

## HOW AVAILABLE ARE SPECIALIST MEDICAL DOCTORS IN MONTENEGRO?

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### SAŽETAK

**Uvod:** Zdravstveni radnici, a posebno visokostručni kadar, svojim znanjem, iskustvom i veštinama treba da omogućavaju sprovođenje zdravstvene politike, a sve sa ciljem očuvanja i poboljšanja zdravlja stanovništva. Cilj ove studije je bio da utvrdi obezbeđenost Crne Gore lekarima, specijalistima medicine, po vrstama specijalizacije, odnosno da utvrdi kakva je njihova starosna i polna struktura u odnosu na druge zemlje Evropskog regiona.

**Materijali i metode:** Jedinica posmatranja u istraživanju su bili lekari medicine (specijalisti, lekari na specijalizaciji i lekari bez specijalizacije). Osim primene deskriptivnih metoda (apsolutni i relativni brojevi) izračunavani su indeksi promene u broju lekara za period između 2009. i 2021. godine, indeksi promene u starosnoj strukturi lekara za period između 2008. i 2021. godine, indeksi promene u zastupljenosti lekara specijalista starosnog doba preko 55 godina (55+) po specijalnostima, kao i stope obezbeđenosti različitim profilima lekara specijalista na 100.000 stanovnika. Korišćeni su podaci koji se odnose na javni sektor, a koje prikuplja i publikuje Institut za javno zdravlje Crne Gore.

**Rezultati:** Ukupan broj lekara (specijalisti, lekari na specijalizaciji i lekari bez specijalizacije) je u Crnoj Gori, u 2021. godini, u javnom sektoru bio za trećinu veći u odnosu na 2009. godinu, dok se broj specijalista uvećao za četvrtinu. Porast broja specijalističkog lekarskog kadra je bio značajno veći u bolničkim delatnostima u odnosu na vanbolničke (povećanje broja lekara specijalista od 46% i lekara na specijalizaciji od 41%, u odnosu na 23% i 5% u vanbolničkim delatnostima). U 2021. godini, specijalistički kadar je bio u najvećem procentu u starosnoj grupi od 55 i više godina (oko 34%).

**Zaključak:** Navedene statističke serije podataka koje se odnose na lekare specijaliste, lekare bez specijalizacije i lekare na specijalizaciji, u vanbolničkoj i bolničkoj zdravstvenoj zaštiti, ukazuju na značajan manjak ovih lekara u Crnoj Gori, u odnosu na većinu zemalja Evropskog regiona, kao i na neadekvatnu starosnu strukturu, posebno za pojedine specijalnosti u kojima treba pažljivo planirati kadar. Kvalitetnije i efikasnije upravljanje ljudskim resursima trebalo bi da omogućiti ranije upućivanje mladih lekara na specijalizaciju.

**Cljučne reči:** ljudski resursi, zdravstvena zaštita, lekari specijalisti

### ABSTRACT

**Introduction:** Health workers, especially highly skilled and trained staff, with their knowledge, experience, and skills, should enable the implementation of health policy, with the aim of preserving and improving the health of the population. The aim of this study was to determine the availability of medical doctors and specialist medical doctors in Montenegro, by type of specialization, i.e., to determine their age and gender structure, as compared to other countries in the European Region (ER).

**Materials and methods:** Medical doctors (specialists, residents, and medical doctors without specialist training) represented the unit of observation in this study. In addition to the application of descriptive methods (absolute and relative numbers), indices of change in the number of doctors for the period between 2009 and 2021, indices of change in the age structure of doctors for the period between 2008 and 2021, indices of change in the prevalence of specialist doctors aged above 55 years (55+), by specialty, were calculated, as well as the density of different specialists per 100,000 population. Data related to the public sector, collected and published by the Institute of Public Health of Montenegro, were used.

**Results:** The total number of doctors (specialists, residents, and medical doctors without specialist training) in Montenegro, in 2021, in the public sector, was by a third higher than in 2009, while the number of specialists increased by a quarter. The increase in the number of specialist medical personnel was significantly higher in hospitals, as compared to outpatient facilities (increase in the number of specialist doctors by 46% and residents by 41%, compared to 23% and 5% in outpatient facilities). In 2021, the highest percentage of specialist staff was in the age group of 55 years and above (about 34%).

**Conclusion:** The aforementioned statistical series of data, related to specialist doctors, residents, and medical doctors without specialist training, in outpatient and inpatient health care, indicate a significant shortage of these doctors in Montenegro, as compared to most countries in the European Region, as well as an inadequate age structure, especially for certain specialties where careful human resources planning should be applied. Better and more efficient management of human resources should provide for young doctors to begin with specialist training sooner.

**Keywords:** human resources, health care, specialist medical doctors

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## UVOD

Performanse zdravstvenog sistema u mnogome zavise od njegovog najvažnijeg resursa – ljudskih resursa, njihovih znanja, veština i motivacije [1,2]. Zdravstveni radnici, a posebno visokostručni kadar, svojim znanjem, iskustvom i veštinama treba da omoguće sprovođenje zdravstvene politike, a sve sa ciljem očuvanja i poboljšanja zdravlja stanovništva. Na putu ka univerzalnoj zdravstvenoj dostupnosti, ljudski resursi moraju biti ne samo brojčano dostupni, već i adekvatno raspoređeni i kompetentni, a moraju imati i adekvatnu podršku [3].

Na tom putu su brojni izazovi, usled starenja populacije, loše geografske dostupnosti zdravstvenog kadra (medicinske pustinje) i povećane potražnje usluga. Sve evropske zemlje se suočavaju sa krizom ljudskih resursa. Nakon krize uzrokovane pandemijom KOVID-19 oboljenja, postojeći problemi su postali još vidljiviji i složeniji. Manjak angažovane radne snage je i dalje prisutan, a kadar odlazi iz zdravstvenog sistema pod teretom problema neadekvatnih uslova rada: izgaranje na poslu, preopterećenost, loši međuljudski odnosi, i drugo [4].

Male zemlje, u koje se ubraja i Crna Gora, susreću se sa velikim brojem izazova u obezbeđivanju kompetentnosti i neophodnih veština ljudskih resursa [5]. U proteklim decenijama su se ljudski resursi neravnomerno razvijali u Crnoj Gori. Velike razlike koje su se javljale među regionima, posledica su neadekvatnog planiranja broja i strukture kadra u prošlosti, kada se više ulagalo u pravcu bržeg razvoja specijalističke delatnosti sekundarnog i tercijarnog nivoa [6]. U novom milenijumu, reformske aktivnosti potencirale su značaj i ulogu specijalističkog kadra na primarnom nivou zdravstvene zaštite, što je za posledicu imalo veći broj lekara specijalista na ovom nivou zdravstvene zaštite.

Cilj ove studije je bio da se utvrdi obezbeđenost Crne Gore lekarima, specijalistima medicine po vrstama specijalizacije, odnosno da se ustanovi kakva je njihova starosna i polna struktura u odnosu na druge zemlje Evropskog regiona, koje svom stanovništvu obezbeđuju visoki standard zadovoljavanja potreba za specijalističkom zdravstvenom zaštitom.

## MATERIJALI I METODE

Jedinica posmatranja u ovoj deskriptivnoj studiji su bili lekari specijalisti, lekari na specijalizaciji i lekari bez specijalizacije, za koje kategorije su, primenom deskriptivnih metoda (apsoluti i relativni brojevi) izračunavani indeksi promene u broju lekara za period između 2009. i 2021. godine, indeksi promene u starosnoj strukturi lekara za period između 2008. i 2021. godine, indeksi promene u zastupljenosti lekara specijalista starosnog doba preko 55 godina (55+) po specijalnostima,

## INTRODUCTION

The performance of the healthcare system largely depends on its most important resource – human resources, their knowledge, skills and motivation [1,2]. Health workers, especially highly skilled and trained staff, should enable the implementation of health policy with their knowledge, experience and skills, all with the aim of preserving and improving the health of the population. On the road to universal health accessibility, human resources must be not only available in numbers, but also adequately distributed and competent, and they must also have adequate support [3].

This road is paved with numerous challenges, due to the ageing of the population, the poor geographical availability of health staff (medical deserts), and the increased demand for healthcare services. All European countries are facing a crisis regarding human resources. After the crisis caused by the COVID-19 pandemic, existing problems have become even more visible and complex. The lack of employed workforce is still present, and healthcare workers are leaving the healthcare system due to the burden of inadequate working conditions: burnout, overwork, poor interpersonal relations, and other [4].

Small countries, including Montenegro, face numerous challenges in securing the competence and necessary skills of human resources [5]. In the past decades, human resources have developed unevenly in Montenegro. The great differences occurring between regions are the result of inadequate planning of the number and structure of personnel in the past, when more was invested in the direction of faster development of specialist activities at the secondary and tertiary levels [6]. In the new millennium, reform activities emphasized the importance and role of specialist staff at the primary level of health care, which resulted in a greater number of specialist doctors at this level of health care.

The aim of this study was to determine the availability of doctors and medical specialists in Montenegro by type of specialization, i.e., to determine their age and gender structure, as compared to other countries in the European Region (ER), which offer their population a high standard in meeting the needs for specialist health care.

## MATERIALS AND METHODS

Medical specialists, residents, and medical doctors without specialist training represented the unit of observation in this descriptive study, for which categories, using descriptive methods (absolute and relative numbers), indices of change in the number of doctors for the period between 2009 and 2021, indices of

kao i stope obezbeđenosti lekarima specijalistima na 100.000 stanovnika.

Na osnovu raspoloživih serija podataka o kretanju broja lekara, dobijene su linije trenda koje pokazuju njihovo prosečno kretanje za period između 2009. i 2021. godine. Obezbeđenost stanovništva doktorima medicine – specijalistima/specijalizantima (isključujući specijaliste/specijalizante hirurgije, ginekologije i akušerstva, pedijatrije, psihijatrije, i opšte medicine), na 100.000 stanovnika, predstavlja indikator koji obuhvata sledeće grupe specijalnosti/subspecijalnosti: interna medicina (uključujući i subspecijalnosti interne medicine), onkologija, pneumoftizilogija, neurologija, otorinolaringologija, radiologija, infektologija, dermatologija, mikrobiologija, biohemija, klinička imunologija, patologija, i medicina rada. Obezbeđenost stanovništva doktorima medicine, specijalistima/specijalizantima hirurških grana na 100.000 stanovnika čine sledeće grupe specijalnosti: opšta hirurgija (sa subspecijalizacijama), neurohirurgija, plastična hirurgija, ortopedija, oftalmologija, urologija, maksilofacijalna hirurgija, urgentna medicina, i anestezija. Prikazane su stope obezbeđenosti stanovništva doktorima medicine, specijalistima/specijalizantima pedijatrije i stope obezbeđenosti stanovništva doktorima medicine, specijalistima/specijalizantima ginekologije i akušerstva na 100.000 stanovnika.

Za dobijanje uporednih pokazatelja za zemlje Evropskog regiona i šire, korišćeni su podaci iz međunarodnih baza podataka kao što su: *OECD Health Statistics 2020*, *Eurostat Database*, baza podataka Svetske zdravstvene organizacije (SZO). Demografske odrednice koje su korišćene bile su pol (muški/ženski) i starost (starosne grupe: do 34 godine, 35 – 44 godine, 45 – 54 godine, 55 i više godina). Podaci o ljudskim resursima, koje prikuplja i objavljuje Institut za javno zdravlje Crne Gore, korišćeni su u izradi ove studije, i to ukupan broj lekara u javnom sektoru koji je obuhvatio lekare u vanbolničkim i bolničkim ustanovama. Za izračunavanje stopa su korišćeni podaci o stanovništvu koje objavljuje Uprava za statistiku MONSTAT.

## REZULTATI

U 2021. godini, bilo je ukupno 1.736 lekara je u javnom sektoru, što je u poređenju sa 2009. godinom povećanje za 429 lekara, odnosno 32,77%. Broj lekara specijalista, u odnosu na 2009. godinu se povećao od 939 na 1.118, odnosno za 246 ili 26,20%, a lekara na specijalizaciji sa 263 na 363 ili za 26,20%. Broj lekara, doktora medicine bez specijalizacije, porastao je sa 107 na 184 ili za 71,96%.

U vanbolničkim delatnostima, postoji porast u broju sve tri kategorije lekara u periodu između 2009. i 2021.

change in the age structure of doctors for the period between 2008 and 2021, indices of change in the prevalence of specialist doctors aged above 55 years (55+), by specialty, were calculated, as well as the density of different specialists per 100,000 population.

Based on the available series of data regarding the trends in the number of doctors, trend lines were obtained showing the average trend for the period between 2009 and 2021. The availability of medical doctors – specialists/residents (excluding specialists/residents specializing in surgery, gynecology and obstetrics, pediatrics, psychiatry, and general medicine) per 100,000 population, is an indicator that includes the following groups of specialties/subspecialties: internal medicine (including subspecialties of internal medicine), oncology, pneumo-phthsiology, neurology, otorhinolaryngology, radiology, infectology, dermatology, microbiology, biochemistry, clinical immunology, pathology, and occupational medicine. The availability of medical doctors, specialists/residents specializing in surgical branches of medicine per 100,000 population consists of the following groups of specialties: general surgery (with subspecialties of general surgery), neurosurgery, plastic surgery, orthopedic surgery, ophthalmology, urology, maxillofacial surgery, emergency medicine, and anesthesia. The density of medical doctors – specialists/residents specializing in pediatrics and the density of medical doctors – specialists/residents specializing in gynecology and obstetrics per 100,000 population are presented in this study.

Data from international databases such as: *OECD Health Statistics 2020*, *Eurostat Database*, *World Health Organization (WHO) database*, were used for obtaining comparative indicators for the countries of the European Region and beyond. The demographic determinants used were gender (male/female) and age (age groups: 34 years and younger, 35 – 44 years, 45 – 54 years, 55 years and above). Data on human resources, collected and published by the Institute of Public Health of Montenegro, were used in the preparation of this study, namely the total number of doctors in the public sector, which included doctors in outpatient facilities and hospitals. Population data published by the Statistical Office of Montenegro MONSTAT were used to calculate the rates.

## RESULTS

In 2021, there was a total of 1,736 doctors in the public sector, which, compared to 2009, is an increase by 429 doctors, or 32.77%. Compared to 2009, the number of specialist doctors increased from 939 to 1,118, i.e., by 246 or 26.20%, while the number of residents increased from 263 to 363, or by 26.20%. The number of

**Tabela 1.** Zastupljenost (broj i %) doktora medicine, po kategorijama, u Crnoj Gori, u periodu između 2009. i 2021. godine\*

Doktori medicine / Medical doctors	2009.	2013.	2014.	2015.	2016.	2017.	2018.	2019.	2021.
	Broj / Number %	Broj / Number %	Broj / Number %	Broj / Number %	Broj / Number %	Broj / Number %	Broj / Number %	Broj / Number %	Broj / Number %
Specijalisti / Specialists	939	1,032	1,044	1,043	1,059	1,082	1,078	1,118	1,185
	71.74	76.61	76.26	70	65.53	65.22	62.31	65.46	68.18
Na specijalizaciji / Residents	263	197	199	305	405	404	463	413	364
	20.09	14.63	14.54	20.47	25.06	24.35	26.76	24.18	20.94
Bez specijalizacije / Doctors without specialist training	107	118	126	142	152	173	189	177	189
	8.17	8.76	9.2	9.53	9.41	10.43	10.93	10.36	10.88
UKUPNO / Total	<b>1,309</b>	<b>1,347</b>	<b>1,369</b>	<b>1,490</b>	<b>1,616</b>	<b>1,659</b>	<b>1,730</b>	<b>1,708</b>	<b>1,738</b>
	100	100	100	100	100	100	100	100	100

**Table 1.** Prevalence (number and %) of medical doctors, by category, in Montenegro, in the period between 2009 and 2021\*

\*Za navedeni period, obuhvaćene su godine: 2009, 2013, 2014, 2015, 2016, 2017, 2018, 2019. i 2021.

\*For the observed period, the following years have been covered: 2009, 2013, 2014, 2015, 2016, 2017, 2018, 2019, and 2021.

godine, a najveći je bio porast broja lekara bez specijalizacije (71%), zatim na lekara na specijalizaciji (23%), dok je broj specijalista porastao za oko 5%.

medical doctors without specialist training increased from 107 to 184, or by 71.96%.

U bolničkim delatnostima, broj lekara specijalista se, u periodu između 2009. i 2021. godine, uvećao za 243, odnosno za 46%, dok se broj lekara na specijalizaciji u ovom periodu uvećao za 68, odnosno 41%. Broj lekara bez specijalizacije u bolničkim delatnostima je bio zanemarljiv tokom celog perioda.

In outpatient facilities, there is an increase in the number of all three categories of doctors in the period between 2009 and 2021, and the largest increase was in the number of doctors without specialist training (71%), followed by residents (23%), while the number of specialists increased by about 5%.

U Tabeli 2 su dati uporedni podaci o broju i učešću lekara (bez/sa specijalizacijom i na specijalizaciji) u

In hospitals, the number of specialists, in the period between 2009 and 2021, increased by 243, i.e., by 46%, while the number of residents increased by 68,

**Tabela 2.** Zastupljenost (broj i %) doktora medicine, bez specijalizacije, na specijalizaciji i specijalista, u vanbolničkim i bolničkim delatnostima, u Crnoj Gori, u periodu između 2009. i 2021. godine\*

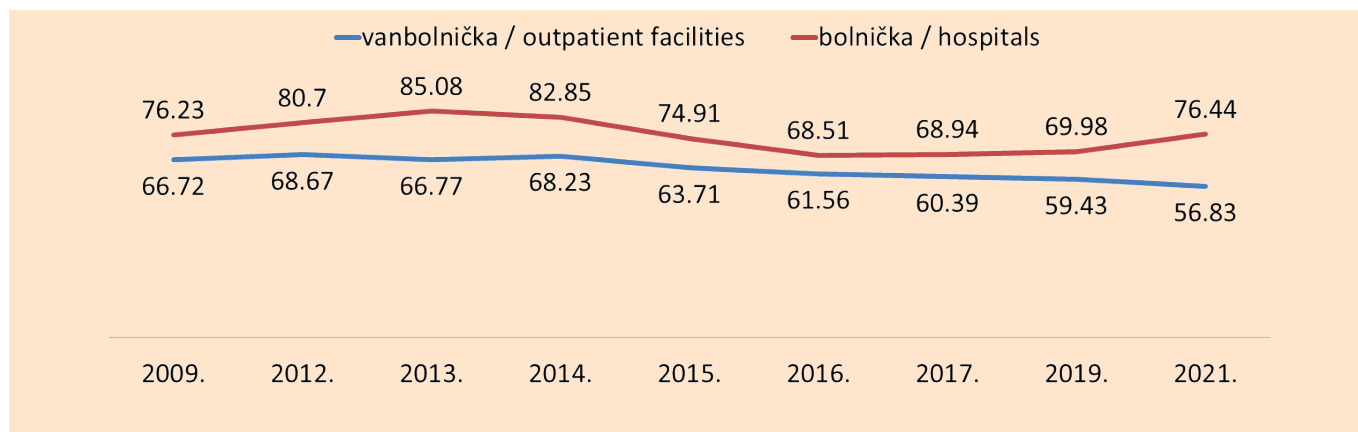
**Table 2.** Prevalence (number and %) of medical doctors without specialist training, residents, and specialists, in outpatient facilities and hospitals, in Montenegro, in the period between 2009 and 2021\*

Doktori medicine / Medical doctors	Vanbolničke delatnosti / Outpatient facilities						Bolničke delatnosti / Hospitals					
	Godine / Years						Godine / Years					
	2009	2012	2015	2017	2019	2021	2009	2012	2015	2017	2019	2021
Specijalisti / Specialists	413	388	416	436	435	435	526	573	627	646	683	769
	66.72	68.67	63.7	60.39	59.43	56.83	76.23	80.7	74.91	68.94	69.98	76.44
Na specijalizaciji / Residents	99	73	98	113	122	122	164	137	207	291	291	232
	15.99	12.92	15.01	15.65	16.67	18.03	23.77	19.3	24.73	31.06	26.82	23.06
Bez specijalizacije / Doctors without specialist training	107	104	139	173	175	184	0	0	3	0	2	5
	17.29	18.41	21.29	23.96	23.9	25.14	0	0	0.36	0	0.2	0.5
Broj / Number %	<b>619</b>	<b>565</b>	<b>653</b>	<b>722</b>	<b>732</b>	<b>732</b>	<b>690</b>	<b>710</b>	<b>837</b>	<b>937</b>	<b>976</b>	<b>1,006</b>
	100	100	100	100	100	100	100	100	100	100	100	100

\*Za navedeni period, obuhvaćene su godine: 2009, 2012, 2015, 2017, 2019. i 2021.

\*For the observed period, the following years have been covered: 2009, 2012, 2015, 2017, 2019, and 2021.





\*Za navedeni period, obuhvaćene su godine 2009, 2012, 2013, 2014, 2015, 2016, 2017, 2019. i 2021.

\*For the observed period, the following years have been covered: 2009, 2012, 2013, 2014, 2015, 2016, 2017, 2019, and 2021.

**Slika 1a.** Zastupljenost (%) doktora medicine, specijalista, u vanbolničkoj i bolničkoj zaštiti, u Crnoj Gori, u periodu između 2009. i 2021. godine\*

**Figure 1a.** Prevalence (%) of specialist medical doctors in outpatient facilities and hospitals, in Montenegro, in the period between 2009 and 2021\*

vanbolničkim i bolničkim delatnostima u Crnoj Gori, u periodu između 2009. i 2021. godine.

i.e., 41%, in this period. The number of doctors without specialist training in hospitals was negligible during the entire period.

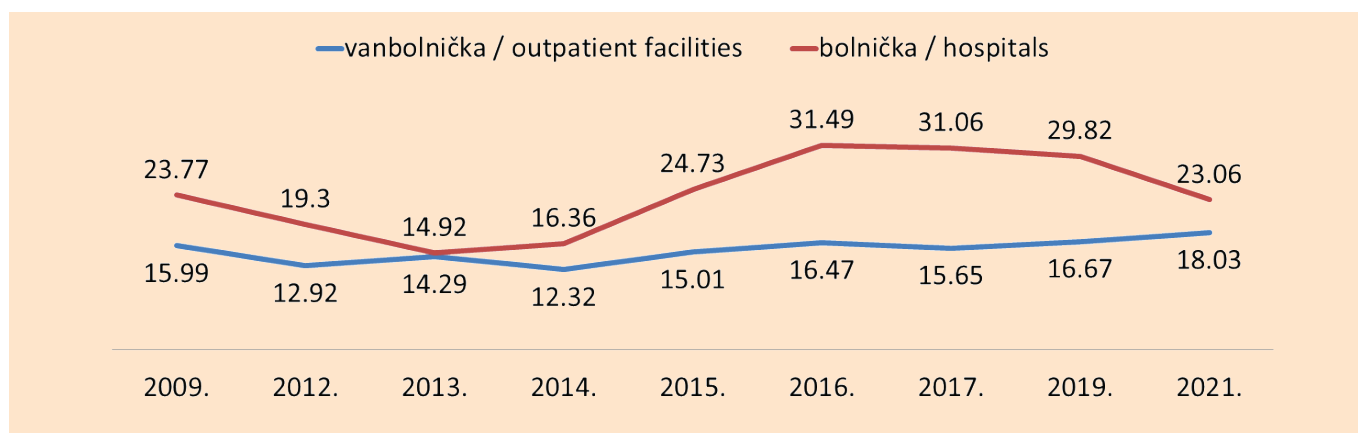
Zastupljenost navedenih kategorija lekara (bez specijalizacije, na specijalizaciji i specijalista) po navedenim godinama, prikazana je u **Grafikonima 1. a, 1. b i 1. c.**

**Table 2** provides comparative data on the number and ratio of doctors (without specialist training/specialists/residents) in outpatient facilities and hospitals in Montenegro, in the period between 2009 and 2021.

Posmatrajući zastupljenost (izraženu u procentima, **Tabela 3.**) lekara (specijalista, lekara na specijalizaciji i lekara bez specijalizacije), po starosnim grupama, u 2008. godini i 2021. godini, zaključuje se da je u 2008. godini specijalistički kadar bio dominantno skoncentrisan u starosnoj grupi od 45 – 54 godine (47%), dok je u 2021. godini specijalistički kadar bio u najvećem procentu u starosnoj grupi od 55 i više godina (oko 34%), a odmah zatim u starosnoj grupi od 35 – 44 godine (32%). Lekari na specijalizaciji su u 2008. godini bili najviše u starosnoj grupi do 34 godine (73%), dok je u 2021. godini taj udeo iznosio 57%. Lekara bez specija-

The prevalence of the defined categories of doctors (doctors without specialist training/residents /specialists), by observed years, is presented in **Graphs 1. a, 1. b, and 1. c.**

Observing the prevalence (expressed in percentages, **Table 3**) of doctors (specialists/residents/doctors without specialist training), by age groups, in 2008 and 2021, it can be concluded that, in 2008, specialist medical doctors were predominantly concentrated in the 45 – 54 years age group (47%), while in 2021, specialist medical doctors were, in the highest percentage,

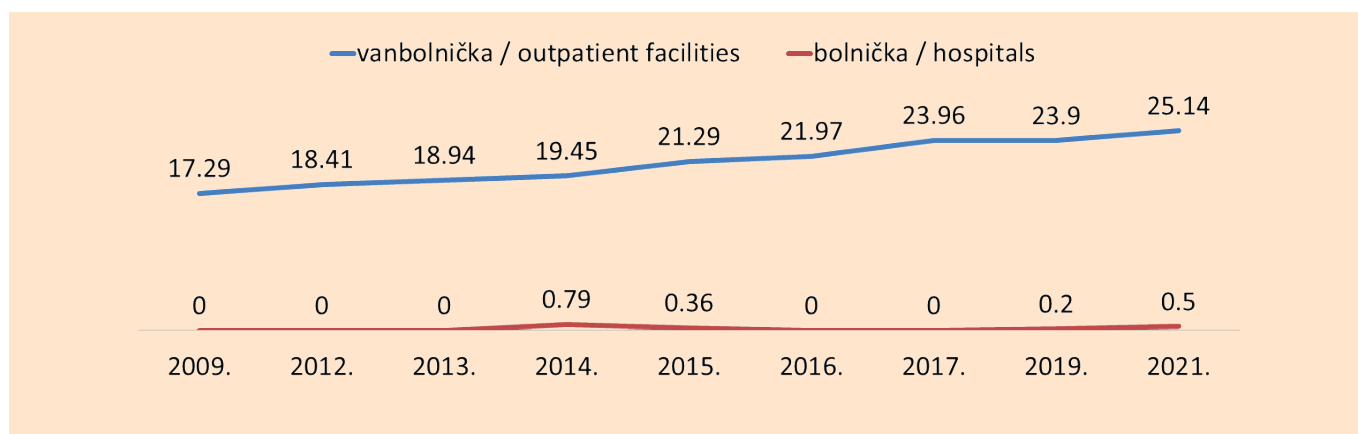


\*Za navedeni period, obuhvaćene su godine 2009, 2012, 2013, 2014, 2015, 2016, 2017, 2019. i 2021.

\*For the observed period, the following years have been covered: 2009, 2012, 2013, 2014, 2015, 2016, 2017, 2019, and 2021.

**Slika 1b.** Zastupljenost (%) doktora medicine na specijalizaciji, u vanbolničkoj i bolničkoj zaštiti, u Crnoj Gori, u periodu između 2009. i 2021. godine \*

**Figure 1b.** Prevalence (%) of residents in outpatient facilities and hospitals, in Montenegro, in the period between 2009 and 2021\*



\*Za navedeni period, obuhvaćene su godine 2009, 2012, 2013, 2014, 2015, 2016, 2017, 2019. i 2021.

\*For the observed period, the following years have been covered: 2009, 2012, 2013, 2014, 2015, 2016, 2017, 2019, and 2021.

**Slika 1c.** Zastupljenost (%) doktora medicine bez specijalizacije, u vanbolničkoj i bolničkoj zaštiti, u Crnoj Gori, u periodu između 2009. i 2021. godine \*

**Figure 1c.** Prevalence (%) of medical doctors without specialist training in outpatient facilities and hospitals, in Montenegro, in the period between 2009 and 2021\*

lizacije je u 2008. godini najviše bilo u starosnoj grupi do 34 godine (58%), dok je u 2021. godini lekara bez specijalizacije bilo više u starosnoj grupi od 35 – 44 godine (41%). U 2008. godini je blizu 20% lekara i dalje bilo bez specijalizacije, dok je u 2021. godini taj udeo iznosio 23%.

Od ukupnog broja lekara, broj lekara u starosnoj grupi od 35 – 54 godine je u 2021. godini bio za 6,63% manji nego u 2008. godini, dok je broj lekara starosti preko 55 godina porastao za 12,13%, u odnosu na 2008. godinu. Zastupljenosti lekara u Crnoj Gori, u 2008. godini i 2021. godini, po starosnim grupama, prikazana je u **Grafikonu 2**.

Od 1.185 specijalista, koji su obavljali zdravstvenu zaštitu stanovništva Crne Gore u vanbolničkim i bolničkim delatnostima (javni sektor), u 2021. godini je njih 407, odnosno 34,35%, bilo sa 55 i više godina starosti (**Tabela 4.**). Preko 50% angažovanog lekarskog kadra

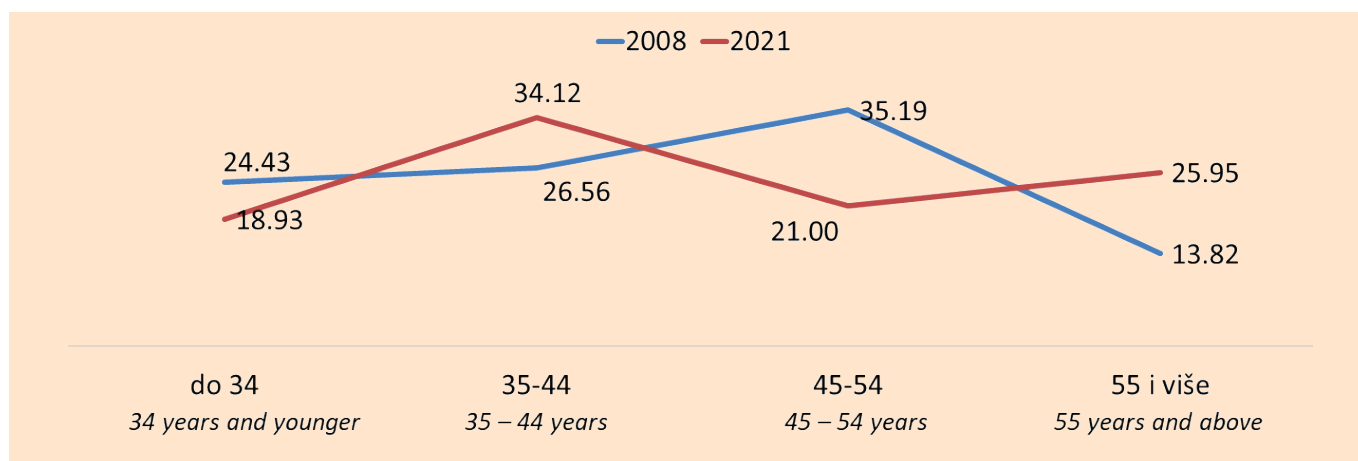
placed in the 55 years and above age group (about 34%), followed immediately by the 35 – 44 years age group (32%). In 2008, the majority of residents were in the 34 and younger age group (73%), while in 2021, this percentage was 57%. In 2008, the majority of medical doctors without specialist training were in the 34 years and younger age group (58%), while in 2021, there were more doctors without specialist training in the 35 – 44 years age group (41%). In 2008, almost 20% of doctors were still without specialist training, while in 2021, this percentage was 23%.

Out of the total number of doctors, the number of doctors in the 35 – 54 years age group in 2021 was by 6.63% lower than in 2008, while the number of doctors above the age of 55 years increased by 12.13%, as compared to 2008. The prevalence of doctors in Montenegro, in 2008 and 2021, by age group, is shown in **Graph 2**.

**Tabela 3.** Zastupljenost (%) doktora medicine, bez specijalizacije, na specijalizaciji i specijalista, u Crnoj Gori, u 2008. godini i 2021. godini

**Table 3.** Prevalence (%) of medical doctors without specialist training, residents, and specialists, in Montenegro, in years 2008 and 2021

Starosne grupe / Age groups	2008			2021		
	Specijalisti / Specialists	Na specijalizaciji / Residents	Bez specijalizacije / Medical doctors with- out specialist training	Specijalisti / Specialists	Na specijalizaciji / Residents	Bez specijalizacije / Medical doctors with- out specialist training
do 34 godine / 34 years and younger	4.13	73.29	58.39	5.65	56.59	29.63
35 – 44 godine / years	29.35	24.54	12.41	32.32	40.94	32.28
45 – 54 godine / years	46.76	2.17	26.28	27.68	2.47	14.81
55 i više godina / 55 years and above	19.76	0	2.92	34.35	0	23.28
<b>Ukupno / Total</b>	100.00	100.00	100.00	100.00	100.00	100.00



**Slika 2.** Zastupljenost (%) lekara po starosnim grupama, u Crnoj Gori, u 2008. i 2021. godini

**Figure 2.** Prevalence (%) of doctors, by age groups, in Montenegro, in years 2008 and 2021

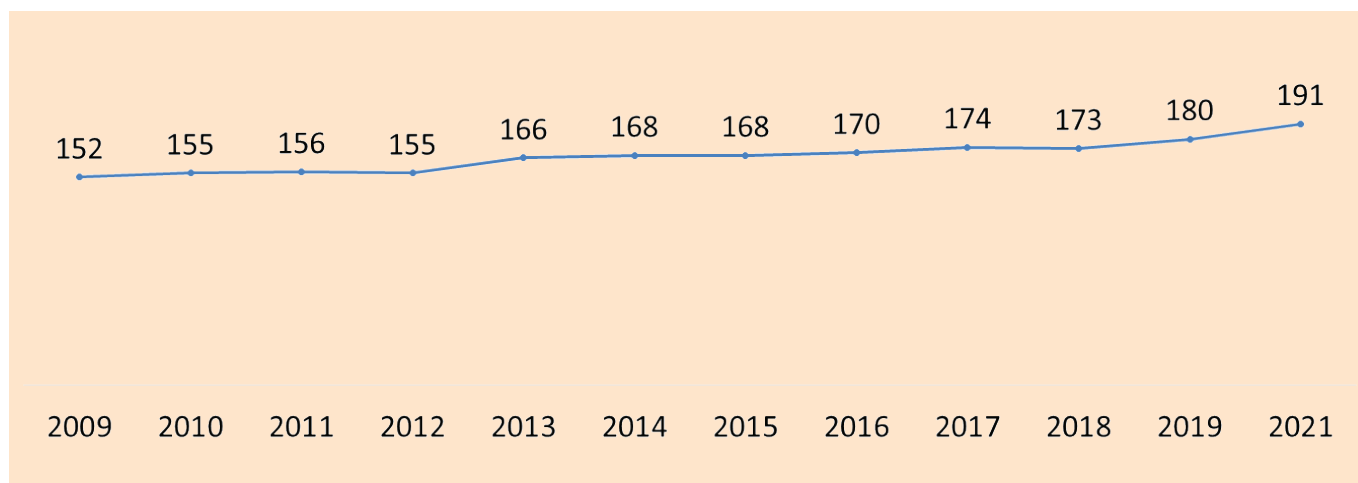
starijeg od 55 godina, bili su lekari specijalisti sledećih specijalnosti: pneumoftizilogija (71%), neuropsihijatrija (82%), fizikalna medicina (50%), transfuziologija (56%), sportska medicina (75%), medicina rada (75%), opšta medicina (60%), kao i plastična i rekonstruktivna hirurgija (60%). U 2021. godini, najveći broj lekara specijalista imao je specijalizaciju iz pedijatrije (148 lekara).

Na osnovu distribucije broja lekara specijalista u periodu između 2009. i 2021. godine i procenjenog broja stanovnika Crne Gore, procenjena je stopa obezbeđenosti lekarima specijalistima na 100.000 stanovnika (**Grafikon 3**). U poređenju sa 2009. godinom, kada je ta stopa iznosila 152 lekara na 100.000 stanovnika, u 2021. godini, taj indikator je dostigao vrednost od 191 lekara na 100.000 stanovnika.

U Crnoj Gori je obezbeđenost stanovništva doktorima medicine, specijalistima/specijalizantima (isključujući specijaliste/specijalizante hirurgije, ginekologije i akušerstva, pedijatrije, psihijatrije, i opšte medicine), u 2020. godini, na 100.000 stanovnika, iznosila 109, dok

Of 1,185 specialists, who were involved in the health care of the population of Montenegro, in outpatient facilities and hospitals (public sector), in 2021, 407 of them, or 34.35%, were 55 years old or above (**Table 4**). More than 50% of the employed medical staff above the age of 55 were medical doctors specializing in following medical fields: pneumo-phthisiology (71%), neuropsychiatry (82%), physical medicine (50%), transfusiology (56%), sports medicine (75%), occupational medicine (75%), general medicine (60%), as well as plastic and reconstructive surgery (60%). In 2021, the highest number of specialist doctors were pediatricians (148 doctors).

The density of specialist doctors per 100,000 population was estimated based on the distribution of the number of specialist medical doctors in the period between 2009 and 2021 and the estimated population of Montenegro (**Graph 3**). Compared to 2009, when the density was 152 doctors per 100,000 population, in 2021, this indicator reached the value of 191 doctors per 100,000 population.



**Slika 3.** Distribucija (broj) doktora medicine, specijalista, na 100.000 stanovnika, u Crnoj Gori, u periodu između 2009. i 2021. godine

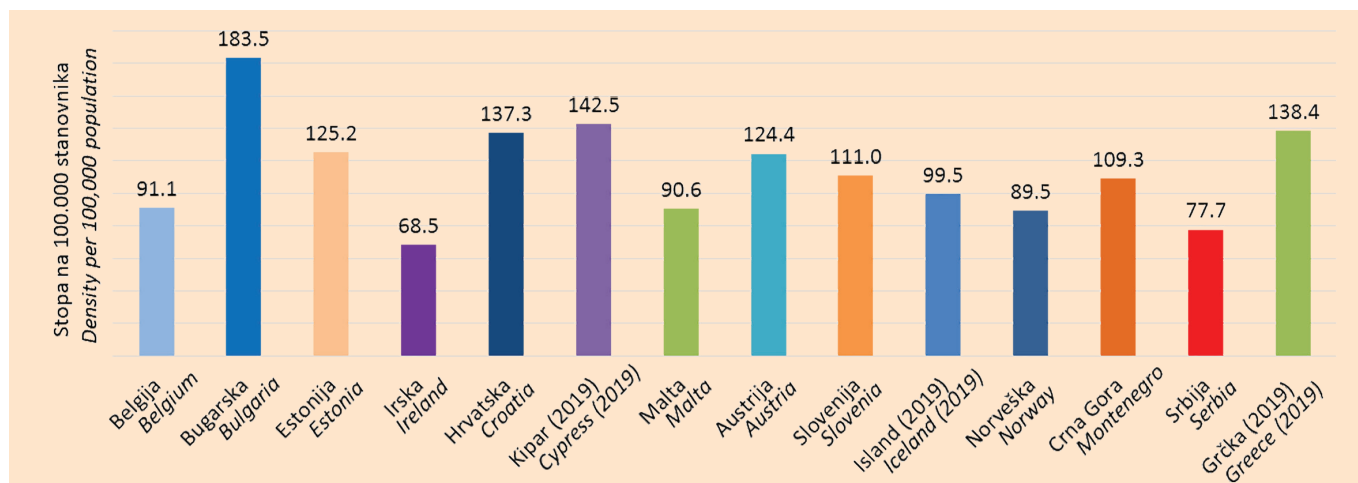
**Figure 3.** Distribution (number) of specialist medical doctors per 100,000 population, in Montenegro, in the period between 2009 and 2021

**Tabela 4.** Zastupljenost (broj i %) doktora medicine, specijalista, starosti od 55 i više godina, u Crnoj Gori, u 2021. godini

**Table 4.** Prevalence (number and %) of specialist medical doctors, aged 55 years and above, in Montenegro, in 2021

SPECIJALNOSTI LEKARA / SPECIALTIES	Ukupan broj lekara specijalista / Total number of specialist medical doctors		Starosti od 55 i više godina / Aged 55 years and above	
			Broj lekara / Number of doctors	% lekara / of doctors
Interna medicina / Internal medicine	131		47	35.88
Infektologija / Infectology	19		8	42.11
Pneumoftziologija / Pneumo-phthisiology	24		17	70.83
Pedijatrija / Pediatrics	148		60	40.54
Psihijatrija / Psychiatry	47		12	25.53
Neuropsihijatrija / Neuropsychiatry	11		9	81.82
Neurologija / Neurology	18		6	33.33
Fizikalna medicina / Physical medicine	16		8	50.00
Dermatovenerologija / Dermatovenereology	20		6	30.00
Radiologija / Radiology	88		13	14.77
Hirurgija / Surgery	67		23	34.33
Urologija / Urology	19		8	42.11
Ortopedija / Orthopedic surgery	37		9	24.32
Neurohirurgija / Neurosurgery	7		1	14.29
Dečija hirurgija / Pediatric surgery	3		1	33.33
Ginekologija i akušerstvo / Gynecology and obstetrics	93		32	34.41
Oftalmologija / Ophthalmology	32		5	15.63
Otorinolaringologija / Otorhinolaryngology	29		6	20.69
Anesteziologija / Anesthesiology	64		23	35.94
Transfuziologija / Transfusiology	16		9	56.25
Patohistologija / Pathohistology	13		2	15.38
Sudska medicina / Forensic medicine	4		0	0.00
Epidemiologija / Epidemiology	49		6	12.24
Mikrobiologija / Microbiology	18		5	27.78
Higijena / Hygiene	10		4	40.00
Socijalna medicina / Social medicine	7		3	42.86
Nuklearna medicina / Nuclear medicine	3		0	0.00
Sportska medicina / Sports medicine	4		3	75.00
Urgentna medicina / Emergency medicine	26		8	30.77
Medicina rada / Occupational medicine	20		15	75.00
Opšta medicina / General medicine	60		36	60.00
Imunologija / Immunology	3		0	0.00
Klinička biohemija / Clinical biochemistry	23		6	26.09
Maksilofacijalna hirurgija / Maxillofacial surgery	7		0	0.00
Plastična i rekonstruktivna hirurgija / Plastic and reconstructive surgery	5		3	60.00
Porodična medicina / Family medicine	42		13	30.95
Zdravstvena statistika / Health statistics	1		0	0.00
Dečija psihijatrija / Child psychiatry	1		0	0.00
<b>Ukupno lekara specijalista / Total number of specialist medical doctors</b>	<b>1,185</b>		<b>407</b>	<b>34.35</b>





U grafikonu su prikazani radno aktivni lekari, osim u Crnoj Gori (profesionalno aktivni) i Grčkoj (lekari koji imaju licencu iz prakse); Izvor: OECD Health Statistics 2020; Eurostat Database.

The graph shows working doctors, except in Montenegro (professionally active) and Greece (doctors who have a license to practice); Source: OECD Health Statistics 2020; Eurostat Database

**Slika 4.** Obezbeđenost stanovništva doktorima medicine, specijalistima/specijalizantima (isključujući specijaliste/specijalizante hirurgije, ginekologije i akušerstva, pedijatrije, psihijatrije i opšte medicine), na 100.000 stanovnika, u Crnoj Gori i u zemljama Evrope, u 2020. godini (ili poslednji dostupni podaci)

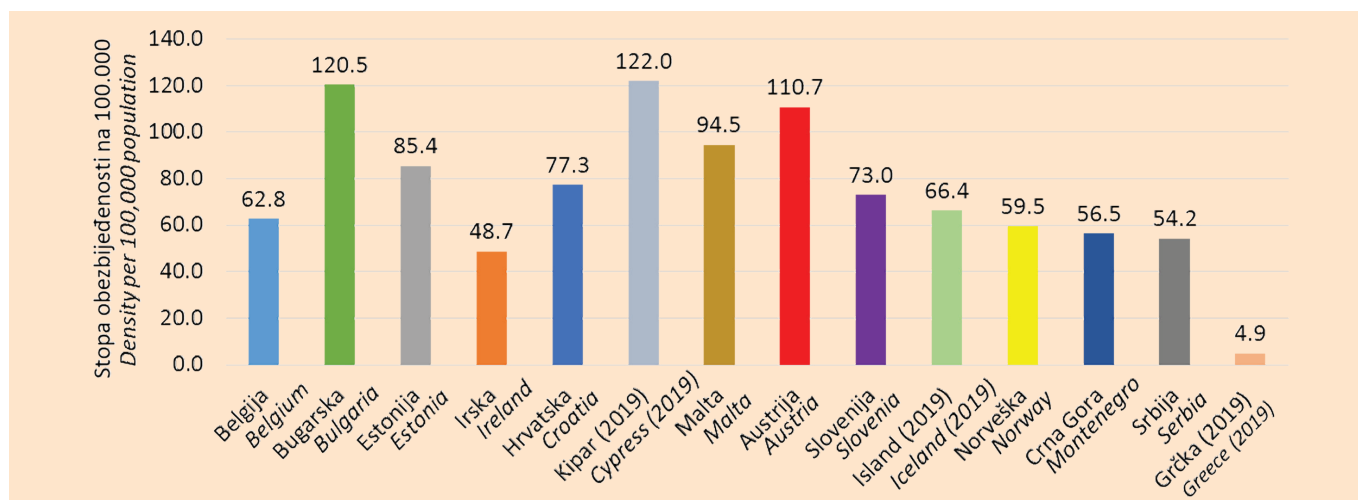
**Figure 4.** Availability of medical doctors – specialists/residents (excluding specialists/residents specializing in surgery, gynecology and obstetrics, pediatrics, psychiatry, and general medicine), per 100,000 population, in Montenegro and in other European countries, in 2020 (or latest available data)

je u Grčkoj iznosila 138 (2019. godina), u Sloveniji 111, a Srbiji 78 (Grafikon 4). Prosek u Evropskom regionu, prema poslednjim dostupnim podacima (SZO, 2014. godina), iznosi 90.

In Montenegro, the availability of medical doctors – specialists/residents (excluding specialists/residents specializing in surgery, gynecology and obstetrics, pediatrics, psychiatry, and general medicine), in 2020, per 100,000 population, was 109, while in Greece it was 138 (2019), in Slovenia 111, and in Serbia 78 (Graph 4). The average availability per 100,000 population in the European Region, according to the latest available data (WHO, 2014), is 90.

Stopa doktora medicine, specijalista/specijalizanata hirurških grana, na 100.000 stanovnika, u Crnoj Gori, u 2020. godini, iznosila je 57, u Grčkoj je iznosila 49 (2019. godina), a u istom periodu je u Sloveniji iznosila 73, dok je u Srbiji bila 54 (Grafikon 5). U Evropskom regionu (ER) je prosek, prema poslednjim dostupnim podacima (SZO, 2014. godina), iznosio 70.

The density of medical doctors – specialists/residents specializing in surgical branches per 100,000



U grafikonu su prikazani radno aktivni lekari, osim u Crnoj Gori (profesionalno aktivni) i Grčkoj (lekari koji imaju licencu iz prakse); Izvor: OECD Health Statistics 2020; Eurostat Database

The graph shows working doctors, except in Montenegro (professionally active) and Greece (doctors who have a license to practice); Source: OECD Health Statistics 2020; Eurostat Database

**Slika 5.** Obezbeđenost stanovništva doktorima medicine, specijalistima/specijalizantima hirurških grana na 100.000 stanovnika, u Crnoj Gori i u zemljama Evrope, u 2020. godini (ili poslednji dostupni podaci)

**Figure 5.** Availability of medical doctors – specialists/residents specializing in surgical branches per 100,000 population, in Montenegro and in other European countries, in 2020 (or latest available data)

## DISKUSIJA

Ova studija je analizirala specijalistički lekarski kadar između dve velike krize, i to ekonomske krize, koja je zahvatila Evropski region 2008. godine, i krize uzrokovane pandemijom KOVID-19 oboljenja, u 2020. godini, kao i u 2021. godini. U periodu krize uzrokovane pandemijom KOVID-19 oboljenja, u 2020. godini, u velikom broju zemalja je zabeležen privremeni porast broja ljudskih resursa do kojeg je došlo usled odgovora na krizu [3,4]. Uzimajući u obzir objektivne okolnosti i složeni uticaj društveno-političko-ekonomskih faktora, koji su uticali na mogućnosti zemlje da jača i razvija zdravstveni sistem u navedenim okolnostima, veliki je uspeh što je osnažen kadrovski potencijal u Crnoj Gori. Ukupan broj lekara (specijalisti, lekari na specijalizaciji i lekari bez specijalizacije) je povećan za oko trećinu, dok je broj specijalista porastao za četvrtinu, u posmatranom periodu. Ipak, značajno veći broj lekara se u 2021. godini našao bez specijalizacije, što treba tumačiti, ne samo u kontekstu navedenih uticaja iz okruženja, već i iz aspekta upravljanja ljudskim resursima. To se posebno odrazilo na mladi kadar u vanbolničkim delatnostima, koji je duže vremena čekao da bude upućen na specijalizaciju nego što je to bio slučaj u 2009. godini.

Nasuprot tome, u bolničkim delatnostima je došlo do značajnijeg porasta broja lekara koji su upućivani na specijalizaciju (za dve trećine više), što se odrazilo na veći broj specijalističkog kadra u bolnicama. Ovo nam ukazuje na to da je upravljanje ljudskim resursima, iako u okolnostima manje obezbeđenosti lekarima specijalistima u odnosu na druge evropske zemlje, imalo veću usmerenost ka jačanju bolničkog potencijala nasuprot vanbolničkog. Iako Crna Gora u ovom trenutku nema strateški okvir kojim se usmerava razvoj zdravstvenog sistema ili ljudskih resursa (budući da su se ranija dokumenta odnosila na period do 2020. ili 2022. godine), potrebno je navesti da su raniji okviri usmeravali sistem ka primarnom nivou zdravstvene zaštite [6,7] kao okosnici zdravstvenog sistema. Nacrtom Strategije razvoja zdravstva, koja je dostupna na veb stranici Ministarstva zdravlja, a koja obuhvata period između 2023. i 2027. godine [8], navodi se da će donosioci odluka istrajati na reformskom opredeljenju iz 2005. godine, kojim se primarna zdravstvena zaštita prepoznaje kao "prioritetna oblast u razvoju zdravstvenog sistema, a u okviru nje i promovisanje zdravih stilova života i preventivne zdravstvene zaštite". Ovaj strateški dokument (nacrt) prepoznao je, u delu strateških ciljeva koji se odnose na ljudske resurse, potrebu povećanja broja specijalista iz oblasti medicine rada.

Specijalistički kadar u Crnoj Gori je relativno star, budući da je, u 2021. godini, bilo najviše lekara specijalista (trećina) koji su stariji od 55 godina. Veliki broj

population, in Montenegro, in 2020, was 57, in Greece it was 49 (2019), it was 73 in Slovenia, in the same period, while in Serbia it was 54 (Graph 5). In the European Region, the average, according to the latest available data (WHO, 2014), was 70.

## DISCUSSION

This study analyzed specialist medical staff between two major crises, namely the economic crisis, which affected the European region in 2008, and the crisis caused by the COVID-19 pandemic in 2020 and continuing into 2021. In the period of the crisis caused by the COVID-19 pandemic in 2020, a large number of countries recorded a temporary increase in human resources numbers, which occurred as the result of response to the crisis [3,4]. Taking into account the objective circumstances and the complex influence of socio-political and economic factors, which affected the country's ability to strengthen and develop the health system in the aforementioned circumstances, the fact that human resources potential in Montenegro has been strengthened is quite a success. The total number of doctors (specialists/residents/medical doctors without specialist training) increased by about a third, while the number of specialists increased by a quarter, in the observed period. Nevertheless, in 2021, a significantly larger number of doctors found themselves lacking specialist training, which should be interpreted, not only in the context of the aforementioned impact of external factors, but also from the aspect of human resources management. This particularly affected younger health professionals in outpatient facilities, who waited longer to be enrolled in specialist training than was the case in 2009.

In contrast, in hospitals, there was a significant increase in the number of doctors who were enrolled in specialist training (by two thirds), which was reflected in the greater number of specialist medical doctors in hospitals. This indicates that the management of human resources, although in circumstances of lesser availability of specialists, as compared to other European countries, was more focused on strengthening inpatient potential as opposed to the potential of outpatient health facilities. Although Montenegro does not currently have a strategic framework directing the development of the healthcare system or the development of human resources (since earlier documents referred to the period until 2020 or 2022), it should be noted that earlier frameworks directed the system towards the primary health care level [6,7] as the backbone of the health system. The draft of the Health Development Strategy, which is available on the website of the Ministry of Health, and which covers the period

zemalja Evropske unije (EU) susreće se sa problemom izrazito starog lekarskog kadra. Tako je u Italiji čak 60% svih lekara starije od 55 godina [9]. Ipak, uočava se da je orijentacija ka jačanju bolničkih kadrovskih resursa u Crnoj Gori u prethodnom periodu dala pozitivne rezultate po pitanju znavljanja kadra, pa se broj lekara koji su starosnog doba od 35 – 44 godine povećao i čini skoro trećinu specijalističkog kadra. Među najmlađim lekarima se smanjilo učešće onih koji su bili upućeni na specijalizaciju, pa je i broj lekara koji su na specijalizaciji bio veći u starijoj starosnoj grupi. Blago je povećan broj lekara koji su bez specijalizacije u starosnoj grupi od preko 55 godina života. Kvalitetnije i efikasnije upravljanje ljudskim resursima trebalo bi da omogućiti ranije upućivanje mladih lekara na specijalizaciju. Upravljanje je ključno, ne samo za jačanje radne snage, nego i za održavanje kompetencija koje su neophodne za pružanje zdravstvenih usluga [10].

U ukupnom broju lekara, uočava se da brže raste broj lekara u starosnoj grupi od 55 i više godina, nego što se povećava broj najmlađih lekara koji ulaze u sistem. Ovakvo upravljanje ljudskim resursima, i to lekarima, neće dugoročno poboljšati obezbeđenost lekarima, već može da dovede sistem u još nepovoljniji položaj. To će svakako zavisiti i od dejstva velikog broja drugih faktora iz okruženja (migracije, jačanje privatnog sektora, i slično).

Ova studija je prepoznala oblasti u kojima je posebno ugroženo funkcionisanje i pružanje usluga u budućem periodu, usled visokog udela kadra koji je starijeg doba, a koje su obuhvatile sledeće specijalnosti: pneumoftizilogija, neuropsihijatrija, fizikalna medicina, transfuziologija, sportska medicina, medicina rada, opšta medicina, kao i plastična i rekonstruktivna hirurgija.

U poređenju sa drugim zemljama regiona i Evrope, obezbeđenost stanovništva doktorima medicine, specijalistima/specijalizantima (isključujući specijaliste/specijalizante hirurgije, ginekologije i akušerstva, pedijatrije, psihijatrije, i opšte medicine) na 100.000 stanovnika, u Crnoj Gori, bila je blizu obezbeđenosti ovim kadrom u Sloveniji, a bolja nego u drugim malim zemljama, kao što su Malta ili Island [11]. Međutim, stopa doktora medicine, specijalista/specijalizanata hirurških grana na 100.000 stanovnika je, u Crnoj Gori, u 2020. godini, bila među najnižim u Evropi, i bila je značajno ispod standarda koji se odnosi na zemlje Evropske unije [11]. Bolja je situacija ako se uporedi obezbeđenost stanovništva doktorima medicine, specijalistima/specijalizantima pedijatrije i obezbeđenost stanovništva doktorima medicine, specijalistima/specijalizantima ginekologije i akušerstva na 100.000 stanovnika, u Crnoj Gori i u zemljama Evrope.

between 2023 and 2027 [8], states that decision-makers will stay on the course of reform commitments from 2005, which recognize primary health care as a "priority area in the development of the health system, and within it also the promotion of healthy lifestyles and preventive health care". This strategic document (draft) recognized, in the part of the strategic goals related to human resources, the need to increase the number of specialists in the field of occupational medicine.

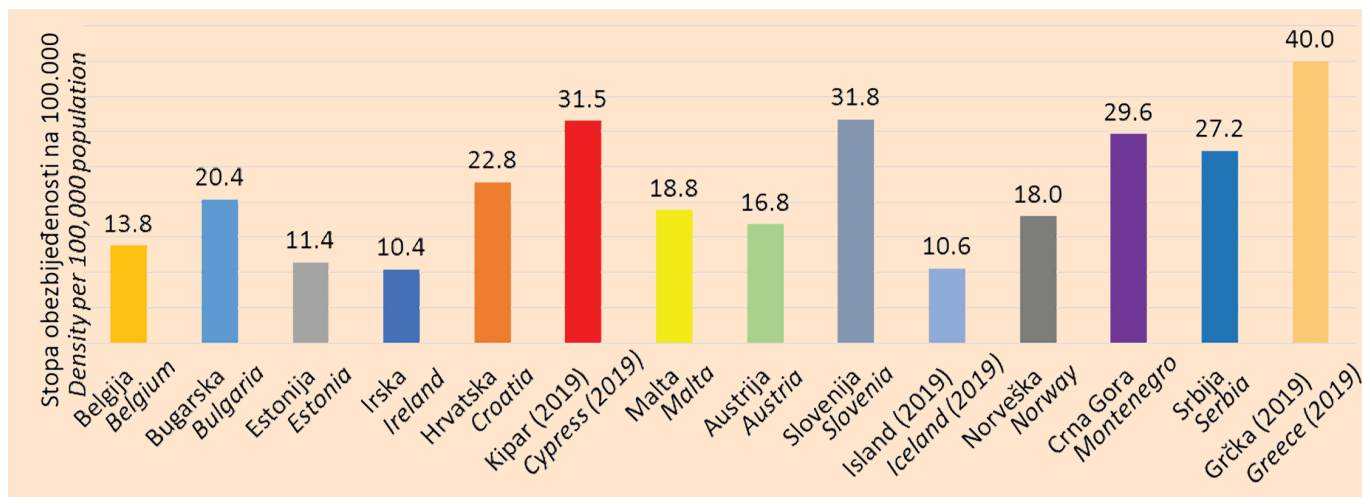
In Montenegro, specialist medical personnel are relatively old, since in 2021, the majority of specialists (one third) are above the age of 55 years. A large number of European Union (EU) countries are facing the problem of very old medical staff. In Italy, as many as 60% of all doctors are older than 55 years [9]. Nevertheless, it is evident that the orientation towards strengthening hospital personnel resources in Montenegro in the previous period has yielded positive results in terms of staff recruitment, whereby the number of doctors aged 35 – 44 years has increased, making up almost a third of the specialist staff. Among the youngest doctors, the ratio of those enrolled in specialist training decreased, so the number of residents was higher in the older age group. The number of doctors without specialist training in the 55 years and above age group slightly increased. Better and more efficient management of human resources should enable earlier enrolment of young doctors in specialist training. Management is crucial, not only for strengthening the workforce, but also for maintaining the competencies necessary to provide health services [10].

In the total number of doctors, it can be seen that the number of doctors in the 55 years and above age group is growing faster than the number of the youngest doctors entering the system. This kind of human resources management, particularly doctors, will not improve the availability of doctors in the long term, rather it can drive the system into an even more unfavorable situation. This will certainly depend on the effect of a large number of other external factors (migration, strengthening of the private sector, etc.).

This study has identified areas where the future functioning and provision of services are particularly threatened, due to the high ratio of older staff. These areas included the following specialties: pneumophthisiology, neuropsychiatry, physical medicine, transfusiology, sports medicine, occupational medicine, general medicine, as well as plastic and reconstructive surgery.

As compared to other countries in the region and in Europe, the availability of medical doctors – specialists/residents (excluding specialists/residents specializing in surgery, gynecology and obstetrics, pediatrics,





U grafikonu su prikazani radno aktivni lekari, osim u Crnoj Gori (profesionalno aktivni) i Grčkoj (lekari koji imaju licencu iz prakse); Izvor: OECD Health Statistics 2020; Eurostat Database

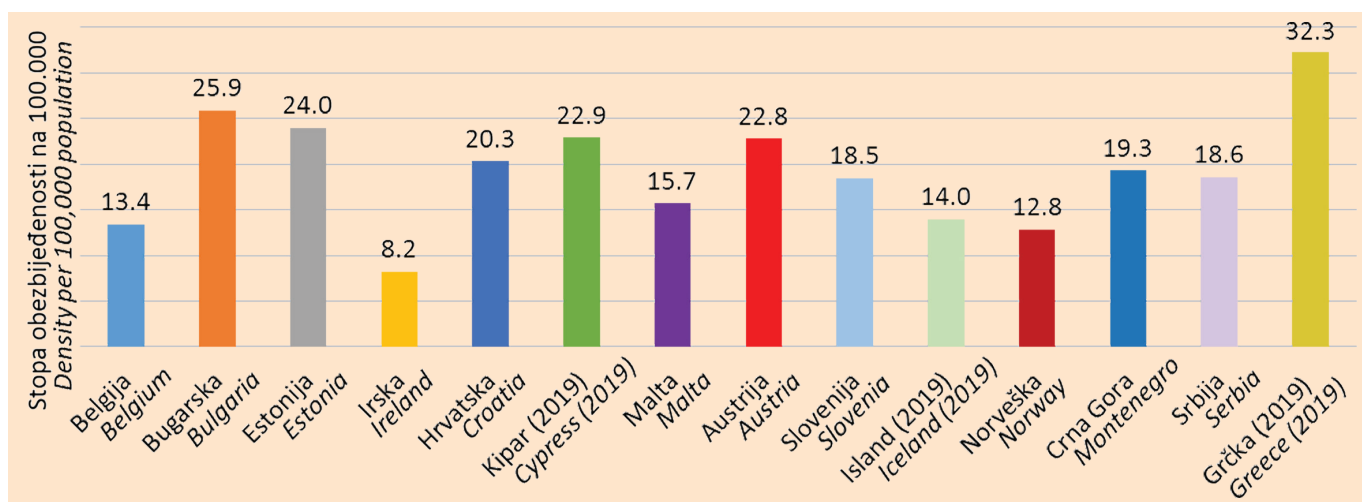
The graph shows working doctors, except in Montenegro (professionally active) and Greece (doctors who have a license to practice); Source: OECD Health Statistics 2020; Eurostat Database

**Slika 6.** Obezbeđenost stanovništva doktorima medicine, specijalistima/ specijalizantima pedijatrije na 100.000 stanovnika, u Crnoj Gori i u zemljama Evrope, u 2020. godini (ili poslednji dostupni podaci)

**Figure 6.** Availability of medical doctors – specialists/residents specializing in pediatrics per 100,000 population, in Montenegro and in other European countries, in 2020 (or latest available data)

Budući da se, prema podacima SZO, udeo žena u ukupnoj radnoj snazi povećao u Evropskom regionu, važno je posebno analizirati podatke koji se odnose na polnu strukturu kadra, kako bi zdravstveni sistem prepoznao doprinos žena, kao i nejednakosti koje postoje u svetu [12] u kojem „muškarci vode, a žene pružaju usluge globalnog zdravlja” [13]. Trend feminizacije medicine u Crnoj Gori je od ranije prepoznat. Kao što je slučaj i u mnogim zemljama Evropskog regiona i zemljama u okruženju, zapaža se tendencija porasta uдела žena među specijalističkim lekarskim kadrom, a

psychiatry, and general medicine) per 100,000 population, in Montenegro, was close to the availability of this personnel in Slovenia, and was better than in other small countries, such as Malta or Iceland [11]. However, the density of medical doctors – specialists/residents specializing in surgical branches per 100,000 population, in Montenegro, in 2020, was among the lowest in Europe, and was significantly below the standard applied in European Union countries [11]. The situation is better if the availability of medical doctors – specialists/residents specializing in pediatrics and the availability of medical doctors - specialists/residents specializing



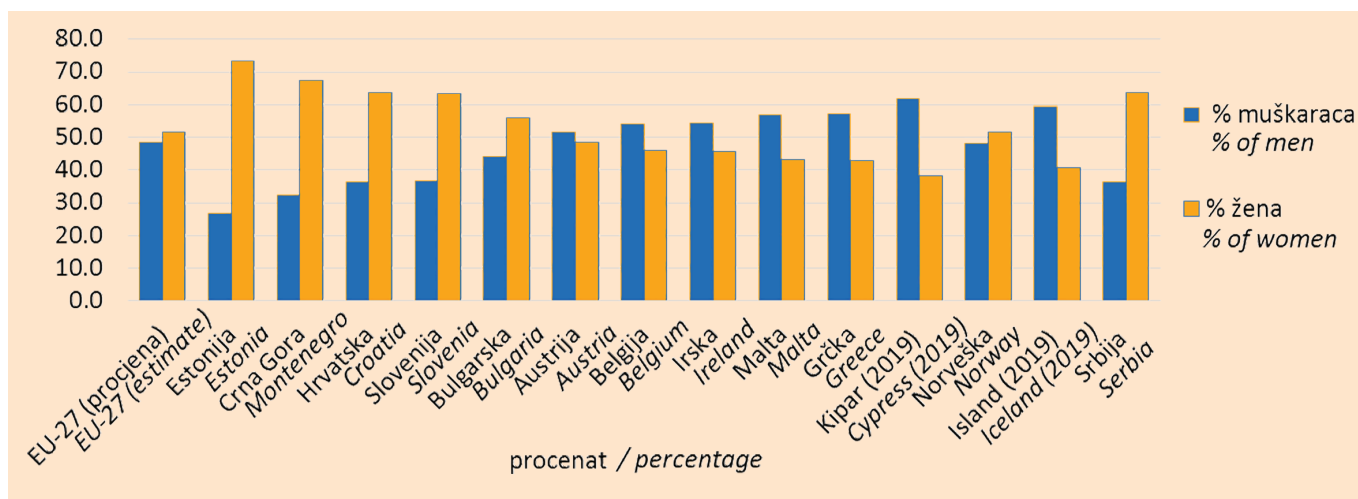
U grafikonu su prikazani radno aktivni lekari, osim u Crnoj Gori (profesionalno aktivni) i Grčkoj (lekari koji imaju licencu iz prakse); Izvor: OECD Health Statistics 2020; Eurostat Database

The graph shows working doctors, except in Montenegro (professionally active) and Greece (doctors who have a license to practice); Source: OECD Health Statistics 2020; Eurostat Database

**Slika 7.** Obezbeđenost stanovništva doktorima medicine, specijalistima/ specijalizantima ginekologije i akušerstva na 100.000 stanovnika, u Crnoj Gori i u zemljama Evrope, u 2020. godini (ili poslednji dostupni podaci)

**Figure 7.** Availability of medical doctors – specialists/residents specializing in gynecology and obstetrics per 100,000 population, in Montenegro and in other European countries, in 2020 (or latest available data)





U grafikonu su prikazani radno aktivni lekari, osim u Crnoj Gori (profesionalno aktivni) i Grčkoj (lekari koji imaju licencu iz prakse); Izvor: OECD Health Statistics 2020; Eurostat Database

The graph shows working doctors, except in Montenegro (professionally active) and Greece (doctors who have a license to practice); Source: OECD Health Statistics 2020; Eurostat Database

**Slika 8.** Odnos lekara prema polu, u 2020. godini (%), u Evropskoj uniji i regionu (procena/poslednji dostupni podaci)

**Figure 8.** Ratio of doctors in relation to gender, in 2020 (%), in the European Union and in the region (estimate/latest available data)

to je posebno karakteristično za bivše jugoslovenske zemlje.

in gynecology and obstetrics per 100,000 population, is compared between Montenegro and other European countries.

Glavno ograničenje naše studije je to što su obuhvaćeni samo podaci koji se odnose na javni sektor, budući da još uvek u Crnoj Gori nije razvijen registar kadrova, a zakonska regulative nije prepoznala nagli razvoj privatnog sektora u kojem je angažovan značajni deo specijalističkog kadra. Nadalje, iako se prepoznaje uticaj migracija na raspoloživost lekarskog kadra, usled nedostupnosti podataka, nije bilo moguće analizirati kretanje lekara sa ovog aspekta. Pitanje emigracije već duži vremenski period ostaje nerešeno, a gubljenjem kadrova, posebno specijalističkog kadra koji je visoko obrazovan, zemlja gubi velika sredstva i vreme koje je uloženo u izgradnju tih kadrova [14]. Ova studija nije ispitala kadrovsku obezbeđenost i dostupnost lekarima specijalistima po regionima u Crnoj Gori, već samo na nacionalnom nivou, budući da se Crna Gora ubraja u zemlje sa malim brojem stanovnika. Takva istraživanja u budućem periodu bi pružila detaljniji prikaz kadrovske obezbeđenosti lekarima specijalistima. Uporedivost podataka je jedno od ograničenja, jer neke zemlje prijavljuju licencirane zdravstvene radnike bez obzira na to gde su zaposleni ili ako su nezaposleni, a druge zemlje samo zdravstvene radnike koji aktivno rade u zdravstvenom sektoru.

Since, according to WHO data, the ratio of women in the total labor force has increased in the European Region, it is important to analyze the data related to the gender structure of the staff separately, so that the health system may recognize the contribution of women, as well as the inequalities that exist in the world [12], where "men lead and women provide global health services" [13]. The trend of feminization of medicine in Montenegro has long been recognized. As is the case in many countries of the European Region and in the surrounding area, there is a tendency to increase the proportion of women among the specialist medical staff, and this is especially characteristic of former Yugoslav countries.

## ZAKLJUČAK

Prikazane statističke vremenske serije podataka o ljudskim resursima, kako ukupno za Crnu Goru, tako posebno za vanbolničku i bolničku zdravstvenu zaštitu, omogućavaju da se sagledaju stanje, struktura i dina-

The main limitation of our study is that only data related to the public sector has been included in the analysis, since the human resources register has not yet been developed in Montenegro, and the laws and regulations have not as yet recognized the rapid development of the private sector, where a significant number of the specialist staff is employed. Furthermore, although the impact of migration on the availability of medical staff has been recognized, due to the unavailability of data, it was not possible to analyze the migration of doctors from this aspect. The issue of emigration has been unresolved for a long period of time, and by losing staff, especially highly trained specialist staff, the country loses considerable funds and time invested in educating this staff [14]. This study did not examine the availability and accessibility of specialist

mika njihovih promena u navedenom periodu. Podaci će u narednim godinama omogućiti uporedivost kadra raznih profila u Crnoj Gori sa drugim evropskim zemljama prema stopama opterećenosti. Navedene statističke serije podataka koje se odnose na lekare specijaliste, lekare bez specijalizacije i lekare na specijalizaciji, u vanbolničkoj i bolničkoj zdravstvenoj zaštiti, ukazuju na značajan manjak ljudskih resursa – lekara u Crnoj Gori, u odnosu na većinu zemalja Evropske unije ili Evropskog regiona, kao i na neadekvatnu starosnu strukturu, posebno za pojedine specijalnosti u kojima treba pažljivo planirati kadar, kako bi se poboljšala njihova obezbeđenost u budućem periodu.

**Sukob interesa:** Nije prijavljen.

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medical doctors, by individual regions, in Montenegro, but only at the national level, since Montenegro is one of the countries with a small population. Such future research would provide a more detailed account of the availability of medical specialists. Comparability of data is one limitation, as some countries report licensed health workers regardless of where they are employed or if they are unemployed, and other countries only report health workers who are actively working in the health sector.

## CONCLUSION

The presented statistical time series of data regarding human resources, both for Montenegro as a whole, and especially for outpatient and inpatient health care, allow us to see the state, structure and dynamics of their changes in the specified period. In the coming years, new data will enable comparability of human resources of various profiles in Montenegro with other European countries, according to workload rates. The aforementioned statistical series of data related to specialists, doctors without specialist training, and residents, in outpatient and hospital health care, indicate a significant shortage of human resources – doctors in Montenegro, as compared to most countries of the European Union or the European Region, as well as the inadequate age structure, especially for certain specialties, where personnel should be carefully planned, in order to improve their availability in the future.

**Conflict of interest:** None declared.

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