12. konferencija »Splitska inicijativa«

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Značaj digitalizacije
u porodičnoj/obiteljskoj/opštoj medicini

The importance of digitalization in family medicine

Knjiga sažetaka
Book of summaries

Skoplje, 21. – 22. 3. 2025

Urednici: Biljana Đukić, Aleksander Stepanović

12. KONFERENCIJA »SPLITSKA INICIJATIVA«
Značaj digitalizacije u porodičnoj/obiteljskoj/opštoj medicini
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Urednici: Biljana Đukić, Aleksander Stepanović

Izdavač: Univerza v Ljubljani, Medicinska fakulteta, Katedra za družinsko medicino

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Konferencija »Splitska incijativa«

Značaj digitalizacije u porodičnoj/obiteljskoj medicini

Skoplje, 21-22.03.2025

PROGRAM RADA

Četvrtak 20. 03. 2025 Dolazak i smještaj učesnika			
20.00	Welcome reception		
Petak 21.3. 2025			
9.00 -9.30	Registracija učesnika		
9.30-9.45	Pretstavljanje ucesnika		
9.45- 10.05	Otvaranje konferencije	Welcome adress by Deans/Vice Deans	
10.05-10.20	Faculty of Medical Science, University »Goce Delcev« Stip	Valentina Nejasmić	
10.20-10.35	Faculty of Medical Science, University of Tetovo	Bekim Ismaili	
10.35-10.50	Center for family medicine, Faculty of medicine UKIM	Katarina Stavrić	
10.50-11.20	Coffe break		
11.20-11.40	„Zadovoljstvo, izazovi i očekivanja specijalizanta i specijalista obiteljske medicine“.	Aleksander Stepanović	Katedru Porodične medicine, Medicinskog fakulteta u Ljubljani
11.40-12.00	Digitalization in Primary Health Care	Matilda Vojnović, Ana Miljković	[1]Department of General Medicine and Geriatrics, Faculty of Medicine, University of Novi Sad, Serbia, [2]Health Center Novi Sad, Novi Sad, Serbia,
12.00-12.20	Use of digital models at the primary level	Biljana Đukić, Žan Trontelj	Katedru Porodične medicine, Medicinskog fakulteta u Ljubljani
12.20-12.40	Enhancing Patient Care in Family Medicine through Electronic Health	Miha Lavre	Department of family medicine, Faculty of Medicine, University of Maribor Slovenija

	Records and Integrated Communication Tools in Slovenia		
12.40-13.00	Application of telemedicine in everyday practice in a family medicine office	Katerina Kovachevikj, Sashka Janevska, Marta Tundzeva, Ružica Angeleska, Azra Gicić, Katarina Stavrikj	Family Medicine Center, Medical Faculty, UKIM Skopje, Republic of North Macedonia
13.00-13.20	Clinical research in family medicine	Sukriev Ljubin	Macedonia
13.20-13.45	Discussion		
13.45-14.45	Lunch		
15.00-17.00	Skopje visit		
19.00-	Dinner		
Subota 22.3. 2025			
9.00-9.20	Medical education with simulation for emergency cases for medical students – need or challenge?	Elizabeta Kostovska Prilepchanska; Katarina Stavrić; Saška Janevska; Natalija Šaurek Aleksandrovska	Center for Family Medicine, Medical Faculty, UKIM Skopje
9.20-9.40	Dinamic assesment of treinees in learning problem based proces	Marta Tundgeva, Katarina Stavrić	Center for Family Medicine, Medical Faculty, UKIM Skopje
9.40-10.00	Analysis of team members' satisfaction with work in family medicine	[1,2]Kosana Stanetić, [1,2]Verica Petrović, [1,2]Nevena Todorović, [1,2]Nataša Pilipović Broćeta, [1,2] Biljana Lakić	[1]JZU Dom zdravlja Banja Luka, Bosna i Herzegovina [2]Medicinski fakultet Banja Luka, Univerzitet u Banjoj Luci, Bosna i Hercegovina
10.00-10.20	Management of mastitis in the hospital setting: an international audit study	Lisa H Amir[1,2], Kelly P Coca[3,4], Marcia Juliana Mello Da Silva[3,5], Marcia Massumi Okada[6], Güliz Onat Demir [7], Busra Duran[8], Süleyman Kargin[9], Kübra Güllü[10], Lara Delic[11], Magdalena Dragicevic[11], Maria Rosenbauer[11,12], Mee-	11. Department of Family Medicine, School of Medicine, University of Split, Split, Croatia

		Har Michelle Ngan[2], Wirawan Jeong[13], Moni Rani Saha[14], Irena Zakarija-Grkovic[11]	
10.20-10.50	Disccusion		
10.50-11.15	Coffe break		
11.15-11.35	The association of chronic disease and anxiety with the attitude about vaccinat ion against the SARS- COV-2 virus	Vedrana Tudor Špalj [1,2], Gordana Mičetić Balog [1,2], Zoran Adžić [1,2], Nives Radošević Quadranti [1,2], Branislava Popović [1,3], Ines Diminić Lisica [1,4]	[1]University of Rijeka, Facultyof Medicine, Department ofFamily Medicine, Rijeka, Croatia [2]Comunity Health Centerof Primorsko-Goranska County, Rijeka, Croatia [3]Specialistic ambulanceoffamilyphysicians Branislava Popović, Rijeka, Croatia [4]Health institution dr. Ines Diminić – Lisica, Rijeka Croatia
11.35-11.55	Effect of ursodeoxycholic acid on metabolic and oxidative stress parameters in patients with type 2 diabetes mellitus in family medicine: results of a randomized clinical trial	Biljana Lakić[1,2], Ranko Škrbić [3, 4], Snežana Uletilović [5], Nebojša Mandić- Kovačević[6], Milkica Grabež [7], Mirna Popović Šarić [2], Miloš P. Stojiljković [3, 4], Ivan Soldatović [8], Zorica Janjetović [9], Anastasija Stokanović [2], Nataša Stojaković [3],Momir Mikov	[1] Department of Family Medicine, Faculty of Medicine, University of Banja Luka, Banja Luka, The Republic of Srpska, Bosnia and Herzegovina [2] Primary Health Care Centre, Banja Luka, The Republic of Srpska, Bosnia and Herzegovina
11.55-12.15	The essential role of magnesium in health and nutrition personalized therapy and supplementation	Ana Miljković [1’2], Matilda Vojnović [1]	[1]Department of General Medicine and Geriatrics, Faculty of Medicine, University of Novi Sad, Serbia, [2]Health Center Novi Sad, Novi Sad, Serbia,
12.15-12.30	Discussion		
12.30-13.00	Closing meeting and future plans		
13.00-14.00	Lunch		

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Zadovoljstvo, izazovi i očekivanja specijalizanata i specijalista obiteljske/porodične medicine

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Sažetak

Zdravlje i dobrobit liječnika ključni su za kvalitetu zdravstvenog sustava, jer utječu na njihovo zadovoljstvo na poslu i kvalitetu skrbi za pacijente. Visoka radna opterećenost, stres i nezadovoljstvo faktori su koji mogu dovesti do sagorijevanja, pogrešaka na poslu ili napuštanja profesije. Zadovoljstvo na poslu ovisi o različitim faktorima, poput motivacije, radnih uvjeta i plaće. Liječnici obiteljske/porodične medicine imaju specifičnu ulogu u zdravstvenom sustavu, no suočavaju se s izazovima poput nedostatka kadrova i etičkih dilema. Istraživanja o zadovoljstvu liječnika pokazala su da su određeni faktori, poput radnih uvjeta i podrške u obrazovanju, ključni za očuvanje kvalitetnog rada. Važno je da zdravstvena politika uzme u obzir ove faktore kako bi poboljšala uvjete za liječnike i dostupnost zdravstvene skrbi.

Cilj istraživanja je proučiti zadovoljstvo i izazove s kojima se susreću specijalizanti i specijalisti obiteljske/porodične medicine u prvim godinama nakon završetka specijalizacije. Rezultati istraživanja poslužit će kao osnova za poboljšanje obrazovnih programa i obuke u ovoj specijalizaciji, kako u Sloveniji, tako i šire. Glavni ciljevi su istražiti razinu sagorijevanja, otpornost na stres, zadovoljstvo radnim uvjetima i obrazovnim programima, utjecaj posla na osobni život te stav prema umjetnoj inteligenciji u obiteljskoj/porodičnoj medicini. Istraživanje pretpostavlja da je razina sagorijevanja visoka, da je zadovoljstvo radom umjereno i da su liječnici otvoreni za primjenu umjetne inteligencije u svom radu.

U istraživanje će biti uključeni specijalizanti obiteljske/porodične medicine u trećoj i četvrtoj godini specijalizacije te mladi specijalisti koji su završili specijalizaciju u posljednje tri godine, iz Slovenije, Hrvatske, Bosne i Hercegovine, Srbije, Sjeverne Makedonije i Crne Gore. Cilj je

prikupiti 200 sudionika, što omogućuje pouzdane rezultate. Predviđena starost sudionika je oko 30 godina. Sudjelovanje će se provoditi putem internetske ankete, a sudionici će se prijaviti za istraživanje ispunjavanjem ankete. Isključeni će biti oni koji ne žele sudjelovati.

Podaci za istraživanje prikupljat će se pomoću sociodemografskih pitanja i validiranih upitnika koji su usmjereni na ciljeve i hipoteze istraživanja. Sociodemografska pitanja obuhvatit će informacije kao što su dob, spol, bračni status, obrazovanje, radno iskustvo i radni uvjeti. Za mjerenje različitih aspekata povezanim sa sagorijevanjem, zadovoljstvom na poslu i profesionalnim izazovima koristit će se različiti standardizirani upitnici, poput MBI (mjerenje sagorijevanja), RS-14 (otpornost na stres), WAMI (smisao posla), JSS (zadovoljstvo na poslu), FTP (očekivanja u pogledu budućnosti), TAM (prihvaćanje tehnologija) i prilagođeni CEQ (ocjena obrazovnih programa). Podaci će biti prikupljeni putem internetske ankete, a analizirani odgovarajućim statističkim metodama. Rezultati će biti anonimizirani, pohranjeni u skladu s zaštitom privatnosti i korišteni za pripremu izvještaja, znanstvenih publikacija i prezentacija na konferencijama.

Statistička analiza podataka provodit će se korištenjem SPSS-a za osnovne analize i R-a za naprednije analize i vizualizacije. Za deskriptivnu analizu izračunat će se prosjeci, medijan, standardna devijacija i frekvencijske distribucije. Sociodemografske varijable analizirat će se univarijantnim analizama, pri čemu će se koristiti frekvencijske i deskriptivne tablice. Za provjeru normalnosti podataka koristiti će se testovi poput Shapiro-Wilk testa i vizualnih pregleda. Ako podaci nisu normalno distribuirani, primijenit će se neparametrijske metode. Cronbachova alfa procijenit će unutarnju dosljednost skala, a prihvatljiva vrijednost bit će najmanje 0,7. Za provjeru hipoteza koristit će se Pearsonov ili Spearmanov korelacijski koeficijent za analizu povezanosti između varijabli, t-test ili Mann-Whitneyjev test za usporedbu između grupa, te ANOVA ili Kruskal-Wallisov test za više kategorija. Statistička značajnost bit će određena na razini $p < 0,05$, a rezultati će biti prikazani s odgovarajućim pokazateljima, poput p-vrijednosti, intervala pouzdanosti i veličine učinka.

Istraživanje će trajati šest mjeseci, sudjelovanje će biti dobrovoljno i neće predstavljati rizik za zdravlje sudionika. Očekujemo da je razina sagorijevanja visoka, da je zadovoljstvo radom umjereno i da su liječnici otvoreni za primjenu umjetne inteligencije u svom radu.

Ključne riječi: ***zadovoljstvo, izgorjelost, radni uvjeti, obiteljska/porodična medicina, umjetna inteligencija***

Satisfaction, challenges and expectations of family medicine residents and specialists

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Abstract

The health and well-being of physicians are critical to the quality of the healthcare system as they affect job satisfaction and the quality of patient care. High workload, stress and dissatisfaction are factors that can lead to burnout, errors at work or leaving the profession. Job satisfaction depends on various factors such as motivation, working conditions and salary. GPs have a special role in the healthcare system, but they face challenges such as staff shortages and ethical dilemmas. Research on physician satisfaction has shown that certain factors such as working conditions and supportive training are key to maintaining high quality work. It is important for health policy to take these factors into account when improving conditions for doctors and the accessibility of healthcare.

The aim of the study is to investigate the satisfaction and challenges faced by general practitioners in the first years after completing their specialisation. The results of the study will serve as a basis for the improvement of training programmes and education in this specialty, both in Slovenia and beyond. The main objectives are to investigate the level of burnout, stress resistance, satisfaction with working conditions and training programmes, the impact of work on private life and attitudes towards artificial intelligence in family medicine. The study assumes that burnout levels are high, job satisfaction is moderate and doctors are open to the use of artificial intelligence in their work.

General practitioners in their third and fourth year of specialisation and young specialists who have completed their specialisation in the last three years from Slovenia, Croatia, Bosnia and Herzegovina, Serbia, North Macedonia and Montenegro will take part in the study. The aim is to recruit 200 participants, which will enable reliable results. The expected age of the participants is around 30 years. Participation will be via an online survey and participants will

consent to the study by completing the survey. Those who do not wish to participate will be excluded.

Data for the study will be collected using socio-demographic questions and validated questionnaires that are aligned with the objectives and hypotheses of the study. The socio-demographic questions include information such as age, gender, marital status, education, work experience and working conditions. Various standardised questionnaires will be used to measure different aspects related to burnout, job satisfaction and career challenges, such as MBI (measurement of burnout), RS-14 (stress resilience), WAMI (meaning of work), JSS (job satisfaction), FTP (future expectations), TAM (technology acceptance) and the adapted CEQ (evaluation of educational programmes). The data is collected via an online survey and analysed using suitable statistical methods. The results are anonymised, stored in compliance with data protection regulations and used for the preparation of reports, scientific publications and presentations at conferences.

The statistical analysis of the data is carried out with SPSS for basic analyses and with R for further analyses and visualisations. The descriptive analysis includes calculations of means, medians, standard deviations and frequency distributions. The socio-demographic variables are analysed with univariate analyses using frequency and descriptive tables. The normality of the data is checked using tests such as the Shapiro-Wilk test and visual inspections. If the data is not normally distributed, non-parametric methods are used. Cronbach's alpha is used to assess the internal consistency of the scales, whereby an acceptable value of at least 0.7 is achieved. To test the hypotheses, Pearson or Spearman correlation coefficients are used to analyse the relationships between the variables, t-tests or Mann-Whitney tests for group comparisons and ANOVA or Kruskal-Wallis tests for multiple categories. Statistical significance is set at $p < 0.05$ and results are presented with appropriate indicators such as p-values, confidence intervals and effect sizes.

The study is expected to last six months, participation is voluntary and poses no risk to participants' health. It is expected that burnout levels will be high, job satisfaction will be moderate and doctors will be open to the use of artificial intelligence in their work.

Key words*: satisfaction, Burnout, Working conditions, Family medicine, Artificial intelligence*

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Povezanost kronične bolesti i anksioznosti sa stavom o cijepljenju protiv SARS-COV-2 virusa

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Sažetak

Cilj istraživanja: Analizirati stavove o cijepljenu protiv bolesti COVID-19 i poveznicu s kroničnom bolesti i anksioznosti u pacijenta obiteljske medicine.

Ispitanici i metode: Uključeno je bilo 184 susljednih ispitanika (stratificiranih po spolu i prisutnosti kronične bolesti), pacijenata pet ordinacija obiteljske medicine iz Rijeke, dobi 18-87 godina (medijan 48 godina; 50% žena). Podaci su prikupljeni upitnikom.

Rezultati: Odluka o cijepljenju protiv COVID-19 bila je više povezana s povjerenjem u javnopolitičke izvore nego u zdravstvene profesionalce (r=0,370 i 0,342; p<0,001), a nije bila povezana s vjerom u alternativne izvore informacija (društvene mreže, prijatelji nezdravstvene struke). Povjerenje u izvore informacija nije ovisilo o anksioznosti. Kroničari su više vjerovali zdravstvenim profesionalcima (pogotovo liječnicima obiteljske medicine) kao izvorima informacija o cijepljenju nego nekroničari (p=0,021; r=0,171). Ograničavanje kretanja između županija bila je najiritantnija, a održavanje fizičke udaljenosti najmanje iritantna epidemiološka mjera. Kroničari su bili manje iritirani epidemiološkim mjerama (p<0,001; r=-0,311).

Anksioznost nije bila povezana s iritiranosti mjerama. Prediktori odluke o cijepljenju pacijenata obiteljske medicine su bili prethodna nezaraženost SARS-CoV-2, poznavanje nekog tko je umro od COVID-19 te prethodno cijepljenje protiv gripe uz kontrolu spola, dobi, stupnja obrazovanja, kroniciteta, anksioznosti te poznavanje zaraženog i hospitaliziranog zbog SARS-CoV-2. Izostanak prethodne infekcije povezan s 3,9x većim izgledom za odluku o cijepljenju (95% CI 1,6-9,5; p=0,003), prethodno cijepljenje protiv gripe s 3,8x većim izgledom (95% CI 1,4-10,4; p=0,009), a poznavanje osobe koje preminula od COVID-19 s 3,2x većim izgledom (95% CI 1,1-9,7; p=0,037).

Zaključak: Kronična bolest i anksioznost nisu odrednice stava o cijepljenu protiv bolesti COVID-19 pacijenata obiteljske medicine.

Ključne riječi: ***bolest COVID; cijepljenje; kronične bolesti; anksioznost; obiteljska medicina***

The association of chronic disease and anxiety with the attitude about vaccination against the SARS-COV-2 virus

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Abstract

The study aim:of : To analyze attitudes about being vaccinated against the disease COVID-19 and the link with chronic disease and anxiety in family medicine patients.

Subjects and methods: 184 consecutive subjects (stratified by gender and presence of chronic disease), patients of five family medicine practices from Rijeka, aged 18-87 years (median 48 years; 50% women) were included. Data were collected by questionnaire.

Results: The decision to vaccinate against COVID-19 was more related to trust in public political sources than in health professionals ($r=0.370$ and 0.342; $p<0.001$), and was not related to trust in alternative sources of information (social networks, non-health friends) profession).

Trust in information sources did not depend on anxiety. Chroniclers trusted health professionals (especially family medicine doctors) as sources of vaccination information more than non-chroniclers (p=0.021; r=0.171). Restriction of movement between counties was the most irritating, and maintaining physical distance the least irritating epidemiological measure. Chroniclers were less irritated by epidemiological measures (p<0.001; r=-0.311). Anxiety was not related to irritation measures. Predictors of the decision to vaccinate family medicine patients were previously not infected with SARS-CoV-2, knowing someone who died of COVID-19, and previous influenza vaccination while controlling for sex, age, level of education, chronicity, anxiety, and knowing someone infected and hospitalized for SARS - CoV-2. Absence of prior infection is associated with 3.9x greater odds of decision to vaccinate (95% CI 1.6-9.5; p=0.003), prior influenza vaccination with 3.8x greater odds (95% CI 1.4-10 .4; p=0.009), and knowing a person who died from COVID-19 with a 3.2x greater likelihood (95% CI 1.1-9.7; p=0.037).

Conclusion: Chronic illness and anxiety are not determinants of family medicine patients' attitudes about being vaccinated against COVID-19.

Keywords: ***disease COVID; vaccination; chronic diseases; anxiety; family medicine***

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Dinamička procjena specijalizanta u procesu učenja zasnovanog na problemu

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Sažetak

Uvod: dinamička procjena praktično na mjestu zadatog zadatka sa pacijentom daje polazniku najbolju priliku da pokaže tačniju mjeru svoje kompetencije, a takođe pruža mentorima / edukatorima transparentnu intervenciju za obrazovnu podršku koja kombinuje nastavu i praksu.

Cilj: prikazati proces dinamičke evaluacije specijaliste na licu mjesta sa pacijentom i atribute za isti.

Diskusija: Izgradnja odnosa podrške između mentora/edukatora i specijalizanta tokom procesa dinamičkog ocjenjivanja je ključni momenat za izgradnju povjerenja koji može omogućiti polazniku da pokaže svoju kompetenciju posebno ako ima predhodno iskustvo i znanje. Faze I aktivnosti za sprovođenje procjene dinamičkog kliničkog posmatranja su: (a) prije zadatka, kada oni treba da budu svjesni "pravila igre" za procjenu uključujući format ocjenjivanja i očekivane kriterijume učinka ili da nisu upoznati sa problemom ili da nemaju prethodno iskustvo u pristupu učenju zasnovanom na problem; (b) neposredno prije početka zadatka; (c) tokom obavljanja zadatka; (d) neposredno nakon završetka zadatka; (e) pregled I analizu. Glavni praktični koraci za mentora/edukatora pri obavljanju dinamičke procjene na random mjesti gdje je zadatak.Glavni fokus je prije svega pružanje mogućnosti ili okruženja svakom specijalizantu da demonstrira tačniju predstavu svog učinka kroz razgovor, dijalog i da eksplicitno svoje "razmišljanje koje se ne može posmatrati", odn.objašnjavanje tokom obavljanja datog zadatka. I drugo, mentori mogu dobiti više informacija o svakom specijalizantu, uključujući osnovne metakognitivne procese i način na koji modifikuju motivacione i kognitivne procese koji utiču na performance kao i na obrazovnu podršku potrebnu za razvoj ovih procesa. Dodatni izazov je to što mnogi mentori takođe očekuju profesionalni razvoj u sprovođenju dinamičke procjene uključujući korištenje fokusiranih

pitanja kao uputstva. Važna prepreka su ograničeno očekivano vrijeme i ograničenje radnog opterećenja, ali se tokom vremena dinamička ocjena može lako integrisati u posmatrani proces procjene kliničkih vještina ili vježbu procjene procjene mini konsultacija u roku od 5 min. Postoji složen mješoviti skup faktora koji utiču na potencijal učenja specijalizanta u učenju zasnovanom na problemu. Preporučuje se da mentori/edukatori budu svjesni i važnih psihosocijalnih faktora kao barijere na koju treba dati podršku i komplementarni pristup u kojem specijalizant upoređuje svoje performanse i kompetencije između dva ocjenjivanja i između dva druga zadatka. Ovo može biti korisno za prevazilaženje nevoljnosti i neiskustva. Ovaj pristup može povećati motivacione procese pri čemu specijalizant vremenom postaje svjestan svog progresivnog profesionalnog razvoja.

Zaključak: Dinamička procjena pruža praktičnu i teorijsku intervenciju zasnovanu na dokazima, koja može pomoći specijalizantima da rade na najbolji mogući način I tačno odražavaju njihovu kompetenciju sa korištenjem fokusiranih pitanja kao instrukcija sa strane mentora/edukatora, koje poboljšavaju metakognitivni, motivacioni I kognitivni proces u njihovim odlukama. Odgovori mogu otkriti slabosti u znanju koje zahtjevaju dodatnu obrazovnu podršku.

Ključne riječi: ***dinamičko ocjenjivanje, učenje na osnovu problema, specijalizant, mentor***

Dynamic assessment of specialization trainees in a problem-based learning process

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Introduction: dynamic assessment practically at the site of the assigned task with the patient gives the specialization trainee the best opportunity to demonstrate a more accurate measure of his competence and also provides mentors/educators with a transparent intervention for educational support that combines both teaching and practice

Objective: to show the process of dynamic evaluation of the specialist on the spot with the patient, and the attributes for the same.

Discussion: Building a supportive relationship between the mentor/educator and the specialization trainee during the dynamic assessment process is a key confidence-building moment, which can enable the specialization trainee to demonstrate their competence, especially if they have prior experiential knowledge. The stages and activities for conducting a dynamic assessment for clinical observation are: (a) before the assignment, when specialization trainees should be aware of the "rules of the game" for the assessment, including the assessment format and expected performance criteria, or be unfamiliar with or have no prior experience in approaching problem-based learning; (b) immediately before starting the the task; (c) during the execution of the task; d) Immediately after the completion of the task; (e) review or analysis. The main practical steps for the mentor/educator when conducting a dynamic assessment for clinical observation in the dynamic assessment practically at the workplace where the task is assigned are: step 1 or initial overall assessment of the specialization trainee's performance; step 2 or integrating all information about the trainee's performance and the response to the specialization trainer's focused questions as a stimulus obtained from step 1 to obtain feedback. The main focus is first of all providing an opportunity or environment to each specialization trainee to demonstrate a more accurate representation of his performance through conversation, dialogue and to make an explicit "thinking that cannot be observed" i.e. explanation while performing a given task. And second, mentors can obtain greater information about each trainee, including the essential metacognitive processes and how they modify motivational and

cognitive processes that affect performance, and also the educational support needed to develop these processes. An additional challenge is that many mentors also expect professional development in conducting dynamic assessment including the use of focused questions as instructions. An important barrier is limited expected time and workload constraints, but over time dynamic assessment can be easily integrated into an observed clinical skills assessment process or a mini-consultation evaluation exercise, within min. 5 minutes. There is a complex mixed group of factors that influence the potential of the specialization trainee's learning in solving a learning-based problem. It is recommended that mentors/educators are also aware of important psycho-social factors as a barrier that should be addressed with support and an additional approach, in which the trainee compares his/her own performance competence between two assessments between two given tasks. This can be helpful in overcoming reluctance or inexperience. This approach can increase motivational processes, with the trainee becoming aware of his progressive professional development over time.

Conclusion: Dynamic assessment provides a practical and theoretical evidence-based intervention that can help trainees present their best performance and accurately reflect their competence using focused questions as instructions that improve metacognitive, motivational, and cognitive processes in trainees' decision-making.The responses of the trainee can reveal a weakness in the knowledge that requires additional educational support

Keywords: *dynamic assessment, problem-based learning, intern, mentor*

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Analiza zadovoljstva članova timova radom u porodičnoj medicini

Analysis of team members' satisfaction with work in family medicine

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Uvod: Reforma u primarnoj zdravstvenoj zaštiti (PZZ) u Bosni i Hercegovini započela je 1999.godine. Tokom provođenja reforme, primarni nivo zdravstvene zaštite počeo je funkcionisati po principima porodične medicine. Cilj provođenja reforme je bio povećati efikasnost rada u PZZ, povećati zadovoljstvo korisnika usluga i timova porodične medicine.

Cilj: Ispitati zadovoljstvo članova timova radom u porodičnoj medicini.

Metode: Istraživanje je studija presjeka, a provedeno je u ambulantama porodične medicine Doma zdravlja Banja Luka u periodu od 01.02 do 01.04.2022. godine metodom anketiranja. Od ukupno 120 timova porodične medicine, koji su u vrijeme istraživanja radili u domu zdravlja, istraživanjem je obuhvaćeno 50 timova (50 doktora porodične medicine i 50 medicinskih sestara/tehničara), koji su popunjavali anketu formiranu za potrebe našeg istraživanja. Ispitanici

su popunjavali sociodemografski upitnik, i upitnike o zadovoljstvu radom u porodičnoj medicine. Formirani su posebni upitnici za doktore i medicinske sestre/tehničare. Obuhvaćeni su članovi timova porodične medicine iz gradskih, prigradskih i seoskih ambulanti doma zdravlja.

Rezultati: U istraživanju je učestvovalo 50 doktora porodične medicine, 92% ženskog pola; najviše doktora (20%) u starosnoj dobi od 50 do 52 godina i od 59 do 62 godina; najviše doktora 24% sa ukupnim radnim stažom od 29 do 32 godina; 70% doktora su nosioci tima od 1500 do 2000 korisnika usluga; 48% su se izjasnili da su zadovoljni svojim poslom u porodičnoj medicini.

U istraživanju je učestvovalo 50 medicinskih sestara/tehničara. Rezultati upitnika su bili sljedeći: 94% medicinskih sestara/tehničara je ženskog pola; u istraživanju je učestvovalo najviše medicinskih sestara/tehničara (34%) u starosnoj dobi od 41 do 46 godina; većina medicinskih sestara/tehničara (32%) su imali ukupni radnim staž od 17 do 21 godina; 52% su izjavili da su zadovoljni svojim poslom u porodičnoj medicini.

Rezultati istraživanja su pokazali da 86% doktora i 86% medicinskih sestara/tehničara smatra da im je potrebno više edukacije; 100% doktora i 100% medicinskih sestara/tehničara smatra da dobra organizacija rada unutar tima povećava zadovoljstvo članova tima, 92% doktora i 76% medicinskih sestara/tehničara se izjasnilo da visina plate pozitivno utiče na kvalitet rada timova porodične medicine, 94% doktora i 92% medicinskih sestara/tehničara se izjasnilo da je potrebno poboljšati rad patronažne službe.

Medicinske sestre/tehničari su dali slijedeće prijedloge za unapređenje rada timova porodične medicine: veća finansijska podrška (21%); formiranje Komore medicinskih sestara/tehničara (16%); manji obim posla (12%); bolji položaj Službe porodične medicine u domu zdravlja (11%); više vremena za promociju zdravlja i prevenciju bolesti (9%), bolji informacioni sistem (9%).

Zaključak: Rezultati našeg istraživanja su pokazali da je 48% doktora i 52% medicinskih sestara/tehničara zadovoljno radom u porodičnoj medicini. Međutim, učesnici istraživanja su iznijeli brojne nedostatke u radu timova porodične medicine, a medicinske sestre/tehničari i prijedloge za poboljšanja. Naši rezultati mogu poslužiti kao putokaz za povećanje zadovoljstva timova porodične medicine, što bi unaprijedilo rad i doprinijelo i većem zadovoljstvu korisnika naših usluga.

Ključne riječi: ***porodična medicina, doktori, medicinske sestre/tehničari, zadovoljstvo radom***

Analysis of team members' satisfaction with work in family medicine

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Introduction: The reform of primary health care (PHC) in Bosnia and Herzegovina began in 1999. During the implementation of the reform, the primary level of health care began to function according to the principles of family medicine. The goal of implementing the reform was to increase the efficiency of work in PHC, to increase the satisfaction of service users and family medicine teams.

Objective: To examine the satisfaction of team members with work in family medicine.

Methods: The research is a cross-sectional study, and it was conducted in the family medicine clinics of the Banja Luka Health Center in the period from February 1th to April 1th, 2022. using the survey method. Out of a total of 120 family medicine teams that worked in the health center at the time of the research, the research included 50 teams (50 family medicine doctors and 50 nurses/technicians), who filled out a questionnaire created for the purposes of our research. Respondents filled out a sociodemographic questionnaire and questionnaires about satisfaction with work in family medicine. Special questionnaires were created for doctors and nurses/technicians. Members of family medicine teams from urban, suburban and rural health center clinics are included.

Results: In the research, out of 50 family medicine doctors included, 92% were females; most doctors (20%) aged 50 to 52 and 59 to 62 years; majority of doctors (24%) with a total working experience of 29 to 32 years; 70% of doctors are team leaders of 1,500 to 2,000 service users; 48% declared that they were satisfied with their work in family medicine. In the research 50 nurses/technicians participated. The results of the questionnaire have been as follows: 94% of nurses/technicians are female; majority of nurses/technicians (34%) aged 41 to 46; majority of nurses/technicians (32%) with a total working experience of 17 to 21 years; 52% expressed that they were satisfied with their work in family medicine.

The research results showed that 86% of doctors and 86% of nurses/technicians believe that they need more education; 100% of doctors and 100% of nurses/technicians believe that good organization of work within the team increases the satisfaction of team members, 92% of doctors and 76% of nurses/technicians stated that the level of salary has a positive effect on the quality of work of family medicine teams, 94% of doctors and 92% of nurses/technicians stated that it is necessary to improve the work of the outpatient service.

Nurses/technicians gave the following suggestions for improving the work of family medicine teams: greater financial support (21%); formation of the Chamber of Nurses/Technicians (16%); smaller volume of work (12%); better position of the Family Medicine Service in the health center (11%); more time for health promotion and disease prevention (9%), better information system (9%)

Conclusion: The results of our research showed that 48% of doctors and 52% of nurses/technicians are satisfied with their work in family medicine. However, research participants presented numerous shortcomings in the work of family medicine teams, and nurses/technicians gave suggestions for improvements. Our results can serve as a roadmap for increasing the satisfaction of family medicine teams, which would improve their work and contribute to the greater satisfaction of users of our services.

Keywords: *family medicine, doctors, nurses/technicians, job satisfaction*

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Upotreba digitalnih tehnologija na primarnom nivou

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Sažetak

Savremene tehnologije su imale dalekosežne efekte u svim oblastima medicine, ali digitalna medicinska revolucija je u nekim oblastima bila sporija od drugih. Brzo širenje pandemije COVID- 19 je povećalo zahtjeve za medicinsko osoblje i njegu, dok su mjere uvedene za zaustavljanje širenja epidemije promjenile način na koji pacijenti pristupaju primarnoj zdravstvenoj zaštiti.

Telemedicina se koristi u različitim oblicima: savjetovanje na daljinu(telefonske ili video konsultacije koje smanjuju koje smanjuju potrebu za ambulantnim posjetama), daljinsko praćenje (telemetrija-mjerenje različitih vitalnih znakova kod kuće (krvni pritisak, zasićenost kiseonikom u krvi, brzina disanja) i beskontaktni prenos podataka zdravstvenom osoblju… Telemedicina kombinuje praktičnost , isplativost i dostupnost informacijama u vezi sa zdravljem putem interneta, telekomunikacija i povezanih tehnologija.

Ako su prije nešto više od deset godina glavni razlog zakašnjelog prelaska u digitalno doba bili prvenstveno relativno visoki troškovi nabavke i održavanja hardvera i softvera, a otpor ljudi prema promjenama bio je na drugom mjestu, to se posljednjih godina promijenilo. Tehnologija je postala jeftinija, napredna i uspješno se koristi za automatizaciju određenih procesa u zdravstvu.

U slovenačkom zdravstvu informaciona tehnologija se u početku pojavila u oblasti finansijske administracije i služila je prvenstveno platiocu zdravstvenih usluga . Korak naprijed bilo je uvođenje pametne zdravstvene kartice i opća upotreba računara, a sljedeći veliki iskorak očekuje se projekat e-Zdravstvo . S obzirom na brzinu uvođenja potonjeg, prepreke navedene u prethodnom paragrafu snažno su izražene u našem regionu.

Glavne prepreke digitalnoj revoluciji u zdravstvu su postale ne tehnološke. Najizrazitije su zastarjela kultura, mentalni stav, organizacijska struktura i upravljanje. Ako žeimo telemedicinu uspješno upotrebljavati u urgentnim i vanrednim stanjima , mora prije toga postati rutinski dio zdravstvenog stanja. Njegovo uključivanje mora biti proaktivno, ne retroaktivno. Na taj način donosi bolje rezultate, kako u svakodnevnoj praksi, tako i na dugi rok.

Ključne riječi*: tehnologija, telemedicina, družinska medicina, COVID-19*

Use of digital technologies at the primary level

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Abstract

Modern technologies have had far-reaching effects in all areas of medicine, but the digital medical revolution has been slower in some fields than others. The COVID-19 pandemic's swift spread has increased requirements for medical personnel and care, while measures instituted to halt the epidemic's spread have changed how patients access primary care.

Telemedicine is used in different forms: remote consultation (telephone or video consultations that reduce the need for outpatient visits), remote monitoring (telemetry-measurement of various vital signs at home (blood pressure, blood oxygen saturation, breathing rate) and contactless data transmission to health personnel... Telemedicine combines practicality, cost-effectiveness and availability of health-related information via the Internet, telecommunications and related technologies.

If a little more than ten years ago the main reason for the delayed transition to the digital age was primarily the relatively high costs of acquiring and maintaining hardware and software, and people's resistance to change was second, that has changed in recent years. Technology has become cheaper, advanced and is successfully used to automate certain processes in healthcare.

In Slovenian healthcare, information technology initially appeared in the field of financial administration and served primarily the payer of healthcare services. A step forward was the introduction of a smart health card and the general use of computers, and the next big step is expected to be the e-Health project. Considering the speed of the introduction of the latter, the obstacles mentioned in the previous paragraph are strongly expressed in our region.

The main obstacles to the digital revolution in healthcare have become non-technological. The most obvious ones are outdated culture, mental attitude, organizational structure and management. If we want to successfully use telemedicine in emergency and emergency situations, it must first become a routine part of the health condition. Its involvement must be proactive, not retroactive. In this way, it brings better results, both in daily practice and in the long term.

Key words: ***technology, telemedicine, family medicine, COVID-19,***

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Medicinska edukacija sa simulacijom za hitna stanja za studente medicine – potreba ili izazov?

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Cilj istraživanja: Uvođenje medicinskog učenja i nastave zasnovane na simulaciji u nastavni plan i program za studente medicine, kako bi se postigla idealna povezanost teorije i prakse, dok se istovremeno integrišu bazične i kliničke nauke, pripremajući studente da sa sigurnošću odgovore na izazove koje nosi ljekarska praksa, obezbeđujući najbolje standarde za negu i sigurnost pacijenata, kao i menađment i minimiziranje mogućih grešaka kroz kvalitetnu obuku.

Opis i metodologija istraživanja: Centar za porodičnu medicinu Medicinskog fakulteta u Skoplju u okviru Erasmus programa i Transsimed projekta započeo je realizaciju radionica za hitna stanja na primarnom nivou zdravstvene zaštite, gde su medicinski timovi vežbali kako da se nose sa životno ugrožavajućim situacijama kroz edukaciju zasnovanu na simulaciji. Ovaj inovativni način učenja sproveden je ove godine i za studente poslednje godine studija u okviru obavezne medicinske prakse. Katedra za porodičnu medicinu po prvi put je organizovala 10 radionica za 99 studenata. U bezbednom okruženju, prema najnovijim protokolima, studenti su stekli praktično iskustvo u menađiranju sa anafilaksijom i srčanim zastojem. Vežbali su na visoko fidelitičnom manekenu, naučili su kako da primene adrenalin, da izvedu CPR, da koriste AED, a istovremeno su se učile i netehničke veštine kao što su komunikacijske , rad u timu, kritičko razmišljanje i rešavanje problema. Izrađeni su realni scenariji iz svakodnevne lekarske prakse, simulacija je snimljena, a učesnici su nakon toga dobijali personalizovane povratne informacije kako bi prevazišli određene slabosti i fokusrali se na momente koje su mogli biti bolji, ali i pohvale za odlično realizovane aktivnosti.

Rezultati i specifični podaci: Na osnovu popunjenih evaluacija dobijeni su sledeći podaci: prosečna ocena za radionicu bila je 4,70; 75,8% učesnika ocenilo je radionicu kao odličnu. Više od 70% studenata se nakon ove radionice oseća sigurno da prepozna anafilaksiju, da daje adrenalin i da sprovodi CPR. Neki od komentara uključuju: „Jedna od najboljih edukativnih

vežbi na Medicinskom fakultetu“, „Treba da uđe u redovnu nastavu u šestoj godini“, „Treba da bude više ovakvih vežbi tokom studija, najviše se uči kroz praksu.“

U kontekstu izazova koji bi trebalo da se razmotre, izdvojili bi visoku cenu simulatora, specifična obuka instruktora i prilagođavanje nastavnih programa.

Važni zaključci ili pitanja koja proizilaze iz istraživanja: Učenje zasnovano na simulaciji je skupo, ali i ekonomski isplativo ako se pravilno koristi. Uvođenjem simulacije kao predmeta na medicinskom fakultetu možemo poboljšati veštine studenata, što će na kraju rezultirati bolje pripremljenim zdravstvenim radnicima.

Ključne reči*: medicinsko obrazovanje, medicinska simulacija, student medicine, bolja nega*

Medical education with simulation for emergency cases for medical students - need or chalenge?

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Purpose of the research: To introduce simulation-based medical learning and teaching into the curriculum for medical students to ideally link theory and practice, while integrating basic and clinical sciences in a way that prepares students to confidently respond to the challenges of medical practice, ensuring the best standards for patient care and safety, and managing and minimizing possible errors through quality training.

Description and methodology of the research: The Family Medicine Center at the Medical Faculty, under the Erasmus program and the Transsimed project, started conducting workshops on emergency conditions at the primary healthcare level, where medical teams practiced how to handle life-threatening situations through simulation-based education. This innovative method was implemented this year for final-year students as part of the mandatory medical practice. For the first time, the Department of Family Medicine organized 10 workshops for 99 students. In a safe environment, according to the latest protocols, students gained practical experience in dealing with anaphylaxis and cardiac arrest. They practiced on high-fidelity mannequins, learned how to administer adrenaline, perform CPR, operate an AED, while also focusing on non-technical skills such as communication, teamwork, critical thinking, and problem-solving. A realistic scenario from everyday medical practice was created, the simulation was recorded, and participants received personalized feedback to overcome weaknesses and focus on areas for improvement, as well as praise for well-executed actions.

Results and specific data: From the evaluation sheets filled out, the following data was obtained: the average rating for the workshop was 4.70; 75.8% of the participants rated the workshop as excellent. More than 70% of the students felt confident after the workshop in

recognizing anaphylaxis, administering adrenaline, and performing CPR. Some of the comments include: "One of the best educational exercises at the Medical Faculty," "Should be part of the regular curriculum in the 6th year," "There should be more of these exercises during the studies;best way is learning through practice."

In the context of challenges to be considered, the high cost of simulators, the specific training of instructors, and the adjustment of teaching programs are noted.

Important conclusions or questions arising from the research: Simulation-based learning is expensive, but it is also economical if used properly. By introducing simulation as a subject at the medical faculty, we can improve students' skills, which will ultimately result in better-prepared healthcare professionals.

Keywords: ***medical education, medical simulation, medical students, better care***

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How to apply Simulation-Based Learning in Medical Education?
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Simulation-based medical teaching and learning Abdulmohsen H Al-Elq [1,✉]PMCID: PMC3195067 PMID:22022669

Application of telemedicine in everyday practice in a family medicine office

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Sažetak

Uvod: Globalno, zdravstveni sistemi se suočavaju sa sve većim pritiskom da na efikasan način obezbede brzu, pristupačnu i kvalitetnu zdravstvenu zaštitu. Razvoj telekomunikacija i informacionih tehnologija rezultirao je brzim razvojem i primjenom telemedicine (TM), kao i promjenama u načinu pružanja medicinskih usluga. Primjena TM u primarnoj zdravstvenoj zaštiti (PZZ) povećava dostupnost zdravstvenih usluga stanovništvu i poboljšava kvalitet zdravstvene zaštite.

Cilj ovog rada je da se definiše telemedicina i prikaže njena primena u pružanju zdravstvenih usluga u PZZ.

Diskusija: Prema Svjetskoj medicinskoj asocijaciji – Izjava o digitalnom zdravlju, telemedicina je pružanje zdravstvenih usluga putem informacionih i komunikacijskih tehnologija, u cilju poboljšanja zdravlja pojedinaca i zajednica. Omogućava razmjenu informacija za dijagnostiku, liječenje i prevenciju bolesti i povreda, te istraživanje i edukaciju zdravstvenih radnika. Direktne konsultacije licem u lice između doktora i pacijenta zlatni su standard u pružanju zdravstvene zaštite. Kada se koriste telemedicinske usluge, one treba da budu dopunjene ličnim konsultacijama i potkrijepljene odgovarajućim dokazima i poštovanjem, uz primjenu principa medicinske etike. Razlikujemo dva osnovna tipa telemedicine: sinhronu telemedicinu (konsultacije se odvijaju uživo, u realnom vremenu, postoji kontakt licem u lice između doktora i pacijenta) i asinhronu telemedicinu (metoda pohranjivanja i prosljeđivanja, pacijenti šalju informacije svom liječniku koji kasnije provjerava i šalje povratnu informaciju, komunikacija se ne odvija u realnom vremenu i nema

kontakta licem). Primjena telemedicine u PZZ obuhvata nekoliko aspekata: konsultacije sa pacijentima koji ne mogu da prisustvuju lično ili osobama sa ograničenom pokretljivošću; liječenje akutnih i kroničnih stanja; edukacija pacijenata, preventivne zdravstvene usluge; psihološka podrška pacijentima; naručivanje laboratorijskih pretraga, pretraga i njihovo tumačenje, propisivanje hronične medikamentne terapije i konsultacije sa ljekarima drugih specijalnosti. U Sjevernoj Makedoniji je implementiran pilot projekat – kurs o telemedicini i telezdravstvu za buduće specijaliste porodične medicine, koji su prošli obuku iz telepsihijatrije i teledermatologije. Učesnici su dali pozitivne povratne informacije. Međutim, postoje određena ograničenja: problemi vezani za telekomunikacijske i informacione tehnologije, potreba za poboljšanjem infrastrukture i opremanja digitalnim alatima, nedostatak trenera za zdravstvene radnike u korišćenju TM, ograničena lična interakcija i nemogućnost fizičkog pregleda, dostupnost tehnoloških resursa pacijentima, kao i nedostatak politike nadoknade za telemedicinske zdravstvene usluge.

Zaključak: Telemedicina ima potencijal da značajno poboljša kvalitet zdravstvene zaštite i omogući pristup medicinskim uslugama koje inače ne bi bile dostupne. Dopunjuje tradicionalnu zdravstvenu zaštitu i transformiše odnos između pacijenta i doktora. U svim oblicima telemedicinskih usluga posebno je važno poštovanje etičkih standarda, ljekarske zakletve i međunarodnog kodeksa medicinske etike. Napredak u tehnologiji i implementacija novih zdravstvenih politika stvaraju uslove da telemedicina i dalje bude ključni alat u primarnoj zdravstvenoj zaštiti.

Application of telemedicine in everyday practice in a family medicine office

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Abstract

Introduction: Globally, health systems are facing increasing pressure to provide fast, accessible and quality health care in an efficient manner. The development of telecommunications and information technologies has resulted in the rapid development and application of telemedicine (TM), as well as changes in the way medical services are provided. The application of TM in primary health care (PHC) increases the availability of health services to the population and improves the quality of health care. **The aim** of this paper is to define telemedicine and to present its application in the delivery of health services in PHC. **Discussion:** According to the World Medical Association - Statement on Digital Health, telemedicine is the delivery of health services through information and communication technologies, in order to improve the health of individuals and communities. It enables the exchange of information for the diagnosis, treatment and prevention of diseases and injuries, and research and education of health professionals. Direct, face-to-face consultations between a doctor and a patient are the gold standard in providing health care. When telemedicine services are used, they should be supplemented by personal consultations and supported by appropriate evidence and respect, while also applying the principles of medical ethics. We distinguish two basic types of telemedicine: synchronous telemedicine (the consultation takes place live, in real time, there is face-to-face contact between the doctor and the patient) and asynchronous telemedicine (a store-and-forward method, patients send information to their doctor who later checks and sends feedback, the communication does not take place in real time and there is no face-to-face contact). The application of telemedicine in PHC covers several aspects:

consultations with patients who cannot attend in person or people with limited mobility; management of acute and chronic conditions; patient education, preventive health services; psychological support for patients; ordering laboratory tests, investigations and their interpretation, prescribing chronic medication therapy and consultations with doctors from other specialties. A pilot project was implemented in North Macedonia – a course on telemedicine and telehealth for future family medicine specialists, who underwent training in telepsychiatry and teledermatology. Participants gave positive feedback. However, there are certain limitations: problems related to telecommunication and information technologies, the need to improve the infrastructure and equipping with digital tools, lack of trainers for healthcare professionals in the use of TM, limited personal interaction and impossibility of physical examination, availability of technological resources to patients, as well as lack of reimbursement policies for telemedicine healthcare services**. Conclusion:** Telemedicine has the potential to significantly improve the quality of healthcare and provide access to medical services that would otherwise be unavailable. It complements traditional healthcare and transforms the relationship between the patient and the doctor. In all forms of telemedicine services, respect for ethical standards, the medical oath and the international code of medical ethics is particularly important. Advances in technology and the implementation of new health policies create conditions for telemedicine to continue to be a key tool in primary health care.

Key words*: telemedicine, digital health, telehealth guidelines, primary health care*

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Digitalizacija u primarnoj zdravstvenoj zaštiti

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Cilj istraživanja: Digitalna transformacija označava novu eru u primarnoj zdravstvenoj zaštiti koja osnažuje pacijente i zajednice kroz bolji pristup nezi i informacijama; smanjuje liste čekanja i troškove; omogućava zdravstvenim uslugama da dopru do najugroženijih grupa stanovništva; podržava saradničku međuprofesionalnu praksu; i olakšava pristup zdravlju ili zajednici uopšte.S tim u vezi cilj istraživanja je implementacija digitalnih tehnologija radi poboljšanja efikasnosti, dostupnosti i kvaliteta primarne zdravstvene zaštite kao i uticaj digitalizacije na poboljšanje zdravstvenih usluga, zadovoljstvo pacijenata, na celokupni zdravstveni sistem.

Metode: Analiza podataka prikupljenih od pacijenata, zdravstvenih radnika, i stručnjaka u oblasti zdravstvene tehnologije. Pregled najnovijih radova iz oblasti digitalizacije u primarnoj zdravstvenoj zaštiiti

Rezultati: Predlozi za digitalizaciju pokazali su značajne pozitivne efekte, uključujući smanjenje vremena čekanja na preglede, poboljšanu komunikaciju između pacijenata i zdravstvenih radnika, te povećanu dostupnost zdravstvenih informacija. Istraživanje je također otkrilo izazove poput tehnološke nepismenosti, nedostatka infrastrukture i otpora prema promenama među nekim zdravstvenim radnicima i pacijentima. Digitalna transformacija je kulturna promena koja mora uzeti u obzir nove modele zdravstvene zaštite, reinženjering procesa, reorganizaciju sistema i dublje razumevanje ponašanja ljudi i digitalnih veština. Takva transformacija zahteva novi multisektorski i interdisciplinarni pristup u razvoju i implementaciji javnih politika, regulatornih okvira i nacionalnih programa digitalne pismenosti.Sveobuhvatna digitalna transformacija ima potencijal da poboljša zdravstvene ishode za sve, omogućavajući zdraviju populaciju i održiviju budućnost.

Zaključak: Digitalizacija primarne zdravstvene zaštite predstavlja ključnu komponentu za unapređenje zdravstvenih usluga. Proces uvođenja novih tehnologija može biti dug i

komplikovan. Promene koje se odnose na celokupan sistem utiču i na odnos lekara i pacijenata, posebno u pogledu novih načina komunikacije i pružanja zdravstvenih usluga. Iako postoje prepreke koje treba prevazići, benefiti digitalizacije u vidu efikasnosti, dostupnosti i kvaliteta zdravstvene zaštite su evidentni. Neophodno je ulaganje u obuku i edukaciju svih učesnika u sistemu zdravstva kako bi se postigli maksimalni efekti digitalizacije. Dalja istraživanja bi trebala da omoguće optimalno prilagođavanje digitalnih rešenja specifičnim potrebama zajednice.

Ključne reči: ***digitalizacija, zdravstveni radnici, pacijenti, primarna zdravstvena zaštita***

Digitalization in Primary Health Care

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Objective of the Research: Digital transformation marks a new era in primary health care that empowers patients and communities through better access to care and information; reduces waiting times and costs; enables health services to reach the most vulnerable population groups; supports collaborative interprofessional practice; and facilitates access to health or the community as a whole. In this regard, the aim of the research is the implementation of digital technologies to improve the efficiency, accessibility, and quality of primary health care, as well as the impact of digitalization on enhancing health services, patient satisfaction, and the overall health system.

Methods: Analysis of data collected from patients, health workers, and experts in health technology. Review of the latest studies in the field of digitalization in primary health care.

Results: Proposals for digitalization have shown significant positive effects, including reduced waiting times for examinations, improved communication between patients and health workers, and increased availability of health information. The research also revealed challenges such as technological illiteracy, lack of infrastructure, and resistance to change among some healthcare workers and patients. Digital transformation is a cultural change that must take into account new models of health care, process reengineering, system reorganization, and a deeper understanding of human behavior and digital skills. Such a transformation requires a new multisectoral and interdisciplinary approach to the development and implementation of public policies, regulatory frameworks, and national digital literacy programs. Comprehensive digital transformation has the potential to improve health outcomes for all, enabling a healthier population and a more sustainable future.

Conclusion: Digitalization of primary health care is a key component for the improvement of health services. The process of introducing new technologies can be long and complicated. Changes related to the entire system also affect the relationship between doctors and patients, especially regarding new ways of communication and the provision of health services.

Although there are obstacles to overcome, the benefits of digitalization in terms of efficiency, accessibility, and quality of health care are evident. Investment in training and education for all participants in the health system is essential to achieve the maximum effects of digitalization. Further research should enable optimal adaptation of digital solutions to the specific needs of the community.

Keywords: ***digitalization, health workers, patients, primary health care***

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Esencijalna uloga magnezijuma u zdravlju i savremenoj ishrani

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Uvod: Magnezijum je esencijalni mineral i četvrti po učestalosti katjon u ljudskom telu, sa ključnom ulogom u mnogim fiziološkim procesima. Većina magnezijuma se nalazi u kostima (53%) i unutarćelijskom prostoru mišića i mekih tkiva (46%), dok se manje od 1% ukupne količine nalazi u serumu i crvenim krvnim zrncima. Magnezijum je neophodan za više od 300 enzimskih reakcija, uključujući metabolizam proteina, lipida i ugljenih hidrata, sintezu DNK i RNK, stabilizaciju ćelijskih membrana, kao i regulaciju funkcija nervnog i imunog sistema. Takođe, igra ključnu ulogu u homeostazi kalcijuma, krvnom pritisku i zdravlju kostiju.

Diskusija: Nedostatak magnezijuma (hipomagnezijemija) je često prisutan, posebno kod osoba sa metaboličkim sindromom, dijabetesom tipa 2, hipertenzijom i bolestima bubrega. Procenjuje se da oko 15% opšte populacije pati od nedostatka magnezijuma, što može dovesti do povećanog oksidativnog stresa, metaboličkih poremećaja i povećanog rizika od kardiovaskularnih bolesti, uključujući hipertenziju, hiperlipidemiju i koronarnu bolest. Simptomi hipomagnezijemije mogu uključivati anksioznost, depresiju i neurološke disfunkcije. Preporučeni dnevni unos magnezijuma varira prema polu i uzrastu: muškarcima se preporučuje 400-420 mg dnevno, a ženama 310-320 mg. Prirodni izvori magnezijuma uključuju orašaste plodove, mahunarke, integralne žitarice, tamnozeleno povrće i proizvode od soje. Međutim, savremene prehrambene navike, koje uključuju visok unos prerađene hrane bogate natrijumom i fosfatima, doprinose smanjenoj apsorpciji magnezijuma. Stoga je suplementacija često neophodna, posebno kod osoba s povećanim potrebama ili poremećenom apsorpcijom. Studije pokazuju da kombinacija magnezijuma sa vitaminima, poput B6, može poboljšati njegovu apsorpciju i efikasnost. Inovacije u medicini omogućavaju bolje praćenje i upravljanje statusom magnezijuma u organizmu. Telemedicinske platforme omogućavaju pacijentima da prate svoj nutritivni status i dobijaju personalizovane preporuke za unos magnezijuma. Kontinuirani

monitoring pomoću nosivih biosenzora može rano otkriti hipomagnezijemiju, omogućavajući pravovremenu intervenciju. Veštačka inteligencija igra sve veću ulogu u dijagnostici i terapiji, pružajući precizne preporuke zasnovane na individualnim potrebama pacijenata. Algoritmi mogu analizirati medicinske podatke i predvideti rizik od hipomagnezijemije kod visokorizičnih grupa, čime se poboljšava prevencija i lečenje.

Praktična primena ovih inovacija uključuje telemedicinske konsultacije za pacijente u ruralnim sredinama, upotrebu nosivih uređaja kod sportista za praćenje nivoa elektrolita, kao i primenu AI sistema u bolnicama za analizu laboratorijskih nalaza. Ove tehnologije omogućavaju personalizovan pristup terapiji i poboljšavaju ishode pacijenata.

Zaključak: Magnezijum je ključni mineral za optimalno zdravlje, a njegov nedostatak može imati ozbiljne posledice. Suplementacija i pravilna ishrana su važni za održavanje njegovog optimalnog nivoa, dok inovativne tehnologije donose revoluciju u prevenciji i lečenju deficita magnezijuma. Digitalizacija zdravstvene zaštite, telemedicina i veštačka inteligencija mogu unaprediti dijagnostiku, omogućiti pravovremenu intervenciju i poboljšati kvalitet života pacijenata.

Ključne reči: magnezijum, homeostaza, hipomagnezijemija, suplementacija, metaboličke funkcije

The essential role of magnesium in health and nutrition

personalized therapy and supplementation

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Introduction: Magnesium is an essential mineral and the fourth most abundant cation in the human body, with a key role in many physiological processes. Most magnesium is found in the bones (53%) and intracellular space of muscles and soft tissues (46%), while less than 1% of the total amount is found in serum and red blood cells. Magnesium is essential for more than 300 enzymatic reactions, including protein, lipid, and carbohydrate metabolism, DNA and RNA synthesis, stabilization of cell membranes, and regulation of nervous and immune system functions. It also plays a key role in calcium homeostasis, blood pressure, and bone health.

Discussion: Magnesium deficiency (hypomagnesemia) is often present, especially in people with metabolic syndrome, type 2 diabetes, hypertension, and kidney disease. It is estimated that about 15% of the general population suffers from magnesium deficiency, which can lead to increased oxidative stress, metabolic disorders, and an increased risk of cardiovascular disease, including hypertension, hyperlipidemia, and coronary artery disease. Symptoms of hypomagnesemia can include anxiety, depression, and neurological dysfunction. The recommended daily intake of magnesium varies by gender and age: 400-420 mg per day is recommended for men and 310-320 mg for women. Natural sources of magnesium include nuts, legumes, whole grains, dark green vegetables, and soy products. However, modern eating habits, which include a high intake of processed foods rich in sodium and phosphates, contribute to reduced magnesium absorption. Therefore, supplementation is often necessary, especially in people with increased needs or impaired absorption. Studies show that combining magnesium with vitamins, such as B6, can improve its absorption and effectiveness. Innovations in medicine make it possible to better monitor and manage the status of magnesium in the body. Telemedicine platforms allow patients to monitor their nutritional status and receive

personalized recommendations for magnesium intake. Continuous monitoring using wearable biosensors can detect hypomagnesemia early, allowing for timely intervention. Artificial intelligence is playing an increasingly important role in diagnosis and therapy, providing precise recommendations based on the individual needs of patients. The algorithms can analyze medical data and predict the risk of hypomagnesemia in high-risk groups, thereby improving prevention and treatment. Practical applications of these innovations include telemedicine consultations for patients in rural areas, the use of wearable devices by athletes to monitor electrolyte levels, as well as the application of AI systems in hospitals to analyze laboratory findings. These technologies enable a personalized approach to therapy and improve patient outcomes.

Conclusion: Magnesium is a key mineral for optimal health, and its deficiency can have serious consequences. Supplementation and proper nutrition are important for maintaining optimal magnesium levels, while innovative technologies are revolutionizing the prevention and treatment of magnesium deficiency. Digitalization of healthcare, telemedicine and artificial intelligence can improve diagnostics, enable timely intervention and improve the quality of life of patients.

Keywords: magnesium, homeostasis, hypomagnesemia, supplementation, metabolic functions

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Uticaj ursodeoksiholne kiseline na metaboličke parametre i parametre oksidativnog stresa kod pacijenata sa dijabetes melitusom tipa 2 u porodičnoj medicini: rezultati randomizovane kliničke studije

Ursodeoksiholna kiselina u dijabetes melitusu tipa 2

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Sažetak

Uvod i cilj istraživanja: Oksidativni stres i inflamacija su blisko povezani patofiziološki procesi koji se javljaju kod dijabetes melitusa tipa 2 (DMT2). Pored standardnog liječenja DMT2 potencijalna strategija je usmjerena na upotrebu žučnih kiselina (ŽK) kao dodatnog vida liječenja. Ursodeoksiholna kiselina (UDHK), kao prva ŽK koja se koristi kod ljudi, poboljšava metabolizam glukoze i lipida i ublažava oksidativni stres. Cilj ove studije je bio da se procijene potencijalna metabolička, antiinflamatorna i antioksidativna dejstva UDHK kod pacijenata sa DMT2.

Metodologija: Istraživanje je provedeno kao prospektivna, dvostruko slijepa, placebom kontrolisana klinička studija, koja je obuhvatila 60 pacijenata sa DMT2, nasumično

raspoređenih da primaju UDHK ili placebo. Ispitanici su liječeni tabletama UDHK od 500 mg ili placebom tri puta dnevno (ukupna doza od 1500 mg/dan) tokom osam nedelja. Dvije studijske posjete, na početku (F0) i na kraju (F1) studije, uključivale su intervju, antropometrijska i klinička mjerenja i biohemijske analize.

Rezultati: Tretman sa UDHK je pokazao značajno smanjenje indeksa tjelesne mase (p= 0,024) i dijastolnog krvnog pritiska (p= 0,033), u poređenju sa placebom. Pored toga, došlo je do pojave statistički značajnih razlika u obimu struka u UDHK grupi prije i poslije tretmana (p<0,05).Tokom osmonedeljnog praćenja u UDHK grupi je došlo do značajnog smanjenja aktivnosti enzima jetre te je uočen trend smanjenja prosječnog nivoa glukoze, ali bez statističke značajnosti. Nadalje, utvrđeno je značajno smanjenje prooksidativnih parametara (TBARS, NO2-, H2O2) i značajno povećanje antioksidativnih parametara kao što su SOD i GSH (p< 0,001).

Zaključci: Osmonedeljna primena UDHK pokazala je povoljne efekte na parametre metaboličkog i oksidativnog stresa kod pacijenata sa T2DM. Prema tome, UDCA bi mogla da ublaži progresiju dijabetesnih komplikacija te bi je trebalo smatrati dodatnom opcijom drugim modalitetima liječenja DMT2. Ovo istraživanje je registrovano na www.clinicaltrial.gov kao NCT05416580.

Ključne riječi: ***dijabetes melitus tipa 2, ursodeoksiholna kiselina, metabolički parametri, oksidativni stres, inflamacija***

Effect of ursodeoxycholic acid on metabolic and oxidative stress parameters in patients with type 2 diabetes mellitus in family medicine: results of a randomized clinical trial

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Abstract

Background/Aim: Oxidative stress and inflammation are closely related pathophysiological processes, both occurring in type 2 diabetes mellitus (T2DM). In addition to standard treatment of T2DM, potential strategy has been focused on the use of bile acids (BAs) as additional treatment. Ursodeoxycholic acid (UDCA), as the first BA used in humans, improves glucose and lipid metabolism, and attenuates oxidative stress. The aim of this study was to evaluate the potential metabolic, anti-inflammatory and antioxidative effects of UDCA in patients with T2DM.

*Methods***:** This prospective, double blind, placebo-controlled clinical study included 60 patients with T2DM, randomly allocated to receive UDCA or placebo. Subjects were treated with 500 mg tablets of UDCA or placebo administered three times per day (total dose of 1500 mg/day)

for eight weeks. Two study visits, at the beginning (F0) and at the end (F1) of the study, included the interview, anthropometric and clinical measurements, and biochemical analyses.

Results: UDCA treatment showed a significant reduction in body mass index ($p=0.024$) and diastolic blood pressure ($p=0.033$), compared to placebo. In addition, there were statistically significant differences in waist circumference in the UDCA group before and after treatment ($p<0.05$). During the eight-week follow-up in the UDCA group, there was a significant decrease in the activity of liver enzymes and a trend of a decrease in the average glucose level was observed, but without statistical significance. Furthermore, a significant reduction in pro-oxidative parameters (TBARS, NO_2^-, H_2O_2) and significant elevation in anti-oxidative parameters such as SOD and GSH ($p<0,001$) was found.

Conclusions: The eight-week UDCA administration showed beneficial effects on metabolic and oxidative stress parameters in patients with T2DM. Thus, UDCA could attenuate the progression and complications of diabetes and should be considered as an adjuvant to other diabetes treatment modalities. This trial is registered at www.clinicaltrial.gov as NCT05416580.

Key words: ***type 2 diabetes mellitus; ursodeoxycholic acid; oxidative stress; metabolic parameters; inflammation***

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Liječenje mastitisa-rezultati međunarodne studije

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SAŽETAK

Pozadina istraživanja

Zdravstveni autoriteti snažno promiču dojenje, ali malo je istraživanja o kvaliteti liječenja koju zdravstveni djelatnici pružaju ženama kod kojih se pojavi mastitis/apsces dojke.

Cilj istraživanja

Istražiti liječenje/tretiranje mastitisa/apscesa dojke u bolničkim odjelima hitnog prijema.

Metode

Pregledana je medicinska dokumentacija pacijentica primljenih na hitni bolnički prijem (HBP) u Australiji, Brazilu, Hrvatskoj, Njemačkoj i Turskoj sa sumnjom na laktacijski mastitis/apsces dojke između 2017. i 2023. godine. Demografske i kliničke informacije (uključujući simptome, liječenje i pretrage) su za ove pacijentice pronađene, grupirane i analizirane.

Rezultati

Ukupno 580 žena s mastitisom/apscesom dojke (od 646 prijema u HBP, uglavnom u prvih 8 tjedana nakon poroda) je identificirano tijekom razdoblja istraživanja. Većina žena imala je simptome mastitisa/apscesa dojke (bol u dojci, kvržicu i upalu) >48 sati prije dolaska u HBP. U Australiji su rezultati kultura i antibiograma mlijeka bili dostupni za 44% (146/331) prijema. *S. aureus* bila je najčešće izolirana bakterija (33%, n=48), od čega je 6% (n=3) bilo rezistentno na meticilin. Upotreba dijagnostičkog ultrazvuka je varirala od države do države, od 5% (3/65) u Hrvatskoj do 82% (40/49) u Njemačkoj. Apscesi dojke većinom su zbrinuti ultrazvučno vođenom aspiracijom u Australiji, dok su incizija i drenaža bili standardni oblici intervencije u Njemačkoj. Amoksicilin/klavulanat se najčešće

propisivao u Hrvatskoj (57%, 31/54) i Turskoj (69%, 28/42), dok su se flukloksacilin, cefaleksin ili cefuroksim prvenstveno koristili u Australiji (86%, 272/322), Brazilu (62%, 66/106) i Njemačkoj (80%, 33/41).

Zaključci

Liječenje mastitisa/apscesa dojke značajno se razlikovalo među zemljama. Potrebne su međunarodne, na dokazima utemeljene smjernice za liječenje laktacijskog mastitisa.

Ključne riječi: *breastfeeding, mastitis, clinical audit, management*

Management of mastitis in the hospital setting: an international audit study

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Background

Breastfeeding is strongly promoted by health authorities, but there is little research on whether health professionals provide best-practice care for women experiencing mastitis/breast abscess.

Research aim

To explore management of mastitis/breast abscess in hospital emergency departments (EDs).

Methods

Medical records of patients presented to hospital EDs in Australia, Brazil, Croatia, Germany and Türkiye with lactational mastitis/abscess between 2017 and 2023 were reviewed. Demographic and clinical information (including symptoms, management, and investigations) was extracted and analysed.

Results

A total of 580 women with mastitis/breast abscess (646 ED presentations, mostly in the first 8 weeks postpartum) were identified during the study period. The majority of the women had

symptoms of mastitis/breast abscess (breast pain, lump and inflammation) for >48 hours before ED presentation. In Australia, culture and sensitivity testing of milk was available for 44% (146/331) of presentations. *S. aureus* was the most common bacteria isolated (33%, n=48), of which 6% (n=3) were methicillin-resistant. The use of diagnostic ultrasound varied between sites, from 5% (3/65) in Croatia to 82% (40/49) in Germany. Breast abscesses were mostly managed by ultrasound-guided aspiration in Australia, whereas incision and drainage was standard care in Germany. Amoxycillin/clavulanate was most commonly prescribed in Croatia (57%, 31/54) and Türkiye (69%, 28/42), whereas flucloxacillin, cephalexin, or cefuroxime was primarily used in Australia (86%, 272/322), Brazil (62%, 66/106), or Germany (80%, 33/41), respectively.

Conclusions

The management of mastitis/breast abscess varied considerably between countries.
International evidence-based guidelines for the management of lactational mastitis are needed.

Key words: *breastfeeding, mastitis, clinical audit, management*

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