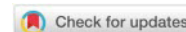


INSURANCE WITH SPECIALIST DOCTORS AND HEALTH CARE SPECIALISTS IN REGIONAL CITIES WITH MEDICAL UNIVERSITIES IN BULGARIA

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Abstract: People are the most important resource for any organization, including healthcare. The analysis of the geographical distribution of human resources in the "Healthcare" sector in the Republic of Bulgaria shows that there are certain disproportions. The lack or insufficiency of specialists can lead to a deficit in the diagnostic-treatment-rehabilitation activity in certain medical specialties, or to non-use of certain available medical equipment. The purpose of the present study is to examine the number and relative share of doctors with a specialty and health care specialists, where they are most numerous - in the cities where there are medical universities in Bulgaria and their adjacent areas for 2021. The following methods were used to carry out the research: documentary method - based on official data from the National Statistical Institute, comparative analysis, economic analysis, mathematical-statistical method, tabular analysis. Based on the obtained results, it is clear that in Bulgaria the number of general practitioners is the highest - 3,945, and the number of "Infectious Diseases" specialists is the lowest. Per 10,000 people of the population, the highest share of doctors and medical specialists in health care is in Pleven district, 67.3 and 95.0, respectively, and the lowest in Varna district, respectively – 50.7 and 63.8. The number of doctors in Bulgaria is above the average for the European Union, but despite this there is a serious shortage of doctors in certain specialties, which had its impact on the treatment of patients during the COVID-19 pandemic. Our country is one of the countries in the EU with the lowest provision of nurses. Their shortage is due to several factors, among them the emigration of trained nurses, the aging of the workforce - with the average age of this type of specialist being over 50, dissatisfaction with wages and working conditions. The human factor is a significant element in any healthcare organization at all levels. The provision and use of other types of resources depends on human resources. A higher supply of doctors implies a stronger health sector, and a higher supply of health care professionals, and above all nurses, is a guarantee of more economical and better health care.

Keywords: insurance, specialty doctors, health care professionals, cities with medical universities.

Field: Medical sciences and Health.

1. INTRODUCTION

People are the most important resource for any organization, including healthcare. People are the main active resource of any health care system and they are of the utmost importance for its functioning and the achievement of public health goals. As noted by the WHO, the goal of human resource management is to have the right number of people with the right skills in the right place at the right time. [3,8]

The analysis of the geographical distribution of human resources in the "Healthcare" sector in the Republic of Bulgaria shows that there are certain disproportions. And the lack or insufficiency of specialists can lead to a deficit in the diagnostic-treatment-rehabilitation activity in certain medical specialties, or to non-use of certain available medical equipment.

The purpose of the present study is to examine the number and relative share of doctors with a specialty and health care specialists, where they are most numerous - in the cities where there are medical universities in Bulgaria and their adjacent areas for 2021.

2. MATERIAL AND METHODS

The following methods were used to carry out the research: documentary method - based on official data from the National Statistical Institute, comparative analysis, economic analysis, mathematical-statistical method, tabular analysis.

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3. RESULTS

Table 1. Doctors with specialty in number

Specialty	Bulgaria	Sofia (capital)	Plovdiv	Varna	Pleven
Total ¹	29 604	7 120	3 470	2 378	1 536
Internal diseases	948	202	116	56	32
Cardiology	1 843	470	197	147	107
Pneumology and Phthisiatry	596	97	38	47	35
Pediatrics	1 408	252	120	137	49
Surgery	1 538	318	189	95	61
Orthopedics and Traumatology	1 020	277	110	72	45
Urology	522	136	86	39	24
Infectious diseases	248	39	40	16	9
Obstetrics and Gynecology	1 756	514	208	125	90
Ophthalmology	1 019	316	115	108	37
Ear-nose-throat diseases	684	159	91	68	27
Neurological diseases	1 437	298	147	102	78
Psychiatry	675	131	64	47	26
Skin and Venereal Diseases	447	133	40	39	17
Imaging diagnostics	974	265	105	84	57
Physical and rehabilitation medicine	658	126	69	48	27
Clinical Laboratory	645	138	62	48	46
General practitioners	3 945	745	405	274	188
Other specialties	9 115	2 486	1 247	823	578
Unallocated ²	126	18	21	3	3

Source: National Institute of Statistics, Health 2022

- 1) The medical staff of other departments is not distributed by region
- 2) Physicians in individual and group practices for specialized medical care under a contract with the National Health Insurance Institute, practicing more than 1 specialty

From table 1 it is clear that for the entire country the total number of doctors is 29,604, with the highest number of general practitioners (GPs) - 3,945 (13.3%), followed by "Cardiology" and "Obstetrics and Gynecology" specialists. respectively 1,843 (6.2%) and 1,756 (5.9%). The fewest are doctors with "Infectious Diseases" specialties - only 248 (0.8%), followed by "Skin and Venereal Diseases" - 447 (1.5%) and "Urology" - 522 (1.8%).

Although their number is the highest of all other specialties in Bulgaria, our country is actually among the countries in the EU with the fewest general practitioners per capita, and their number is decreasing. The share of doctors who have reached retirement age and those who are about to reach it is increasing. The other unfavorable finding is that there is a concentration of GP practices in large cities, while at the same time there is a shortage of doctors practicing this humanitarian profession in villages, in hard-to-reach and remote areas. [3]

Out of all 29,604 working doctors in Bulgaria in 2021, 7,120 (24.1%) work in Sofia (the capital). As presented in table. 1 the next regions with the highest number of doctors are Plovdiv (11.7%), Varna (8.0%) and Pleven (5.2%).

Table 2. Doctors with specialty in %

Specialty	Bulgaria	Sofia (capital)	Plovdiv	Varna	Pleven
Total ¹	100.0	24.1	11.7	8.0	5.2
Internal diseases	100.0	21.3	12.2	5.9	3.4
Cardiology	100.0	25.5	10.7	8.0	5.8
Pneumology and Phthisiatry	100.0	16.3	6.4	7.9	5.9
Pediatrics	100.0	17.9	8.5	9.7	3.5
Surgery	100.0	20.7	12.3	6.2	4.0
Orthopedics and Traumatology	100.0	27.2	10.8	7.1	4.4
Urology	100.0	26.1	16.5	7.5	4.6
Infectious diseases	100.0	15.7	16.1	6.5	3.6
Obstetrics and Gynecology	100.0	29.3	11.8	7.1	5.1
Ophthalmology	100.0	31.0	11.3	10.6	3.6
Ear-nose-throat diseases	100.0	23.2	13.3	9.9	3.9
Neurological diseases	100.0	20.7	10.2	7.1	5.4
Psychiatry	100.0	19.4	9.5	7.0	3.9
Skin and Venereal Diseases	100.0	29.8	8.9	8.7	3.8
Imaging diagnostics	100.0	27.2	10.8	8.6	5.9
Physical and rehabilitation medicine	100.0	19.1	10.5	7.3	4.1
Clinical Laboratory	100.0	21.4	9.6	7.4	7.1
General practitioners	100.0	18.9	10.3	6.9	4.8
Other specialties	100.0	27.3	13.7	9.0	6.3
Unallocated	100.0	14.3	16.7	2.4	2.4

Source: National Institute of Statistics, Health 2022

Regarding the relative share of doctors with a specialty from table. 2 we observe the following data: In Sofia (the capital) the share of specialists in "Ocular diseases" is the highest (31.0%), followed by specialists in "Skin and Venereal Diseases" (29.8%) and doctors specializing in "Obstetrics and Gynecology" (29.3%). The relative share of specialists in "Infectious diseases" is the lowest (15.7%), followed by doctors specializing in "Pneumology and Phthisia" (16.3%) and "Pediatrics" (17.9%).

In Plovdiv, the highest relative share of specialists in "Urology", "Infectious diseases" and "Ear-nose-throat diseases", respectively (16.5%), (16.1%) and (13.3%), and the lowest of doctors specializing in "Pneumology and Phthisiology" (6.4%), "Pediatrics" (8.5%) and "Skin and Venereal Diseases" (8.9%).

In Varna, there are the most specialists in "Eye Diseases" (10.6%), followed by the specialists in "Ear, Nose and Throat Diseases" (9.9%) and "Pediatrics" (9.7%), while the share of doctors is the lowest with a specialty in "Internal Diseases" (5.7%), "Surgery" (6.2%) and "Infectious Diseases" (6.5%).

In Pleven, specialists in "Imaging diagnostics" and "Pneumology and phthisiology" predominate, 5.9% each, as well as in "Cardiology" (5.8%), and the least are specialists in "Eye diseases" and "Infectious diseases" (3.6% each), "Pediatrics" (3.5%) and "Internal Medicine" (3.4%).

Table 3. Healthcare professionals in 2021

Districts	Total	Paramedics	Midwives	Nurses (incl. children's)	Laboratory workers (medical and X-ray)	Dental technicians	Others
Total for the country	44 451	1 814	3 264	28 816	5 930	1 636	2 991
Sofia (capital)	9 784	81	836	6 150	1 498	464	755
Plovdiv	4 729	62	305	3 048	700	240	374
Varna	2 989	78	355	1 661	527	163	205
Pleven	2 169	61	210	1 347	360	32	159

Source: National Institute of Statistics, Health 2022

Insurance with health care specialists is a total of 44,451 for the country, with the largest share of them (68.4%) occupied by nurses. Medical and X-ray laboratory workers follow - 5,930 or (13.3%). 3,264 (7.3%) are midwives, and 1,814 (4.1%) are paramedics. The least numerous are dental technicians, 1,636 (3.7%).

Table 4. Healthcare professionals in % 2021

Regions	Total	Paramedics	Midwives	Nurses (incl. children's)	Laboratory workers (medical and X-ray)	Dental technicians	Others
Total for the country	100.0	4.1	7.3	64.8	13.3	3.7	6.7
Sofia (capital)	100.0	0.8	8.5	62.9	15.3	4.7	7.7
Plovdiv	100.0	1.3	6.4	64.5	14.8	5.1	7.9
Varna	100.0	2.6	11.9	55.6	17.6	5.5	6.9
Pleven	100.0	2.8	9.7	62.1	16.6	1.5	7.3

Source: National Institute of Statistics, Health 2022

From table 4 it is evident that the relative share of nurses is the highest in Plovdiv (64.5%), and the lowest in Varna (55.6%). But for Varna we observe the highest percentages in the country for medical and X-ray laboratory technicians (17.6%), midwives (11.9%) and dental technicians (5.5%).

The lowest is the share of paramedics (0.8) in Sofia (the capital), of midwives (6.4) and laboratory assistants (14.8) in Plovdiv, and of dental technicians (1.5%) in Pleven.

Table 5. Provision of the population with medical personnel on 31.12.2021 by regions
(per 10,000 of the population)

Regions	Doctors	Medical health care professionals	
		total	including nurses
Total for the country	43.3	65.0	42.1
Sofia (capital)	54.5	74.8	47.0
Plovdiv	52.3	71.3	46.0
Varna	50.7	63.8	35.4
Pleven	67.3	95.0	59.0

Source: National Institute of Statistics, Health 2022

As is clear from table 5, the Pleven region has the highest coverage of doctors (67.3 per 10,000 of the population) and health care specialists - 95.0 per 10,000 of the population, of which the coverage of nurses is 59.0 per 10,000 of the population. The lowest level of insurance is in Varna region, where there are 50.7 doctors, 63.8 health care specialists, including 35.4 per 10,000 population nurses. The provision of medical personnel in Sofia (the capital) and Plovdiv region is approximately similar.

4. DISCUSSION

The number of doctors in Bulgaria is above the average for the European Union, but despite this there is a serious shortage of doctors in certain specialties, which had its impact on the treatment of patients during the COVID-19 pandemic. Our country is one of the countries in the EU with the lowest provision of nurses. Their shortage is due to several factors, among them the emigration of trained nurses, the aging of the workforce - with the average age of this type of specialist being over 50, dissatisfaction with wages and working conditions. Because of the extreme workload, this profession is losing its appeal. [7]

According to the current regulatory requirements in the health care system in Bulgaria, general practitioners have been turned into administrators of health data, instead of paying more attention to the diagnostic and treatment process of their patients. In addition, there is a lack of incentives to motivate them to take a more serious part in health promotion and disease prevention activities. [3]

The opportunity for professional development is a key measure to retain young doctors and other medical professionals in the country.[10] The Ministry of Health has set as a priority the creation of attractive conditions for acquiring a specialty. In the Annual Report on the State of Citizens' Health and the Implementation of the National Health Strategy for 2021, it is stated that in 2021, a change was implemented in Ordinance No. 1 of 2015 on the acquisition of a specialty in the health care system, which created conditions for training more specialists in places funded by the state. [4]

5. CONCLUSION

The human factor is a significant element in any healthcare organization at all levels. The provision and use of other types of resources depends on human resources. A higher supply of doctors implies a stronger health sector, and a higher supply of health care professionals and above all nurses is a guarantee of more economical and better quality health care.

Health security in general for the whole country, and in particular the effective implementation of activities related to the prevention of human health and well-being are at risk due to the shortage of specialists in the field of public health care in Bulgaria. And this problem is even more acute in small and hard-to-reach settlements.

6. RECOMMENDATIONS

It is necessary to carry out a purposeful and complex policy to ensure the necessary human resources in the health care system to meet the needs of the population both in the present and in the future. This can be done by developing and adopting a National Health Strategy, which also includes a National Human Resources Strategy. In this way, the system can be stabilized, the pay of doctors and health care specialists can be increased, as well as the possibility of professional realization - specialization and qualification - can be increased.

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