MEDICAL UNIVERSITY-SOFIA

FACULTY OF PUBLIC HEALTH

"Prof. Tsekomir Vodenicharov, MD, DSc"

Tsvetelina Stoyanova Stoyanova

FINANCIAL RESOURCE MANAGEMENT IN SPECIALIZED OUTPATIENT MEDICAL CARE

ABSTRACT OF THE DISSERTATION FOR ATTAINING THE EDUCATIONAL AND SCIENTIFIC DEGREE OF DOCTOR (PhD)

Higher education field: 7. "Healthcare and Sports" Professional field: 7.4. "Public Health" Doctoral program "Social Medicine and Organization of Healthcare and Pharmacy"

Scientific supervisor:

PROF. TIHOMIRA ZLATANOVA ZLATANOVA, MD, DSC

REVIEWERS

PROF. RALITSA ZLATANOVA ZLATANOVA-VELIKOVA, MD, PhD

PPROF. DIANA KRASTEVA IVANOVA, PhD

Sofia, 2024

The dissertation work has been approved and referred for defense by the departmental council of the Department of "Health Economics" at the Faculty of Public Health "Prof. Tsekomir Vodenicharov, MD, DSc", Medical University - Sofia.

The dissertation contains 146 pages and is illustrated with 16 tables and 31 figures. 2 applications are submitted to it. The bibliographic reference contains 145 sources, of which 68 are in Cyrillic, 77 are in Latin.

Scientific jury:

1. Prof. Nikolay Angelov Popov, MD
2. Prof. Ralitsa Zlatanova Zlatanova - Velikova, MD, PhD
3. Prof. Vladimir Hristov Gonchev, MD, PhD
4. Prof. Maria Anastasova Semerdzhieva -Filipova, MD, PhD
5. Prof. Diana Krasteva Ivanova, PhD

Reserve members:
Prof. Rumyana Todorova Yaneva, PhD
Prof. Hristina Tancheva Milcheva, PhD

The public defence will take place on 07 March 2024 at 2:00 pm in the meeting hall of the Faculty of Public Health "Prof. Tsekomir Vodenicharov, MD, DSc", University General Hospital for Active Treatment “Tsaritsa Yoanna - ISUL” EAD, 8 Byalo More Str. Sofia. The defence materials are available in the secretariat of the Dean's Office of the Faculty of Public Health “Prof. Tsekomir Vodenicharov, MD, DSc”, Sofia Medical University, University General Hospital of Active Treatment “Tsaritsa Yoanna - ISUL” EAD, 8 Byalo More Str., Sofia and on the website of the Sofia Medical University. The numbering of the tables, figures and graphs does not correspond to that in the dissertation.

CONTENTS:

Contents

INTRODUCTION 4

RESEARCHMETHODOLOGY 6

GOAL 6

TASKS 6

OUR RESEARCH 10

1. AN ANALYSIS OF THE INSURANCE COVERAGE, NHIF'S ACTIVITIES AND FUNDING IN SOC IN BULGARIA FOR THE 2011-2021 PERIOD 10

2. ANALYSIS AND ASSESSMENT OF THE QUESTIONNAIRE RESULTS CONDUCTED AMONG PATIENTS 25

CONCLUSIONS 59

RECOMMENDATIONS 61

To the Ministry of Health 61

To the NHIF: 61

The BMA and medical universities: 62

The local authorities (municipalities) 62

CONTRIBUTIONS 63

LIST OF PUBLICATIONS RELATED TO THE DISSERTATION 64

INTRODUCTION

After the establishment of the general practitioner institution, the access to specialist outpatient care has been conducted after a specialist referral is secured. NHIF covers payments for care delivered by a specialised medical care provider to a health-insured person who was given a referral by a primary and/or specialised outpatient care (SOC) provider, who has entered into a contract with NHIF.

The access regulation applied is simultaneously the main financial regulatory mechanism in the closed healthcare system implemented in Bulgaria. Most often, the insurance cost containment policies in the world and Europe involve applying more closed payment systems for the medical services provided. On the other hand, there is an expansion of the policy to share costs among the insured, resulting in citizens and patients making larger contributions to payments and consumer charges at the time of the service (Yanev G., 2000).

In Bulgaria, the a access to specialized care is regulated by the Health Act, the Health Insurance Act, and the Ordinance on Exercising the Right of Access to Medical Care. The access is based on the principle of the patient's freedom to choose a medical institution for primary, specialized and in-patient care throughout the country, and on the other hand, in the SOC area, it is regulated through referrals for consultations and testing.

The National Health Insurance Fund operates on a fixed budget that's established by law, and there is no funding for payments in case physicians report more physical exams. In case the limit for referrals is reached, any health-insured person may be declined the opportunity for a physical exam and the needed medical care may not be covered by the budget, to which the patient contributes on a regular basis. The Health Insurance Act guarantees that the insured have free access to medical care, and the patient's right to chose should not be geographically or administratively limited.

The main problem faced by the SOC system is related to the continued dominance of in-patient care as the place to solve the majority of the population's health problems. The lack of appropriate incentives for the development of outpatient activities within outpatient facilities and the hospital sector's aggressive policy of implementing a large number of hospitalizations largely depersonalizes specialized outpatient care and deprives it of incentives for development.

As in POC, in SOC, there is a tendency for individual and collective specialised practices to be predominant, at the expense of the larger medical institutions, such as medical centres and diagnostic and consultative centres (DCC). This, as well as the lack of appropriate culture and requirements in place to ensure a comprehensive approach to treating patients in recent years, often leads to diagnostic difficulties and weaknesses and the so-called phenomenon of "footballing" patients from one specialist to another without addressing the overarching health problem. Part of the problem lies within the absence of communication and subordination with the GPs before and after the respective consultative examinations.

The mismanagement of large SOC medical facilities - municipal diagnostic and consultative centres and medical centres, successors of the former polyclinic health facilities - over the last 30 years also contributes to this. In these structures, local authorities do not invest in staff retention, equipment and building renovation, which is why they are no longer able to provide high-quality and complex medical care. This has a particularly negative effect in smaller towns where there is no established hospital care facility and the respective medical center or DCC is the only access to medical diagnostic testing, such as clinical and laboratory, and microbiological testing, imaging, etc.

Against the backdrop of ever-increasing health care costs worldwide, health systems are challenged with answering the questions of "How?" and "In what way?" they can achieve efficient use of scarce financial health care resources. In particular, at the specialised outpatient level, they are faced with providing better health to the nation. This efficiency depends first and foremost on a clear allocation of the budget which finances the activities of the health care providers, and on the skilful use (utilisation) of the funds provided, i.e. on good management of public funds.

All these factors determine the relevance of the current dissertation topic.

RESEARCHMETHODOLOGY

GOAL

The goal of this dissertation is to assess the financial resource management in SOC and to identify the problems and opportunities for their elimination. This will be based on an in-depth research and analysis of legislation, financial reports and patients' opinions.

TASKS

In order to achieve this goal, the following scientific tasks have been completed:

1. Presenting the role of specialised outpatient medical care in the health care system in the Republic of Bulgaria.
2. Analysing of the mapping, conditions and procedures for the provision of SOC.
3. Researching and analysing the insurance coverage in SOC in Bulgaria for the 2010-2021 period.
4. Conducting a comparative analysis of the access to SOC in Bulgaria and worldwide and assessing the effectiveness of the health systems
5. Conducting a questionnaire survey among patients (health service consumers) on their satisfaction with their medical care in the following areas:
   - ✓ availability of specialist doctors in outpatient care;
   - ✓ access to outpatient specialist practices;
   - ✓ the financial aspects of using SOC;
6. Substantiating recommendations for improving the resource management and, in particular, financial management in SOC.

The objects of observation, their units and signs are specified based on the scientific tasks thus set.

The **SUBJECT** of this study is specialised outpatient medical care (SOC) with particular regard to resource provision and financial resources.

The research is complex. The concrete scientific tasks, the object, units and features of the study are related to the specificity of the research.

One of the components involves researching and analysing the insurance coverage in SOC in Bulgaria for the 2010-2021 period.

The second component involves a questionnaire survey, which was distributed among patients who have used specialized outpatient medical care in the country, whereby the principles of voluntary participation and anonymity were respected.

For this purpose, a questionnaire (Annex 1) containing 32 questions was developed. It included structured, semi-structured and open-ended answers, where free responses were possible. The survey aims to explore and analyse the respondents' views on specialised outpatient care in the following areas:

- ✓ specialist referrals from the GP;
- ✓ assessment of the time and reasons for waiting to see a specialist;
- ✓ assessing the means of accessing a specialist;
- ✓ the attitude to a paid physical exam by a specialist.

The selection of the patients surveyed was random - there was no selection of the respondents, which is reason to claim that the results are representative. The confidence interval at significance level P(t)=0.05 provides information, which can be used to assess the accuracy of the analysed indicators.

The logical unit of observation are the surveyed patients.

The technical unit of observation is the practices for specialized outpatient medical care.

Time and place of the observation

The survey was conducted among the respondents from 18.04.2023 to 31.07.2023 using the online platform Google Forms. 509 patients from all over the country participated in the survey.

Research documents

We used empirical data from:

- ✓ regulatory documents of the NHIF, the Ministry of Health (MH), etc.;
- ✓ financial reports on the activities of the NHIF;

- ✓ reports, analyses, strategies, etc.

The main documents used to collect primary information is the patient questionnaire - APPENDIX 1.

Research Methods

To collect the necessary information, the following methods were used in the dissertation:

- ✓ documentary method - various pieces of legislation, NHIF financial reports, reports, analyses and strategies were studied;
- ✓ sociological method - a questionnaire survey conducted using the Google Forms online platform. Using special settings in the Google Forms platform, the respondent anonymity was ensured, and they had the ability to send their answers in real time. Patients from all over the country were surveyed;

Information processing methods:

- ✓ Statistical methods. A wide range of descriptive and analytical statistical methods are used in the dissertation:
- ✓ Descriptive analysis - the frequency distribution of the considered features is presented in tabular form, broken down by study group;
- ✓ Analysis of variance - to assess central tendency characteristics and statistical variance;
- ✓ Graphical analysis - for visualising the results obtained;
- ✓ Alternative analysis - for comparison of relative shares;
- ✓ Time series analysis - a lasting trend;
- ✓ Economics analysis.

During the course of the study, the methods listed above complemented each other, allowing for a multifaceted assessment of the information.

A complex methodology was used to objectify the observed patterns and analyse the collected information. The indicators were assessed at $\alpha=0.05$ level of significance.

The quantitative analyses were performed with the SPSS 17.0 statistical software package. MICROSOFT OFFICE products were used for tabular and graphical processing and presentation.

OUR RESEARCH

1. AN ANALYSIS OF THE INSURANCE COVERAGE, NHIF'S ACTIVITIES AND FUNDING IN SOC IN BULGARIA FOR THE 2011-2021 PERIOD

Although there is no shortage of physicians, the human resources composition of the health system is unbalanced. The number of general practitioners (GPs) and nurses is insufficient, further eroding primary care in the country. There are significant regional imbalances as well as inadequate insurance and vacancies for some medical specialties. In addition, the healthcare workforce is ageing rapidly and emigration among young workers is not decreasing.

At the end of 2021, the number of physicians working in the country's health care institutions on a basic employment contract was 29 604, which was 4.4% more than in 2011. Of these, 10 255 physicians and 7 082 dentists worked in outpatient care facilities, including all physicians (6 731) working in individual or collective practices, contracted by the NHIF, and dentists /6 585/ working in collective or individual practices, contracted by the NHIF. By the end of 2021, the number of physicians working on basic employment contract in medical centers was 1 830, while those in the diagnostic and consultative centres made up 1 296. In the breakdown of physicians by specialty at the end of 2021, the largest share was held by general practitioners, making up 3 945, or 13.3%, of all physicians in the country, followed by specialists in cardiology - 6.2%, obstetrics and gynecology - 5.9%, surgery - 5.2%, and nervous system diseases - 4.9%. Physician availability varies by district from 23.4 to 67.3 per 10,000 of the population, with the highest rates in districts whose centres have medical universities or university hospitals. Pleven had the highest number of doctors per 10 000 of the population - 67.3 per 10 000, followed by Sofia (54.5), Plovdiv (52.3) and Varna (50.7). Kardzhali had the lowest number of physicians per 10 000 of the population (23.4). The insurance of general practitioners in the country is 5.8 per 10,000 of the population at the end of 2021. The number of healthcare professionals is decreasing. At the end of 2021 their number was 44 451, with nurses making up 28 816 and midwives at 3 264. The

most pronounced decrease was reported for nurses, with the number of nurses falling by 8.8% compared to 2011. The number of dentists in 2021 grew by 11.8% compared to 2011 (Table 1).

Table 1. Medical personnel, number and change

	2011	2016	2021	2011 – 2021 change
Physicians	**28 348**	**29 318**	**29 604**	**4.4%**
General practitioners	**4 677**	**4 344**	**3 945**	**-15.7%**
Specialist physicians	**23 671**	**24 974**	**25 659**	**8.4%**
Dental Physicians	**6 710**	**7 366**	**7 499**	**11.8%**
Nurses	**31 609**	**30 976**	**28 816**	**-8.8%**
Physicians working in hospitals	**15 264**	**16 778**	**17 179**	**12.5%**
Share of the total number of physicians	**53.8%**	**57.2%**	**58.0%**	**7.8%**
Nurses working in hospitals	**20 651**	**20 107**	**18 352**	**-11.1%**
Share of all nurses	**65.3%**	**64.9%**	**63.7%**	**-2.5%**

Source: Eurostat 2022

Bulgaria follows the general trend of an increase in the number of physicians per capita in Europe. The number of physicians per 10,000 of the population steadily increased from 38.7 in 2011 to 43.3 by the end of 2021. The number of outpatient physicians per 10,000 of the population increased from 14.5 in 2011 to 15.0 in 2021 (Table 2). As in other European countries, the increase is due to both an absolute increase in the number of physicians and a population decline.

Table 2. Medical staff per 10000 of the population, 2011-2021

	(number)			*(number)*		
	Number of physicians			***Physicians per 10000 of the population***		
	2011	**2016**	**2021**	**2011**	**2016**	**2021**
Total	**28 348**	**29 318**	**29 604**	**38.7**	**41.3**	**43.3**
Internal Medicine	1 489	1 065	948	2.0	1.5	1.4
Cardiologists	1 354	1 636	1 843	1.8	2.3	2.7
Pediatricians	1668	1738	1408	2.3	2.4	2.1
Surgeons	1627	1 606	1 538	2.2	2.3	2.2
Obstetrician-Gynecologists	1 659	1 751	1 756	2.3	2.5	2.6
Ophthalmologists	904	952	1 019	1.2	1.3	1.5
Neurologists	1 450	1 463	1 437	2.0	2.1	2.1
Cutaneous and sexually transmitted infections	483	485	447	0.7	0.7	0.7
General practitioners	4 677	4 344	3 945	6.4	6.1	5.8
Physicians in in-patient institutions	15 264	16 778	17 179	20.8	23.6	25.1
Physicians in outpatient institutions	10 589	10 621	10 255	14.5	15.0	15.0

Source: Eurostat 2022.

Compared to the rest of the EU, Bulgaria demonstrates a relatively high coverage along with Austria (5.04), Portugal (4.42), Lithuania (4.30), Sweden (4.12) and Germany (4.11). In terms of the relative share of physicians, Bulgaria stands better than the EU13 (2.8), EU28 (3.5) and EU15 (3.7) averages, and is ahead of countries such as Poland (2.3), Romania (2.4), Croatia (3.13) and Hungary (3.3).

Although many EU member states experience an unbalanced ratio of general practitioners to specialists, in Bulgaria this ratio is extremely low. Moreover, the

number of the former declined by 15.7% between 2011 and 2021, while the number of specialists grew by 8.4%. The share of GPs in the total number of physicians has been steadily decreasing from 16.5% in 2011 to 13.3% in 2021. Part of the reasons for this are the administrative workload, the insufficient pay and recognition, the lack of interest among young physicians and the problems with training and acquiring a specialty in general medicine (Valentinova, Nedkova-Milanova 2018).

Specialised outpatient medical care is provided by specialised practices, diagnostics and treatment centres, and laboratories. Such care is also provided by mental health centres, complex oncology centres, centres for cutaneous and sexually transmitted infections, and centers for complex services for children with disabilities and chronic diseases. Specialized outpatient medical care facilities may be registered as:

- ✓ individual or collective practices for specialised medical care in certain medical specialties;
- ✓ medical and medical-dental centres with a minimum of three doctors and/or dentists with different medical specialties;
- ✓ diagnostic and consultative centers with a minimum of 10 doctors with different medical specialties and own diagnostic units-clinical laboratory and imaging diagnostics;
- ✓ independent medical laboratories, which can be of two types: (1) medical-diagnostic laboratories performing laboratory tests and analyses or imaging; and (2) Medical-Technical laboratories making special medical devices (e.g. dental laboratories).

Medical, medico-dental, as well as diagnostic and consultative centres may have units in which physicians' assistants, nurses or midwives independently provide health care.

Diagnostic and consultative centres are often owned by municipalities and under the control of the respective municipal councils. The other types of specialised outpatient care facilities are mostly privately owned. All, regardless of ownership, are registered under the Commerce Act as trading companies. Patients in Bulgaria have the right to freely choose a specialist throughout the country.

Similar to primary care, specialty care is dominated by individual practices, but their number decreased by 8.4% in 2021. compared to 2011. In contrast, the

number of medical centres, medico-dental centres and stand-alone medico-diagnostic laboratories is increasing significantly (Table 3). Many specialists simultaneously work in both outpatient facilities and hospitals. The majority of specialists in outpatient care work under contract with the NHIF.

The basic package of specialised health services covered by compulsory health insurance includes primary and secondary check-ups, preventive check-ups, dispensary monitoring, rehabilitation, highly specialised medical activities and assessment for temporary incapability to work if the patient's condition requires longer sick leave.

Surgeons, paediatricians, obstetricians, cardiologists and neurologists are the specialists with the largest numbers (NSI 2021). There is a shortage of physicians with specialties in clinical toxicology, parasitology, infectious diseases and allergology. According to the NCPHA report, specialized outpatient care capacity is underdeveloped, which creates access inequalities for the population especially in remote areas (NCPHA 2017). The distribution of specialists shows significant regional variations and imbalances between provinces. The health insurance of the population with doctors by district varies from 23.4 to 67.3 per 10,000 people, the highest is in districts whose centers have medical universities or university hospitals. Pleven had the highest number of doctors per 10 000 of the population - 67.3 per 10 000, followed by Sofia (54.5), Plovdiv (52.3) and Varna (50.7). Kardzhali has the lowest number of doctors per 10,000 of the population at 23.4 (NSI-2022).

Table 3. Outpatient medical facilities, 2011 - 2021

MEDICAL FACILITIES	2011	2016	2021	2011 – 2021
GP[A]	4 677	4 344	3 945	-15.7%
Individual practices for specialized medical care [B]	2 858	2 949	2 619	-8.4%
Group practices for specialized medical care [B]	146	139	107	-26.7%
Medical centers[C]	559	702	766	37.0%
Medical and dental centers [C]	35	50	53	51.4%

Diagnostics and consultation centers [C]	121	112	111	-8.3%
Independent medical and diagnostics and medical technical laboratories [C]	1 006	1 115	1 147	14.0%

Sources: A - NSI 2022; B - NSI 2012, 2017, 2022; C - NSI 2022.

AN ANALYSIS OF THE HEALTH INSURANCE PAYMENTS MADE IN SPECIALISED OUTPATIENT CARE IN THE CONDITIONS OF COVID-19 AND POST-COVID /2019-2021/-

Adopted with the 2020 National Health Insurance Fund Budget Act, the funds amount to BGN 264 700 thousand. During the year, the funds were increased by a total of BGN 14 170 thousand with decisions of the National Council of the NHIF, including:

- ✓ under Article 15, Paragraph 1, Item 7, Article 26, Paragraph 2 of the Health Insurance Act and Article 116 of the Public Finance Act (with funds from the NHIF reserve) - increase by BGN 20 833.1 thousand;
- ✓ under Article 115 of the PFA (internally compensated changes) - decrease by BGN 6663.1 thousand.

As a result of the changes, the annual health insurance payment plan for SOC for 2020 amounts to BGN 278 870 thousand (including a transfer of BGN 1 037.9 thousand for government-funded hospitals).

As of 31.12.2020, BGN 277 999.6 thousand (including BGN 1 037.9 thousand transfer for government-funded hospitals) have been paid for SOC, which represents 6.1% of all health insurance payments made in 2020. An increase of BGN 27 776.7 thousand or 11.1% is reported compared to the payments made as of 31.12.2019.

Of the 2020 total SOCpayments:

- ✓ BGN 11 973.7 thousand represent an advance payment to the SOC providers under the contracts with the Regional Health Insurance Fund for the activity performed in December 2020, in accordance with the "Conditions and procedure in the implementation of Article 13 of the National Framing

Contract for medical activities for 2020 - 2022 determined jointly between the NHIF and the BMA".

- ✓ BGN 31,244 thousand implemented the Methodology under Article 201a of the National Framing Contract (NFC) for medical activities for 2020-2022.

The value of the activities of the SOC contractors from the reimbursable period in 2020 (December 2019 - November 2020) according to the NFC amounts to BGN 241 003.5 thousand, of which BGN 6 210.7 thousand was paid to the SOC contractors in advance in 2019 and BGN 10.9 thousand was deferred for payment in a subsequent period.

Compared to the value of SOC activity paid in 2019 for the period December 2018 - November 2019, **an overall decrease of BGN 3 004.9 thousand or 1.2% was reported. as a result of the overall decrease in the volume of reported activity as a result of the restrictions introduced during the state of emergency**, and the state of epidemic emergency respectively. In 2020, a total of 18,417.5 thousand specialized activities were reported, which is 2,631 thousand fewer activities or 12.5% less than in 2019. The decrease by activity was as follows:

- ✓ specialised screening (primary and secondary) for acute conditions - a total of 8,972.3 thousand check-ups, which is 1,221.2 thousand check-ups, or 12%, fewer than in 2019;
- ✓ specialized screening related to dispensary observation - a total of 653 thousand check-ups, which is 131.8 thousand check-ups, or 16.8%, fewer than in 2019;
- ✓ specialized preventive screening - a total of 348.4 thousand screenings, which is 46.9 thousand activities, or 11.9%, fewer than in 2019.
- ✓ expert activity - a total of 994.1 thousand medical exams, which is 68.7 thousand exams, or 6.5%, fewer than in 2019; highly specialised activities (HSAs) - a total of 722.2 thousand HSAs reported. which are 63.8 thousand HSAs, or 8.1%, fewer than in 2019; physiotherapy activities (screening and procedures) - a total of 6 727.4 thousand physiotherapy activities were reported, which is 1,098.5 thousand activities, or 14%, fewer than in 2019.

As one of the measures to compensate for the effects of the pandemic emergency, in addition to the increase in the activity prices agreed with the NFC om 01.01.2020 (by 10.6% on average), an additional price increase of 4.4% on average was agreed as of 01.08.2020. Despite the increased activity prices resulting from the overall decrease of 2020 activities, the rise of BGN 27 776.7 thousand in health insurance payments for SOC in 2020 compared to 2019 is solely due to the payments under the Methodology line, which amount to BGN 31 244 thousand.

Despite the trend of general decline in medical activities, there was a result of the implementation of financial incentives for 2020. **An increase of 11.1% (BGN 22 776.6 thousand) in health insurance payments** under the NHIF budget for SOC was reported compared to 2019 (Table 4).

Table 4. The structure of health insurance payments made for SOC in 2019 and 2020.

Indicators (thousand BGN)	**Activities paid as of 31.12.2019**		**Activities paid as of 31.12.2020**		**Change**	
	Value	Share (%)	Value	Share (%)	Value	%
PPA *about SOC* , incl.:	**250 222.9**	**100%**	**277 999.5**	**100,0%**	**27 776.6**	**11.1%**
- for SOC activities	244 008.4	97.5%	241 003.5	86.7%	-3 004.9	-1.2%
- sums by Methodology	0	0.0%	31 244.0	11.2%	31 244.0	
payments for other periods	6 214.5	2.5%	5 752.0	2.1%	-462.5	-7.4%

According to the data in Table 5, only the BGN 31 244 thousand **paid under the Methodology had a positive impact on the overall growth of SOC spending.** Of this, BGN 29,654 thousand goes towards for payment of up to 85% of the base value for reported activity for 03.2020 to 11.2020 period, and BGN 1,590 thousand goes towards an additional payment of BGN 30,000 per month for a SOC Medical Centre contractor with imaging and laboratory facilities or a DCC that has formed one or more teams to screen and test patients with suspected COVID-19 for the 11.2020 to 12.2020 period.

The implementation of financial incentives for medical care providers in the context of a state of emergency was a successful approach to securing the operations of SOC, given the general trend observed in 2020. The financial incentives implemented for specialists in outpatient care are not only a mechanism to financially support their activities, but also a prerequisite to increase their motivation to work and a way to give them the recognition they deserve in the fight against COVID-19.

Table 5. Prices, number of reported and paid activities for 2020 - 2021 in SOC

Nomenclature	**Prices after January 2019**	**Prices after January 2020**	**Prices after August 2020**	**Reported and paid activities in 2020.**	**Reported and paid activities in 2021.**	**2021 growth compared to 2020.**	
	BGN	**BGN**	**BGN**	**number**	**number**	**difference in cash**	**difference in %**
Total for SOC:				**18 417 469**	**19 449 828**	**1 032 359**	**5.61**
Primary visits				**6 290 171**	**6 616 795**	**326 624**	**5.19**
Primary check-ups in case of acute diseases and with chronic ones, not subject to dispensary supervision	22.00	23.50	24.50	5 310 478	5 602 512	292 034	**5.50**
Primary check-ups of HIP from 0 to 18 years of age with a specialist in Pediatrics and/or a physician with an acquired specialty in Children's Diseases, referred by the GP for acute conditions	22.00	23.50	24.50	767 262	788 917	21 655	**2.82**
Primary check-ups with specialists (Surgery; Orthopedics and Traumatology) performing procedures	22.00	23.50	24.50	139 973	122 420	-17 553	-12.54

Primary preventive check-ups under the Maternal Health program	21.50	23.00	24.00	39 297	39 218	-79	-0.2
Primary specialized check-ups in dispensary monitoring of HIP	21.00	23.00	24.00	33 161	29 675	-3 486	-10.51
Check-up of a HIP with confirmed COVID					34 053		
Secondary visits				**2 754 544**	**3 147 086**	**392,542**	**14.25**
Secondary check-ups in case of acute diseases and with chronic ones, not subject to dispensary supervision	9.50	11.00	12.00	2 085 608	2 490 266	404 658	**19.40**
Secondary check-ups of HIP from 0 to 18 years of age with a specialist in Pediatrics and/or a physician with an acquired specialty in Children's Diseases, referred by the GP for acute conditions	9.50	11.00	12.00	541 263	545 813	4 550	**0.84**
Secondary check-ups with specialists (Surgery; Orthopedics and Traumatology) performing procedures	9.50	11.00	12.00	127 673	111 007	-16 666	-13.05
Prophylactic check-ups of HIP up to 18 years by a physician specialised in Pediatrics	**13.00**	**13.00**	**14.00**	**42 163**	**45 959**	3 796	**9.00**
Secondary preventive check-ups under the Maternal Health program	**13.00**	**13.00**	**14.00**	**266 762**	**284 140**	17 378	6.51
Prophylactic check-ups of patients over 18 years of age with risk factors for disease development	**12.00**	**12.00**	**13.00**	**148**	**94**	-54	-36.49

Specialized check-ups in dispensary monitoring of HIP with one or more diseases	**12.50**	**12.50**	**13.50**	**604 747**	**540 748**	-63 999	-10.58
Comprehensive dispensary (outpatient) monitoring of persons with mental illnesses and cutaneous and venereal diseases	**14.00**	**15.00**	**16.00**	**15 154**	**15 039**	-115	-0.76
Medical expertise	**7.00**	**10.00**	**10.00**	**994 143**	**1 085 611**	**91 468**	**9.2**
Highly specialized activities				**722 232**	**730 166**	**7 934**	**1.1**
Diagnostic and therapeutic join injection	17.44	17.44	17.44	21 423	22 383	960	4.48
Echocardiography	22.79	22.79	22.79	490 846	505 504	14 658	2.99
Doppler sonography; Doppler sonography of peripheral vessels; Doppler sonography of thyroid vessels	17.66	17.66	17.66	39 041	37 668	-1 373	-3.52
Electroencephalography (EEG)	16.05	16.05	16.05	29 870	26 544	-3 326	-11.13
Electromyography (EMG)	16.05	16.05	16.05	32 642	32 158	-484	-1.48
Physiotherapy and rehabilitation				**6 727 405**	**6 984 190**	**256 785**	**3.82**
Initial specialized physical examination under the physiotherapy and rehabilitation package	9.00	10.00	11.00	306 492	318 514	12 022	3.92
Procedures under Group 1 from the physiotherapy and rehabilitation package	2.00	3.00	3.00	2 912 840	3 079 708	166 868	5.73
Procedures under Group 2 from the physiotherapy and rehabilitation package	2.00	3.00	3.00	117 849	130 058	12 209	10.36

Procedures under Group 3 from the physiotherapy and rehabilitation package	2.00	3.00	3.00	3 084 645	3 139 257	54 612	1.77
Final physical examination under the physiotherapy and rehabilitation package	7.00	7.00	8.00	305 579	316 653	11 074	3.62

It can be seen from Table 5 that the total reported and paid activities in specialised outpatient care in 2021 was 19 449 828, while in 2020 it was 18 417 469, which constitutes an increase of 5.61% in 2021 compared to the reported activities in 2020.

The number of primary and secondary consultative check-ups for acute and chronic diseases in 2021, which are subject to payment from the NHIF's 2021 Budget, as well as the turnover to these activities is increasing compared to the 2020 level. We see a 5.5% increase in primary consultative check-ups in 2021 compared to 2020 and a 19.4% increase in secondary consultative check-ups in 2021 compared to 2020.

In 2021 there was slight increase of 2.82% in primary check-ups of patients aged 0 to 18 with a Paediatrics specialist and/or a physician with an acquired specialty in Children's Diseases, referred by a GP for acute conditions, compared to 2020 (21,655 more check-ups were reported and paid for). A total of 6 524 541 primary consultative check-ups were reported, of which 816 976 check-ups were reported by physicians with a specialty in Paediatrics and Paediatric specialties, and in 2020, of the 6 217 713 primary consultative check-ups reported, 799 570 check-ups were reported by physicians with a specialty in Paediatrics and Paediatric specialties. The national average was 0.80 primary consultative check-ups per 1 HIP, and in 2020 this indicator was 0.73. In 2021/2020, the reported national average was 0.36/0.28 secondary consultative check-ups per 1 HIP. The ratio of primary consultative to secondary consultative check-ups was 0.45/0.39.

The national average of reported primary check-ups per 1 HIP aged from 0 to 18 with a physician specialised in Paediatrics was 0.68 check-ups, while in 2020 this indicator was 0.60. During the reporting period, secondary checkups with a specialist in Paediatrics per 1 HIP aged 0 to 18 years averaged 0.47 in 2021 and 0.42 in 2020. It should be borne in mind that a referral to a Paediatrician for acute illnesses and conditions in children is outside the designated number of specialised medical

activities of POC contractors (non-regulated activity). The ratio between primary and secondary examinations for acute conditions of patients aged 0 to 18 with a physicians with a specialty in Paediatrics and Paediatric specialties averages 0.69, i.e. it does not exceed the acceptable ratio of 1:1. This means that 30% of the children who underwent a primary check-up did not have a secondary check-up performed and subsequently reported. **In 2021, the rule that referrals to a Pediatrician and/or a physician with an acquired specialty in "Children's Diseases" for acute illnesses and conditions in children are outside the designated number of specialized medical activities of the POC contractors (non-regulated activity) continued to apply.**

The **Children's Health** Programme, implemented by a specialist paediatrician: the total reported preventive activities of HIP up to the age of 18 in 2021 was 45,870 examinations, and, in 2020, 42,163 examinations were reported. In 2021, an 8% increase was observed in reported check-ups for this indicator, compared to 2020. The national average value of the indicator "Number of preventive check-ups per 1 HIP aged 0 to 18 under the Children's Health Care Programme" in SOC in 2021 is 0.038 check-ups, and in 2020 it is 0.035 check-ups.

The **Maternal Health** Programme, carried out by a specialist obstetrician and gynaecologist on pregnant women with normal and at-risk pregnancies: In 2021, the Maternal Health Programme for the monitoring of pregnant women with normal and at-risk pregnancies by a OBGYN specialist reported a total of 322 319 preventive check-ups of 60 151 pregnant women (39026 primary and 283 293 secondary). In 2020, a total of 303 883 preventive check-ups were reported for 72 766 pregnant women (39 305 primary and 264 578 secondary). The average value of the indicator for the country in 2021 was 5.36 check-ups per pregnant woman included in the program, and in 2020 the value of the indicator was 4.18 check-ups. **The conclusion was that, in the majority of the country, pregnant women choose to be seen by specialists in Obstetrics and Gynaecology, and only in some regions where access to specialised medical care is difficult, monitoring is carried out by GPs.**

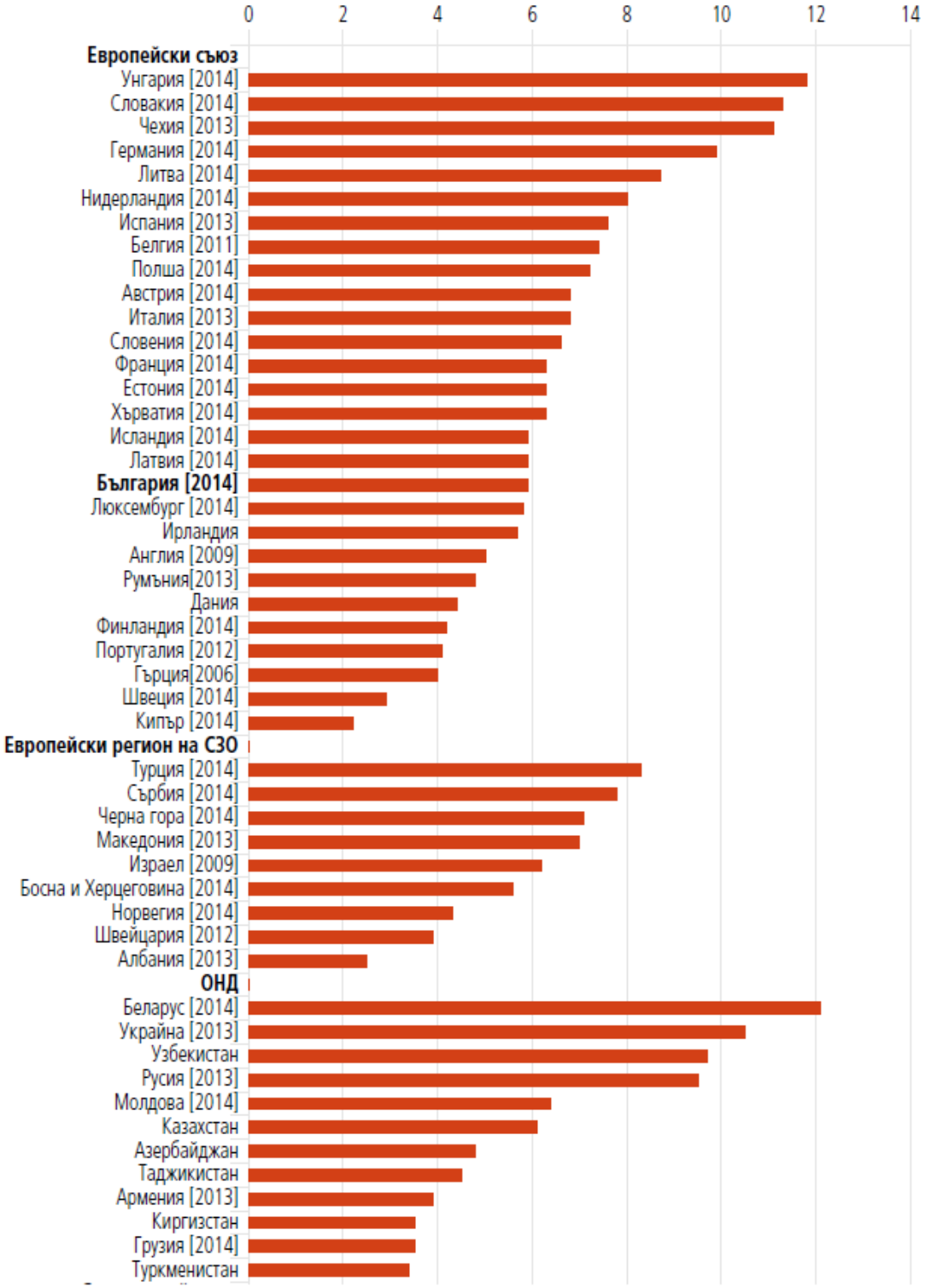
Physical and rehabilitation medicine: 9172 physiotherapy procedures from the Physical and Rehabilitation Medicine package were reported per 10,000 patients on average in the country in 2021, which represents an increase of 11% compared to 2020 (8148). In 2021 and 2020, the number of specialised primary check-ups under the Physical and Rehabilitation Medicine package per 10,000 HIP on average per country was equal to the number of final check-ups. In 2021, reported primary and

final physiotherapy and rehabilitation check-ups saw an increase of nearly 11.2% from 2020. As of 01.04.2017, indications for hospitalization have been in force for physiotherapy clinical pathways for central nervous system, peripheral nervous system and musculoskeletal system diseases rehabilitation. A patient is hospitalized according to these indications when there is insufficient therapeutic effect of the physiotherapy and rehabilitation conducted in outpatient care.

The total number of reported specialised dispensary check-ups (primary/secondary) in 2021 was 575,958 (down 10.7% from 2020). In 2020, the reported number of specialised dispensary check-ups (primary/secondary) was 637 608. The total number of reported dispensary checkups within the dispensary monitoring algorithm in 2021 was 1.07 checkups per dispensary patient in SOC. For 2020 the value of this indicator was 1.15 check-ups. In the 1 January 2021 - 31 December 2021 period, the ICD 10 disease classes with the highest number of dispensaries for patients seen by a specialist are "Diseases of the respiratory system" - 197 463 HIP seen, "Endocrine, nutritional and metabolic diseases" with 113 731 HIP seen. In the 1 January 2020 - 31 December 2020 period, the ICD 10 disease classes with the highest number of dispensaries for patients seen by a specialist are "Diseases of the respiratory system" - 204 571 HIP seen, "Endocrine, nutritional and metabolic diseases" with 116 615 HIP seen. The total number of reported dispensary checkups within the dispensary monitoring algorithm in 2021 was 1.07 checkups per dispensary patient in SOC. For 2020 the value of this indicator is 1.11 check-ups. **This decrease can be explained by the anti-epidemic measures introduced and the respective lower attendance.**

Figure 1 presents the average number of outpatient visits in the WHO European Region in 2014. With an average of 5.9 visits in 2014 Bulgaria is below the EU13 average (7.54 in 2014) and the EU28 average of 7.03 per capita (WHO Europe 2017). These data cover primary and specialised outpatient care. Furthermore, the average number of examinations per doctor was only 1 480 in 2014, among the lowest in the EU (OECD/EU 2016).

Figure 1. Average number of outpatient visits per capita in the WHO European Region 2014.



2. ANALYSIS AND ASSESSMENT OF THE QUESTIONNAIRE RESULTS CONDUCTED AMONG PATIENTS

Demographic characteristics and social status of the respondents

During the study period, 509 patients from across the country were surveyed. Of them 63.3% were women and 36.7% were men (Figure 2).

The age structure of the respondents is presented in Figure 3. The age characteristics of the respondents were studied for the purpose of the research and in order to correlate age with the other indicators studied.

Figure 2. Respondent distribution by gender

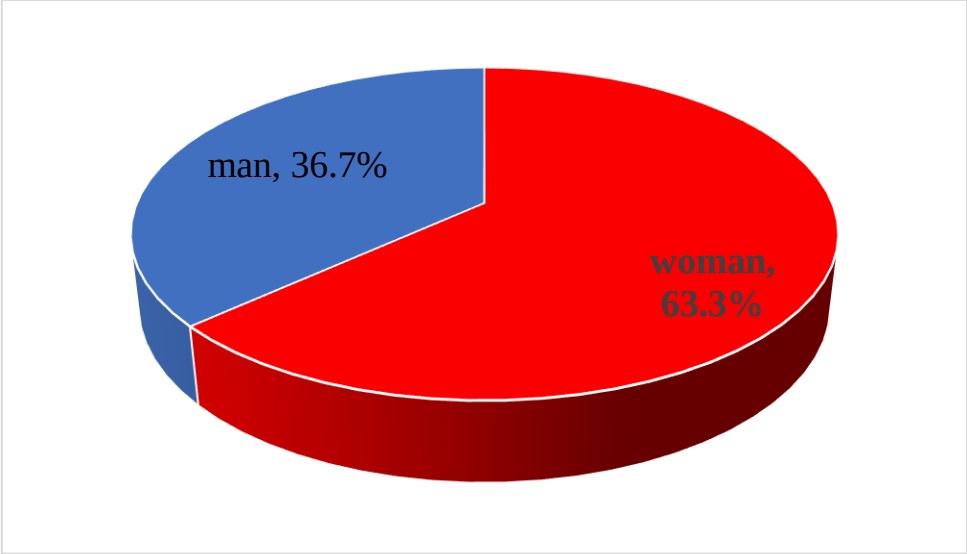
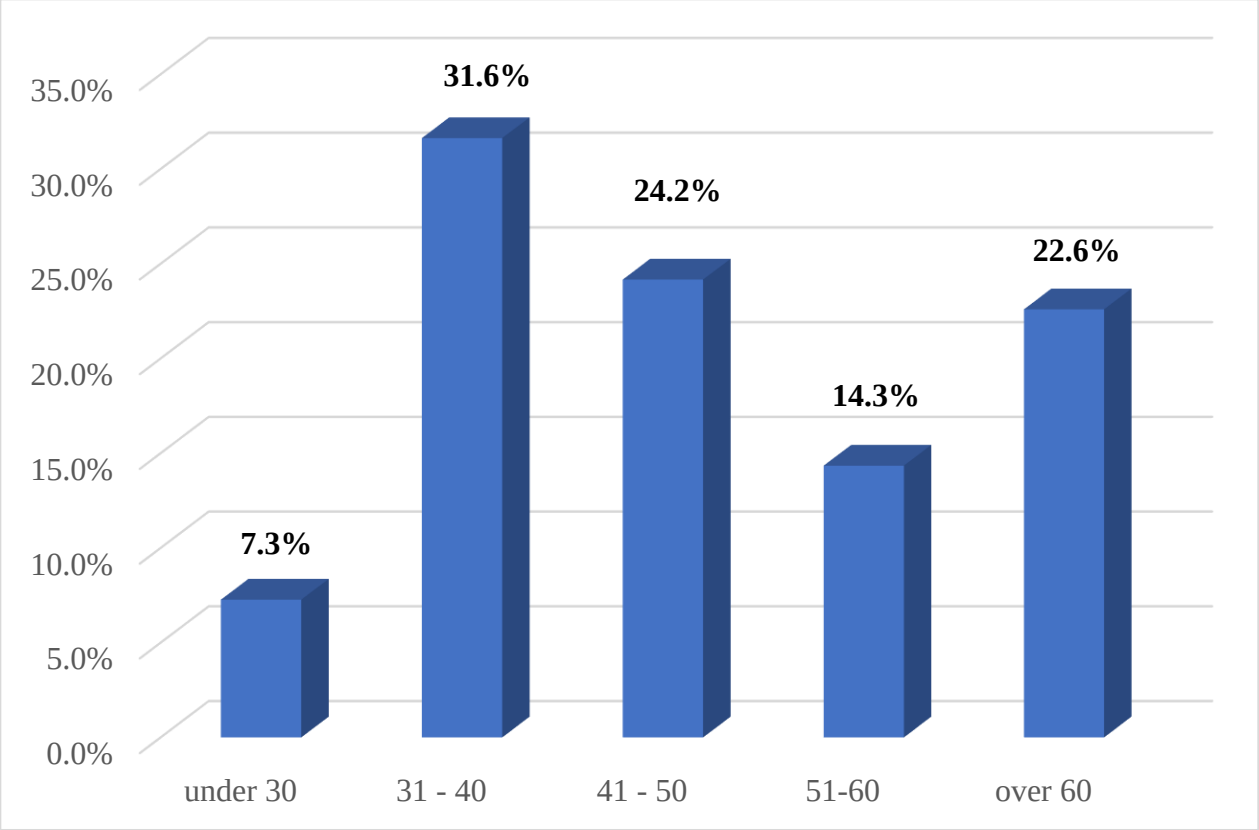


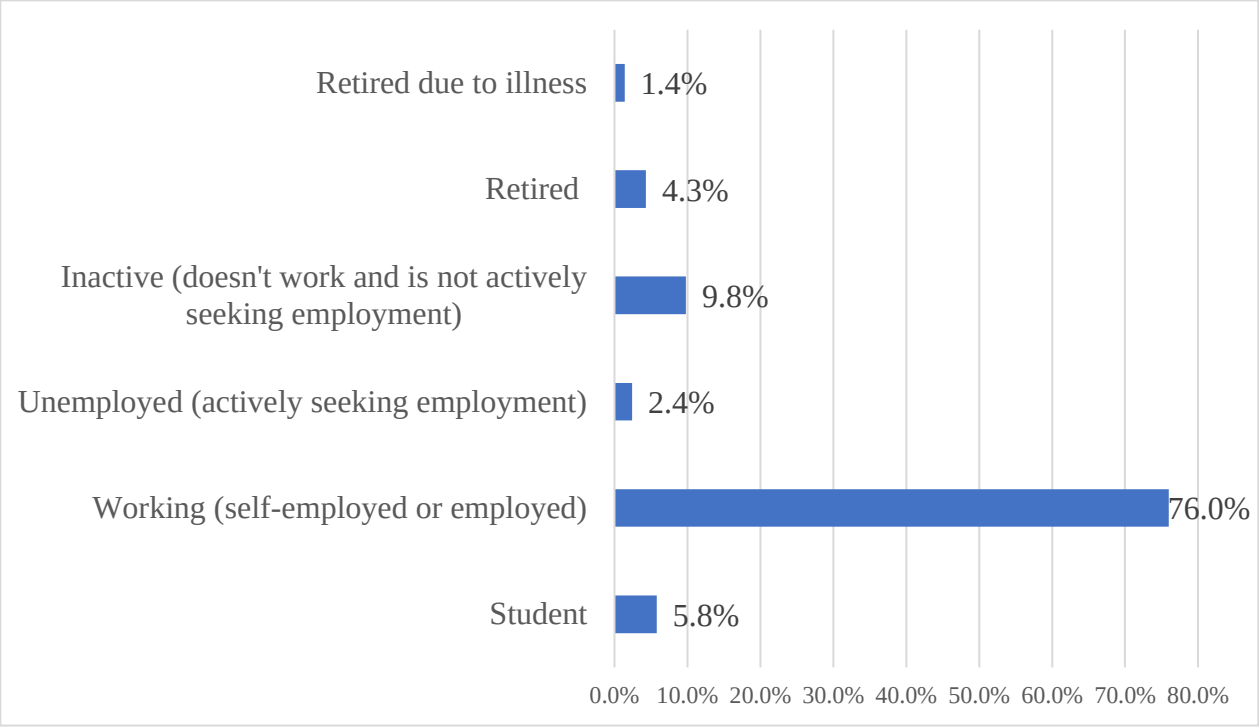
Figure 3. Age structure of the patients surveyed



The largest proportion of respondents fell in the 31-40 age range - 31.6%, followed by the 41-50 age group - 24.2%, and the over 60 age group -22.6%. The under 30 age group was had the smallest number - 7.3%.

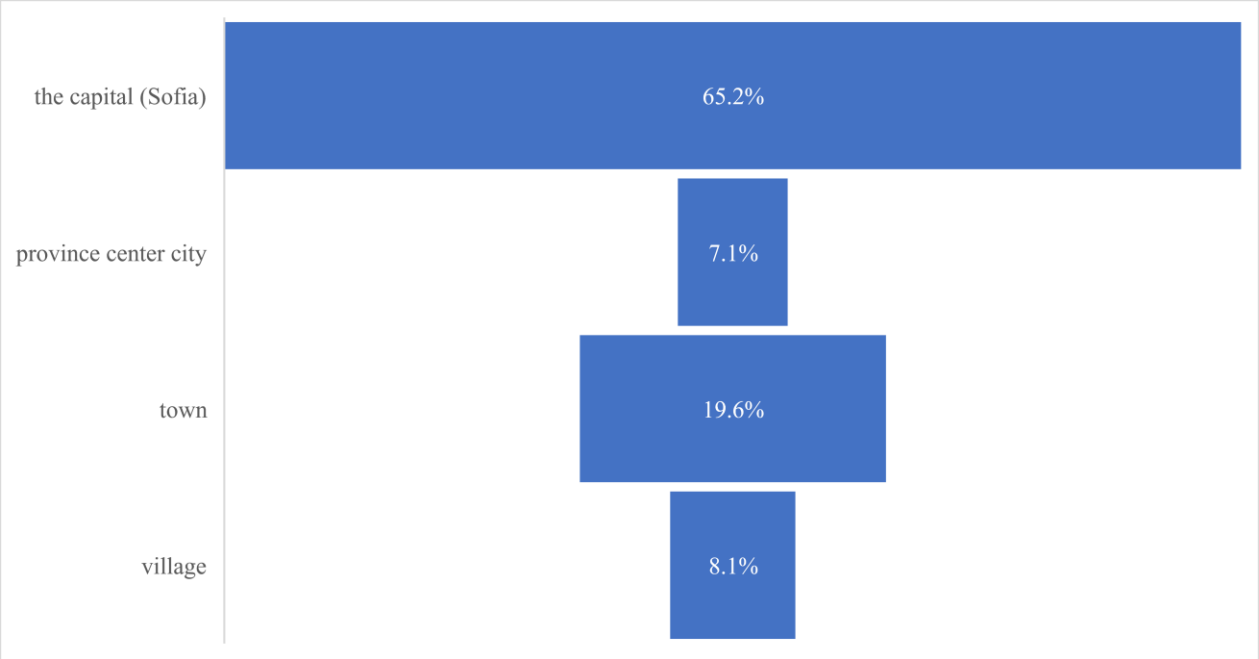
The questions regarding the respondents' social status shows that more than 3/4 (76%) of them are employed, followed by the those who are unemployed - 9.8%, the students (5.8%) and the retirees - 5.7 % (Figure 4).

Figure 4. Respondent distribution by to social status



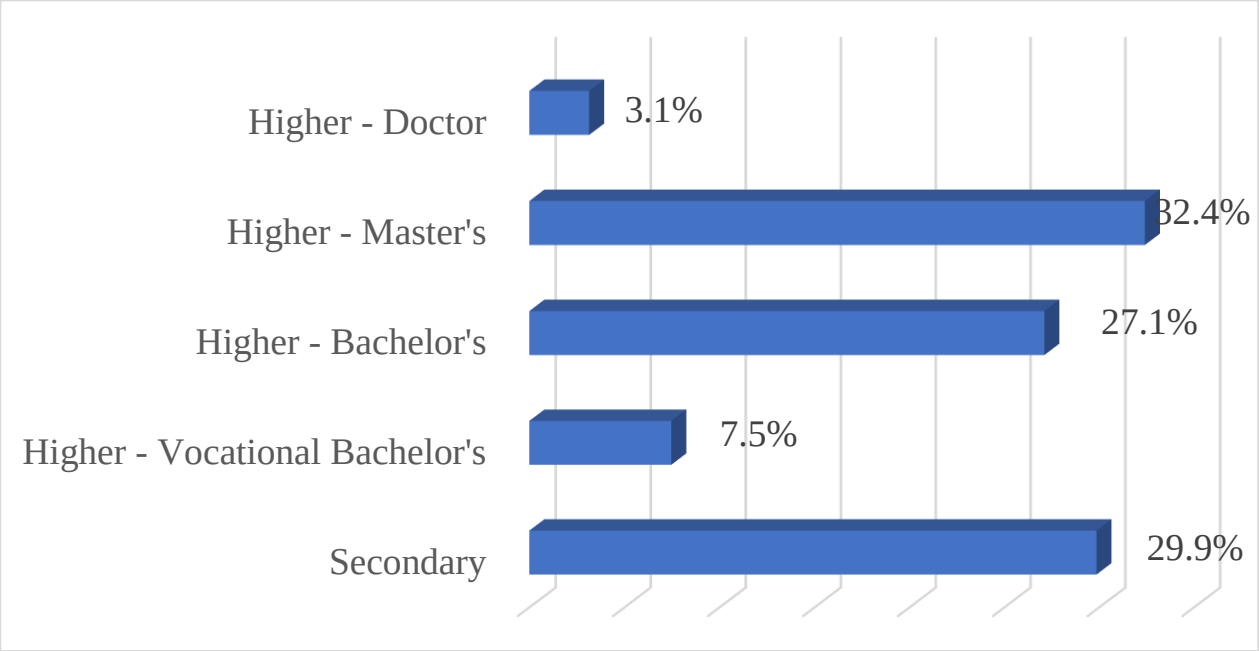
The majority of respondents – 65.2% live in the capital, 26.7% in cities and 8.1% reside in villages (Figure 5).

Figure 5. Respondent distribution by place of residence



Aided by the questionnaire, we looked into the respondents' education level. The results show that 70.1% of the respondents have a higher education diploma, whereby 3.1% have obtained the scientific title of "doctor". The respondents with secondary education make up 29.9% (Figure 6). The educational level described here, is such that we can expect the respondents to have an adequate understanding of the questions asked and give highly accurate answers.

Figure 6. Respondent education



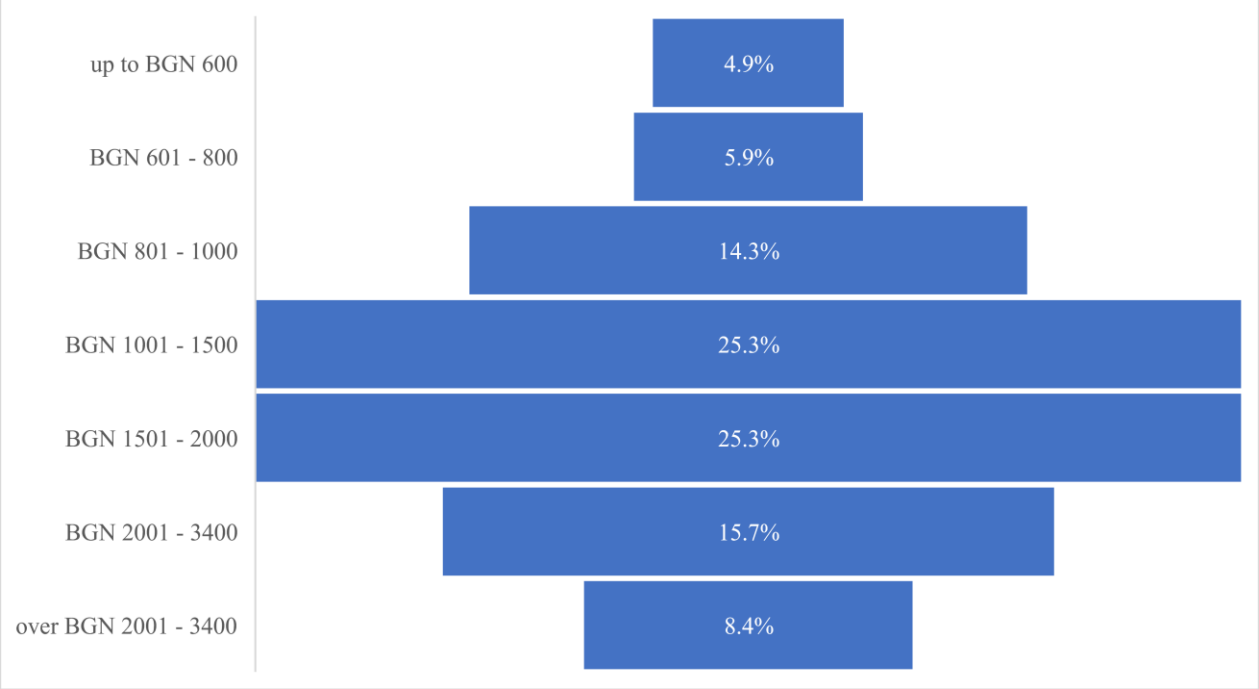
Income is another of the indicators studied in the general part of the questionnaire. Here, the participants were divided into the following groups according to their monthly income:

- ✓ up to BGN 600
- ✓ BGN 601 - 800
- ✓ BGN 801 - 1000
- ✓ BGN 1001 - 1500
- ✓ BGN 1501 - 2000
- ✓ BGN 2001 - 3400
- ✓ over BGN 3400.

It was established that the majority of the respondents' income fits in two ranges - that between 1001 and 1500BGN and that between 1501 and 2000BGN - with 25.3 % for both groups. They are followed by the 2001-3400BGN ranges - 15.7 %, with the 801-1000BGN range in third place - – 14,3 %. It is concerning that 10.8% of the participants reported an income under 800BGN (Figure 7). The size of the monthly income affects people's ability to satisfy their needs, which has an effect on the quality of life. Low-income patients cannot afford health services not included in the NHIF's package, paid services, costly treatment. This has an indirect impact

on the quality of health services they are provided with.

Figure 7. The respondents' monthly income



Access to a specialist in specialised outpatient care

The patients' access to medical care is a fundamental component of public health system assessment. Access is a complex multi-factor term for which there is no unified universal definition. According to the WHO, access to health care is defined as "the provision of health care that is sustained over time, organized, geographically, financially, culturally and functionally easily accessible to the whole of society, adequate enough in volume and quantity to meet and respond to people's needs, delivered through methods and practices acceptable to people" (https://www.who.int). Generally, access to health services is understood as the timely provision of medical care to the people who need it, without any serious restrictions, consistent with their individual needs and independently from their financial capabilities. The concept of access is associated with a number of other concepts and characteristics of the health system, such as:

- ✓ The right to health and access to health services;
- ✓ Access and quality of medical care;
- ✓ Justice;
- ✓ Equality;
- ✓ Effectiveness and efficiency.

According to Bulgarian legislation, it is the right of every Bulgaria citizen to receive medical help, under the terms and procedure established in the Health Act and Health Insurance Act. The right to affordable medical care is implemented in application of the following principles (HA, HIA):

- ✓ timeliness, sufficiency and quality of medical care;
- ✓ equality in providing medical care with children, pregnant women and mothers of children up to 1 year being a priority;
- ✓ cooperation, consistency and coordination of activities between health facilities;
- ✓ respect for the rights of the patient.

The terms and procedure for realising the right to access medical care are determined with an ordinance by the Council of Ministers. Health-insured persons in the Republic of Bulgaria have the right to receive medical help in the scope of the basic health services package guaranteed by the budget of the National Health Insurance Fund (NHIF). This package provides access to affordable treatments according to the stage, development, severity and acuteness of the respective condition (https://lex.bg/laws/ldoc/2135527794/).

To examine and analyze some aspects of the respondents ' access to a specialist in outpatient medical care, we asked a series of questions.

After the establishment of the general practitioner institution, the access to specialist outpatient care has been conducted after a specialist referral is secured. NHIF covers payments for care delivered by a specialised medical care provider to a health-insured person who was given a referral by a primary and/or specialised outpatient care (SOC) provider, who has entered into a contract with NHIF.

The access regulation applied is simultaneously the main financial regulatory mechanism in the closed healthcare system implemented in Bulgaria. Most often, the insurance cost containment policies in the world and Europe involve applying more closed payment systems for the medical services provided. On the other hand, there is an expansion of the policy to share costs among the insured, resulting in citizens and patients making larger contributions to payments and consumer charges at the time of the service (Yanev G., 2000).

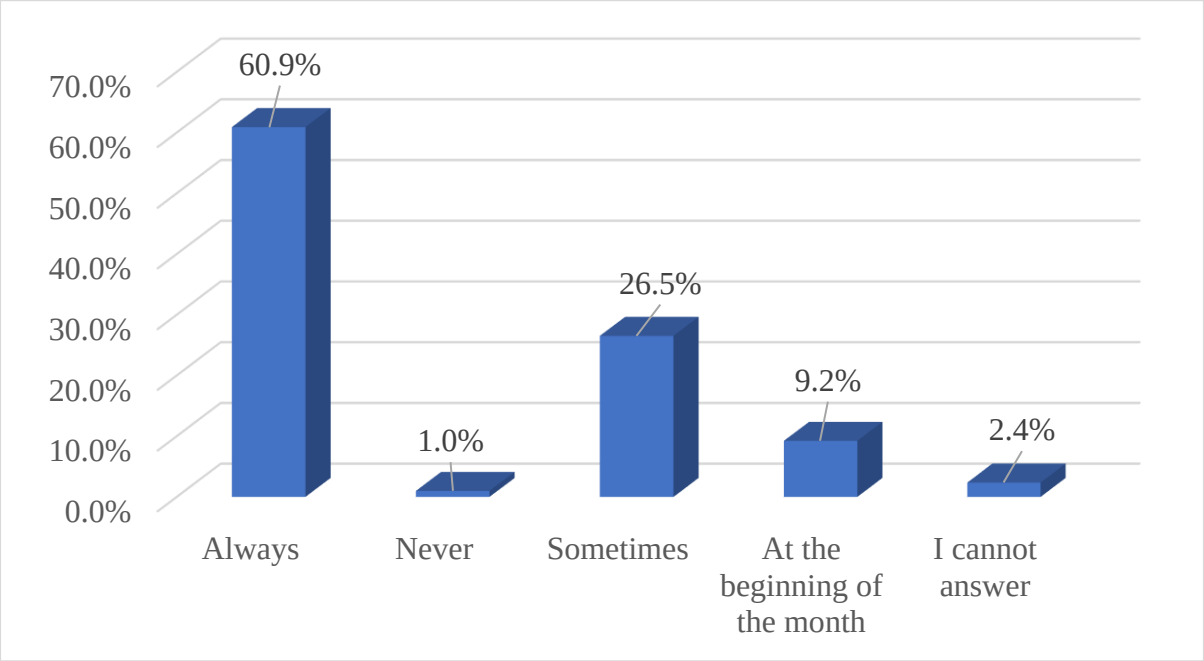
In Bulgaria, the a access to specialized care is regulated by the Health Act, the Health Insurance Act, and the Ordinance on Exercising the Right of Access to Medical Care. The access is based on the principle of the patient's freedom to choose a medical institution for primary, specialized and in-patient care throughout the country, and on the other hand, in the SOC area, it is regulated through referrals for consultations and testing.

The National Health Insurance Fund operates on a fixed budget that's established by law, and there is no funding for payments in case physicians report more physical exams. In case the limit for referrals is reached, any health-insured person may be declined the opportunity for a physical exam and the needed medical care may not be covered by the budget, to which the patient contributes on a regular basis. The Health Insurance Act guarantees that the insured have free access to medical care, and the patient's right to chose should not be geographically or administratively limited.

Patients constantly complain about the insufficient number of referrals. On the other hand, they very often want to be examined by a specialist without any objective reason for doing so, and do not give their GP the opportunity to assess whether there is an objective need for such an examination.

In this regard, we asked the respondents whether they receive specialist referrals from their GP if they express interest in one. The results are presented on Figure 8.

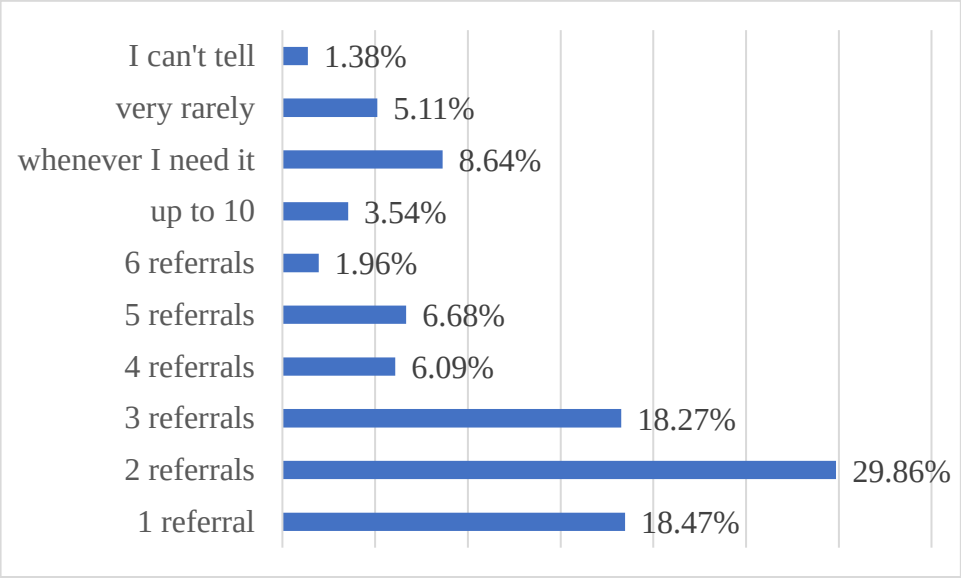
Figure 8. Do you a receive specialist referral from your GP if you request it



More than half of the respondents (60.9%) report experiencing no issues with obtaining a specialist referral and always receive one from their GP, and 9.2% receive a specialist referral at the beginning of the calendar month. This result is legitimate, as GPs have a limit on referrals for specialist physician consultations and exceeding it can lead to the corresponding penalties. Almost a quarter (26.5%) receive specialist referrals sometimes, while only 1% answer in the negative. Only 2.4% can't give a definite answer.

We asked the respondents how many referrals to a specialist physician they receive from their GP annually (Figure 9). The results show that most of the respondents receive 2 referrals per year from GPs (29.86%), followed by those who report that they receive one specialist referral per year (18.47%) and those who report receiving three referrals (18.27%). Nearly ¼ (18.27%) report receiving between 4 and 10 referrals per year from their GP, and 8.64% receive referrals whenever needed. As little as 5.11% answer that they receive referrals very rarely or that they do not use specialist referrals from a GP.

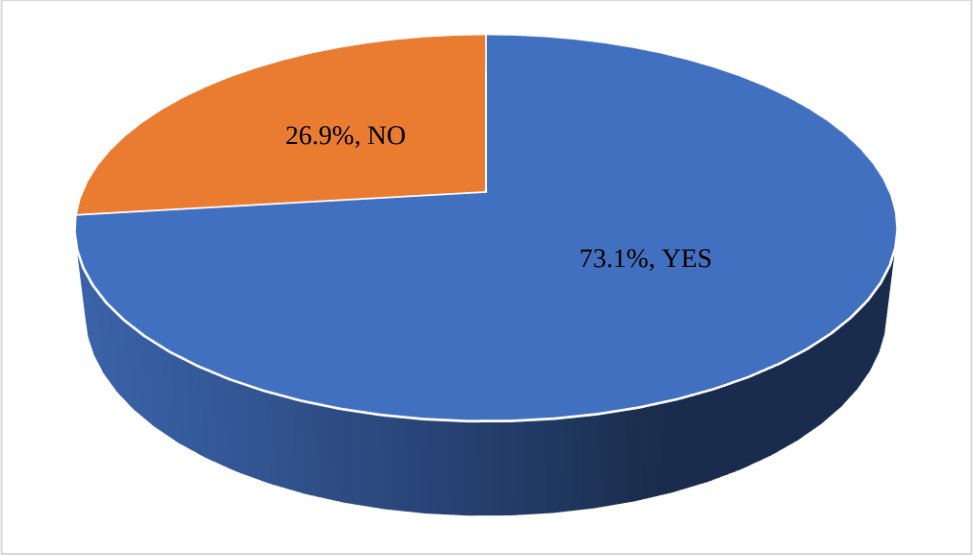
Figure 9. Number of specialist referrals received from GPs for one year



We asked several questions to assess whether patients were aware of the existence of limits on specialist referrals and the time limits for their use.

We asked "Are you aware that there is a limit to the number of specialist referrals?". A positive response was given by 73.1% of respondents, while over ¼ (26.9%) were ignorant of the existence of this regulation (Figure 10).

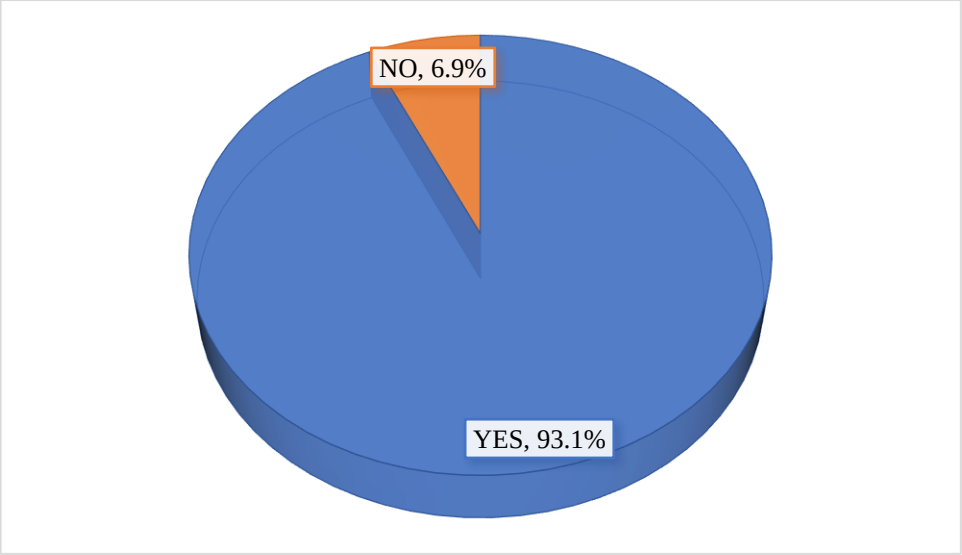
Figure 10. Respondents' informedness on the existence of a limit on specialist referrals



The next question relates to whether patients know that they must use the specialist referral they have obtained within 30 days of its being issued. Only

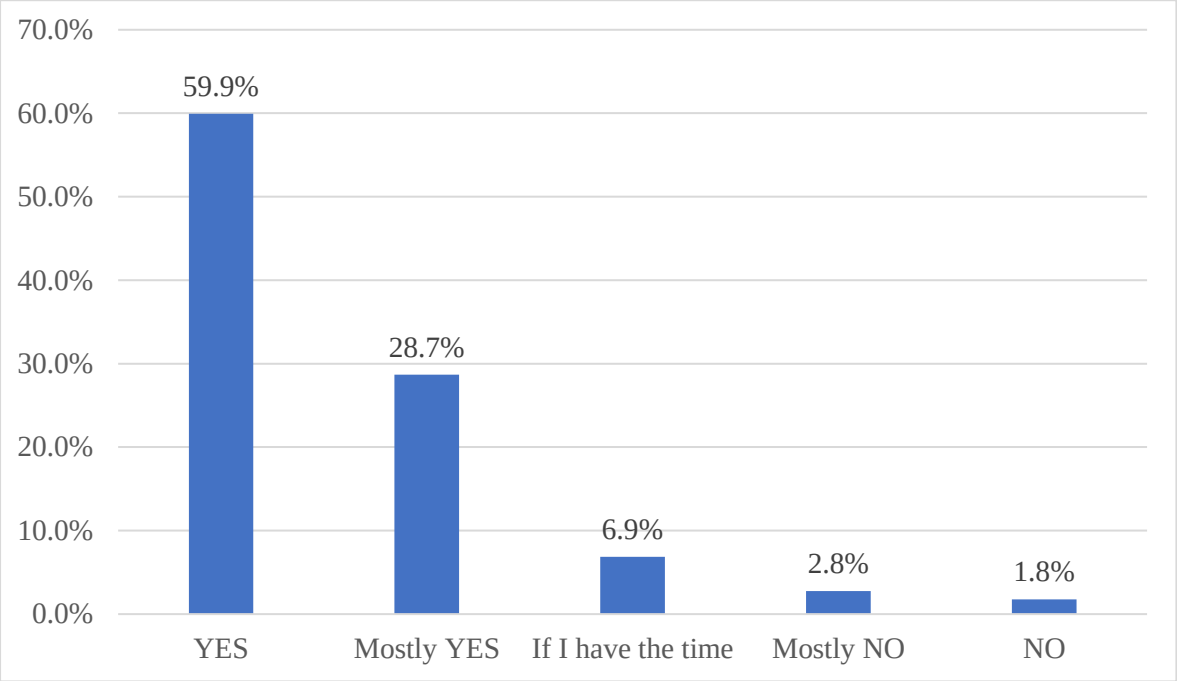
6.9% gave a negative response, while 93.1% were aware of the time limits for using specialist referrals issued by GPs (Figure 11).

Figure 11. Respondents' informedness on the time limits for using a specialist referral (within 30 days after its being issued)



We asked the questionnaire respondents if they always used the specialist referral they received from their GP. The purpose of this question is to assess the patients' responsibility and efficiency in using the NHIF's limited resources. The results (Figurer 12) showed that 88.6% of the respondents used their specialist referrals, while 6.9% said they used referrals if they found time, and 4.6% gave a negative response. That is, 11.5% of all respondents did not take a responsible approach to efficiently use the NHIF's limited resources.

Figure 12. Do you always use the specialist referral received from your GP



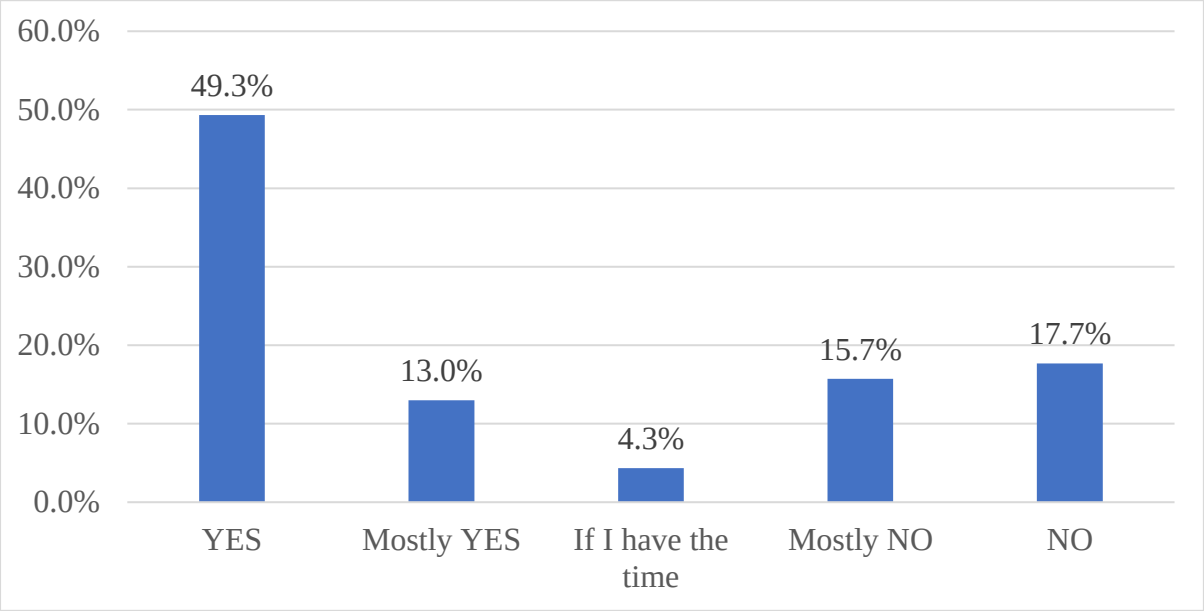
We looked for a relationship between the utilisation of specialist referrals obtained from GPs and the respondents' place of residence (Table 6). The results show that the largest portion (68.1%) of the respondents residing in the capital city (Sofia) always use the specialist referrals they obtain from their GPs (they respond with a definitive "yes"). The most likely reason for this is the more abundant availability of specialist physicians and the quicker access though the NHIF.

Table 6. Relationship between the utilisation of specialist referrals and place of residence

Place of residence	**town**		**province center city**		**village**		**the capital (Sofia)**	
	number	**%**	**number**	**%**	**number**	**%**	**number**	**%**
Yes	47	47.0%	11	30.6%	21	51.2%	226	68.1%
Mostly yes	33	33.0%	16	44.4%	18	43.9%	79	23.8%
No	1	1.0%	0	0.0%	1	2.4%	7	2.1%
Mostly no	4	4.0%	0	0.0%	1	2.4%	9	2.7%
If I have the time	15	15.0%	9	25.0%	0	0.0%	11	3.3%

We asked the respondents if they informed their GP if they did not use a specialist referral in order to assess patient responsibility. The results showed that 62.3% informed their GP when they did not use the specialist referral they had received, while over 1/3 (33.4%) did not inform their GP, and 4.3% reported that they informed their GP if they found time (Figure 13). These results suggest that it is necessary to work towards increasing patient informedness when it comes to the limits and scarcity of the resources provided through mandatory health insurance in order to increase the efficiency of their use.

Figure 13. Do you inform your GP if you do not use a specialist referral you have received?



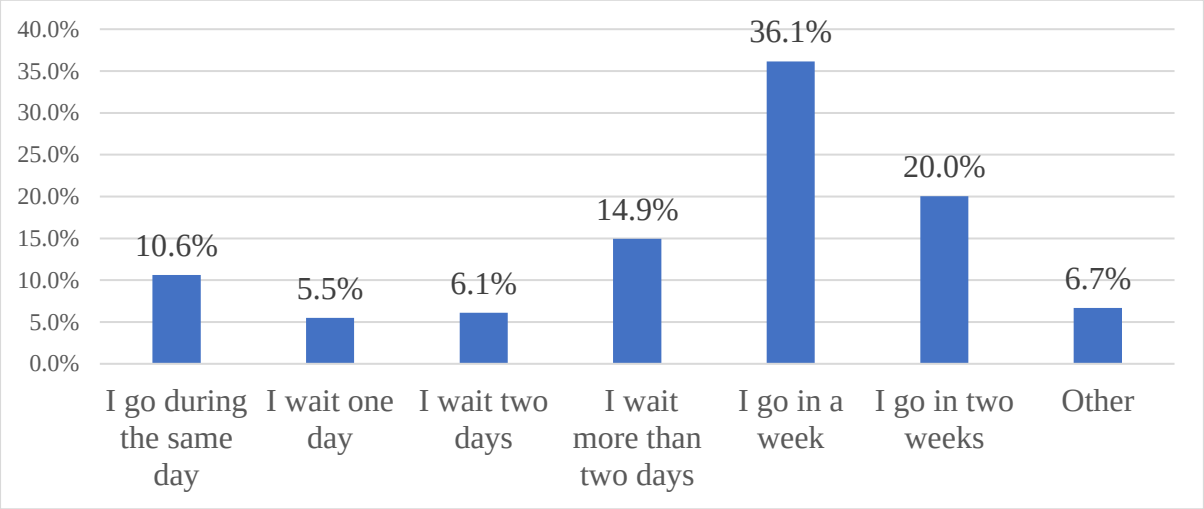
More than half of the respondents living in villages (56.1%), 46% of those living in towns and 44.5% of those living in province center cities do not notify their GP if they have not used the specialist referral within 30 days of receiving it (Table 7). Only 1/4 of respondents residing in the capital do not notify their GP if they have not used the specialist referral within 30 days of receiving it. The reason for these results should be sought, firstly, in the patients - for not being informed on the rules and regulations for using referrals, and, secondly, in the GPs - for not informing the patients on the existing time limits for using specialist referrals. Bearing in mind the fact that this system of regulation and time limits has functioned for over 20 years, without having experienced any change to the rules for issuing specialist referrals and their time limits, we can draw a conclusion concerning the patients' lack of responsibility in spending the NHIF's limited resources at the outpatient level. It is necessary for informational campaigns to be organised, or information brochures to be distributed, with the aim of increasing informedness on patient responsibility.

Table 7. Dependency of the patients notifying their GPs if the specialist referral is not used and their place of residence

Place of residence	town		province center city		village		the capital (Sofia)	
	number	%	number	%	number	%	number	%
Yes	36	36.0%	12	33.3%	13	31.7%	190	57.2%
Mostly yes	12	12.0%	7	19.4%	4	9.8%	43	13.0%
No	25	25.0%	6	16.7%	14	34.1%	45	13.6%
Mostly no	21	21.0%	10	27.8%	9	22.0%	40	12.0%
If I have the time	6	6.0%	1	2.8%	1	2.4%	14	4.2%

When asked "How long do you wait to see a specialist after obtaining a referral from your GP?" the largest proportion of patients surveyed - 36.1% - answered they see a specialist within one week, and 1/5 (20%) within two weeks of receiving the referral. 10.6% report that they see the specialist on the same day that they receive a referral from their GP, 5.5% wait one day before seeing the specialist, and 6.1% wait two days (Figure14). These results indicate that the patients have an easy access to a specialist in outpatient medical care.

Figure 14. How long do you wait to see a specialist after obtaining a referral from your GP?



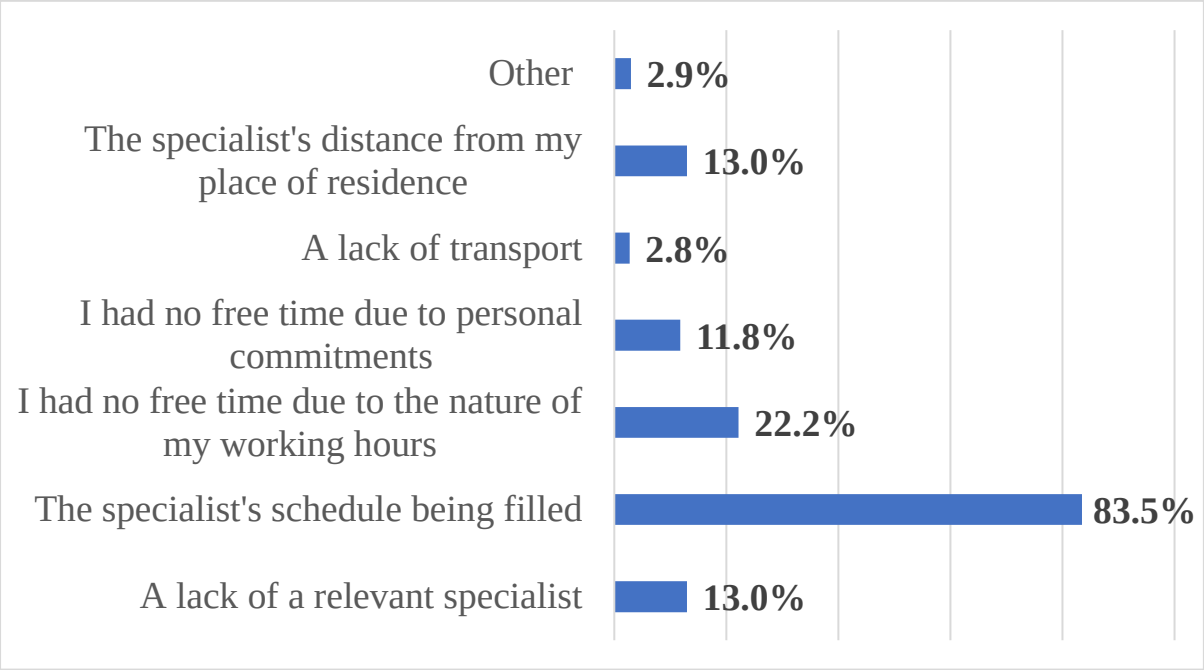
We looked for a relationship between the waiting time for a specialist exam after obtaining a referral from the GP and the place of residence (Table 9). The results show that the largest relative share of the participants from the capital (39.5%), villages (39%) and cities (27%) go to a specialist's exam within 1 week after receiving a referral from the GP. In province center cities, the highest percentage of respondents report waiting more than 2 days (36.1%) for a specialist exam after receiving an referral from the general practitioner. Here, it can be concluded that the place of residence is not a factor determining the waiting time to see a specialist after obtaining a referral from the GP. Most likely the reason for the wait is due to the fact that most specialists work under the NHIF (i.e. with referrals from GPs) only on certain days and times of the week, which results in the obtained results.

Table 8. Dependence of waiting time to see a specialist after a GP referral on the place of residence

Place of residence	town		province center city		village		the capital (Sofia)	
	number	%	number	%	number	%	number	%
Within the day	16	16.0%	2	5.6%	4	9.8%	32	9.6%
I wait one day	13	13.0%	2	5.6%	3	7.3%	10	3.0%
I wait two days	14	14.0%	5	13.9%	3	7.3%	9	2.7%
I wait more than two days	23	23.0%	13	36.1%	5	12.2%	35	10.5%
Within one week	27	27.0%	10	27.8%	16	39.0%	131	39.5%
Within two weeks	6	6.0%	3	8.3%	8	19.5%	85	25.6%
Other	1	1.0%	1	2.8%	2	4.9%	30	9.0%

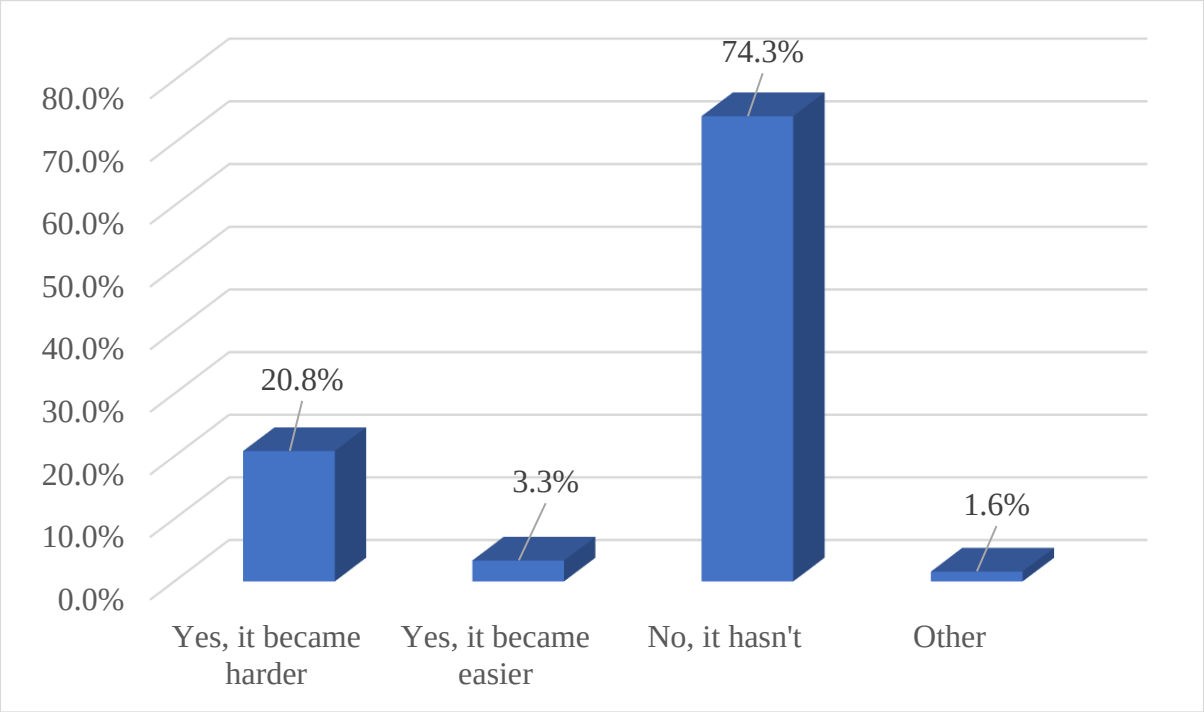
We investigated the reason for waiting to see a specialist with the next question in our survey (Figure 15). The results showed that the most common reason was the specialist's busy schedule - in 83.5% of respondents. The second reason given by respondents was the lack of free time due to the nature of their working hours - 22.2%, followed by the lack of the relevant specialist and The specialist's distance from their place of residence - 13% each. 11.8% said they did not use the specialist referral due to personal commitments. The sum of the responses exceeds 100% as the participants had the opportunity to give multiple answers. The conclusion that can be drawn from the answers to this question is that there is difficulty in accessing specialist outpatient care due to the declining number of specialists working in POC and the nature of their working hours.

Figure 15. Reasons for waiting to see a specialist



When asked "as your access to outpatient specialists changed since the COVID-19 pandemic?", only 1/5 (20.8%) respondents found access more difficult, while 74.3% found no change in access (Figure 16). 3.3% report that access to a specialist became easier after the COVID-19 pandemic. The results show that the COVID-19 pandemic did not cause a change in access to specialist outpatient care. Rather, it shows that the personnel problem in healthcare is systemic and that it is necessary to consider a complete change in the health system.

Figure 16. Has your access to outpatient specialists changed since the COVID-19 pandemic?



While access to an outpatient specialist has not changed since the COVID-19 pandemic for 76.5% of respondents residing in the capital, 75% of those residing in province centers, and the same relative proportion of those residing in towns (Table 9), 41.5% of participants residing in villages report that access has become more difficult. It can generally be concluded that the COVID-19 pandemic has not affected patient access to outpatient specialists.

Table 9. Relationship of change in access to specialist outpatient care after the COVID 19 pandemic and place of residence

Place of residence	town		province center city		village		the capital (Sofia)	
Change in access	**number**	**%**	**number**	**%**	**number**	**%**	**number**	**%**
Yes, it became harder	25	25.0%	7	19.4%	17	41.5%	57	17.2%
Yes, it became easier	0	0.0%	1	2.8%	1	2.4%	15	4.5%
No, it hasn't changed	75	75.0%	27	75.0%	22	53.7%	254	76.5%
Other	0	0.0%	1	2.8%	1	2.4%	6	1.8%

We asked respondents how they accessed specialist outpatient care other than by referral from their GP (Table 10). The results showed that a paid check-up was the most common way to get a check-up from a SOC specialist (78%). More than ¼ (25.7%) indicated that they had health insurance (Voluntary Health Insurance) and used this to see outpatient specialists in addition to referrals from GPs. Only 2.6% responded that they got a screening through an occupational health service (Table 10). The total exceeds 100% as the participants had the opportunity to give multiple answers.

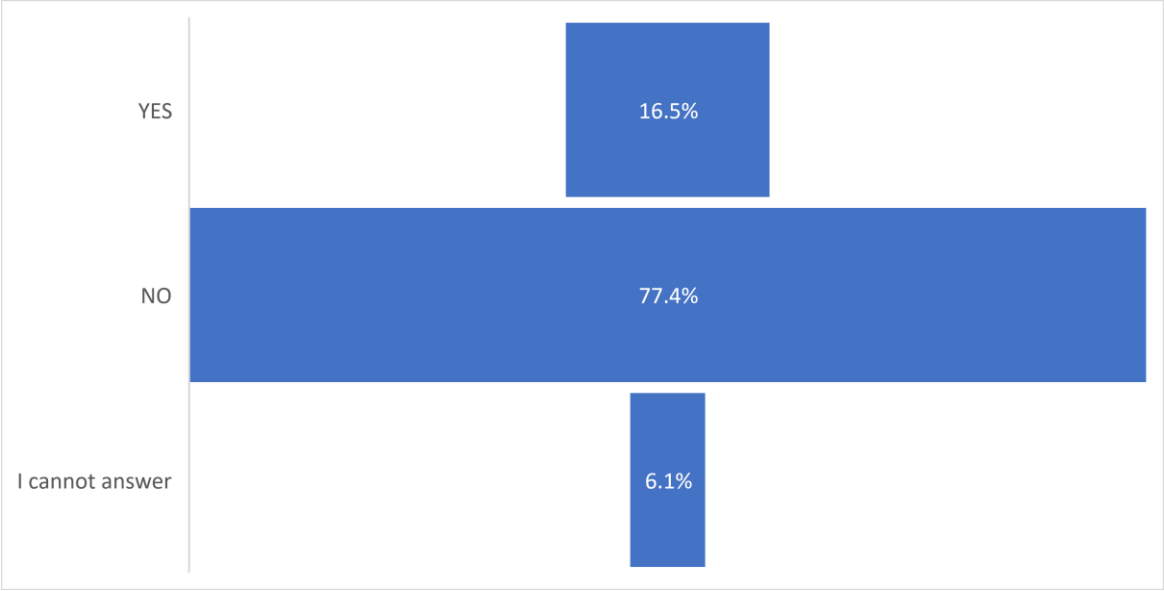
Table 10. Ways to be seen by a specialist from outpatient medical care in addition to a referral from a GP

responses	number	%
I have health insurance (voluntary health insurance)	131	25.7%
Paid exam	397	78.0%
Though an occupational health service	13	2.6%
Other	12	2.4%

In order to establish whether there are restrictions in access to specialists and treatment for patients and the reasons for this, we asked a few questions.

To the question "In the last year, have you ever been unable to get the medical consultation and treatment from a specialist that you needed?", 16.5% answered positively and 6.1% could not answer. 77.4% of respondents haven't experienced not having the option of specialist medical consultation and treatment when they needed the same (Figure 17).

Figure 17. "In the last year, have you ever been unable to get the medical consultation and treatment from a specialist that you needed?"



We looked into the reasons for patients not being able to access medical advice and treatment from a specialist amongst those who gave an affirmative answer (Table 11). Nearly half (48.8%) cite the long waiting list as a reason for not getting the specialist consultation and treatment they needed, followed by lack of money - 22.6%, and in third place, with 19%, are those who respondent with - lack of the necessary specialist at my place of residence, and lack of free time due to the nature of my working hours. The total exceeds 100% as the participants had the opportunity to give multiple answers. The results obtained from this question point us yet again to an approaching problem in the healthcare system – the decreasing number of specialists in outpatient medical care.

Table 11. Reasons for not receiving the necessary consultation or treatment from a specialist

Responses	number	%
I didn't have the money	19	22.6%
I had no free time due to the nature of my working hours	16	19.0%
I had no free time due to other commitments	6	7.1%
Because of the lack of the necessary specialist in and near my place of residence	16	19.0%
Due to a long wait list	41	48.8%
I did not receive a referral	11	13.1%
Waiting to see if the issue improves	12	14.3%
I do not know a good specialist	12	14.3%
A fear of physicians/testing	4	4.8%

When asked "In the last year, have you ever asked a specialist doctor to prescribe cheaper medications?" only 10.8% of respondents give an affirmative answer (Figure 18). The main reason for asking for cheaper medicines that respondents point to is lack of money - 61.8% of them answered in the affirmative, and 36.4% did not think that expensive medicines were more effective (Figure 19).

Figure 18. In the last year, have you ever asked a specialist doctor to prescribe cheaper medications?

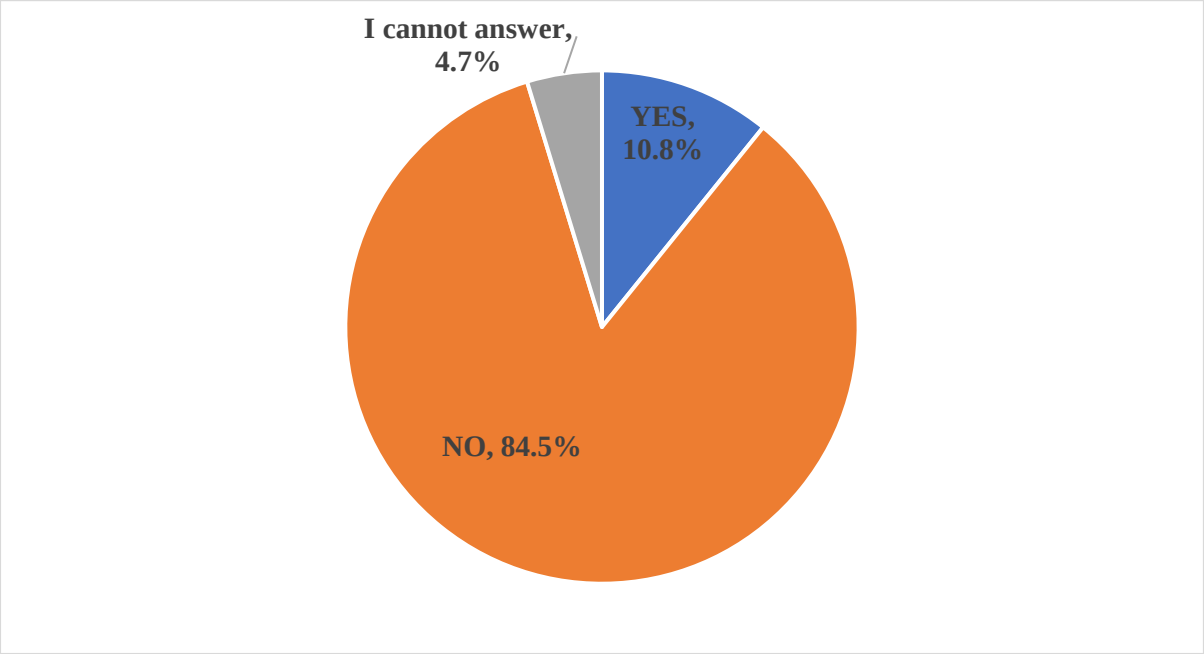
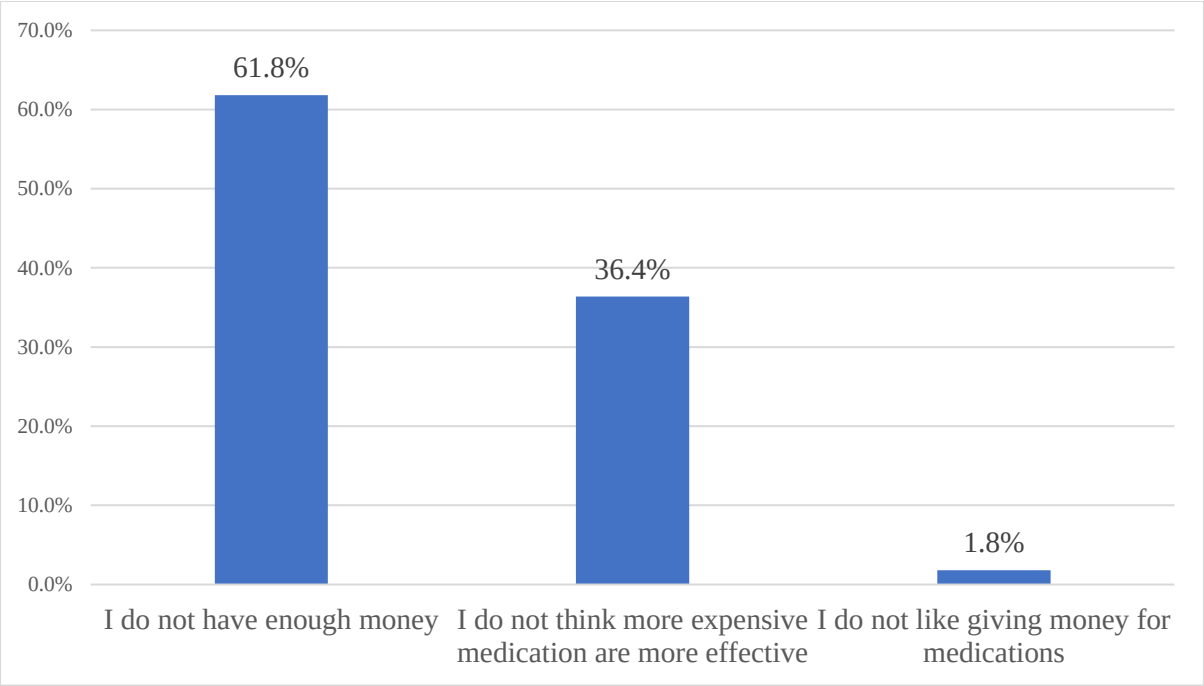


Figure 19. The respondents' reasons for requesting cheaper medications



The need to study patient satisfaction with specialist outpatient care, particularly after the COVID-19 pandemic, is growing steadily and is linked to

the need to improve the quality and efficiency of this care.

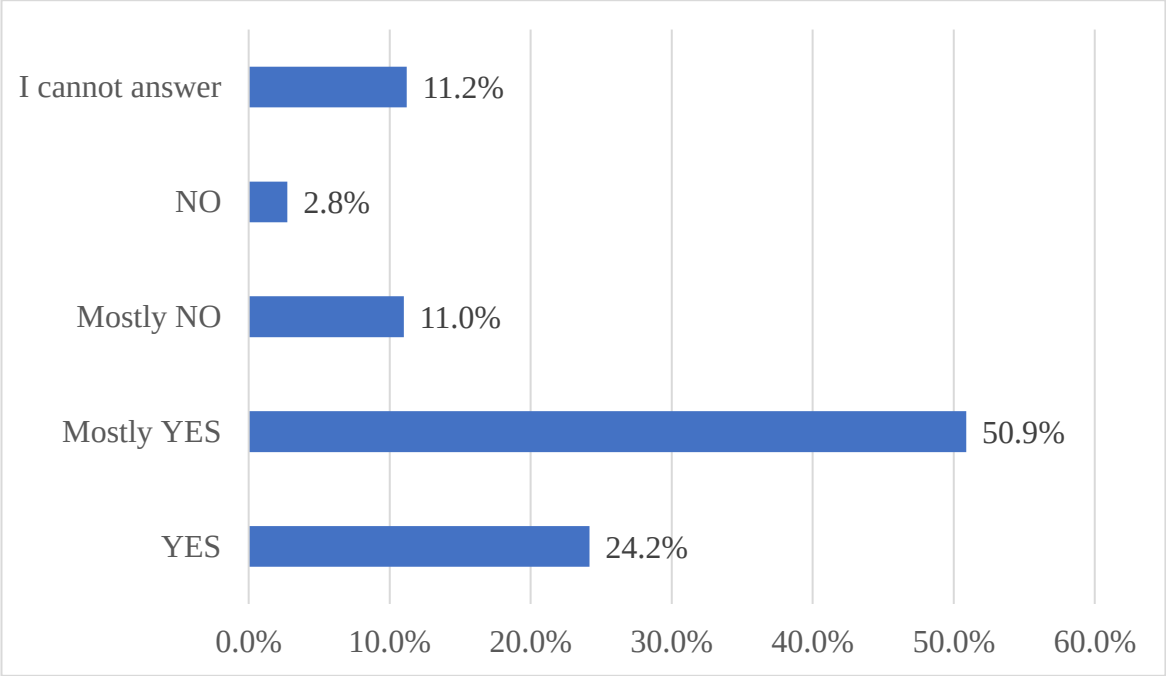
According to the Health Insurance Act, "patients' satisfaction with the medical activities related to the delivered medical care" shall mean correspondence between the patient's expectations and needs and the medical care actually rendered to the patient, and shall be an indicator for medical care quality assessment based on surveying patients' attitudes and opinions" (HIA).

In the ordinance on surveying patients' satisfaction with the medical activities purchased by the National Health Insurance Fund, the assessment of patient satisfaction covers the following main components:

- ✓ medical records, data on the patient's condition and treatment;
- ✓ quality of medical care provided;
- ✓ treatment-related activities;
- ✓ co-payments by the patient.

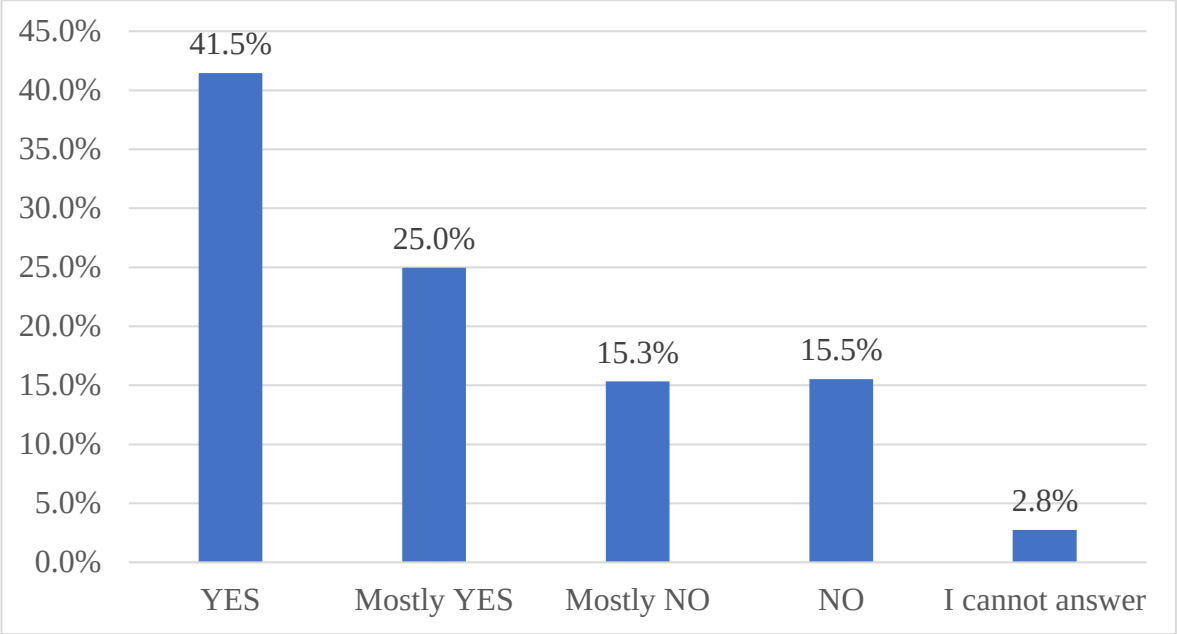
Some of the questions in the questionnaire were asked in order to examine and analyse the respondents' satisfaction with specialist outpatient care. The assuredness that the problem a patient visited a physician for has been resolved is an element of patient satisfaction. This is why we asked the respondents: "Do you believe that the health issue you visited a specialist about has been resolved after the visit?" (Figure 20). According to nearly ¼ (24.2%) the problem is solved. Half (50.9 %) of the respondents believe that the problem is mostly solved, while 13.8% of the respondents do not think that the problem is solved and 11.2% cannot answer.

Figure 20. Do you believe that the health issue you visited a specialist about has been resolved after the visit?



To the question "Have specialists ever redirected you to another specialist?""(Figure 21) 66.5% of respondents responded in the affirmative, 30.8% gave a negative answer and only 2.8% could not answer. These results indirectly speak to the responsibility of specialists in solving patients ' health problems. The high percentage of respondents that report that specialists have referred them to other specialists shows their desire to provide a comprehensive service and make sure the patients get the needed health service.

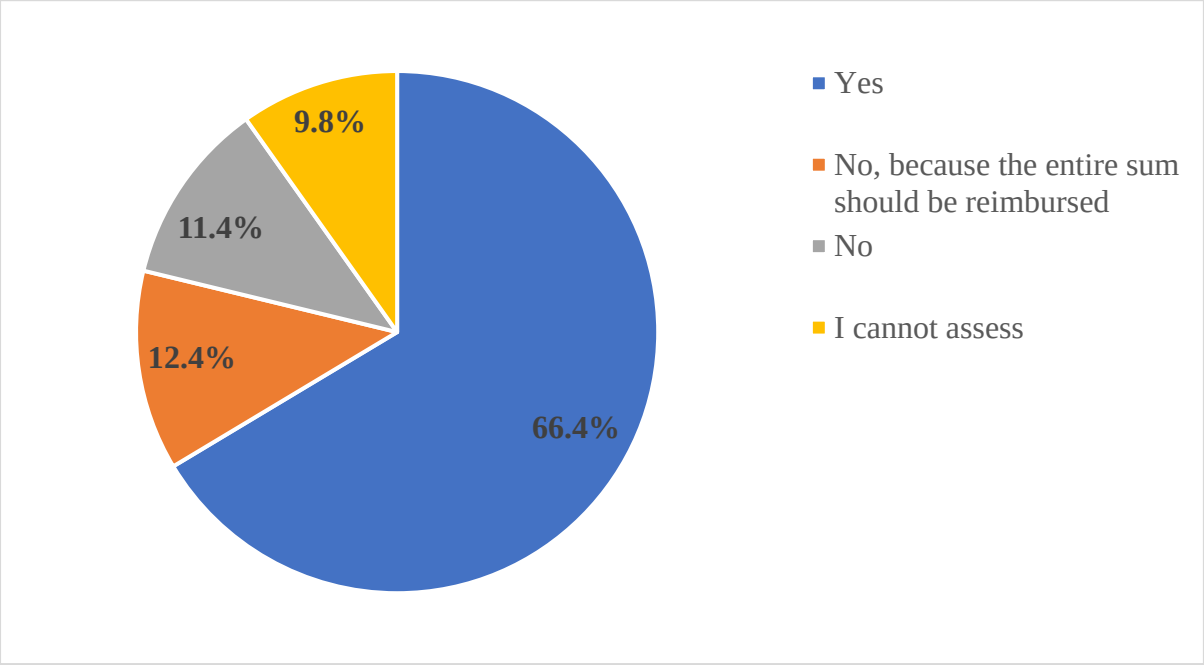
Figure 21. "Have specialists ever redirected you to another specialist?"



In order to analyze and assess the attitude of the respondents to paid examinations with outpatient specialists, we asked a series of questions.

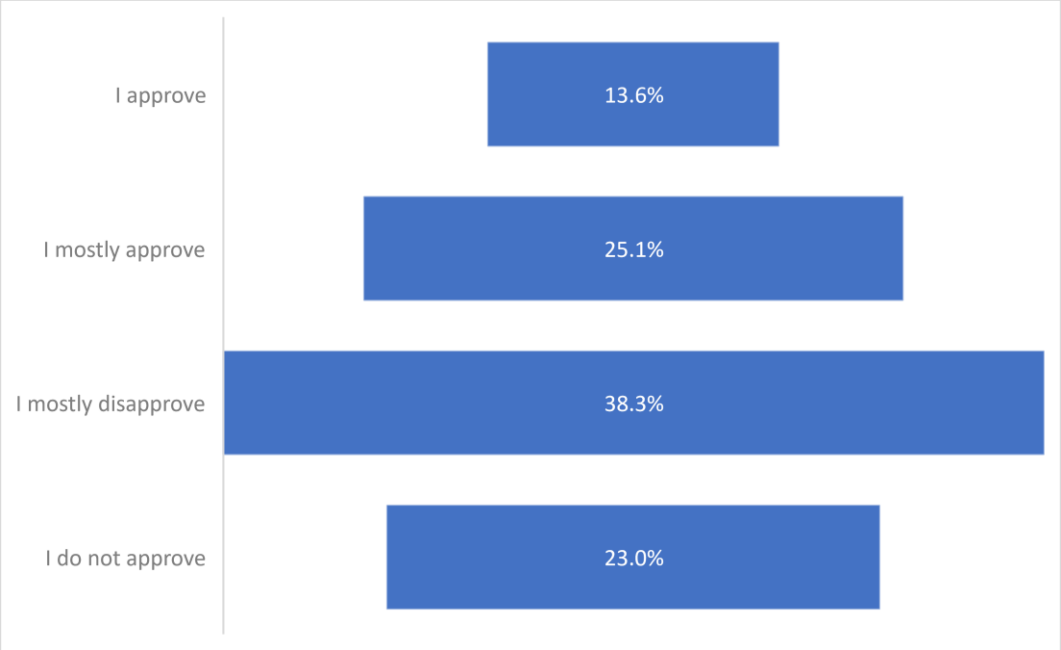
When asked "Would you go to a paid physical exam with a specialist, under the condition that only 90% of the price is immediately reimbursed?", 66.4 % of the participants give an affirmative answer (Figure 22). According to 12.4 % of the respondents, the entirety of the sum paid should be reimbursed, while 11.4 % would not agree to go through an exam under those conditions. A not insignificant part - 9,8 % were unable to give an answer.

Figure 22. Would you go to a paid physical exam with a specialist, under the condition that 90% of the price is immediately reimbursed?



In order to clarify the respondents' attitude to fully paid specialist physical exams, we asked the question "How would your describe your attitude to fully paid physical exams with a specialist?" (Figure 23). The results show that the negative answers are the majority - 23% of the participants do not approve of paid exams with a specialist at all, and those who mostly disapprove are 38.3%. Only 13.6% fully approve of paid physical exams by a specialist, while ¼ (25.1 %) approve of them mostly.

Figure 23. Patient attitudes to fully paid physical exams by a specialist



We looked for the dependence of approval or disapproval on the fully paid specialist examinations by the respondents and their place of residence (Table 12). In all settlements, the majority of respondents living in villages (78%), followed by those living in province centers (72.2%) and towns (63%), disapprove of fully paid specialist examinations. Accordingly, the highest approval of fully paid specialist examinations can be observed among the respondents living in the capital (42.5%).

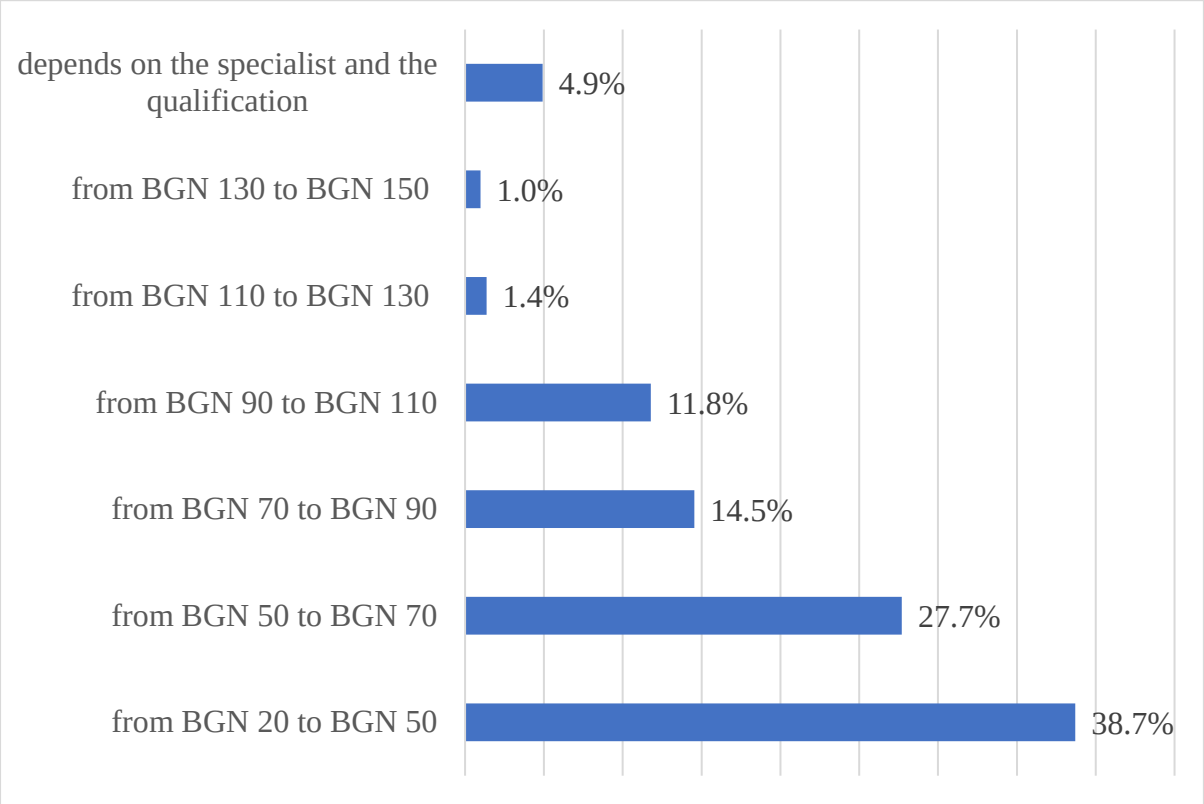
Table 12. Dependence of the respondents' attitude to fully paid examinations on their place of residence

Place of residence	town		province center city		village		the capital (Sofia)	
	number	%	number	%	number	%	number	%
I approve	10	10.0%	4	11.1%	3	7.3%	52	15.7%

I mostly approve	27	27.0%	6	16.7%	6	14.6%	89	26.8%
I mostly disapprove	35	35.0%	14	38.9%	19	46.3%	127	38.3%
I do not approve	28	28.0%	12	33.3%	13	31.7%	64	19.3%

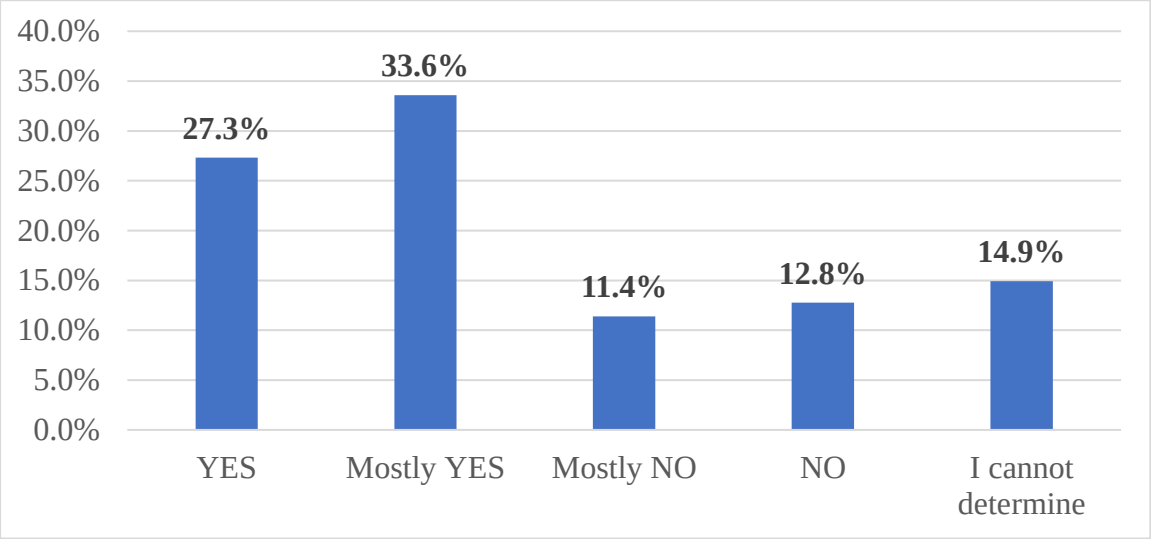
The respondents were asked what they thought the cost of seeing a specialist should be (Figure 24). According to 38.7% of the respondents, the price for a specialist exam should be between 20 and 50 BGN, while 27.7% believe that the price should be between 50 and 70 BGN, and 11.8% - between 90 and 110 BGN. Only 4.9% responded that the price should be determined by the specialist's qualifications. The responses to this question showcase the patients' ignorance of the real cost of medical services. Most likely, this is a consequence of the current health care system and the poor information campaigns in this area.

Figure 24. The participants' opinions on the he cost of seeing a specialist



The respondents were asked whether they thought there were advantages to a paid physical exam with a specialist over one carried out with a GP referral (Figure 25). According to 60.9% of the respondents, a paid exam by a specialist has advantages over one performed with a referral from a GP, while nearly ¼ (24.2%) believe that there is no such advantage. 14.9% could not determine whether there was an advantage to seeing a paid specialist.

Figure 25. Respondents' opinion on the presence of advantages to a paid physical exam with a specialist over one carried out with a GP referral



The respondents who gave affirmative answers were asked to indicate what they considered to be the advantages of a paid physical exam by a specialist over one carried out with a referral from a GP (Table 13). The first reason given by respondents was that paid physical exams are carried out with better tools and in better conditions (39.7 %), followed by that they are conducted more quickly (39.5 %). According to 14.9%, paid physical exams are carried out by more qualified specialists, while 13.9% stated that they are more accessible. The total exceeds 100% as there was the opportunity to give multiple answers.

Table 13. Advantages to a paid physical exams with a specialist over one carried out with a GP referral, according to the participants

Advantages	number	%
A paid exam is carried out by more qualified specialist	76	14.9%
A paid exam is conducted more quickly	201	39.5%
A paid exam is carried out with better tools and in better conditions	202	39.7%
A paid exam is more accessible	71	13.9%
Other	11	2.2%

When asked "In which cases would you be willing to filly cover the cost of a physical exam with a specialist?", 68,4 % indicated they would do it in case of emergency or urgency (Table 14). Over half the participates - 51,1 %, indicated they would in case they need to get a second opinion on a pre-existing diagnosis. About 1/3 (32.4%) would prefer to visit a particular specialist recommended to them who does not work with referrals, and only 3.3% could not answer. The total of the percentages exceeds 100% as the respondents were given the opportunity to give multiple answers.

Table 14. The respondents' opinions on when they'd be willing to pay for an physical exam with a specialist

responses	number	%
In case of emergency or urgency	348	68.4%
To get a second opinion on a pre-existing diagnosis	260	51.1%
To visit a particular specialist recommended to me who does not work with referrals	165	32.4%
I cannot determine	17	3.3%

CONCLUSIONS

From the data presented, the analyses and assessments made, we can formulate the following conclusions:

1. The spending on outpatient care (primary and specialized) makes up a relatively low share of the NHIF budget. It experienced an insignificant growth in 2021 of about BGN 6 million for POC and BGN28 million for SOC.
2. Researching and analysing the coverage in SOC in Bulgaria for the 2010-2021 period. There are significant regional disparities, insufficient coverage and vacancies for some medical specialties, which has an impact on the activities of SOC.
3. The implementation of financial incentives for medical care providers in the context of a state of emergency was a successful approach to securing the operations of SOC, given the general trend observed in 2020.
4. The financial incentives implemented for specialists in outpatient care are not only a mechanism to financially support their activities, but also a prerequisite to increase their motivation to work and a way to give them the recognition they deserve in the fight against COVID-19.
5. A paid check-up was the most common way to have a check-up with a specialist from SOC (78%) outside health insurance, followed by health insurance (Voluntary Health Insurance) - 25.7%.
6. The main reason for not being able to get medical consultation and treatment from a specialist for the patients who gave affirmative answers (16.5%) was the long waiting list (48.8%), followed by lack of money (22.6%) and lack of the necessary specialist in and near the place of residence and lack of free time due to the nature of working hours (19% each).
7. To varying degrees, 51.3% of respondents disapproved of fully paid examinations by a specialist and only 13.6% strongly approved of paid examinations by a specialist.
8. Patients' ignorance about the real cost of the medical service is shown by the results of the question on what the price of an examination with a specialist should be (according to 38.9% of the respondents the price for an examination with a specialist should be between 20 and 50 BGN,

27.7% are of the opinion that the price should be between 50 and 70 BGN, and 11.8% - between 90 and 110 BGN).

9. According to 60.9% of respondents, a paid examination with a specialist physician has advantages over a referral from a GP.
10. The largest proportion of respondents believe that the paid exam is conducted with better equipment and in better conditions (39.7 %), followed by that it is carried out more quickly (39.5%), and according to 14.9% the a paid exam is carried out by a more qualified specialist.
11. When asked when they would be willing to pay to see a specialist, 68.4% of respondents cited an emergency and urgent case as the reason, 51.1% - in case a needed a second opinion on an pre-existing diagnosis, and 1/3 (32.4%) would preferred to see a specific specialist who was recommended to them and did not work with referrals.

RECOMMENDATIONS

From the analyses presented on the coverage, activity and financing in SOC and the questionnaire survey conducted among SOC consumers we can formulate the following recommendations to the responsible institutions:

To the Ministry of Health

The reform of the Bulgarian healthcare system should aim at introducing competition - because the quality of healthcare services and the satisfaction with them are proportionally related to the existence of competition in the sector and the possibility for the health-insured person (HIP) to choose his/her insurance company, medical goods and services provider.

To the NHIF:

1. When limiting the referrals to a specialist, the following factors should be taken into account: the age structure of the GP's patient list, the presence of chronic illnesses and their number per patient, the regulated possibility/limit for dispensing patients to a GP or specialist.
2. Effectively tracking the use of referrals (for specialists in outpatient care and testing) in order for GPs to count only the referrals used, i.e. those for which the NHIF has paid.
3. Financial incentives for the development of the specialist practices in SOC through the development and implementation of a methodology for the assessment of their activities.
4. Additional incentives (in the form of funds, free courses for qualification, etc.) for medical specialists working in small, remote and difficult to reach areas.
5. Optimizing the GP - specialist - hospital care relationship in order to track the patient's condition by introducing digital healthcare and a unified healthcare information system.

The BMA and medical universities:

1. Organizing various forms of continuous medical training and postgraduate training for physicians aimed at improving their knowledge of the role of communication in the diagnostic and treatment process.
2. Organizing information campaigns among the population to increase its health awareness regarding the patients' path in the health care system, their rights and obligations.

The local authorities (municipalities)

In order to attract specialists in small towns and villages, a methodology involving financial and material incentives, as well as professional development incentives should be developed for young specialists who have been working in small towns and villages for at least 5 years after acquiring their specialisation.

CONTRIBUTIONS

The following contributions, which have a scientific and practical character, can be noted in the dissertation:

1. An analysis and assessment of the spending distribution for health insurance payments in the budget of the NHIF for 2019-2021 was carried out.
2. For the first time in Bulgaria an analysis of the coverage, activity and financing under the NHIF in SOC in Bulgaria for the period 2011 - 2021 was carried out, and territorial disparities leading to difficult access to specialists were identified.
3. The regulatory system for financial resources in specialised outpatient medical care was analysed and the existing problems were highlighted.
4. Based on a questionnaire survey conducted among patients, for the first time, an analysis and evaluation of SOC was carried out on: the availability of specialist doctors in outpatient care; the access to specialist practices in outpatient care; the usability of referrals and the financial aspects of using SOC.
5. The attitude of the patients to fully paid examinations with a SOC specialist was analysed, as well as the existing advantages in this type of exams and the conditions under which the patients would agree to pay.
6. Specific recommendations were formulated to the relevant institutions in order to improve the existing coverage, accessibility and financing of SOC and to manage the limited resources in healthcare more effectively.

LIST OF PUBLICATIONS RELATED TO THE DISSERTATION

1. **Stoyanova Ts.,** B. Semova, T. Zlatanova, Analysis of the activity in specialized outpatient medical care in the conditions of COVID-19, COLLECTION OF REPORTS FROM THE FIFTH ANNIVERSARY SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION "CONTEMPORARY CHALLENGES BEFORE HEALTHCARE" - November 26, 2021., city of Vratsa, ed. Sofia Medical University, Central Medical Library, 2022, pp. 22-26, ISBN 978-619-7491-49-4
2. Zlatanova T., **Ts. Stoyanova**, A. Sergeeva, N. Popov, Analysis of health insurance payments in specialized outpatient medical care in the conditions of COVID-19 COLLECTION OF REPORTS FROM THE FIFTH ANNIVERSARY SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION "CONTEMPORARY CHALLENGES BEFORE HEALTH CARE" - November 26, 2021, Vratsa, ed. Sofia Medical University, Central Medical Library, 2022, pp. 30-32, ISBN 978-619-7491-49-4
3. **Stoyanova Ts**. PATIENT ATTITUDES TO PAID SPECIALIST VISITS, Sciences of Europe (Praha, Czech Republic), No 126 (2023), pp. 27-30, ISSN 3162-2364, DOI: 10.5281/zenodo.8412722
4. **Stoyanova Ts**., **Zlatanova T., Penchev D.**, PATIENT INFORMEDNESS ON THE REGULATION OF ACCESS TO SOCIALISED OUTPATIENT MEDICAL CARE, Sciences of Europe (Praha, Czech Republic), No 130 (2023), pp. 34-39, ISSN 3162-2364, DOI: 10.5281/zenodo.10352331