

PROMENE VREDNOSTI INDIKATORA KVALITETA U KAPITACIONOJ FORMULI ZA PRIMARNU ZDRAVSTVENU ZAŠTITU U SRBIJI TOKOM PANDEMIJE

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SAŽETAK

Uvod/Cilj: Pandemija COVID-19 stvorila je nove izazove i zadatke za primarnu zaštitu, utičući na rutinske zdravstvene usluge. Ova studija je imala za cilj da izmeri promene vrednosti pokazatelja učinka koji su deo kapitacione formule u Srbiji na osnovu podataka dobijenih od Fonda za zdravstveno osiguranje.

Metode: Podaci su analizirani na nacionalnom nivou. Promena indikatora je merena kao apsolutna razlika u vrednostima indikatora između 2020. i 2019. godine.

Rezultati: U službi za zdravstvenu zaštitu odraslog stanovništva, vrednosti tri indikatora koji se odnose na savete o načinu života porasle su u 2020. godini između 3,0% i 3,8%, dok su vrednosti indikatora koji se odnose na šećernu bolest, povišen arterijski pritisak i među pacijentima sa prethodnim infarktom miokarda smanjile u rasponu od 0,5% do 2,4%. Vrednosti indikatora koji se odnose na savetovanje gojazne dece, odgovarajući broj pregleda novorođenčadi i usluga koji se odnose na rano otkrivanje i savetovanje trudnica povećani su za 1,2% na 10,2%. Ostali indikatori su zabeležili pad vrednosti do 9,9%.

Zaključak: Uprkos preprekama sa kojima se suočavala tokom pandemije COVID-19, primarna zdravstvena zaštita je igrala i nastavlja da igra značajnu ulogu u očuvanju i poboljšanju zdravlja stanovništva.

Ključne reči: COVID-19, kvalitet zdravstvene zaštite, prevencija

Uvod

Pojava novog soja koronavirusa u Kini dovela je do globalne pandemije koja je uticala na sve aspekte života (1-4). To je uključivalo i pružanje zdravstvene zaštite. Virus COVID-19 bolesti se brzo proširio širom sveta, izazivajući do tada neviđenu društvenu, psihološku i ekonomsku štetu. U Srbiji je Ministarstvo zdravlja potvrdilo prvi slučaj zaraze 6. marta 2020. godine (5). Nakon toga, vlada je proglasila vanredno stanje 15. marta (6).

Kao i u drugim zemljama, zdravstveni sistem u Srbiji se suočio sa inicijalnim uticajem ove nove pretnje. Većina resursa bila je usmerena na rano otkrivanje, dijagnozu, lečenje zaraženih osoba i sprečavanje daljeg širenja u zajednici. Neke zdravstvene ustanove bile su isključivo posvećene lečenju obolelih od COVID-19, što je uticalo na njihovu sposobnost da pruže redovnu zdravstvenu zašti-

tu pacijentima. Ove velike promene su se odrazile kroz negativan uticaj na ostale usluge zdravstvene zaštite, uključujući one koje se pružaju pacijentima koji nisu oboleli od COVID-19 i drugim ranjivim grupama, poput hroničnih bolesnika, starih, dece i trudnica (7,8). Ove značajne promene, iako su bile neophodne, predstavljale su različite izazove i trebalo ih prihvatiti sa razumevanjem.

Zdravstveni sistem Srbije se pre svega finansira kroz obavezno zdravstveno osiguranje, pri čemu je Republički fond za zdravstveno osiguranje (RFZO) glavni naručilac usluga. Sistem nudi usluge na primarnom, sekundarnom i tercijarnom nivou. Na primarnom nivou, usluge se pružaju u domovima zdravlja u okviru primarne zdravstvene zaštite (PZZ). Pruža ih „izabrani lekar“ koji može biti lekar opšte prakse ili specijalista opšte medicine, pedi-

CHANGES IN THE VALUE OF QUALITY INDICATORS IN THE CAPITATION FORMULA FOR PRIMARY HEALTH CARE IN SERBIA DURING THE PANDEMIC

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SUMMARY

Introduction/Aim: The COVID-19 pandemic created new challenges and assignments for primary care, affecting routine health services. This study aimed to measure the changes in the values of the performance indicators that are part of the capitation formula in Serbia using data obtained from the National Health Insurance Fund.

Methods: Data were analyzed at the national level. The indicator change was measured as the absolute difference in the indicator's values between 2020 and 2019.

Results: In the healthcare services for adults, the values of three indicators related to lifestyle advice increased in 2020 between 3.0% and 3.8%, while the values of indicators related to diabetes, arterial hypertension, and among patients with previous myocardial infarction have decreased in the range of 0.5% to 2.4%. The values of indicators associated with counseling obese children, the adequate number of check-ups of newborns, and services related to early detection and counseling among pregnant women increased by 1.2% to 10.2 %. The other indicators recorded a decline in their value up to 9.9%.

Conclusion: Despite the obstacles faced during the COVID-19 pandemic, primary healthcare has played and continues to play a substantial role in preserving and improving the population's health.

Keywords: COVID-19, Quality of Health Care, Prevention

Introduction

The emergence of a new strain of coronavirus in China led to a global pandemic that impacted all aspects of life (1-4). That included a healthcare provision also. The COVID-19 virus spread rapidly worldwide, causing unprecedented social, psychological, and economic damage. In Serbia, the Ministry of Health confirmed the first case of infection on March 6, 2020 (5). Following this, the government declared a state of emergency on March 15 (6).

Like other countries, the Serbian healthcare system faced the initial impact of this new threat. Most resources were directed towards early detection, diagnosis, treatment of infected individuals, and prevention of further community spread. Some healthcare institutions were exclusively dedicated to treating COVID-19 patients,

which affected their ability to provide regular patient care. These massive changes reflected their negative impact on other healthcare services, including those provided to non-COVID patients and vulnerable groups such as the chronically ill, the elderly, children, and pregnant women (7, 8). These significant changes, while necessary, presented various challenges and should be recognized with empathy.

The Serbian healthcare system is primarily funded through compulsory health insurance, with the National Health Insurance Fund (NHIF) being the leading purchaser of services. The system offers services at primary, secondary, and tertiary levels. At the primary level, services are provided in primary healthcare centers (PHCs). They are delivered by a “chosen doctor” who can be a general practitioner

jatrije, ginekologije ili stomatologije (9). Domovi zdravlja primarne zdravstvene zaštite su organizovani na nivou opštine ili grada, sa mrežom lokalnih ambulant u gradskim i ruralnim zajednicama (10). Ovaj pristup ima za cilj da primarnu zdravstvenu zaštitu učini lako dostupnom korisnicima.

Od 2012. godine, ustanovama primarne zdravstvene zaštite se nadoknađuju troškovi za pružanje usluga na osnovu ugovora sa RFZO koji se zasniva na kapitacionoj formuli (10). Kao rezultat toga, domovi zdravlja primarne zdravstvene zaštite moraju da daju izveštaj o pruženim uslugama, pri čemu se kvalitet ocenjuje uz pomoć unapred utvrđenih indikatora (11). RFZO izračunava ove indikatore i objavljuje ih na svom sajtu na osnovu izveštaja dobijenih od zdravstvenih ustanova. Ovi indikatori prate sprovođenje različitih programa primarne i sekundarne prevencije koji su usmereni na određene grupe stanovništva. Indikator odražava procenat ljudi u toj populacionoj grupi koji primaju unapred definisane preventivne mere uključene u kapitacionu formulu. Ovi programi su kreirani da preveniraju ili rano otkriju zdravstvene probleme. Stoga bi ovaj indikator u idealnom slučaju trebalo da bude blizu 100%. Primarna zdravstvena zaštita je bila na prvoj liniji odbrane u pandemiji, igrajući ključnu ulogu u identifikaciji, upravljanju, praćenju i lečenju obolelih od COVID-19. Pored toga, bila je važna u brzom sprovođenju kampanja masovne vakcinacije, naglašavajući njenu jedinstvenu i ključnu ulogu u sistemu zdravstvene zaštite (12).

Međutim, prisustvo virusa COVID-19 ne znači da nestaju sve druge zdravstvene potrebe. Čak i u vanrednim okolnostima, lekari primarne zdravstvene zaštite i medicinski tim nastavili su da pružaju kontinuiranu negu, zadovoljavajući zdravstvene potrebe pacijenata s obzirom da su prva tačka kontakta sa zdravstvenim sistemom. Cilj ovog rada je da predstavi promene indikatora kvaliteta uključenih u kapitacionu formulu pre i tokom pandemije.

Metode

Svrha ove studije bila je da se sprovede deskriptivna analiza retrospektivnih anonimizovanih podataka sa sajta RFZO (13). Prikupljeni su zbirni podaci za 154 od 175 dostupnih domova zdravlja primarne zdravstvene zaštite, u periodu od 1. januara 2019. do 31. decembra 2020. U studiju nisu uključeni indikatori koji pokrivaju period duži od 12 meseci. Analizirani indikatori su izračunati kao

jednostavan odnos uz pomoć brojioca i imenioca. Imenilac je predstavljao broj registrovanih osiguranika sa određenom karakteristikom, kao što je starosna grupa, dijagnostikovana bolest ili trudnoća. Sa druge strane, brojilac je ukazivao na broj pacijenata koji su dobili uslugu među registrovanim osiguranicima sa određenom karakteristikom. Vrednosti indikatora mogu se kretati od 0 do 100%. Na primer, vrednost indikatora od 50% bi značila da je polovina osiguranika sa određenom karakteristikom dobila specifičnu preventivnu uslugu. Važno je napomenuti da se sve usluge koje se pominju u studiji odnose samo na klasični kontakt licem u lice. Kompletna lista analiziranih indikatora nalazi se u Tabeli 1. Promena indikatora je merena kao apsolutna razlika u godišnjim vrednostima indikatora između 2019. i 2020. godine.

Rezultati

Kada su u pitanju usluge opšte prakse, između 2019. i 2020. godine, došlo je do smanjenja vrednosti indikatora u rasponu od 0,5% do 2,4% (Slika 1). Samo su vrednosti četiri indikatora porasle u ovom periodu, od kojih su se tri odnosila na savetovanje o zdravim navikama: saveti za ishranu kod dijabetičara porasli su za 3,0%, saveti koji su se ticali načina života kod pacijenata sa hipertenzijom porasli su za 3,4%, saveti koji su se ticali načina života kod pacijenata sa infarktom miokarda porasli su za 3,8%. Ovi indikatori su bili među najvišim, sa vrednostima iznad 50% za obe godine. Pored toga, uočen je blagi porast od 0,3% za procenat pacijenata sa prethodnom istorijom infarkta miokarda sa EKG snimkom u prethodnih 12 meseci.

Smanjenje vrednosti indikatora u okviru usluga za decu i omladinu bilo je do 9,9% u zavisnosti od indikatora (Slika 2). Smanjenje je posebno bilo izraženo za indikatore koji se odnose na zdravstvenu zaštitu adolescenata. Povećane su vrednosti samo dva pokazatelja: procenat dece uzrasta dve godine koja su imala najmanje tri preventivna pregleda u toku prve godine (za 1,2%) i procenat gojazne dece i mladih koji su dobili savete o ishrani u prethodnih 12 meseci (do 10,2%).

Vrednosti pokazatelja kada su u pitanju zdravstvene usluge koje se pružaju ženama smanjene su za 0,9% za pregled i palpaciju dojki kod žena uzrasta 15 i više godina, za 2,7% za savete o planiranju porodice kod žena 15-49 godina i 6,5% za preventivne preglede kod žena uzrasta 15 i više godina (Slika 3). U isto vreme, pokazatelji izračunati među

or a specialist in general medicine, pediatrics, gynecology, or dentistry (9). PHCs are organized at the municipal or city level, with a network of local ambulatories in local urban and rural communities (10). This approach aims to make primary healthcare easily accessible to users.

Since 2012, primary healthcare institutions have been reimbursed for service provision under a contract with NHIF based on the capitation formula (10). As a result, PHCs must report on the quantity of provided services, with the quality being assessed using predetermined indicators (11). NHIF calculates these indicators and publishes them on its website based on reports received from healthcare institutions. These indicators monitor the implementation of various primary and secondary prevention programs targeting specific population groups. The indicator reflects the percentage of people in that population group who receive predefined preventive measures included in the capitation formula. These programs are designed to prevent or detect health issues early. Therefore, this indicator should ideally be as close as 100%.

Primary care has been at the forefront of the pandemic, playing a crucial role in identifying, managing, monitoring, and treating COVID-19 cases. Additionally, it has been instrumental in the rapid execution of mass vaccination campaigns, highlighting its unique and essential role in the healthcare system (12).

However, the presence of COVID-19 does not mean that all other health needs disappear. Even in extraordinary circumstances, primary healthcare physicians and the medical team have continued to provide continuous care, meeting patients' health needs as their first point of contact with the healthcare system. This paper aims to present the changes in the quality indicators included in the capitation formula before and during the pandemic.

Methods

The purpose of this study was to conduct a descriptive analysis of retrospective anonymized data from the NHIF website (13). Aggregated data were collected for 154 out of 157 available PHCs, covering the period from January 1, 2019, to December 31, 2020. The study did not include indicators that cover a period longer than 12 months. Analyzed indicators were calculated as a simple ratio using a numerator and denominator. The denominator represented the number of registered

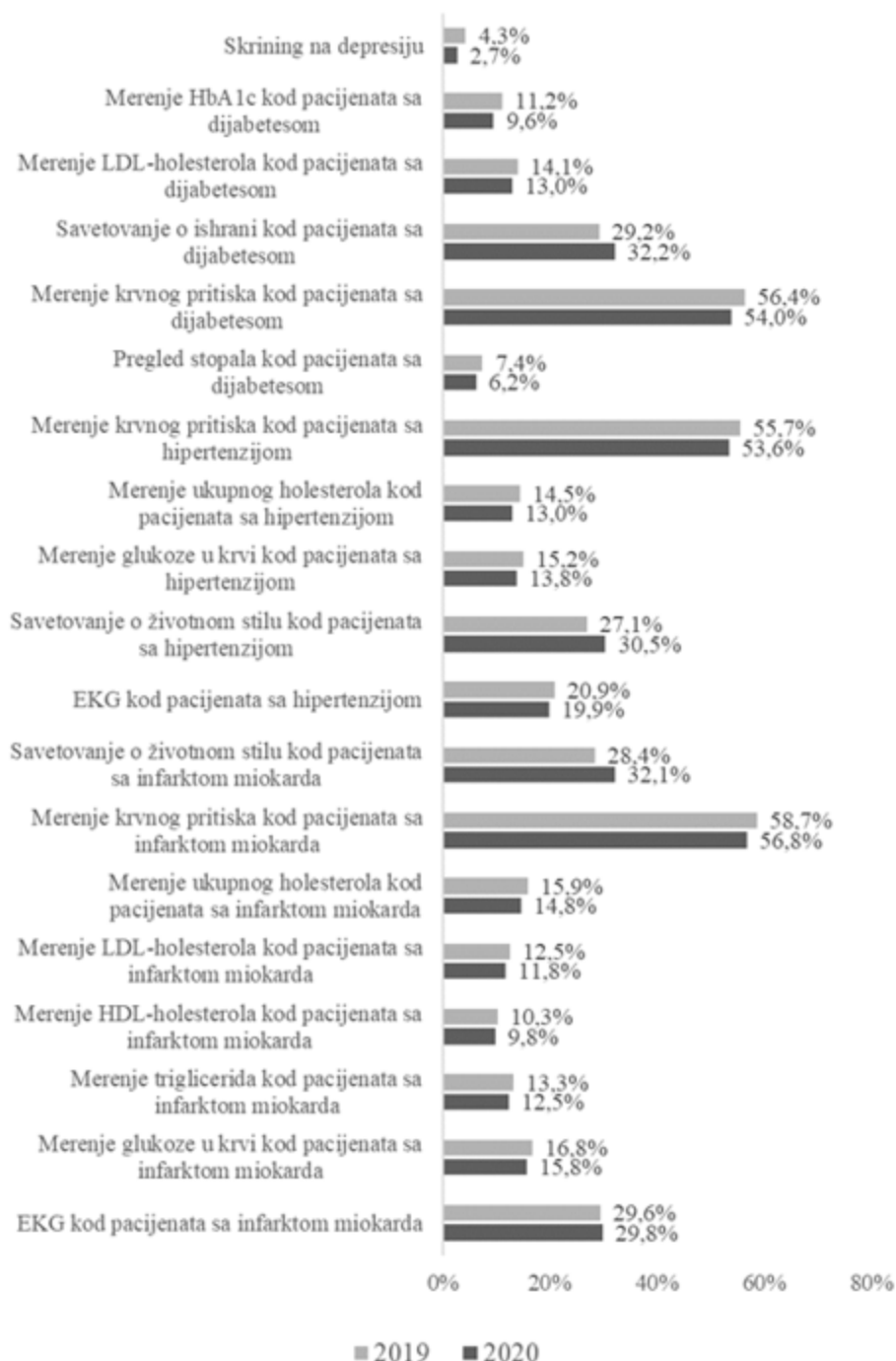
insured persons with a specific characteristic, such as age group, diagnosed disease, or pregnancy. On the other hand, the numerator indicated the number of patients that received a service among the registered, insured persons with a specific characteristic. The indicator values can range from 0 to 100%. For example, an indicator value of 50% would mean that half of the insured with a particular characteristic received a specific preventive service. It's important to note that all services referred to in the study pertain to classic face-to-face contact only. The complete list of analyzed indicators can be found in Table 1 in the Supplement. The change in the indicators was measured as the absolute difference in the annual values of the indicators between 2020 and 2019.

Results

In general practice services, between 2019 and 2020, there was a decrease in the indicators in the range from 0.5% to 2.4% (Figure 1). Only four indicators increased over this period, three related to counseling on healthy habits: Diet advice among diabetic patients increased by 3.0%, Lifestyle advice among hypertensive patients increased by 3.4%, and Lifestyle advice among patients with myocardial infarction increased by 3.8%. These indicators were among the highest, with values above 50% in both years. Additionally, a slight increase of 0.3% was observed for the percentage of Patients with a history of myocardial infarction with ECG recording in the previous 12 months.

A decrease in the value of indicators within the services for the children and youth diminished by up to 9.9% depending on the indicator (Figure 2). The reduction was especially prominent for indicators related to adolescent care. Only two indicators increased: The percentage of children at the age of two who had at least three preventive check-ups during the 1st year (by 1.2%) and the percentage of children and youth with obesity who received nutritional advice in the previous 12 months (by 10.2%).

The values of indicators in women's health services decreased by 0.9% for Breast inspection and palpation among women aged 15 and over, 2.7% for Family planning advice among women aged 15-49, and 6.5% for Preventive check-ups aged 15 and above (Figure 3). At the same time, indicators calculated among pregnant women increased by 5.2% for Early detection of gestational diabetes,



Slika 1. Indikatori primarne zdravstvene zaštite: usluge primarne zdravstvene zaštite za odrasle
 Legenda: HbA1c – glikolizirani hemoglobin; LDL – lipoprotein niske gustine; EKG – elektrokardiogram;
 HDL – lipoprotein visoke gustine; MI – infarkt miokarda

trudnicama porasli su za 5,2% za rano otkrivanje gestacijskog dijabetesa, 5,5% za rano otkrivanje EPH-gestoze (EPH: edemi – proteinurija - hipertenzija) i 8,9% za savete o načinu života.

Diskusija

Indikatori koji se koriste za izračunavanje plaćanja na osnovu kapitacije su u početku bili niski u Srbiji, ali su najviše opali tokom pandemi-

je. Kada su u pitanju usluge primarne zdravstvene zaštite, 15 od 19 posmatranih indikatora pokazalo je smanjenje. Kada su u pitanju usluge zdravstvene zaštite dece i omladine, vrednosti šest od osam indikatora su se smanjile, dok su vrednosti tri od šest indikatora opale za usluge zdravstvene zaštite žena. Ovo je u skladu sa nalazima u Kataloniji, gde je došlo do značajnog pada vrednosti indikatora posebno kada je u pitanju skrining, i nalazima studi-

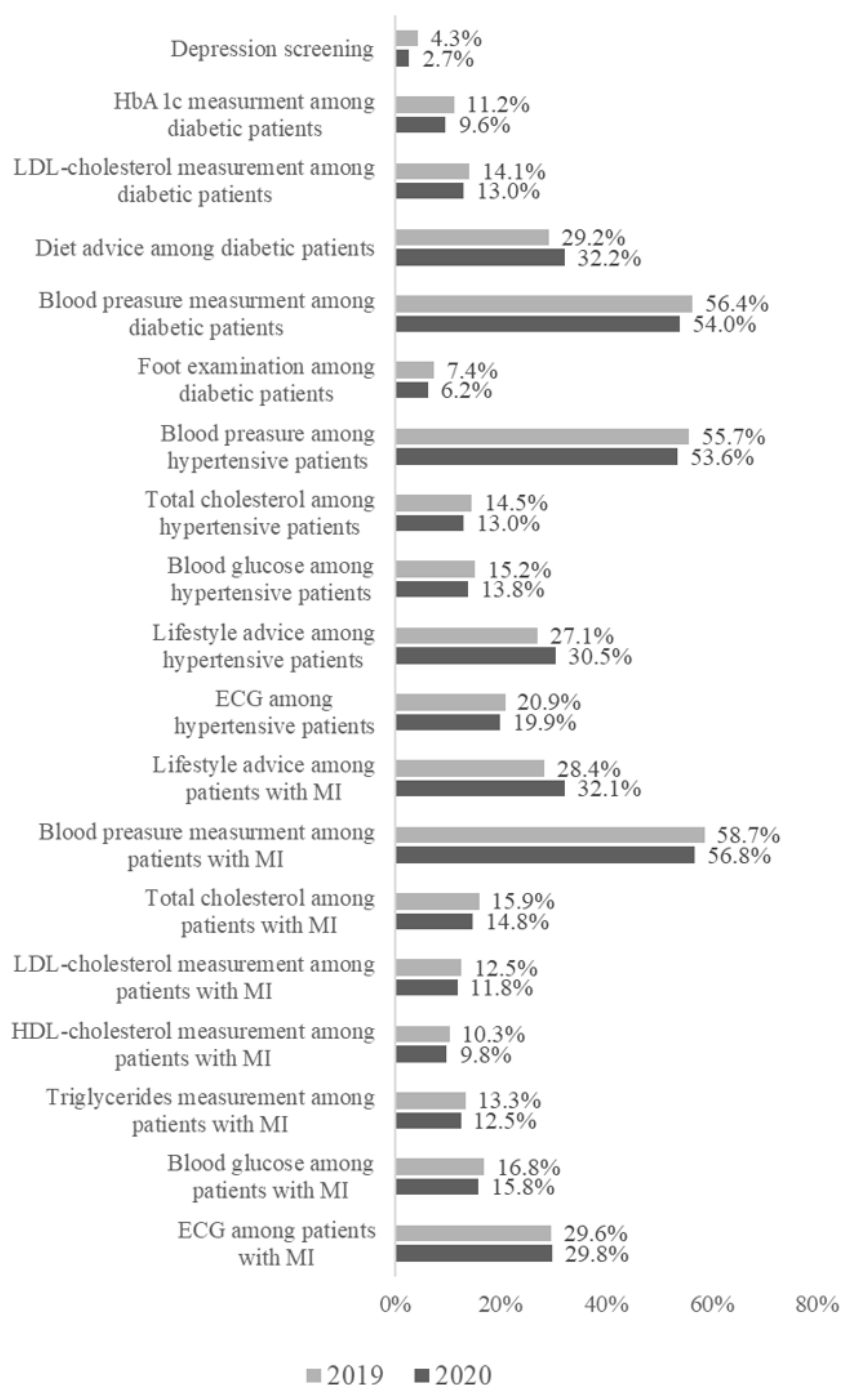


Figure 1. Indicators of primary healthcare: Primary healthcare services for adults

Legend: HbA1c - glycated haemoglobin; LDL - low-density lipoprotein; ECG - electrocardiogram; HDL - high-density lipoprotein; MI - myocardial infarction

5.5% for Early detection of Edema-proteinuria-hypertension (EPH) gestosis, and 8.9% for Lifestyle advice.

Discussion

The indicators used for calculating capitation-based payments in Serbia were initially low, but most declined during the pandemic. In primary healthcare services for adults, 15 out of 19

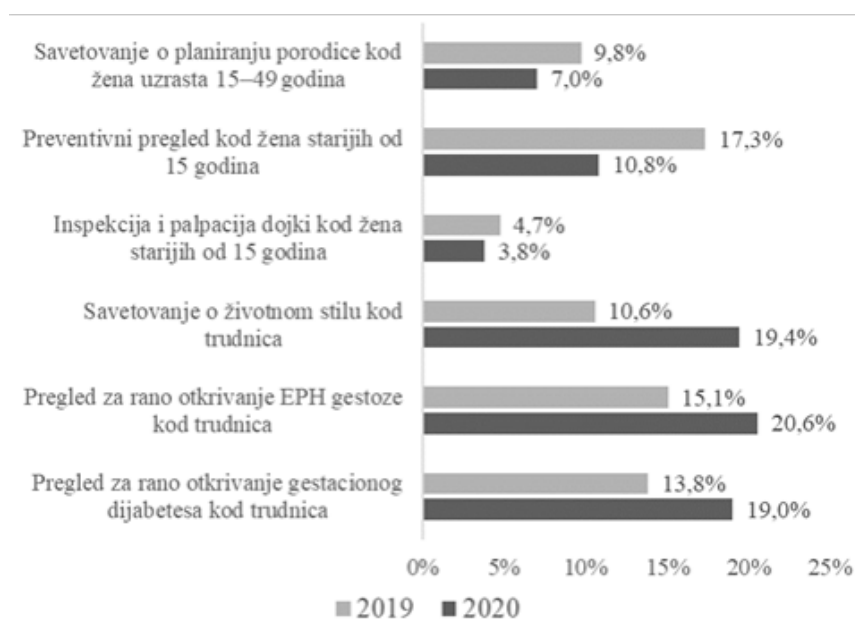
observed indicators showed a reduction. Six of eight indicators in children and youth healthcare services decreased; three of six indicators declined in women's healthcare services. This aligns with findings in Catalonia, where there was a significant drop in indicators, particularly in screening, and a study documenting decreases in consultation counts and chronic disease monitoring (14). Rachamin et al. documented substantial declines in consultation



Slika 2. Indikatori primarne zdravstvene zaštite: zdravstvene usluge za decu i omladinu

je koja dokumentuje smanjenje broja konsultacija i praćenja hroničnih bolesti (14). *Rachamin* i saradnici su dokumentovali značajno smanjenje broja konsultacija i opšteg praćenja hroničnih bolesti dijabetesa, hipertenzije i kardiovaskularnih bolesti (15). Pad vrednosti indikatora može biti posledica izbegavanja ustanova zdravstvene zaštite od strane pacijenata, smanjenog broja medicinskog osoblja i ograničene kliničke aktivnosti, naročito kada su u pitanju skrining i urgentni slučajevi. Kako se smanjuje broj osoba koje posećuju izabranog lekara, smanjuje se i broj ljudi koji mogu biti podvrgnuti preventivnim pregledima i skriningu.

Podaci Nacionalnog instituta za javno zdravlje takođe ukazuju na smanjeno korišćenje usluga zdravstvene zaštite i manje poseta „izabranom lekaru“. Ovi podaci ukazuju da su nivoi korišćenja zdravstvenih usluga izraženi kroz prosečan broj poseta po lekaru u periodu pre epidemije bili manje više stabilni u sve tri službe (16,17). Nasuprot tome, posete zdravstvenim službama za odrasle su smanjene za 10%, dok su posete zdravstvenim službama za decu i omladinu i zdravstvenim ustanovama za žene smanjene za 35% i 24% 2020. godine u poređenju sa 2019. godinom (18,19).



Slika 2. Indikatori primarne zdravstvene zaštite: zdravstvene usluge za decu i omladinu

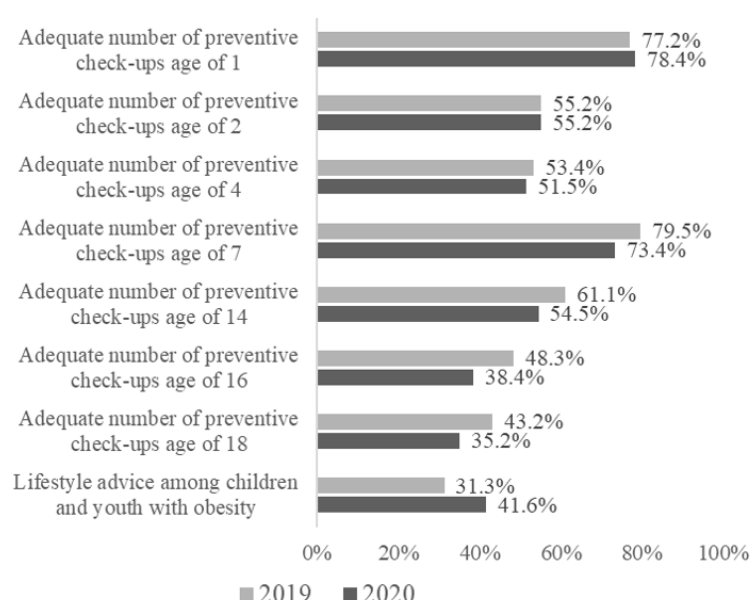


Figure 2. Indicators of primary healthcare: Children and youth healthcare services

counts and general chronic disease monitoring of diabetes, hypertension, and cardiovascular disease (15). The decline in indicators may be due to patients avoiding healthcare facilities, reduced medical personnel, and limited clinical activity, especially for screening and urgent cases. As the number of clients visiting selected doctors decreases, the number of people who can undergo preventive examinations and screenings also decreases.

Data from the National Institute for Public Health also indicate reduced use of healthcare services and fewer visits to “chosen doctors”. These data suggest that the levels of use of health services

expressed through the average number of visits per doctor in the earlier pre-epidemic period were more or less stable in all three services (16, 17). On the contrary, visits to adult healthcare services decreased by 10%, while visits to children and youth healthcare services and women's healthcare services decreased by 35% and 24% in 2020 compared to 2019, respectively (18, 19).

Children's primary care is particularly vulnerable to changes in the healthcare system. Children received less primary care due to increasing requirements to treat a growing burden of adult chronic disease. Nine out of ten children in Serbia

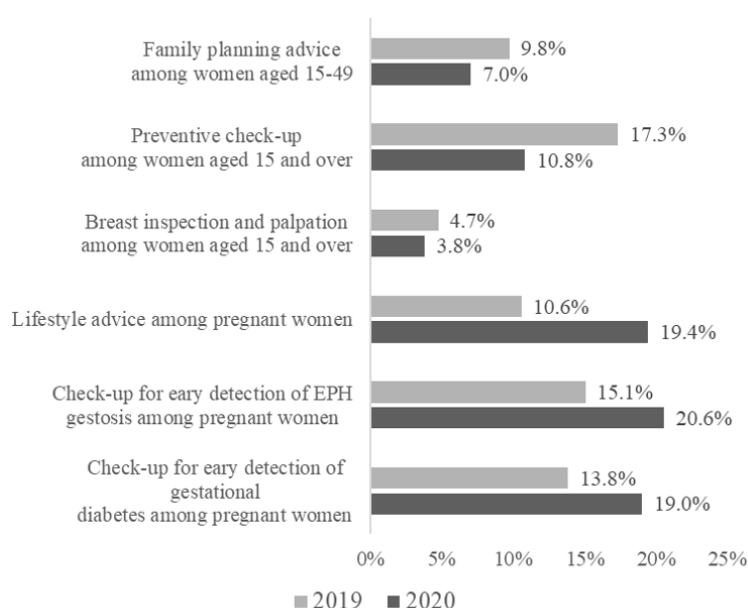


Figure 3. Indicators of primary healthcare: Women's healthcare services

Primarna zdravstvena zaštita dece je posebno osetljiva na promene u sistemu zdravstvene zaštite. Deca su dobijala manje nege u primarnoj zdravstvenoj zaštiti zbog sve većih potreba i sve većeg opterećenja kada je u pitanju lečenje hroničnih bolesti odraslih. Devet od desetoro dece u Srbiji ima „izabranog lekara“, a roditelji generalno imaju poverenje u lekare svoje dece, koje je najveće u ranom uzrastu. Ne iznenađuje što se stopa usklađenosti za indikatore u prvim godinama života nije promenila. Međutim, stope usklađenosti za indikatore se smanjuju kako deca rastu.

Međutim, nisu se vrednosti svih pokazatelja smanjile. Zabeležen je porast pokazatelja koji su se odnosili na nove skrininge kod trudnica. Uprkos povećanju, vrednosti ovih pokazatelja bile su neprihvatljivo niske. Nasuprot zdravstvenoj zaštiti dece, manje od polovine žena ima izabranog ginekologa u državnim zdravstvenim ustanovama u Srbiji (20). Većina njih preferira privatne zdravstvene službe. Žene su češće izbegavale pristup zdravstvenim uslugama tokom pandemije (21). Uopšteno govoreći, ima mnogo prostora za poboljšanje rada zdravstvenih službi za žene u primarnoj zdravstvenoj zaštiti, čak i u urgentnim stanjima. Brojni dokumenti, uključujući Nacionalni program zdravstvene zaštite žena, dece i adolescenata podstiču promociju i pristup zdravstvenoj zaštiti kod najčešćih zdravstvenih problema i povezanih terapija za bolesti, a rutinski pristup preventivnim uslugama je suštinski deo tog programa (22).

Iako je primarna zdravstvena zaštita odigrala ključnu ulogu u odgovoru na pandemiju, postoji prostor za poboljšanje, posebno kada je u pitanju zdravstvena zaštita žena. Uprkos izazovima sa kojima smo se suočili 2020. godine, pokazalo se da je primarna zdravstvena zaštita neophodna, a njeno jačanje bi trebalo da bude prioritet za buduće vanredne situacije koje se tiču javnog zdravlja.

Sistem plaćanja po učinku u RFZO ima i prednosti i nedostatke (23,24). U ovoj studiji, pružaoci zdravstvene zaštite prijavljuju potrebne vrednosti parametara za izračunavanje vrednosti indikatora. Više vrednosti indikatora se povezuju sa većim prihodima, što bi moglo da ugrozi preciznost izveštavanja. Lečenje starijih ljudi i ljudi sa više bolesti je posebno složeno i izazovno za izračunavanje. Autori priznaju ograničenja prikupljenih podataka, koji zavise od više faktora, i izazov koji se tiče prilagođavanja kovarijanse (25).

Zaključak

Naši rezultati su pokazali da je pandemija COVID-19 uticala na rutinske zdravstvene usluge. Vrednosti indikatora primarne zdravstvene zaštite su se promenile 2020. godine. Od 33 indikatora, kod 24 je zabeležen pad 2020. godine u poređenju sa 2019. godinom. Vrednost tog smanjenja bila je do 9,9%. Kod ostalih indikatora je zabeležen rast u rasponu od 0,3% (EKG kod pacijenata sa prethodnim infarktom miokarda) do 10,2% (saveti o načinu života kod dece i mladih sa gojaznošću). Buduća istraživanja bi trebalo da se bave nedostacima u arhivskim podacima uz pomoć analize razlika u uočenim promenama u smislu nejednakosti između urbanih i ruralnih zajednica, dostupnosti privatne zdravstvene zaštite i nezadovoljenih potreba za zdravstvenim uslugama.

Konflikt interesa

Autori su izjavili da nema konflikta interesa.

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have a “chosen doctor”, and parents generally trust their children’s doctors, particularly in the early years (20). Parents generally have exceptional trust in their children’s doctors, which is strongest in the infant period. Unsurprisingly, the compliance rate for the indicators in the first years of life did not change. However, compliance rates for indicators decrease as children get older.

However, not all indicators have decreased. Indicators related to the newly established screenings among pregnant women recorded growth. Despite the increase, the values of these indicators are unacceptably low. Contrary to the health care of children, less than half of women have a chosen gynecologist in publicly owned health institutions in Serbia (20). Most of them prefer private healthcare services. Women were more likely to avoid accessing health services during the pandemic (21). In general, there is much room for improvement in the work of women’s health services in PHC, even during an emergency. Numerous documents, including the National Program for the Health Care of Women, Children, and Adolescents, encourage health promotion and access to care for the most common health disorders and related disease therapies, and routine access to preventative services is an essential part of that program (22).

While primary care has played a significant role in the pandemic response, there is room for improvement, especially in women’s health services. Despite the challenges in 2020, primary care has proven to be essential, and strengthening it should be a priority for future public health emergencies.

The pay-for-performance system of the NHIF has both advantages and disadvantages (23, 24). In this study, healthcare providers report the necessary parameter values to calculate the indicator values. Higher indicator values are linked to higher incomes, which could compromise reporting accuracy. Treating the elderly and people with multiple diseases is particularly complex and challenging to measure. The authors acknowledge the limitations of aggregated data, which depend on various factors, and the challenge of adjusting for covariates (25).

Conclusion

Our results showed that the COVID-19 pandemic influenced routine health services. In 2020, the values of primary healthcare indicators changed. Of 33 indicators, 24 recorded a decrease in 2020 compared to 2019. The drop value was up to 9.9%. Other indicators recorded growth in the range of 0.3% (ECG among patients with previous Acute myocardial infarction) to 10.2% (Lifestyle advice among children and youth with obesity). Future research should address the gaps in archival data by analyzing differences in perceived change in light of inequalities between urban and rural communities, availability of private health care, and unmet needs for health services.

Competing interests

The authors declared no competing interests.

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