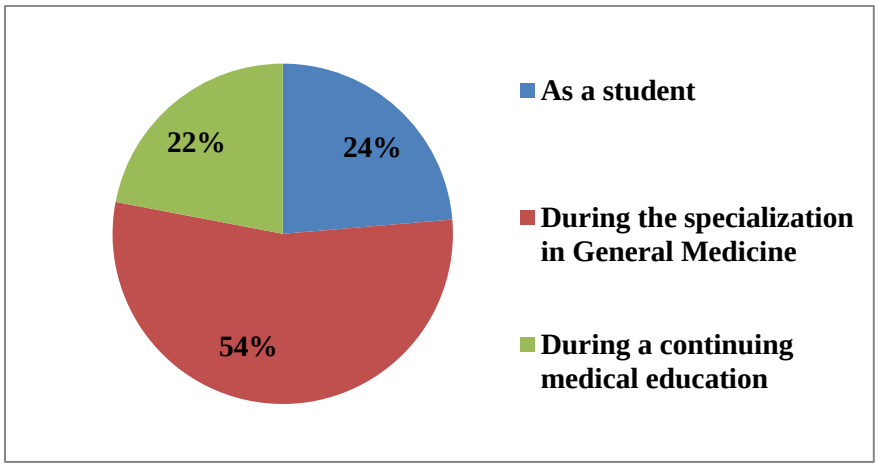



**Fig. 28. When they completed a training module related to depressive disorders**

### 7.1. Preferred forms of education according to GPs

Given that a large number of the surveyed doctors completed a psychiatry training module including the topic of depressive disorders during their training or specialization years ago, we asked GPs if they were willing and would participate in training that would strengthen and facilitate their consultation process so that they could begin to actively seek depressive symptoms and/or other mental health problems in their patients. **Fig. 29**. 89.3% (n=267) of GPs gave a positive response and declared willingness to learn. The desire is more pronounced among doctors under 50 years (X2=6.387; df=2; p=0.041; Cramer"s V=0.146), working in towns/cities with number of residents between 20,000-100,000 (p=0.0001) with the Likelihood Ratio test, and with a number of patients in the list around 1,500 (p=0.003) with the Likelihood Ratio test. 10.7% (n=33) of our respondents **did not want** to participate in organized trainings. Doctors over 60 years of age, with longer working experience, working in rural practices in small villages, alone without support staff, did not wish participate in training modules. It is interesting that there was not a single negative response in the group of practices with a pediatric focus. All declared readiness and desire for training. It is possible that pediatricians feel less confident in this area, and the relatively common presence of depressive symptoms in children under 18 years of age, related to the period of puberty, makes them consider the need for training in order to be able to distinguish between the two conditions.

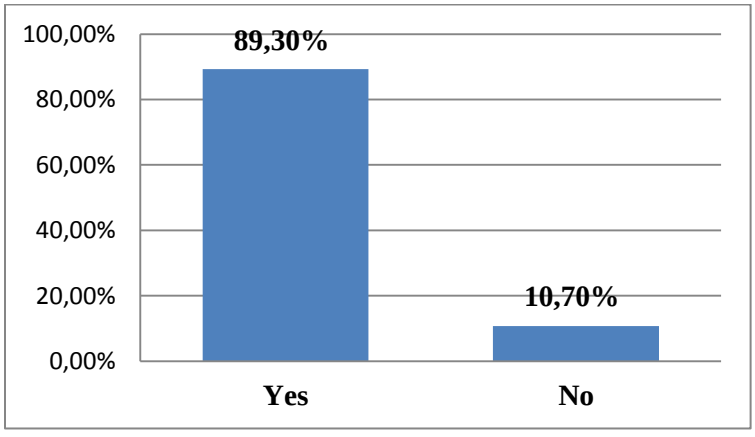



**Fig. 29. Would they participate in training to work with patients with mental health problems?**

We also asked them what their preferences were regarding the organization of such training meetings. **Table 10** presents and ranks the forms of such training in order of preference. The surveyed doctors could indicate more than one form of preference.

81.3% (n=244) prefer it if clinical cases from daily practice are considered and discussed in such meetings. Similar preferences are more observed in the answers of female GPs, among doctors over 60 years, respectively with longer working experience, among doctors with a small number of patients - under 500 (X2=11.967; df=4; p=0.018; Cramer ”s V=0.200), and doctors working in pediatric-focused practices.

More than half of the surveyed GPs, 54.7% (n=164), have a desire for specific additional training in communication skills, necessary when working with this group of difficult patients. Desire for such training was expressed by female GPs (X2=8.754; df=1;p=0.003; Cramer”s V=0.171), doctors working in larger towns/cities (X2=8.963; df=3;p=0.030 ; Cramer”s V=0.173) and physicians with a larger number of patients in their practice, located in urban settings (X2=18.123; df=2; p=0.0001; Cramer”s V=0.246).

30.7% (92) of the family doctors prefer free discussion. Male GPs (X2=5.696; df=1; p=0.017; Cramer”s V=0.138) and doctors working in urban settings with large practices /over 2,000 patients/ prefer free discussion and consideration (X2=9.123; df=3 ;p=0.028; Cramer's V=0.174).

Of interest is the group of GPs, 22.3% (n=67), who are willing to participate in discussions in the form of role-playing games with psychiatrists. A desire for this type of training was declared by female GPs, younger doctors under 50 years of age (X2=8.332; df=2;p=0.016; Cramer”s V=0.167), respectively with less experience and with a smaller number of patients .

**Table 10. Forms of training preferred by GPs**

| № | Forms of training preferred by GPs | N | % |
|---|---|---|---|
| **1.** | Discussion of clinical cases | 244 | 81,3% |
| **2.** | Training in Communication skills for working with difficult patients, including depressed patients | 164 | 54,7% |
| **3.** | An opportunity to freely discuss the problem | 92 | 30,7% |
| **4.** | Role-plays with the participation of psychiatrists | 67 | 22,3% |

### 7.2. Forms of training recommended by psychiatrists

When conducting the semi-structured interview with the psychiatry specialists, we asked them whether they would participate in training that supports GPs to start actively looking for depressive symptoms and other mental health problems in their patients. We have presented the distribution of psychiatrists' responses in **Fig. 30.** Over 90% (n=31) of them declared their willingness to participate. Only three of them would not participate in training that would support GPs.

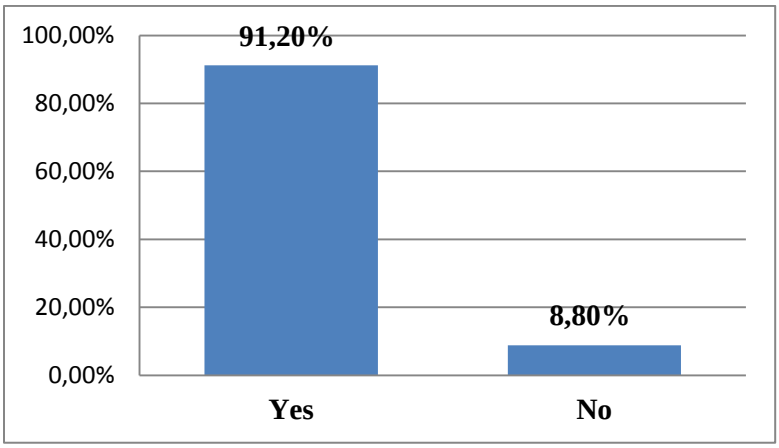



**Fig. 30 Willingness to participate in training in support of GPs**

In **Table 11,** we have presented the forms of training recommended by psychiatrists and the way of conducting them - how they recommend that this type of training should be carried out to help GPs start actively looking for depressive symptoms in their patients.

**Table 11 Forms of training recommended by psychiatrists**

| № | Recommended forms of training | Relative share |
|---|---|---|
| **1.** | Educational seminars, modules, interest groups | **45%** |
| **2.** | Educational brochures to facilitate the work of GPs | **9%** |
| **3.** | Group meetings and discussions with working psychiatrists | **9%** |
| **4.** | In two stages: the first - online lectures, the second - discussion of case studies and clinical cases | **9%** |
| **5.** | Presentations by a psychiatrist at the DCC (Diagnostic and Consultative Centre) with presentation of clinical cases and/or participation of psychiatrists at scientific conferences of the GPs | **9%** |
| **6.** | Interactive methods of training | **4,5%** |
| **7.** | Development of a screening algorithm for depression with a focus on General Medical Practice | **9%** |
| **8.** | "It doesn't matter - online, brochures – to learn to recognize the symptoms of anxiety" | **4,5%** |

### 8. Use of a behavioural algorithm in GMP regarding patients with DE

14 doctors participated in the qualitative research method used, which aimed to study the opinion of a focus group of GPs working in practices located in different places (Sofia, Pleven, Ruse, Vratsa, Gabrovo) about the applicability of the developed algorithm for behaviour in GMP during a depressive episode. Two moderators were used for the discussion, with one moderator trying to keep the session running smoothly and the other one trying to ensure that all topics were covered. A draft of the behavioural algorithm was presented and a total of seven main questions

related to its application in GMP were discussed with the participants in the group discussion. The meeting was recorded and the participants' responses were documented.

Regarding the use of ready-made questionnaires when a depressive episode is suspected, participants again reported not having such practice in 90% of cases. The question of whether it would be easier for them to have a behavioural algorithm for DE patients in GMP did not cause serious discussion - everyone agreed that such an algorithm would be very useful.

The proposed algorithm (Appendix №3) aroused interest and careful consideration. The following questions were discussed with the respondents:

Is the proposed algorithm understandable?

Is it applicable in your practice?

Is it easy to implement?

Would you use it?

Doctors unanimously agreed that the algorithm was understandable and easy to implement. They found it useful in their practice and readily stated that they would use it in their daily work. Their responses are presented in **Fig. 31.**

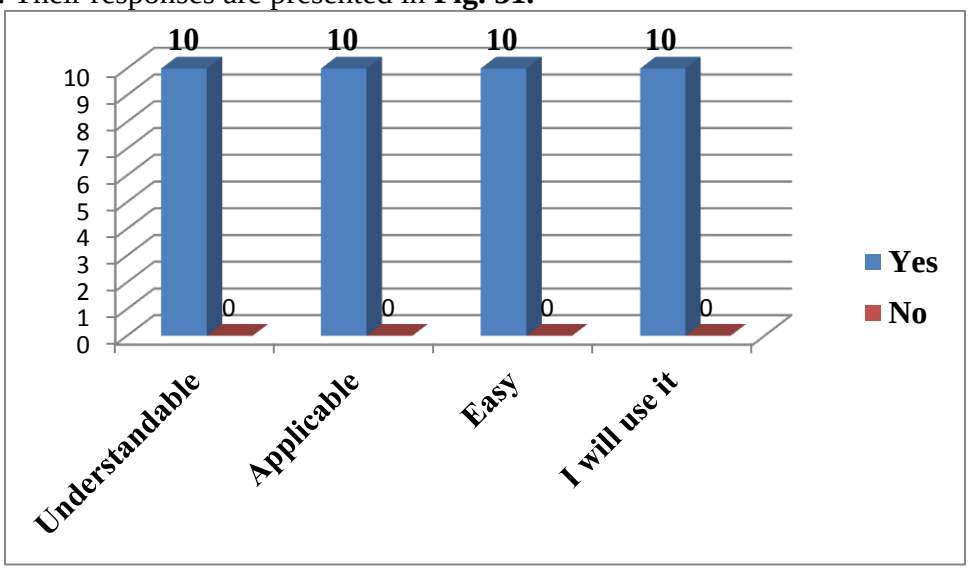



**Fig. 31. GP's opinion on the proposed behavioural algorithm for suspected depressive episode**

Their critical remarks and suggestions for change were discussed. All physicians expressed full agreement with the proposed algorithm, 50% (n=5) suggested adding brief treatment guidelines and first-choice medications.

## V. DISCUSSION

### 1. Demographic characteristics of the studied groups

#### A). General practitioners

The studied group covers about 8% of all GPs in the Republic of Bulgaria. According to an inquiry made in NSI for the year 2022, the total number of GPs in the country at the time of conducting the research was 3,854 (19,316).

Staff shortage is a serious and deepening problem for the specialty of General Medicine and accordingly this leads to an increasingly difficult provision of the population with general practitioners. When the reform was launched in 2000, 4,500 practices and 5,000 GPs were registered. Over the years, their number has decreased drastically, relative to the number of the population served – **Fig. 32.** The best provided are the cities of Sofia, Plovdiv, Varna, Pleven, Stara Zagora, Burgas - traditionally these are the cities with Medical universities. There is a serious personnel problem in the regions of Kardzhali, Razgrad, Targovishte and Shumen.

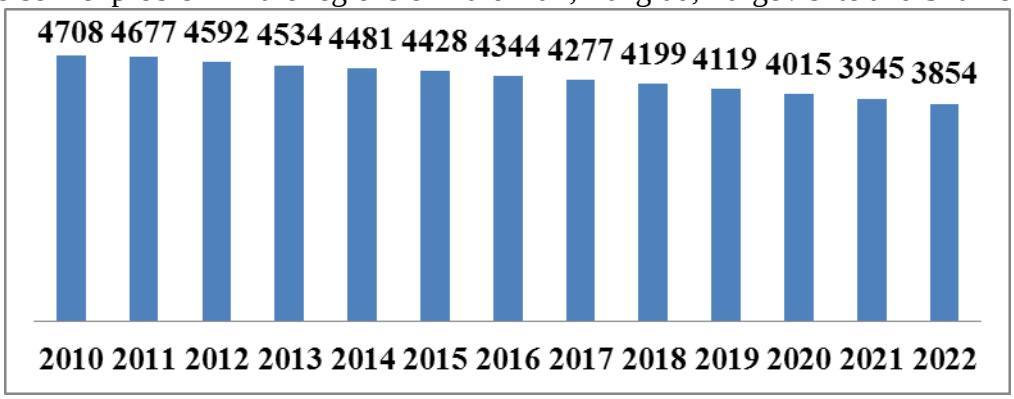



**Fig. 32. Number of general practitioners for the period 2010-2022, according to NSI data**

The profession is traditionally dominated by the female gender in a ratio of 2.4:1 compared to the male gender, which corresponds to the actual female/male ratios in the GMP setting. This fact is also worrying, because women retire earlier, but on the other hand, they have a higher average life expectancy than men.

According to NSI data, in the section structure of doctors by specialty, the share of specialists in General Medicine - GPs, is still the largest in the period of conducting the study. (19,316). As of 31.12.2022, they were 3,854, or 13% of all practising doctors in the country were GPs – **Fig. 33.**

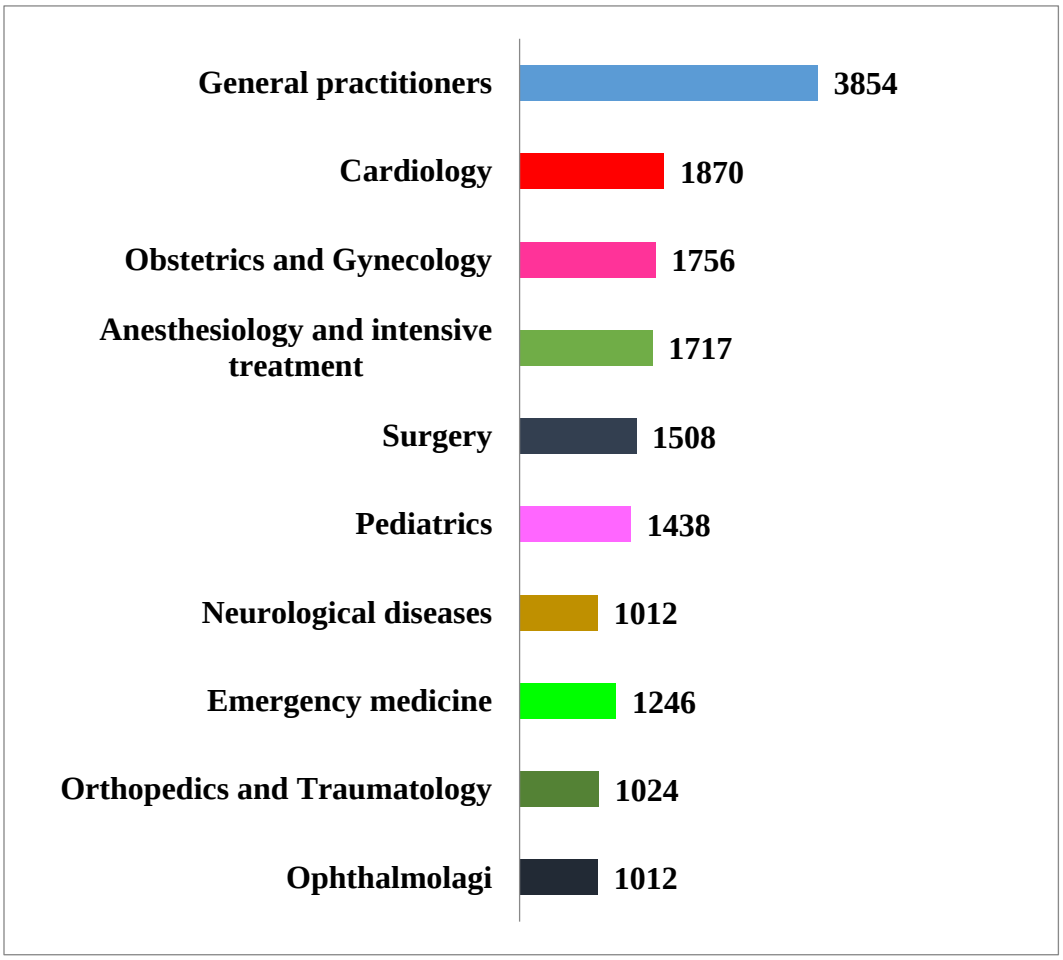



**Fig. 33. Distribution of doctors by specialty - according to NSI data /31.12.2022/**

The interviewed doctors in the conducted study are evenly distributed in terms of the place which is the center of their practice (small villages, towns, cities). This helps to provide a more complete and accurate distribution of family doctors from the regions participating in the survey, without distorting the statistics. It is an indisputable fact that, as a whole, for the country, according to the NSI data, the distribution of GPs is uneven. **Fig. 34** from NSI (316) shows the distribution of the population served by one GP. This distribution is in direct proportion to the availability of sufficient family doctors in the town/city. According to data from the NSI, only the regions of Sofia, Varna, Pleven, Plovdiv and Burgas are characterized by the presence of young and sufficient numbers of GPs.

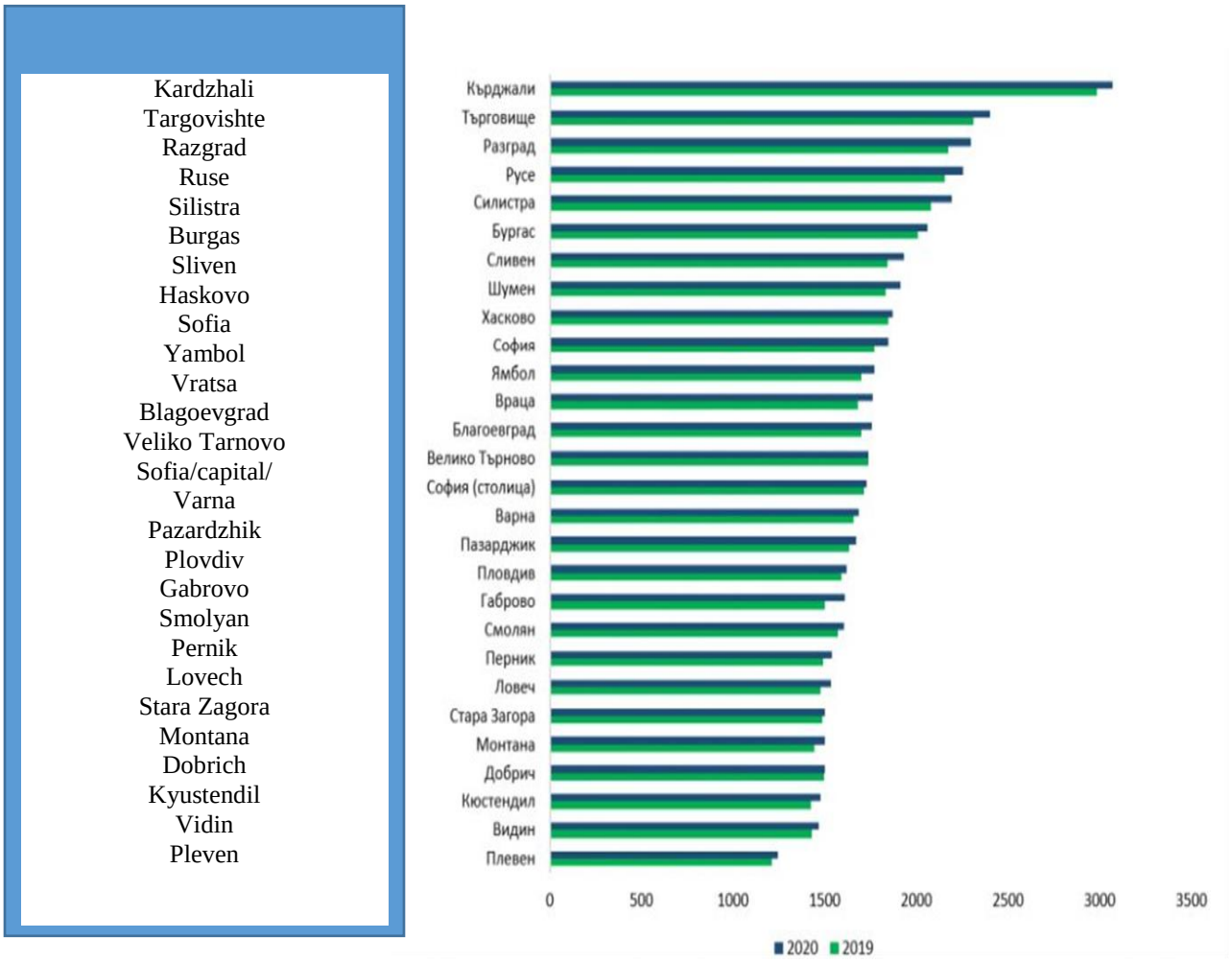



**Figure 34. Distribution of GPs by regions, according to NSI data**

The average age of the participants in the study is over 55 years, the professional experience ranges from over 25-30 years. The low number of GPs under 50 is striking - 22.7%. This fact reflects the alarming trend of the specialty aging, the insufficient number of young colleagues, due to the apparently unattractive specialty, and the large volume of responsibilities and administrative duties of GPs. Almost 2/3 of our respondents have more than 20 years of working experience and began working even before the start of the reform in the Health Care system in Bulgaria and its enforcement in compliance with the EU requirements.

Acquiring a specialty in General Medicine is one of the requirements set for doctors working in PHC in order to increase the quality of the medical services offered. To all the factors demotivating young doctors to devote themselves to GMP, the lack of places for specialization in some regions is added, as well as the difficulty of combining this process with work in practices far from medical universities. Work should be done in the direction of developing a policy to attract and stimulate newly graduated colleagues to the General Medicine specialty, of improving working conditions in practices, good funding, as well as of facilitating the opportunities for specialization and career academic development for those who wish (64).

**Qualification**

At the time of the survey, June-December 2022, 88.3% of the surveyed doctors had obtained a specialty in General Medicine, and only 11% were currently specializing. According to data from the NSI from 2018, the share of doctors specializing in General Medicine was 3,076 (67.9%) of all 4,531 GPs registered at the time. More than 50% of our respondents had previously acquired a specialty in Pediatrics – 20% (60) and Internal Medicine - 30.7% (92). Back in time, this fact had given them the right to practise and enter into a contract with the NHIF without having a specialty in General Medicine. At the moment, the fact that almost 90% of the respondents have acquired the specialty of General Medicine can be considered as a positive trend.

**Specific features of the practice**

There are some specific features of the practices on the territory of the country and the GPs participating in the study. The ratio of GPs working in individual practices to GPs working in group practices is in favour of those in individual 4:1. Family doctors working in individual practices are 80.7% (n=242), and those working in group practices are 19.3% (n=58) of the surveyed doctors. It is interesting to note that a relatively large number of doctors (about 25%) operate their practice alone, without hired nursing and/or other support staff. About 16.3% have employed midwives, 36.3% have employed technical staff and 19.3% have employed other support staff. All practices have software and accounting specialists employed, but do not report it as such, most likely due to the fact that they consider these specialists external to the team.

The number of patients registered in the patient list of the family doctor is directly proportional to the number of residents in the place where the practice operates. As the population in the town/city increases, so does the number of patients on the family doctor's list /**Fig. 34/** The bigger the population of the place is, the higher the number of patients on the GP's list is. The regions of Sofia, Varna, Pleven, Plovdiv and Burgas make an exception to the above-stated fact. These cities stand out for having young and sufficient number of GPs.

Another worrying problem is the relatively small number of colleagues at a young age working as GPs - 22.7% (n=68) under 50. This fact has been established and confirmed in other studies conducted over the years. The lack of interest among young colleagues can be explained by insufficient incentives, difficult career academic development for those wishing to develop in this direction, constant documentary and administrative changes in work and in the process of specialization.

**B). Specialists in Psychiatry – Psychiatrists - Demography**

34 doctors with a recognized specialty in psychiatry from Pleven and Lovech regions took part in the direct semi-structured interview with psychiatrists. The shortage of medical specialists in Bulgaria is increasingly noticeable, but the specialty of Psychiatry is in first place in this category. Doctors responsible for the mental health of the population are psychiatrists, forensic psychiatrists and child psychiatrists. Our country ranks last in the EU in terms of the number of psychiatrists per 100,000 population - 8 per 100,000 **(Fig. 35).** Switzerland is the country with the largest number of psychiatrists - 57/100,000, and in the European Union Germany is best provided with specialists in psychiatry - 3 times more than psychiatrists in Bulgaria - 27/100,000.

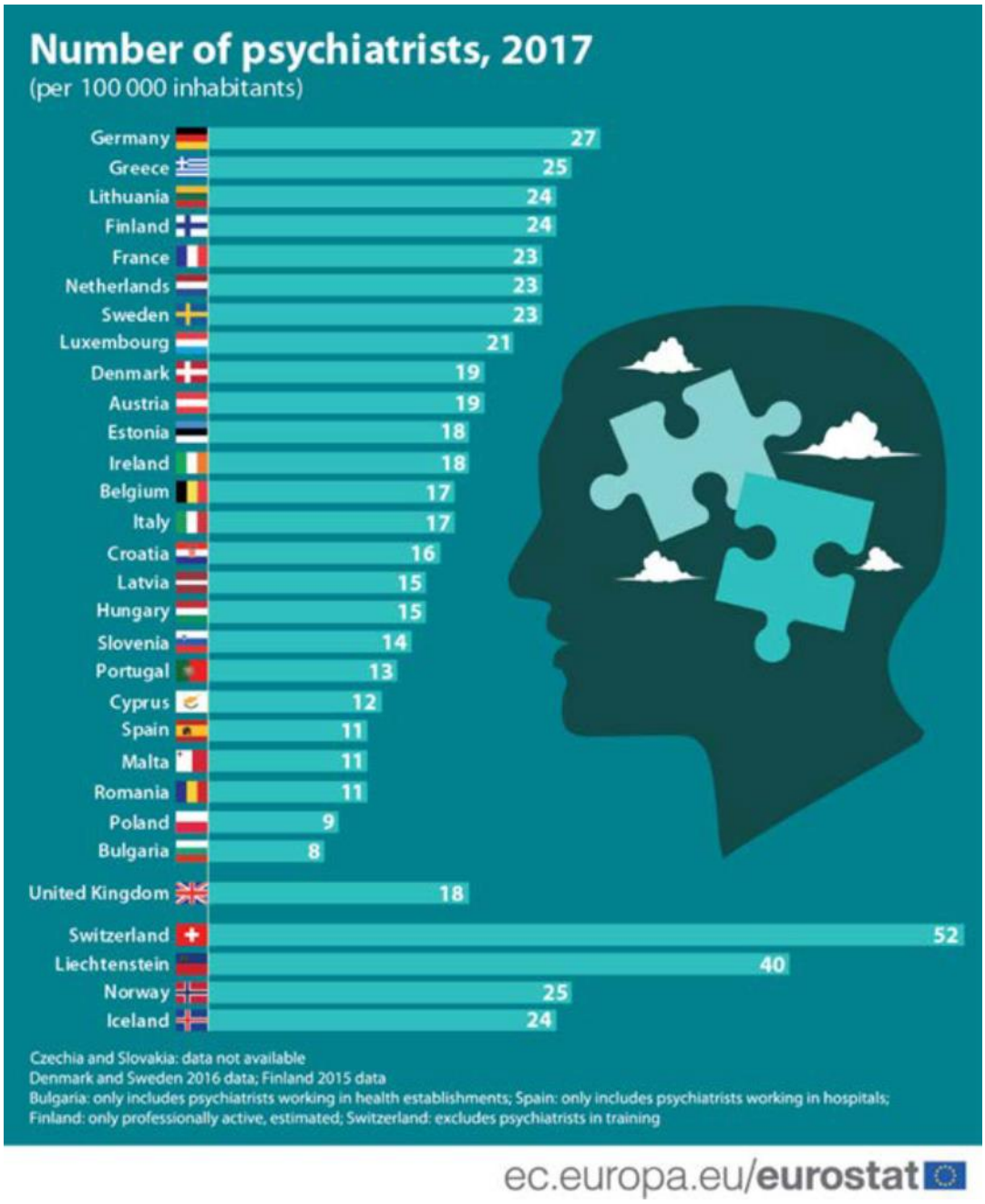



**Fig. 35. Number of psychiatrists per 100,000 population in European countries, according to Eurostat**

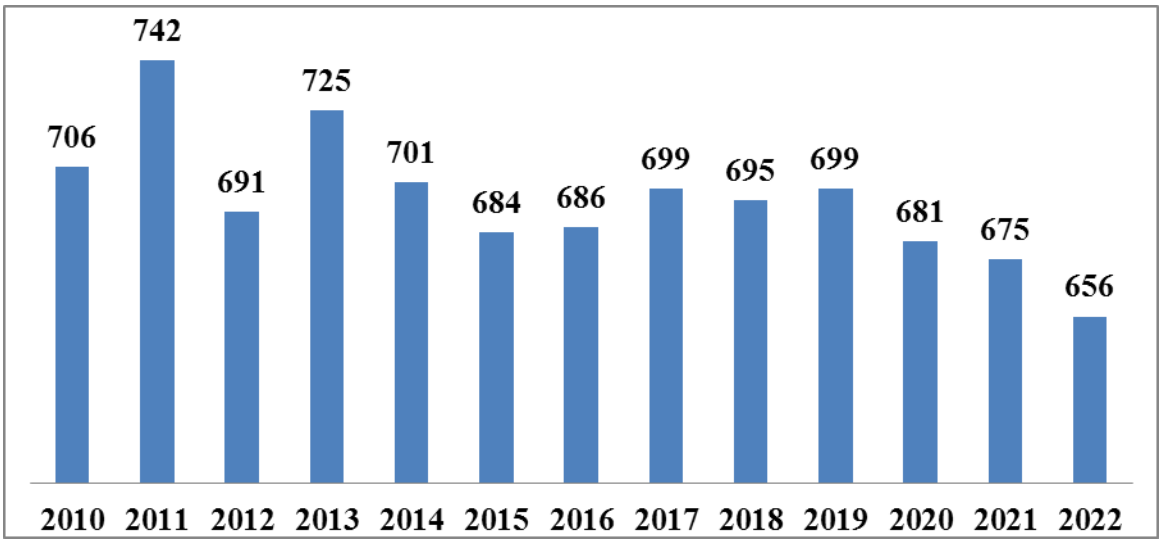



**Fig. 36. Number of psychiatrists for the period 2010-2022 according to NSI data**

Distribution by gender on a national scale is 1:2 in favour of females**.**

A major problem of the psychiatric community in Bulgaria is also the aging of the profession with a tendency for this rate to accelerate. The youngest psychiatrist in our country is 31 years old, and the oldest is 89. According to official data from the BMA and NSI, the total number of psychiatrists who are members of the BMA is 569, with 40% (n=231) of them being at retirement age, and the expectations for 2026 are that this percentage will increase to 60%, which is quite alarming –**Fig. 36.**

Another problem that arises with the provision of PHC and specialized psychiatric care is the uneven distribution of doctors on the territory of the country. There is a concentration in the big cities.

Regarding the work towards handling the problem of the critical shortage of psychiatrists, Assoc. Prof. V. Nakov and Assoc. Prof. K. Stoychev in their article which analyzes the age structure of psychiatrists in the country in 2022 make the following recommendations (10):

- To work in the direction of remote consultation.
- To take steps in the direction of motivating newly graduated doctors to specialize in psychiatry with relaxed enrollment conditions and good and attractive pay and social benefits.
- To take steps in the direction of providing the regions with the greatest shortage of psychiatrists.

**B) Established problems**

The specialties of **General Medicine and Psychiatry are among the specialties in Bulgaria with the most serious staff shortage.** According to the latest economic report**, Bulgaria lacks about 1,000 GPs and 460 psychiatrists.**

The General Medicine specialty faces the following main problems:

✓ The specialty remains unattractive for young doctors, due to the fact that the possibility of career academic development is very limited.

✓ GPs, in addition to their medical duties, are burdened with a huge amount of administrative work.

✓ There are difficulties related to the acquisition of a specialty in General Medicine - due to the small number of places for enrollment and the difficulty in coordinating work in practice with training in the specialty.

✓ There are serious difficulties in finding replacements and using leave when working in GMP.

**Psychiatry** also faces quite serious problems related to staff shortages:

- For a number of reasons - financial, organizational and due to the specific features of the work, the specialty turns out to be too unattractive for young doctors. Every year, fewer than 10 doctors acquire a specialty in psychiatry in the country.

**2.General practitioners' knowledge of the etiology of a depressive episode**

Almost 100% of the responding GPs at the time of the survey had patients with a depressive episode in their practice. Of all 300 who reported such patients, 96.7% (n=289) had patients with more than one depressive episode. In general, the incidence of the depressive episode in GMP in Bulgaria is comparable to the incidence in other European countries, Asia, Africa, North and South America.

According to the answers given by the surveyed general practitioners regarding frequency, affected sex, seasonality and onset age, our data coincide with the data from literature sources in the review made on the subject (6,11,14,15,47,135,136,169,221,258). Better knowledge of the etiology, distribution and course of depression is observed among doctors with longer working experience, with a recognized second specialty in internal medicine or pediatrics, working in larger practices - with more than 2,000 patients. This group of GPs are more confident in their knowledge of depression and a large part of them worked as district physicians even before the start of the reform in the health care system in our country.

According to the literature review we made, women suffer from depression twice as often as men, but on the other hand, male depression is much more difficult to recognize, due to certain specificities of the disease course. In women, there are some specific forms of the course—postpartum depression, PMS, PMDD, and menopausal depression (6,11,14,48,82,127,128,161,240,246). The surveyed doctors confirmed that the female gender is affected twice as often as male. In this regard, we found young GPs, men under the age of 50, who gave predominance to the male gender as more often ill. Apparently, this group of young doctors is more careful and purposeful in looking for depressive symptoms in men.

Training in psychiatry and mental illnesses for GPs is included and most often carried out:

- During medical studies - in the discipline "Psychiatry"
- During the specialization in General Medicine - in the "Psychiatry" module
- During the continuing medical education - by programmes and training modules, which, however, is currently irregular and of a recommended rather than a mandatory nature.

The general practitioners participating in our study ranked the trainings retrospectively - with the largest percentage given to knowledge acquired during continuing medical education, followed by the Psychiatry module during the specialization in General Medicine and lastly by time - to studying medicine.

In summary, GPs have the necessary knowledge about depression in terms of its prevalence - incidence, sex affected, seasonality, age of first onset.

The question remains whether the knowledge comes into use in the consultation process and whether they have the necessary attitudes to look for depressive symptoms in their patients.

### 3.Attitudes and behaviour of GPs when consulting patients with a depressive episode

GPs are providers of primary health care in Bulgaria. They carry out their activities as required by a number of laws - the Health Act (307), The Health Insurance Act (308), (308), the Law on Medical Facilities (309), The Ordinance on Implementing the Right of Health Insured Persons to Access Medical Assistance (311), The Law on Professional Organizations of Doctors and Doctors of Dental Medicine (310), Ordinance on determining the basic package of health activities guaranteed by the NHIF budget(312), Medical standard of general medical practice (313) and they comply with moral and ethical norms and the National Framework Agreement (316).

The main approach in the work of the General Practitioner is the holistic one. Thanks to the holistic approach, the GP can make a triple diagnosis of their patients, and look at the underlying medical problem in the context of the social and psychological factors that accompany it. In this regard, in addition to the normative documents listed above, the General Practitioner also participates in a number of procedures concerning the social sphere of patients' lives, observing and implementing: The Law on Social Services and the Regulations for its Implementation (299) and the Law on the Integration of People with Disabilities (316) and the Regulations for its implementation (305).

All the regulated activities of GPs in PHC have been included in the Medical Standard for General Medical Practice, effective since 2006.

In their daily work, General Practitioners are often faced with serious challenges in recognizing and diagnosing a number of diseases, due to the fact that patients often present with undifferentiated, disorganized symptoms as a specific nosological entity. This means that GPs are expected to have an in-depth knowledge and skills to make an initial medical decision.

We aimed at making a preliminary assessment of the knowledge, skills, attitudes and behaviour of GPs in their work with depressed patients. We focused on depression because it is the most prevalent mental health disorder worldwide, especially after the Covid-19 pandemic. As a criterion, we also included the psychiatrists' opinion on certain questions, so that we could make an assessment of the tasks, comparing the answers of the two groups - GPs and psychiatrists.

It is an undeniable fact that in recent years the diagnosis of depressive disorders has changed in a positive direction. The psychiatric community has unified international criteria, classifications, standards and clear rules for diagnosis and treatment recommendations.

However, recognizing these conditions in PHC, making a diagnosis and conducting adequate treatment remains a problem. Although effective treatment is available, according to most authors, people with depression receive a correct diagnosis in less than half of the cases, and even fewer receive adequate and timely treatment (28,54,104,109,149,151,182,204,205,249,255). One of the main problems is that depressive illnesses are often missed or treated as separate symptoms - insomnia, tension or other somatic complaints, and the underlying disease remains unrecognized. To avoid this, it is necessary to first have the relevant knowledge to recognize depression. In our study, we found that GPs have knowledge about depression, but they self-declared that they needed more knowledge in order to recognize it. Another problem is their attitudes to thoroughly question the patient about psychological issues and to think in the direction of depression. GPs have a crucial role in early recognition of the signs and symptoms of depression. It is indisputable that the first medical decision is the GP's - whether to prescribe treatment for the depressed patient or refer them for consultation. On the other hand, there is also

the patient's desire to do so, even sometimes to ignore the general practitioner and contact a psychiatrist directly, which supports the idea of working in the direction of informing the public about mental health and the place of PHC in mental health protection.

In the conducted study, we found that doctors working in urban settings in larger towns/cities more often have a wait-and-see behaviour and do not take action in relation to DE patients, while doctors in small places are more careful, because in villages people are more often elderly and lonely and the risk of suicide is serious. In accordance with this are the recommendations of the Canadian Task Force on Preventive Health Care /CTFPHC/, which advise family doctors in PHC to be particularly attentive to signs and symptoms of depression in the elderly and, in the presence of risk factors, to refer them for a consultation with a psychiatrist (272,273).

Male GPs were found to be much bolder and more radical when dealing with depressed patients. They prefer to either prescribe therapy immediately, and are bolder to prescribe antidepressants or benzodiazepines, or refer the patient for psychiatric consultation. Women are more likely to take a wait-and-see approach and start treatment with the homeopathic product group first.

In daily work in GMP, time is a basic resource, but also a serious deficit and sometimes it becomes a barrier to the detection of depressive symptoms. Lack of time is also the main reason, according to our respondents, for not using validated questionnaires and for failing to recognize depression, because a longer and more in-depth conversation is needed.

A study was conducted in **South-Eastern Europe** which also aimed to identify barriers in the process of working with depressed patients (91). Our results confirm the main barriers to GPs described by the other authors.

We found that shortly after our study, a similar one was conducted in Sudan, which also aimed to assess the knowledge, attitudes, and behaviour of physicians in Sudan in terms of depression. 400 doctors took part in it. The authors found that 81.1% of doctors had not received mental health training after graduation and had significant misconceptions about depression, 43% had difficulty distinguishing sadness from clinical depression, 50% of doctors did not feel confident that they could deal with depressed patients and nearly 70% relied on psychotherapy. Our results show better knowledge and behaviour of our doctors regarding the problem, but undoubtedly there is a need to work in the direction of increasing the knowledge, skills and attitudes of doctors in different countries to think in the direction of depression. There is also a tangible need to raise the public's awareness of mental health, both in our country and in other countries (193).

**4. Barrier – patients**

In our study, we also indirectly examined the barriers to patients, as seen and judged by physicians. This fact can have a double meaning. On the one hand, patients were not asked for their opinion, which creates the possibility of inaccuracies. On the other hand, studies conducted with patients found that people with barriers drop out of the study because their barriers also lead to refusal to participate in such studies (20).

In the context of the above-mentioned, patient barriers remain unexplored in direct studies, particularly in the area of the sensitive topic of mental health. In our research, the barriers to patients were indicated by the family physicians, as part of the group they observed and served. We chose this research model in order to enrich the understanding of the nature of the depression problem from this perspective as well.

The doctor-patient relationship is long-lasting, based on honesty and mutual trust built over the years. Even unconsciously, the relationship between the patient and the doctor is the most open relationship that a person builds in a lifetime. Very often in the doctor's office, patients share what they consider to be intimate and cherished secrets that they have not shared even with those closest to them. According to an online survey conducted in America, patients are more willing to openly discuss their mental status with their GP, who has been treating them for years.

The thesis was confirmed that the free access to the general practitioner and the closer and long-term relationships built help and stimulate the patient to share more about their mental health problems. These positive trends are more pronounced among colleagues with longer professional experience. This fact helps their patients to share their mental health issues without worry. Traditionally, the female gender is more inclined to share. Patients from smaller towns and villages are more wary of sharing problems about their mental health, but trust their GP more.

Of course, there are still some barriers. According to the physicians surveyed, patients are reluctant to discuss mental health issues because in most cases they think they can deal with them on their own or they find the environment in the office unsuitable. The main barrier to the patient is the concern that their mental problems may be revealed, and in Bulgaria most people are still worried about the examination by a psychiatrist.

General practitioners report that the stigma attached to the mentally ill continues to dominate the society. Traditionally, a visit to a psychiatrist is associated with a "madhouse", and the patient’s fear of being rejected by society if it is revealed that they have mental health problems is very strong.

The existence of stigmatization of the mentally ill is also confirmed in numerous other studies. In many countries, prejudices and discrimination against people with mental problems continue to dominate. People with problems in this delicate area are worried and ashamed, and at one point they are even blamed for their condition. All of the listed barriers prevent patients from seeking the help they need.

The dominance of this negative attitude towards the psychiatrist and the mentally ill person, the negative attitudes of the society and the stigmatization discourage people from seeking help or talking openly with their doctor about their fears and concerns, which becomes a prerequisite for delayed or inadequate treatment.

The problem that comes to the fore is also related to the level of health culture and public awareness regarding mental issues. People do not distinguish between the severity of mental illnesses - psychosis, major depression or depressive and anxiety disorder.

The barriers identified by our research that bother patients to seek help and see a psychiatrist are consistent with the results of numerous studies conducted on the topic - mental illness stigma, public awareness of mental illness, shame, hopelessness and guilt.

The conditions in the doctor's office and the presence of a third person are barriers to both groups - doctor and patient - to talk about mental health issues. (78,89,90,125,155,173,192,219,226,233,270).

Sometimes there is a lack of awareness of the disease, especially when somatic complaints are leading and also because of the way in which these complaints are presented to the GP. This is another barrier to patients – they think they have a physical illness and come with leading somatic complaints that worry them. Another problem is the way patients present these complaints to their doctor.

The communication process between doctor and patient is a complex interaction between two individuals, requiring a shared understanding of the emotional state of both parties. Once

trust is achieved, it in turn leads to mutual agreement, reduces misunderstandings, increases the sustainability of the relationship.

### 5.Barriers – doctors

The results of the conducted survey rank in the first place as the main limiting reason the lack of sufficient time for a thorough consultation. Good communication skills and skillful communication of GPs help them seek and obtain important information from their patients. However, when the family physician is pressed by limited time and a busy schedule, there is almost no time left for careful communication. In the limited examination time, especially pronounced in practices with a larger number of patients, it turns out to be very difficult to thoroughly question the patient about something different from the specific complaint that is bothering them. The implementation of screening programs that are simple and convenient for the needs of general practice requires some time, but they are a very important element. More office time is also needed for more in-depth and purposeful conversation when focusing on mental health issues. Time plays the role of an organizational barrier to both doctor and patient. When available, it can become a stimulating factor. It must be noted that most of the surveyed GPs emphasized the lack of time. This shortage was also cited as a reason why validated questionnaires are not used to detect DE - because their implementation requires additional time beyond the regulated examination time.

According to the surveyed doctors, another barrier that worries patients is the inappropriate environment in the doctor's office and the frequent presence of other staff. The doctor-patient conversation in the consultation process is an intimate moment. Privacy and comfort are factors that should be ensured. The inappropriate environment and the presence of other staff bother the patients more than the doctor themselves.

In ¼ of the cases, the patients themselves refuse to comment on their mental health./**4.4-Patient barriers/** According to Assoc. Prof. Svetozar Haralanov, precisely in the case of the most widespread anxiety and depressive disorders, patients think that they do not have a psychiatric problem and do not turn to and consult a psychiatrist, who would most effectively help them, but resort to looking for other specialists or psychologists, and the vicious circle deepens.

1/5 of physicians think they are insufficiently trained in communication skills and are not well prepared to interview patients with depressive symptoms. Young doctors with less working experience express their need for organized training modules. More often they lack confidence and ability to deal with the situations (2,37).

In some of the cases, family doctors themselves have negative attitudes and views about depression and the effects of its therapy. They find depressed patients to be unattractive and often boring with their pessimistic attitudes. In addition, sometimes it is difficult for them to recognize and distinguish depressive states from sadness, mourning reaction, grief after the loss of a loved one.

The poor attitude of GPs towards recognizing the many aspects of depressive disorders is, in their opinion, related to insufficient training and lack of continuing education on the subject. A good example in this regard was implemented by the National Center for Public Health and Analyses (NCPHA) in a project under the Norwegian Financial Mechanism. An active public campaign about depression was carried out, many GPs were trained in the country, but this happened years ago and was insufficient in scope (6,11,15,18).

A study conducted in the Asia-Pacific region among over 300 GPs identified gaps in education on the topic of 'depression' and assessed the doctors' needs and interests. Most of the respondents reported that they wanted training in all aspects of the disease - screening, diagnosis, referral for consultation with a specialist (72).

The need to work on the barriers faced by society as a whole - the stigma attached to mental illness, the association of the psychiatrist with a "madhouse", the shame and fear of being rejected by society – is also confirmed.

The barriers established in our study - lack of time, presence of a third party in the office, patient's refusal to comment on questions about their mental health and protective behaviour, insufficient education in this aspect of the triune nature of health, need for training on depressive and anxiety disorders - coincide with the barriers found in many other studies (2,32,41,68,78,89,90,125,155,173,192,219,226,233,270). This ignorance of the matter, in our opinion, leads to neglecting the problem and gaps in the diagnosis, and hence inadequate therapy and monitoring. All the listed factors and barriers emphasize the need for training and development of an algorithm applicable in daily practice.

The surveyed GPs categorically indicated in over 90% of their answers that free access to the family physician, excellent doctor-patient cooperation relationships established over the years, and responsibility and care for the whole family helped both the doctor and the patient to comment on mental health problems.

**6. Impact of the Covid pandemic on the emotional state of the population according to the surveyed groups**

In March 2020, the world faced the most serious challenge in modern history - the World Health Organization declared a global pandemic of Covid-19, caused by the SARS-CoV-2 virus. The appearance of the unknown virus infection and the resulting pandemic put to the test all aspects of social and economic life in the countries around the world. Healthcare systems faced serious challenges, and the mental health of the population further deteriorated. The impact of viral infections on mental health was seen in many other pandemics in human history.

In their article, Nakov and colleagues describe the impact of the Covid-19 pandemic on the mental health of the citizens of the Republic of Bulgaria during the second stage of monitoring conducted by the NCPHA. During the period of this observation, a distinct growth in Bulgaria was established in the sales of psychotropic medications from the groups of tranquilizers and antidepressants. They have a calming effect, remove anxiety and tension. During the same period, an increasing number of visits to neurologists and psychiatrists was also observed. Highly alarming and deserving special attention is the fact that an increased number of cases of domestic violence against women and attempted suicides was registered during the period. (4).

Both groups of specialists - GPs and psychiatrists - participating in our study strongly confirmed an observed rise in the number of anxiety and depressive disorders in the previous two years: 2020-2022 during the Covid-pandemic. As leading reasons for the increased incidence, they pointed to social isolation, negative information from the media, the uncertainty, financial concerns. These factors, which according to doctors, worry patients and increase anxiety and depressive disorders, were more often reported by younger GPs. The population of our country was obviously seriously affected by the pandemic, all restrictive measures and their consequences. Social isolation, uncertainty and unpredictability regarding the course, progression and treatment of the Covid-19 infection made people much more anxious and depressed. On the other hand, mental health appeared as a major risk factor, which was responsible for the

complicated course of the disease caused by the Covid-infection and a higher rate of hospitalizations among the sick (65).

GPs, occupying a key position in the health care system, also reported an increased demand for help from their patients for consultation on mental and emotional status. The fact that visits to family doctors were severely limited when the pandemic was announced is also taken into account.

Our results are consistent with the data obtained from the vast number of studies conducted worldwide on the negative impact of the Pandemic and the related restrictive measures on the mental health of the world population (38).

It would also be good to note that during the Pandemic, GPs were one of the most affected groups of doctors in the healthcare system. A reference in the NSI shows that during the pandemic, not a single general practice was newly established, but 73 data were closed - data as of 2020.

## 7. Trainings and doctors' recommendations for change

General practitioners working in PHC must constantly improve and update their knowledge of socially significant diseases, as well as their communication skills to work with their patients. Over the past 20 years, this trend of continuing education to improve communication with the patient has been increasing worldwide. "Soft" skills, including communication and teamwork skills, are no longer an option but a necessity.

• **Training** on depression and its specific features, characteristic of GMP, and the communication skills needed in the process of consultation with this group of difficult patients, turned out to be the most preferred and recommended topics by the surveyed doctors, which they believed would help them freely start a conversation and comment on problems concerning their patients' mental health. The methods of training preferred by GPs are small group discussions, and the desired topics are: characteristics of the course of depression in GMP, communication skills, relationship between depression and other socially significant diseases.

In over 90% of the cases the interviewed family doctors declared their readiness and desire to participate in various forms of organized trainings. From the conducted survey, it became clear that they had completed trainings on current mental problems either during the psychiatry module of the specialization in General Medicine or as students. The interest is more pronounced among female GPs and doctors from large towns/cities, with a large number of patients in their practice. Male GPs prefer free discussions and review of clinical case studies.

Psychiatry specialists also declared their willingness to participate in organized trainings as they believed that GPs needed these trainings as well as joint work and cooperation for the benefit of the patient and for adequate behaviour and treatment. The results are similar to those of other studies worldwide. Research conducted in the Asia-Pacific region, covering more than 6 countries among over 300 family physicians, concluded the following:

- ✓ Family doctors have a great need for training on chronic diseases - the leading ones are psychiatric diseases, dermatological diseases, diabetes, hypertension.
- ✓ Family physicians prefer training in all aspects - screening, diagnosis, monitoring or referral.
- ✓ 32% of the surveyed doctors want training in psychiatric diseases first.
- ✓ All surveyed family doctors express a desire for training in communication skills.
- ✓ The preferred forms of training are in small groups, seminars on Internet-based platforms (193).

All conclusions and results coincide with the opinion and recommendations of our family doctors.

## 8. Limitations

The main limitations are indicated in **point 2.7-Chapter II.**

- We can only assume that the barriers indicated by the surveyed doctors match the actual situation, because they are based on their self-assessment.
- The barriers patients face are defined through the eyes of their GP. A large number of patients who are supposed to have mental health problems refuse to participate in this kind of research because of stigma, fear, stress, but continue to visit their GPs. Due to the listed facts, we assume that the general practitioner's opinion about the patients they serve and the barriers in front of them are well differentiated.
- When performing the qualitative research by using the "focus group" method, the group discussion may be influenced and the results may deviate in a certain direction due to the moderator’s inexperience or bad faith. This can be avoided by having two moderators and impartial and accurate documentation of the process.

## VI. CONCLUSIONS

1. Family physicians have the basic knowledge about depression and recognize themselves as the specialist who can actively seek out and diagnose a DE and its symptoms and manifestations. However, they often associate patients' somatic complaints with physical illness rather than depression.
2. Various factors act as barriers or stimulating factors for patients to seek help and share their mental health problems. The established long-term relationships of mutual trust, the inability to deal with the problem on their own, the accompanying complaints, good health culture, intelligence and education are cited as stimulating factors. The main barriers to patients are their refusal to comment on their mental health problems due to the stigma attached to mental illnesses, the fact that they associate the consultation with a psychiatrist with a "madhouse" and the fear of being rejected by society. There are also some barriers of an organizational nature in GMP, such as the lack of sufficient time to talk in the GP's office or an inappropriate environment and lack of privacy during the conversation with the doctor. The Covid-pandemic and all the imposed restrictive measures have had an additional strong negative impact on the mental and emotional state of patients in GMP.
3. The GP's behaviour is also influenced by a number of factors that stimulate or limit their behaviour regarding the active search for depressive symptoms. The long-term close relationship with the patient and the doctor's good knowledge about depression can be considered as stimulating factors. Limiting factors can be conditionally divided into two groups:

- Barriers of an organizational nature such as lack of time, funds and staff in GMP
- Barriers related to the lack of sufficient confidence of GPs to work with depressed patients – inadequate communication skills to work with this group of difficult patients, as well as the lack of confidence to recognize depression, due to its diverse clinical picture.

4. Training in depression, until now carried out during medical studies, during specialization in General Medicine and within continuing medical education programmes is short, episodic and insufficient.
5. General practitioners declare a very strong willingness to participate in trainings on managing DE in GMP. During the training in communication skills and conducting interviews with this group of difficult patients, they prefer to consider clinical cases with the possibility of free discussion with psychiatrists about the specific features of the course of depression.
6. The high degree of desire for training, declared by the surveyed doctors, shows that GPs have a need and are aware of the importance of the necessary competence on the topic of depression, as well as their key role in the management of patients with such a problem. It is good to use this readiness by organizing short courses for targeted training of GPs in this direction.
7. The identified difficulties and problems in working with patients with depressive symptoms could be alleviated by developing an appropriate algorithm with a direct interview – screening, based on the main symptoms of depression and a careful assessment of suicidal risk, applicable to General Medical Practice.
8. It would be useful to develop and keep a register regarding who refers patients with depression for hospitalization – the GP or a psychiatrist.

9. In terms of patients, the need to work towards improving the health attitudes and health culture of the population regarding mental illnesses is acknowledged.

## VII. RECOMMENDATIONS

### Recommendations to the Ministry of Health and NHIF

Targeted, consistent and timely actions by these institutions to reduce administrative burdens in the daily work of GPs and to increase the attractiveness of the job for newly graduated doctors.

Increase in targeted funding for certain activities, beyond those included in the National Framework Agreement.

Attracting young doctors to enroll in both specialties - General medicine and Psychiatry by using various incentives in the form of a simplified procedure for enrolling in a state-subsidized specialization, additional financial stimulation, etc.

Explanatory programmes aimed at society for improving health culture and health education regarding patients with mental problems.

### Recommendations to the Ministry of Education

Developing and implementing programmes for health education and health protection for socially significant diseases, including anxiety and depressive disorders, in society and among adolescents in schools.

### Recommendations to the Bulgarian Medical Association

It is necessary to update programs and training courses in the continuing education of doctors, especially those related to socially significant diseases, with an emphasis on depressive and anxiety disorders, in view of the social and economic burden of these diseases. Continuing education should become mandatory or completing the courses should bring certain bonuses to the doctors.

In connection with the key positions of GPs in the Health Care system, their responsibilities should be defined in the form of an algorithm in solving the problem of the approach to patients with depressive symptoms.

The formation of multi-functional teams should be encouraged, including a GP, psychiatrist, social worker and others if necessary, for work and social rehabilitation in severe forms of depression, so that patients can recover faster and better and return to their usual daily life.

### Recommendations to general practitioners

To train in the relevant training modules and start applying validated questionnaires for the purpose of early detection of diseases.

To promptly inform their patients about the availability of programmes and provide timely information about socially significant diseases, which will increase the health culture of the population.

### Recommendations to Medical Universities

If possible, classes on communication skills should be included in the curriculum in the education of students from all master's and bachelor's specialties in view of their role in the process of communicating with patients, with an emphasis on the practical applicability.

If possible, courses should be organised by MU aimed at GPs in the relevant town/city to strengthen and improve communication skills in their work with depressed patients. Courses can be organized in the form of small discussion groups and led by a psychiatrist.

### Recommendations to patient organizations

To work actively together with doctors to increase the health culture of the population. If possible, meetings should be organised for the purpose of education, awareness, health education about socially significant diseases - including mental diseases.

## VIII. CONTRIBUTIONS

### Contributions of original character

1. For the first time, a national representative survey has been conducted among General Practitioners on the territory of the Republic of Bulgaria, on the importance of the problem depressive episode in General Medical Practice, which studies GPs' knowledge, attitude and behaviour in their work with this group of difficult patients.
2. In the course of the study, it was found that, in practice, when patients with a severe depressive episode are hospitalized, no register is kept of who referred the patient for admission to a hospital psychiatric facility - GP, psychiatrist and/or institution.

### Contributions of a theoretical nature

1. An in-depth theoretical analysis of depressive and anxiety disorders and their frequency of distribution in different countries and especially in PHC, was made, confirming their importance and the key role of GPs in the process of their recognition and management.
2. The barriers and stimulating factors for GPs in Bulgaria to actively look for problems related to the mental health of their patients, in particular - depressive symptoms, were specified.
3. Barriers and stimulating factors were identified, which, according to GPs, have an impact on patients when discussing their mental health issues and seeking help and specialist advice when needed.
4. Objective facts, independent of doctors and patients, which play the role of barriers in the process of doctor-patient communication, were identified.
5. An in-depth analysis was made of how certain factors related to the doctor's personality - gender, age, years of working experience, acquired specialties and characteristics of the practice - size, place (town/city), number of patients registered in the patient list - influence the doctor's behaviour while conducting the medical consultation of a patient with a depressive episode.
6. Increased incidence of anxiety and depressive disorders as a result of the Covid-pandemic has been observed both in PHC and in specialized psychiatric practice.

### Contributions of an applied nature

1. Based on the literature review on the GPs' attitude and behaviour in their work with patients with depressive symptoms and complying with the Bulgarian and international guidelines on the subject of PHC and the results of the conducted research, an **algorithm of behaviour (Appendix 4)** in the work with patients with depressive symptoms has been proposed, according to the specific conditions of the GMP in the country.
2. Based on the declared desire of GPs and the preferred forms of training and taking into account the recommendations of psychiatry specialists, a sample **programme plan (Appendix 3)** for conducting training modules in small groups of 10-12 GPs under the supervision of a psychiatrist has been proposed.

## Algorithm of behaviour in GMP in case of suspected depression

**CERTAIN !!!**

*Patients with :*
*-low or no **mood***
*- increased **fatigue**, reduced **activity***
*- loss of interest and ability to experience **joy** and **positive emotions***
*- **insomnia,** reduced appetite, reduced libido*

**SUSPICIOUS ???**

*Patients with:*

*Physical complaints (headache, muscle, joint, abdominal pain, pain, tightness in the heart area) in the absence of a somatic disease.*

*/ If you decide, refer to a relevant specialist /*

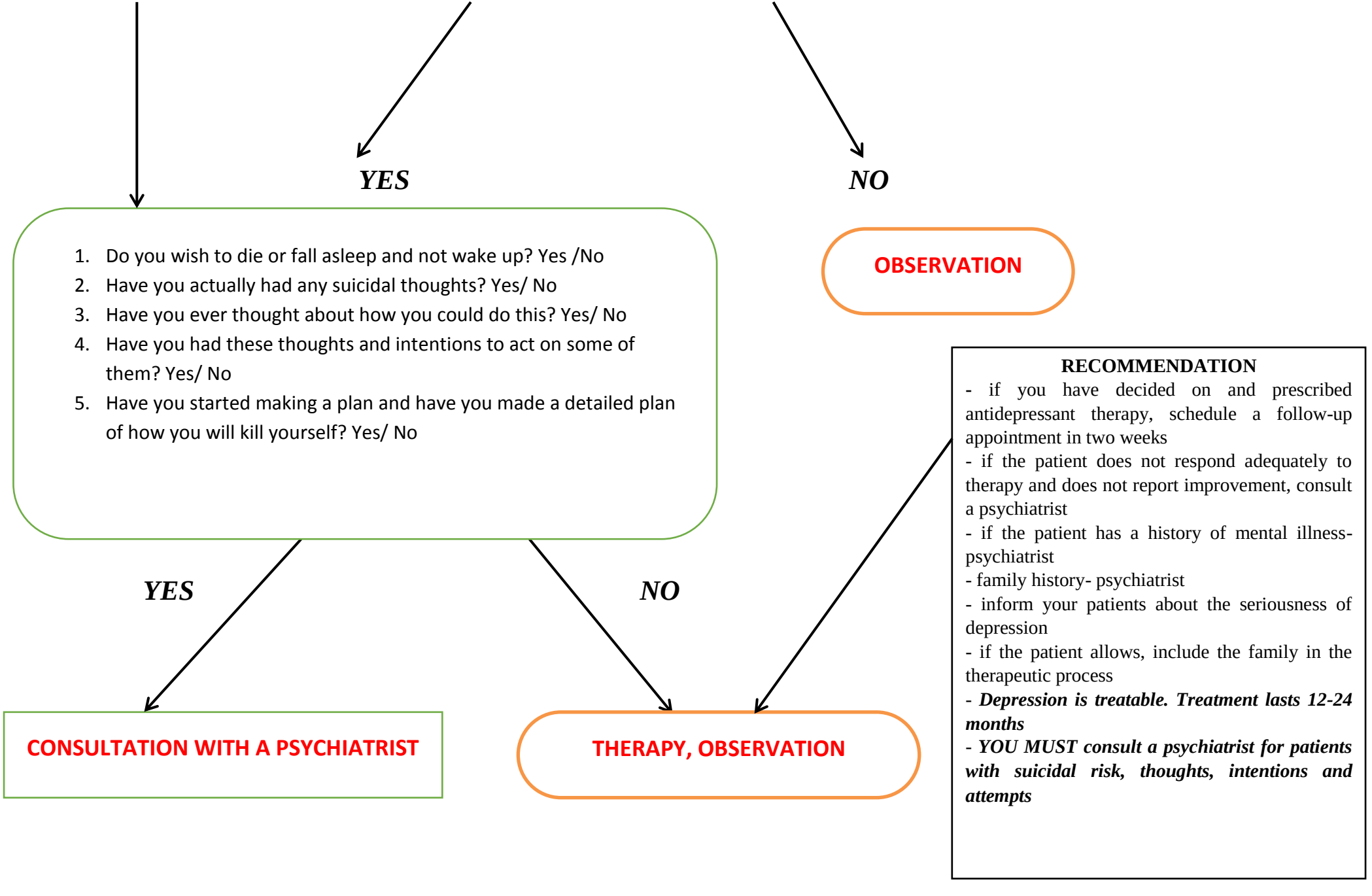
**RISKY !!!**

*Patients :*

- *with increased anxiety*
- *patients after the loss of a loved one*
- *elderly lonely people over 65*
- *children with changes in emotions and behaviour*
- *men-alcohol abuse and aggressive behaviour*
- *postpartum and menopausal women, during the menstrual period*
- *patients with somatic diseases /neurological, endocrine, cardiological, pulmonary, dermatological, oncological, chronic pain syndrome, erectile dysfunction /, often occurring with accompanying depressive episodes*

***SCREENING DIAGNOSTICS – by PROF. PETER MARINOV, MD***

1. In the past 4 weeks, have you had an anxiety attack-a sudden feeling of fear or panic? Yes /No
2. Have you been feeling tense, anxious or worried all the time? Yes /No
3. In the past month, have you often felt sad, depressed, or hopeless? Yes /No
4. In the past month, have you often had a weakened interest, satisfaction? Yes /No


YES
NO
1. Do you wish to die or fall asleep and not wake up? Yes /No
2. Have you actually had any suicidal thoughts? Yes/ No
3. Have you ever thought about how you could do this? Yes/ No
4. Have you had these thoughts and intentions to act on some of them? Yes/ No
5. Have you started making a plan and have you made a detailed plan of how you will kill yourself? Yes/ No
OBSERVATION
YES
NO
CONSULTATION WITH A PSYCHIATRIST
THERAPY, OBSERVATION
RECOMMENDATION
- if you have decided on and prescribed antidepressant therapy, schedule a follow-up appointment in two weeks
- if the patient does not respond adequately to therapy and does not report improvement, consult a psychiatrist
- if the patient has a history of mental illness- psychiatrist
- family history- psychiatrist
- inform your patients about the seriousness of depression
- if the patient allows, include the family in the therapeutic process
- Depression is treatable. Treatment lasts 12-24 months
- YOU MUST consult a psychiatrist for patients with suicidal risk, thoughts, intentions and attempts

## IX. SCIENTIFIC ACTIVITY RELATED TO THE DISSERTATION

### SCIENTIFIC PUBLICATIONS

**Publications in refereed Bulgarian journals and collections:**

1. **Tumbeva E**., Valentinova Tsv. Depressive episode-frequency, significance and problems in its diagnosis in General Practice. Collection of reports Sixth Scientific Conference of Bulgarian Scientific Association for Public Health: Challenges to the Health System, MU-Pleven p.248-253, ISBN 978-954-756-335-3
2. **Tumbeva E.,** Valentinova Tsv. An investigation of problems and barriers in the care of patients with a depressive episode in General Medical Practice. Collection of reports Sixth scientific conference of Bulgarian Scientific Association-Public Health: Challenges to the Health System, MU-Pleven p.254-262, ISBN 978-954-756-335-3
3. **Tumbeva E.,** Valentinova Tsv. Impact of the Covid-pandemic on the emotional state of patients in the General Medical Practice in Bulgaria, Journal of Biomedical and Clinical Trials 17(1) 2024: 59-68 ISSN 1313-9053

### SCIENTIFIC PRESENTATIONS, REPORTS

1. Participation with a report presentation at the Sixth Scientific Conference "Public Health - Challenges to the Health System" May 26-27, 2023, Pleven – subject: "Depressive episode - frequency, significance and problems in diagnosing it in General Practice".
2. Participation with a report presentation at the Sixth Scientific Conference "Public Health - Challenges to the Health System" May 26-27, 2023, Pleven – subject: "An investigation of problems and barriers in the care of patients with a depressive episode in General Medical Practice.
3. Participation with a poster abstract in the International Medical Scientific Conference for Students and Young Doctors /MDSC/, Pleven - "Impact of the Covid-pandemic on the emotional state of patients in General Medical Practice in Bulgaria" 16-20.10 2024, MU-Pleven
4. Participation with a poster abstract in the Southwest European Conference and XXXI Assembly of IMAB- Plovdiv, hybrid version October 28-31, 2021- Depressive and anxiety disorders in the PHC setting. Observation in the conditions of the Covid-pandemic., MU-Plovdiv

### PARTICIPATION IN SCIENTIFIC CONFERENCES, ASSEMBLIES IN OUR COUNTRY

1. The Southwest European Conference and XXXI Assembly of IMAB - Plovdiv, hybrid version October 28-31, 2021.
2. Sixth Scientific Conference "Public Health - Challenges to the Health System" - Pleven Medical University May 26-27, 2023
3. International medical scientific conference for students and young doctors, Pleven 16-20.10 2023

### REALIZED PROJECTS

In connection with the topic of the dissertation work, project No. D 5/ 2022 sponsored by Pleven Medical University was realized. The project has been evaluated with an excellent grade for implementation by the NIP Financing Commission at MU-Pleven. The subject of the project

is "Depressive episode – specific features of the problem in General Medical Practice. Attitude and behaviour of General Practitioners in their work with this group of patients."

Inclusion as a participant in research project No15/ 2022 on the topic "Study of the readiness of young doctors to certify death and serve a patient who died outside a hospital treatment facility." - funded by Medical University-Pleven. The project has been evaluated with an excellent grade for implementation by the NIP Financing Commission at MU-Pleven.