

ZDRAVJE STAROSTNIKOV HEALTH OF THE ELDERLY



**Zbornik
povzetkov z recenzijo
Book of Abstracts**

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zdravje starostnikov
health of the elderly



Univerza na Primorskem • Fakulteta za vede o zdravju
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*Z*dravje starostnikov *Health of the Elderly*

*5. znanstvena in strokovna konferenca
z mednarodno udeležbo
5th scientific and professional
international conference*

*Zbornik povzetkov z recenzijo
Book of Abstracts*



Vsebina

Contents

7	UVODNE MISLI PREFACE
8	Zdravje starostnikov
9	Health of the the Elderly
11	VABLJENI PREDAVATELJI INVITED LECTURERS
17	PLENARNA PREDAVANJA PLENARY LECTURES
	KONFERENČNI POVZETKI CONFERENCE ABSTRACTS
27	SEKCIJA/SECTION FIZIOTERAPIJA IN ZDRAVJE STAREJŠIH ODRASLIH PHYSIOTHERAPY AND HEALTH OF THE ELDERLY
39	SEKCIJA/SECTION GIBANJE IN ZDRAVJE STAREJŠIH ODRASLIH PHYSICAL ACTIVITY AND HEALTH OF THE ELDERLY
57	SEKCIJA/SECTION PREHRANA IN ZDRAVJE STAREJŠIH ODRASLIH NUTRITION AND HEALTH OF THE ELDERLY
85	SEKCIJA/SECTION PSIHOLOGIJA / SOCIALA IN ZDRAVJE STAREJŠIH ODRASLIH PSYCHOLOGY / SOCIAL AND HEALTH OF THE ELDERLY

143 **SEKCIJA/SECTION**
TEHNOLOŠKE IN OSTALE IKT REŠITVE IN ZDRAVJE STAREJŠIH
ODRASLIH
TECHNOLOGICAL AN ICT SOLUTIONS AND HEALTH OF THE ELDERLY

159 **POSTERJI**
POSTER PRESENTATIONS

Uvodne misli

Preface

Zdravje starostnikov

Fakulteta za vede o zdravju v letu 2021 organizira peto letno konferenco v ciklu letnih konferenc s področja zdravja različnih starostnih skupin, drugo na temo zdravja starostnikov. Letošnja konferenca je tako ponovno namenjena izmenjavi mnenj, izsledkov raziskav in izkušenj strokovnjakov s področja zdravja starejših odraslih. Na predhodni letni konferenci z enakim naslovom smo poudarjali, da se delež le-teh v svetovni populaciji strmo povečuje. Govorili smo o številnih raziskavah in pobudah na področju skrbi za zdravje starejših, ter za izboljšanje njihovega socialnega življenja. Danes lahko ugotovitve potrdimo in izpostavimo, da na področju zdravja starejših odraslih ostaja veliko neodgovorjenih vprašanj in priložnosti za raziskovanje. Starejšo populacijo je bržkone bolj kot katerikoli drugo skupino prizadela epidemija virusa SARS-CoV-2. Študije kažejo, da so med epidemijo med starejšimi odraslimi opazili višjo pojavnost anksioznosti, depresije in občutka samote. Verjamemo, da bomo skozi razpravo na konferenci poiskali skupne poti do reševanja aktualnih in prihajajočih izzivov, ki pestijo našo družbo na tem področju in prispevali tudi k boljšemu spopadanju starejših odraslih z epidemijo.

Osrednji namen konference je, da s predstavitvijo najnovejših dognanj povečamo splošno ozaveščenost glede pomena skrbi za zdravje starejših odraslih, ter spodbudimo nadaljnja razmišljanja in sodelovanja strokovnjakov na tem področju. V zborniku prispevkov je v prvi vrsti moč najti predstavitve različnih ukrepov, zasnovanih z namenom izboljšanja zdravja in življenja starejše populacije. Konferenca je tokrat razdeljena na pet vsebinskih sklopov, s čimer želimo spodbuditi povezovanje strokovnjakov sorodnih zanimanj in strokovnih ozadij. V prispevkih so zajete tematike s področja prehrane za zdravje starejših odraslih, pomena gibalne aktivnosti, tehnoloških rešitev, psihologije in sociologije, ter fizioterapije. Vemo, da lahko le z upoštevanjem vseh naštetih vidikov človeka obravnavamo celostno, zato upamo, da bo konferenca spodbudila tudi sodelovanje med različnimi strokami.

Namen konference je ponuditi celosten pregled na problematiko zdravja starostnikov, in spodbuditi raziskovalce, strokovnjake in študente k nadaljnemu razmišljanju, delu, raziskovanju in ukrepanju. Znanstvena in strokovna literatura na temo zdravja starejših odraslih je že precej obsežna, a vendarle je nujno, da v naslednjih letih in desetletjih združimo moči in zasujemo družbo tako, da zagotovimo zdravo staranje prav vsem.

prof. dr. Nejc Šarabon,
vodja programskega odbora konference

Health of the the Elderly

In 2021, the Faculty of Health Sciences is organizing its fifth annual conference, the second on the topic of health of the elderly. This year's conference is intended for exchanging opinions, research results and experiences of experts in the field of elderly health. At the previous annual conference with the same title, we emphasized that the proportion of the elderly in the world population is rapidly increasing. We talked about many research activities and public initiatives aiming to improve the health care for the elderly and their social life. Similar can be said today, and we have to point out that there are still many unanswered questions and opportunities for research in the field of health of the elderly. The elderly were probably more affected than any other group by the SARS-CoV-2 virus epidemic. Studies show that during the epidemic, a higher incidence of anxiety, depression, and feelings of loneliness was observed among the elderly. We believe that with the contributions at the conference, we will also contribute to a better coping of the elderly with the epidemic.

The main goal of the conference is to increase the general awareness of importance of caring for the health of the elderly, by presenting the latest relevant findings, and to encourage further reflection and cooperation of experts in this field. In this collection of papers, one can find first-hand presentations of various interventions, designed to improve the health and overall quality of lives of the elderly. This time, the conference is divided into five sections, with which we want to encourage the connection of experts of related interests and professional backgrounds. The articles cover topics in the field of nutrition for the health of older adults, the importance of physical activity, technological solutions, psychology and sociology, and physiotherapy. We know that we can only treat a person holistically if we consider all of these aspects. Thus, we hope that the conference will also encourage cooperation between the different professional groups.

We hope that the conference will offer a comprehensive overview of the issue of the health of the elderly, and encourage researchers, professionals and students to continue thinking, working, researching and taking action. The scientific and professional literature on the topic of the health of the elderly is already quite extensive, but it is nevertheless necessary to join forces in the coming years and decades to shape the society in such a way as to ensure healthy aging for everyone.

*Prof. Nejc Šarabon, PhD.,
chair of the Conference Programme Committee*

**Vabljeni
predavatelji
Invited lecturers**



Sabina Passamonti je diplomirala s področja medicine in kirurgije ter doktorirala s področja biokemije. Raziskovalno se osredotoča na membranski transport bilirubina in flavonoidov. Je avtorica 76-ih znanstvenih člankov, od tega je pri polovici glavna avtorica, ter 4-ih poglavij v znanstvenih monografijah. Bila je koordinatorica pri dveh večjih raziskovalnih projektih, v katerih je sodelovalo 21 institucionalnih partnerjev, financiranih s strani evropskih strukturnih skladov (Trans2Care in Innov-H2O). Je partnerica projekta Agrotur II, ki nadaljuje z aktivnostmi predhodnega projekta Agrotur. Poučuje biokemijo na študijskih programih prve in druge stopnje. Je članica doktorske šole za nevroznanosti in kognitivne znanosti. Ima bogate izkušnje pri številnih javnih socialnih, izobraževalnih in kulturnih dejavnostih s področja svojega delovanja. V letih 2012 in 2016 je bila odgovorna za habilitacije rednih profesorjev na nacionalni ravni, od leta 1992 pa je zaposlena kot raziskovalka - znanstvena sodelavka.

Sabina Passamonti holds a degree in Medicine and Surgery with a Ph.D. in biochemistry. She performs research studies on membrane transport of bilirubin and flavonoids. She is the author of 76 scientific publications, half of them in the role of principal author, and 4 book chapters. She had coordinating roles in two major R & I network projects, involving 21 institutional partners and financed by European structural funds for around € 4 million (Trans2Care and Innov-H2O). She is partner of Agrotur II project, which continues the activities of the previous project Agrotur. She teaches biochemistry in first and second level courses. She is a member of the doctoral college in Neurosciences and Cognitive Sciences. She has extensive experience in third mission activities. She is the holder of a national scientific qualification for the role of full professor in 2012 and 2016. She has been assistant researcher since 1992.



Prof. dr. Zvezdan Pirtošek, dr. med. je predstojnik katedre za nevrologijo na Ljubljanski medicinski fakulteti in dolgoletni predstojnik kliničnega oddelka za bolezni živčevja Univerzitetnega kliničnega centra Ljubljana ter soustanovitelj skupnega interdisciplinarnega študijskega programa druge stopnje kognitivna znanost - MEI:CogSci, ki poteka na Univerzi v Ljubljani, Dunaju, Budimpešti, Bratislavi in Zagrebu. Deluje tudi kot predsednik Slovenskega sveta za možgane in kot predstavnik Slovenije v upravnem odboru JPND (skupni program EU za raziskave in zdravljenje neurodegenerativnih motenj). Njegovi glavni raziskovalni interesi vključujejo neurodegenerativne bolezni, zlasti Parkinsonovo bolezen in Alzheimerjevo bolezen, kognitivno nevroznanost in starost kot obliko diskriminacije in predsodkov. Za izjemno prodorno, visoko strokovno in človekoljubno delovanje na področju demence je s strani predsednika republike Boruta Pahorja prejel državno odlikovanje red za zasluge.

Zvezdan Pirtošek, MD, PhD is a consultant neurologist, Head of Chair of Neurology, Faculty of Medicine University of Ljubljana (UL), Professor of Neurology and co-founder of the interdisciplinary international Middle European post-graduate study of cognitive sciences MEI:CogSci at Universities of Ljubljana, Vienna, Budapest, Bratislava and Zagreb. He serves as the president of Slovenian Brain Council and as a representative of Slovenia in Managing Board of JPND (EU joint programme on research and treatment of neurodegenerative disorders). His main research interests include neurodegenerative diseases, particularly Parkinson's disease and Alzheimer's disease, cognitive neuroscience and ageism as a form of discrimination & prejudice. For his contribution in the field of dementia President of the Republic distinguished him with The Order of Merit of Republic of Slovenia.



Doc. dr. *Simona Hvalič Touzery* (dr., mag. soc., univ. dipl. soc.) je docentka, zaposlena na Centru za družboslovno informatiko Fakultete za družbene vede Univerze v Ljubljani. Raziskovalno deluje na področju staranja od leta 2001 naprej, z vsebinami, ki posegajo na področje zdravja in zdravstva od leta 2010 naprej; z evalvacijo storitev teleskrbe in telezdravja pa od leta 2017 naprej. Pred tem je bila zaposlena na Inštitutu Antona Trstenjaka (2001-2010) in na Fakulteti za zdravstvo Angele Boškin (2010-2017). Od leta 2017 dela kot raziskovalka in koordinatorica projektov s področja pametnih tehnologij za aktivno staranje, s poudarkom na učinkih uporabe pametnih tehnologij in njihovo sprejemanje med starejšimi osebami in njihovimi neformalnimi oskrbovalci. Je avtorica številnih znanstvenih in strokovnih prispevkov. Z letom 2020 se je kot Management Committee Substitute vključila v COST Action NET4AGE-FRIENDLY. Je članica Eurocarers in International Society for Gerontechnology (ISG).

Simona Hvalič-Touzery (PhD in Social Work /Msc, BSc in Sociology) is Assistant Professor at the Centre for Social Informatics, Faculty of Social Sciences, University of Ljubljana. She has been working on ageing issues since 2001, on health care and health promotion since 2010, and on telecare and telehealth evaluation since 2017. Before her current position, she worked at Anton Trstenjak Institute (2001-2010) and at Angela Boškin Faculty of Health Care (2010-2017). Since 2017 she has been working as a researcher and coordinator of national and international projects focusing on smart solutions for active ageing. She is particularly interested in the results of the use of telecare for older people and their informal carers and their acceptance. She is the author of numerous scientific and professional publications. She is Management Committee Substitute in COST action NET4AGE-FRIENDLY, individual observer member of Eurocarers and full member of International Society for Gerontechnology.



Sandra Zampieri se ukvarja z biologijo skeletne mišice, je magistrica bioloških znanosti in doktorica eksperimentalne revmatologije. Je docentka na Oddelku za kirurgijo, onkologijo in gastroenterologinjo v Padovi in profesorica splošne patologije na Medicinski fakulteti Univerze v Padovi. Je članica Italijanskega Meduniverzitetnega Inštituta za miologijo in Medresorskega raziskovalnega centra za miologijo, biologijo, patofiziologijo, klinično obravnavo in biotehnologijo Univerze v Padovi. Avtor več kot 80 objav v mednarodnih znanstvenih revijah. Odgovorna je za neodvisno vrsto raziskav, ki obravnavajo patofiziološke mehanizme izgube mišične mase pri staranju in kaheksiji pri raku z morfološko in strukturno karakterizacijo skeletnih mišic, in živčno-mišičnih povezav, ter izražanje analiznih poti, ki uravnavajo mišični razvoj in oživčenost.

Sandra Zampieri is a muscle biologist with a master degree in Biological Sciences, and PhD in Experimental Rheumatology. She is Assistant professor at the of Department of Surgery, Oncology and Gastroenterology, in Padova and teaching professor of General Pathology, of the School of Medicine at the University of Padua. She is Member of the Italian Interuniversity Institute of Myology and of the Interdepartmental Research Center of Myology, Biology, Physiopathology, Clinical and Biotechnology of the University of Padova. Author of more than 80 publications in international peer-reviewed journals. She is responsible for an independent line of research addressing the patho-physiological mechanisms of skeletal muscle wasting in ageing and cancer cachexia by morphological and structural characterization of skeletal muscle and neuromuscular junction and expression analyses of the signaling pathways that regulate muscle trophism and innervation.

**Plenarna
predavanja
Plenary lectures**

Vabljeni predavanja

Odnos do podpornih tehnologij med starejšimi osebami in neformalnimi oskrbovalci v Sloveniji

Simona Hvalic-Touzery, Vesna Dolničar

Univerza v Ljubljani, Fakulteta za socialno delo, Center za družboslovno informatiko, Ljubljana,

Uvod. Kljub dokazom o pozitivnih učinkih podpornih tehnologij na življenje starejših oseb in njihovih oskrbovalcev, je razširjenost njihove uporabe še vedno nizka, še posebej v Sloveniji. V zadnjih letih so bile večinoma razvite ozko usmerjene tehnološko podprte rešitve. V okviru mednarodnega projekta i-evAA Lution smo proučevali sprejetje in učinke uporabe paketa z več pametnimi rešitvami na starejše ljudi, ki živijo doma, in na njihove neformalne oskrbovalce. Predstavljamo preliminarne rezultate dela študije, ki se osredotoča na rezultate osnovnega anketnega vprašalnika med slovenskimi udeleženci študije.

Metode. Randomizirana kontrolirana raziskava je potekala od 2019 do 2021 v Osrednjeslovenski regiji. V vzorec je bilo vključenih 55 diad starejših prejemnikov oskrbe (PE) in njihovih neformalnih oskrbovalcev (SE). PE so bili v povprečju stari 78,6 let ($SO = 7,79$). 43,6 % jih je imelo v preteklem letu izkušnjo s padcem. SE so bili v povprečju stari 52,8 let ($SO = 11,58$). Večinoma (71 %) so bili otroci prejemnika neformalne oskrbe. PE in SE so izpolnili vprašalnike v treh ali štirih časovnih točkah: na začetku (pred naključno umestitev v testno ali kontrolno skupino), po namestitvi (samo testna skupina), po 4-5 mesecih (obe skupini) in na koncu, po 12 mesecih (samo kontrolna skupina). Podatki so bili obdelani s statističnim paketom SPSS 20.0. Rezultati. Ugotovili smo statistično pomembno razliko v zanimanju PE in njihovih SE za novo tehnologijo ($MPE = 2,63$, $MSE = 2,12$, $p = 0,000$) ter v njihovem sprejemanju tehnologij ($MPE = 3,12$, $MSE = 3,70$, $p = 0,004$). Tako PE kot SE so kot najpomembnejše lastnosti testiranega paketa pametnih rešitev prepoznali zagotavljanje varnosti ($MPE = 4,32$, $MSE = 4,46$), zagotavljanje storitev v nujnih situacijah ($MPE = 4,17$, $MSE = 4,41$) in storitve povezane s testiranim paketom (npr. namestitve, vzdrževanje) ($MPE = 4,17$, $MSE = 4,36$). Najmanj pomembna lastnost so bile prostočasne dejavnosti ($MPE = 1,98$, $MSE = 2,35$).

Razprava in zaključek. Študija prispeva k omejenim empiričnim dokazom o sprejemanju podpornih tehnologij in odnosu do njih med starejšimi osebami in njihovimi oskrbovalci v Sloveniji. Razumevanje njihovega dojetja podpornih tehnologij in njihovih potreb je koristno tako za razvijalce kot za ponudnike tovrstnih rešitev in lahko doprinese k bolj učinkovitemu uvajanju inovativnih podpornih tehnologij v zdravstvu in oskrbi.

Ključne besede: podporne tehnologije, sprejemanje tehnologij, odnos do tehnologij, randomizirana kontrolirana raziskava

Invited lecture

Attitudes towards smart technologies among older people and their informal carers in Slovenia

Simona Hvalic-Touzery, Vesna Dolničar
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Introduction: Despite the growing body of evidence of smart solutions' positive outcomes on older people and their informal carers, the use of these solutions is still low, even more so in Slovenia. In recent years, mostly single smart solutions have been developed, covering only a small range of applications. The international project i-evAALution evaluated the acceptance and the impact of the bundle of several single solutions on community-dwelling older people and their informal carers. We present the preliminary results of only one segment of the whole study focusing on the results of a baseline questionnaire conducted in Slovenia.

Methods: The randomised control trial was conducted in 2019-2021 in the Central Slovenia region. A total of 55 dyads, including older care recipients (PE) and their primary informal carers (SE), were recruited and completed the baseline questionnaire. PE were on average 78.6 years old (SD = 7.79) and 43.6 % had fallen in the past year. SE were on average 52.8 years old (SD = 11.58). The majority (71 %) of SE were the children of the PE. Participants completed questionnaires at three or four measurement time points: at baseline (before randomisation to test or control group), post-installation (test group only), after 4-5 months (both groups), and after 12 months (control group only). Data were processed using the statistical package SPSS 20.0. Results: We observed a significant difference in technology competence between care recipients and carers (MPE = 2.63, MSE = 2.12, $p = 0.000$) and the interest in technology (MPE = 3.12, MSE = 3.70, $p = 0.004$). In addition, the most important features of a tested i-evAALution bundle recognised by both carers and care recipients were safety (MPE = 4.32, MSE = 4.46), emergency services (MPE = 4.17, MSE = 4.41) and technical services (MPE = 4.17, MSE = 4.36). The least important feature was leisure activities (MPE = 1.98, MSE = 2.35).

Discussion and conclusions: This study contributes to a limited empirical evidence on the acceptance and attitudes of older people and their informal carers in Slovenia towards smart solutions in health and social care. Understanding their perceptions of technology and needs can also help the developers of such solutions, as well as the providers in the market, and support better deployment of such smart solutions in health and social care.

Keywords: assistive technologies, technology acceptance, technology attitudes, randomised control trial

Vabljeni predavanje

Bilirubin kot biomarker tveganja za nastanek bolezni: reševanje analitičnega izziva

Sabina Passamonti

Univerza V Trstu, Oddelek za znanost življenja, Trst, Italija

Uvod. Bilirubin je lipofilna molekula, katere normalna koncentracija v serumu je od 3,5–20 μM , od tega se ga <5 % nahaja v obliki bilirubin diglukuronida. Te vrednosti so posledica ravnovesja med dnevno proizvodnjo približno 300 mg bilirubina, ki nastane pri katabolizmu hema, in izločanjem bilirubina diglukuronida z žolčem. Vsako odstopanje od teh vrednosti kaže na povečano razgradnjo hemoglobina ali na odpoved jeter. Dejansko je blago zvišanje bilirubina, tako kot pri Gilbertovem sindromu, povezano z manjšim tveganjem za kardiovaskularne bolezni in zmanjšanim tveganjem smrtnosti. To odkritje je vodilo v iskanje negenetskih dejavnikov, ki povečujejo bilirubin do zgornjih meja njegovih običajnih vrednosti, kar bi omogočilo izboljšati izbiro ustreznih zdravil, prehranskega in življenjskega sloga v obdobju staranja. Zaščitni učinek bilirubina pripisujejo njegovi sposobnosti odstranjevanja prostih radikalov redoks para bilirubin / biliverdin. Vendar pa metode za njegovo analizo v eksperimentalni in klinični medicini zaenkrat še nimamo, kar preprečuje poglobljeno razumevanje dejavnikov in mehanizmov, ki so povezani z natančnim uravnavanjem homeostaze bilirubina. Zato smo za diagnostične potrebe razvili enostavno, visoko zmogljivo metodo za analizo celotnega nabora žolčnih pigmentov v človeški krvi (tj. biliverdin, bilirubin in bilirubin glukuronid), pri kateri potrebujemo majhen volumen (10 μL) kapilarne krvi, odvzete s punkcijo iz prsta.

Metode. Izdelali smo bifunkcionalne sintetične beljakovine (HUG), sestavljene iz beljakovinskega odra (HELP), spojenega z UnaG, ki veže bilirubin in oddaja fluorescenco. Analizo fluorescenčnega bilirubina smo izvedli na mikrotitrskih ploščah s pomočjo ustreznega čitalca.

Rezultati. Opredelili smo kinetiko vezave bilirubina s HUG. Zaradi zelo visoke afinitete je HUG omogočil fluorimetrično titracijo bilirubina v nevtralnih raztopinah brez albuminov v območju 2–100 nM. Ko je bil v raztopini kot kompleks z albuminom, je HUG zajel ves z albuminom vezan bilirubin. Metodo HUG smo preverili in primerjali s standardno metodo, ki temelji na diazo reagentu. Uporabili smo ga za neposredno mikroanalizo bilirubina v eksperimentalni hepatologiji, kot tudi v človeški in živalski krvi.

Razprava in zaključki. Ta metoda odpira možnosti za analizo celotnega nabora krvnih žolčnih pigmentov v eksperimentalni biologiji in medicini ter v kliničnih preskušanjih in prilagojenih medicinskih študijah, kar odpira perspektivo za prepoznavanje dejavnikov, ki sodelujejo pri presnovi bilirubina in homeostazi.

Ključne besede: bilirubin, biomarker, bolezenska tveganja

Invited lecture

Bilirubin as a biomarker of disease risk: addressing the analytical challenge

Sabina Passamonti

University of Trieste, Department of Life Sciences, Trieste, Italy

Introduction. Bilirubin is a lipophilic molecule found in serum at the concentration of 3.5-20 μM , with $< 5\%$ of that being bilirubin diglucuronide. These values result from the balance between daily production of about 300 mg from heme catabolism and the biliary elimination of bilirubin diglucuronide. The clinical value of bilirubinemia has grown from being just a diagnostic biomarker of haemolysis or liver failure to a predictive one. Mild elevations of bilirubin, as in Gilbert's syndrome, are associated with reduced cardiovascular disease and mortality risk. This has sparked the ambition to find non-genetic factors, such as drugs, diets, or life styles, driving mild hyperbilirubinemia. The protective effect of bilirubin is ascribed to the free radical scavenging activity of the redox couple bilirubin/biliverdin. However, high-throughput methods for its analysis are so far lacking, which prevents a deeper understanding of bilirubin homeostasis. We have addressed this unmet diagnostic need by developing a simple, high-throughput method for the analysis of the full set of bile pigments in human blood (i.e., biliverdin, bilirubin, and bilirubin glucuronide), which requires a tiny volume (10 μL) of capillary blood sampled by finger puncture.

Methods. We produced a bifunctional synthetic protein (HUG), composed of a protein scaffold (HELP) fused with UnaG, which binds bilirubin and emits fluorescence. The fluorimetric assay is performed in microtiter plates, requires a multiplate reader, and produces no waste.

Results. We characterised the kinetics of bilirubin binding by HUG. Due to its very high affinity, HUG enabled the fluorimetric titration of bilirubin in albumin-free, neutral solutions in the range 2-100 nM. When in solution as a complex with albumin, all albumin-bound bilirubin was captured by HUG. The HUG method was validated and compared to the standard method based on the diazo reagent. We have applied it for the direct microanalysis of bilirubin in experimental hepatology, human and animal blood.

Discussion and conclusions. This method opens the opportunity to analyze the full set of blood bile pigments in experimental biology and medicine, as well as in clinical trials and personalized medicine studies. We expect to contribute to an improved scientific understanding of bilirubin metabolism and its regulation.

Keywords: bilirubin, biomarker, disease risk

Vabljeno predavanje

Med staranjem in demenco

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V zgodovini je meja med fiziološkim staranjem in demenco ostajala nejasna in neopredeljena, v večini družb in obdobjih pa je bila demenca razumljena kot sestavni del staranja. Šele nevropatološke študije Aloisa Alzheimerja so jasno opredelile demenco kot bolezensko stanje z značilnimi kliničnimi (izrazita motnja višjih miselnih funkcij, ki v veliki meri onemogoča smiselne dnevne aktivnosti) in histološkimi (amiloidne lehe in nevrofibrilarne pentlje) znaki. Kljub temu pa je tudi izkušenemu zdravniku v začetnih ali v predkliničnih stopnjah Alzheimerjeve bolezni zgolj na osnovi kliničnega pregleda dostikrat težko opredeliti ali gre za začetne (najpogostejše spominske) motnje v okviru fiziološkega staranja ali pa se te težave že odsevajo bolezenski proces.

S starostjo se upočasni hitrost procesiranja informacij, zato je med prvimi znaki upad deljene pozornosti, nekoliko težji in počasnejši priklic in učenje novih informacij, upočasnjeno je psihomotorično odzivanje, razmišljanje in govor; a te spremembe so zelo individualne in nekatere študije ugotavljajo, da pri 70ih 25 % starostnikov kognitivno še vedno funkcionira tako dobro kot povprečen 20-letnik. O blagi kognitivni motnji (BKM) govorimo takrat, ko o prvih kognitivnih spremembah (zlasti pozabljivosti) poroča posameznik ali njegovi svojci, je pa še vedno samostojen, brez težav v izvajanju vsakodnevnih aktivnosti. Podrobno testiranje potrди težave. Vzrok BKM je lahko stres, preobremenitev, depresija, a vendar BKM predstavlja tudi povečano tveganje za nastanek demence; v tem primeru bo ponavljano, serijsko testiranje dalo vse slabši rezultat, prehod v neurodegenerativno demenco pa bomo takrat že lahko potrdili s slikovnimi metodami in preiskavo likvorja. Če je v ospredju motnja spomina (BKM amnestičnega tipa) je bolj verjeten prehod v Alzheimerjevo bolezen, če pa gre za upad kake druge kognitivne funkcije (pozornost, govor, računanje, abstraktno razmišljanje - BKM neamnestičnega) tipa pa razvoj druge vrste demence.

Za medicino poseben izziv predstavljajo t.i. 'super starostniki', ki ostanejo kognitivno izjemno dobro ohranjeni globoko v starost, ki praviloma presega stoletje. Zanimivo je, da imajo nekateri tipične histološke spremembe, ki jih je opisal Alois Alzheimer.

Ključne besede: staranje, blaga kognitivna motnja, demenca

Invited lecture

Between ageing and dementia

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Historically, the boundary between physiological ageing and dementia has remained blurred and undefined, and in most societies and periods, dementia has been understood as an integral part of ageing. Only neuropathological studies by Alois Alzheimer's clearly defined dementia as a disease state with characteristic clinical (pronounced impairment of higher mental functions that largely precludes meaningful daily activities) and histological (amyloid plaques and neurofibrillary tangles) signs. Nevertheless, in the initial or preclinical stages of Alzheimer's disease it is often difficult - even for an experienced clinician - to determine on the basis of a clinical examination whether the person has an initial (most often memory) impairment associated with physiological ageing or whether his problems already indicative of the neurodegenerative disease process.

With age, the speed of information processing slows down, so among the first signs is a decline in divided attention, slight difficulties in recall and slower learning of new information, slowed psychomotor responses, thought process and speech; but these changes are very individual, and some studies find that at the age of 70, 25% of the elderly still function cognitively as well as the average 20-year-old. We talk about a mild cognitive impairment (MCI) when the first cognitive changes (especially forgetfulness) are reported by an individual or his relatives, while he is still independent, without any problems in performing daily activities. Detailed testing confirms the problems.

MCI can be caused by stress, overload, depression, but it also poses an increased risk of underlying dementia; in this case, repeated, serial testing will give a worsening result, and the transition to neurodegenerative dementia could then be able to be confirmed by imaging methods and cerebrospinal fluid examination. If the memory disorder (i.e. MCI of amnesic type) is in the foreground, the transition to Alzheimer's disease is more probable, but if a decline of some other cognitive function (attention, speech, arithmetic, abstract thinking - i.e. MCI of non-amnesic type), the development of another type of dementia is more likely.

A special challenge for medicine is the so-called 'super agers', seniors, who remain cognitively extremely well preserved deep into old age that typically exceeds a century. Interestingly, some have the typical histological changes described by Alois Alzheimer.

Keywords: ageing, mild cognitive impairment, dementia

Vabljeno predavanje

Aktivno staranje: na skeletno mišico usmerjeni pristopi za zdravo staranje

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Staranje je večplasten proces, na katerega vplivajo imunološki, hormonski in prehranski dejavniki. S staranjem prihaja do upada mišične mase, mišične jakosti in odpornosti. Znanstveni dokazi kažejo na pomembno vlogo živčnega sistema pri strukturnih in funkcionalnih spremembah, povezanih s staranjem; s starostjo prihaja do zmanjšanja oživčenosti mišice, remodeliranja motoričnih enot, ter slabšega delovanja cikla vzdraženosti in kontrakcije. Slednje je ključen dejavnik zmanjšanja mišične jakosti s starostjo. Neuporaba mišic zaradi sedečega načina življenja in s tem povezane negativne strukturne in funkcionalne spremembe na kostno-mišično sistem privedejo do krhkosti ter šibkosti. Študije kažejo, da so šibkost mišic spodnjih udov ter oslajeno ravnotežje ter mobilnost, glavni dejavniki tveganja za padce. Padci lahko privedejo do zlomov, ki so povezani z gibalno oviranostjo, zmanjšano kakovostjo življenja, povečano smrtnostjo, ter povečanimi zdravstvenimi stroški. V zadnjih desetletjih je zaradi podaljševanja življenjske dobe število starostnikov naraslo. Ukrepi, usmerjeni v ohranjanje mišične mase in mišične jakosti so ključnega pomena za aktivno in zdravo staranje. Gibalna aktivnost je primeren ukrep, ki zajema kombinacijo presnovnih, hormonskih, živčnih in mehanskih dražljajev, ki skupaj prispevajo ko izboljšanju morfolgije skeletne mišice ter njene zmogljivosti, ter s tem prispevajo k boljši kakovosti življenja pri starostnikih.

Ključne besede: staranje, ukrepi, kakovost življenja

Invited lecture

Active ageing: targeting the skeletal muscle for a healthy ageing

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Aging is a multifactorial process that is influenced by immunological, hormonal, and nutritional factors. With age, the reduction of muscle mass, strength and resistance are typically observed. Scientific evidences emphasize a role of the nervous system in age-related structural and functional alterations of the skeletal muscle, owing to the degeneration of muscle innervation, motor unit remodeling, and excitation-contraction uncoupling, the latter being one of the major causes of the decreased muscle force. Muscle disuse due to sedentary lifestyle of elderlies accounts for frailty and fragility and it is clearly associated with an impaired structure and function of the musculoskeletal system. Several studies revealed that in the older people, the muscle weakness of the lower extremities or the reduction in balance and mobility capabilities, are major factors contributing to falls. Falls can lead to bone fractures, that are associated with physical disabilities, reduced quality of life, increased mortality, and rise in health care costs. In the last decades, the extended human longevity resulted in increasing numbers of senior individuals in the general population, and interventions focused to the maintenance of muscle mass and strength are crucial for an active ageing linked to a healthy ageing. Physical exercise represents a good option invoking a mixture of metabolic, hormonal, neural and mechanical stimuli that can altogether contribute to the improvement of skeletal muscle morphology and performance, also enhancing the quality of life of trained elderly subjects.

Keywords: aging, interventions, quality of life

Konferenčni povzetki
Conference abstracts

Sekcija/Section
Fizioterapija in zdravje starejših odraslih
Physiotherapy and health of the elderly

Učinki kombinirane vadbe na dejavnike tveganja za srčno-žilne bolezni pri starejših odraslih

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Uvod. Srčno-žilne bolezni zasedajo prvo mesto med vzroki za smrtnost in obolevnost svetovnega prebivalstva, predvsem pri starejših odraslih. Povezane so s številnimi dejavniki tveganja, kot so arterijska hipertenzija, hiperlipidemija, debelost, metabolni sindrom in drugi. Z napredujočim staranjem nastopita upad mišične zmogljivosti in moči ter upad srčne funkcije, kar vodi v splošno telesno oslABLjenost in slabšo kakovost življenja. Vadba je povezana z zmanjšanjem telesne maščobe, teže, izboljšanjem zdravja in mišične zmogljivosti, zato igra pomembno vlogo pri zmanjševanju dejavnikov tveganja za srčno-žilne bolezni. Aerobna vadba naj bi srčno-žilne bolezni preprečevala s stabilizacijo krvnega tlaka in gostote lipo-proteinov, zmanjšanjem vnetnih odzivov in z izboljšanjem delovanja srčno-žilnega sistema. Vendar samo z aerobno vadbo težko dosežemo večjo mišično maso. Kombinacija aerobne vadbe in vadbe proti uporju pa naj bi bila učinkovita pri zmanjševanju telesne maščobe, zvišanju puste telesne mase ter zmanjšanju vnetnih odzivov v telesu. Javnozdravstvene organizacije zato poudarjajo vpliv vadbe kot ne-farmakološke oblike zdravljenja za srčno-žilne bolezni. Namen prispevka je bil predstaviti ugotovitve o učinkih kombinirane vadbe na dejavnike tveganja za srčno-žilne bolezni pri starostnikih.

Metode. Iskanje literature je potekalo v podatkovnih zbirkah PubMed, PEDro, Cochrane Library in CINAHL, s ključnimi besedami in njihovimi kombinacijami v angleškem jeziku: combined exercise AND cardiovascular disease risk factors AND elderly ter po seznamih literature ustreznih člankov.

Rezultati. Analizirali smo 5 randomiziranih kontroliranih poskusov, v katerih so kombinirano vadbo primerjali z aerobno vadbo, dieto ali s skupino brez zdravljenja. Kombinirana vadba je v primerjavi z aerobno vadbo izboljšala pusto telesno maso, navor v kolenskem sklepu in gležnju, nivo CRP v eni raziskavi ter izboljšala hipertenzijo in dislipidemijo v drugi. V primerjavi s skupino brez vadbe je izboljšala telesno sestavo, sistolični krvni tlak, skupni holesterol in premer ter pretok po karotidni arteriji v eni raziskavi ter telesno sestavo, skupni holesterol in vrednosti trigliceridov, navor v gležnju in hitrost hoje v drugi, medtem ko se krvni tlak pri preiskovancih slednje ni spremenil. V primerjavi s skupino brez vadbe je v eni raziskavi kombinirana vadba izboljšala tudi visceralno maščobo, izboljšanja v telesni teži, obsegu pasu, nivoju trigliceridov in krvnem tlaku pa so bila najboljša v skupini s kombinirano vadbo in dieto.

Razprava in zaključek. Kombinirana vadba zmanjša dejavnike tveganja za srčno-žilne bolezni pri starostnikih v večji meri kot aerobna vadba ali zdravstvena vzgoja. Zaradi majhnega števila pregledanih raziskav in različne kakovosti dokazov so potrebne nadaljnje raziskave.

Ključne besede: aerobna vadba, vadba proti uporju, srčno-žilne bolezni, starejši odrasli

Effects of combined exercise on cardiovascular disease risk factors in elderly

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Introduction. Cardiovascular diseases represent the number one cause of mortality and morbidity of the world's population, especially in older adults. They are associated with many risk factors such as arterial hypertension, hyperlipidemia, obesity, metabolic syndrome and others. With aging a decline in muscle performance, strength and heart function occurs, which leads to general physical weakness and poor quality of life. Exercise is associated with lower body fat, improving overall health and muscle strength and is therefore paramount in reducing risk factors for cardiovascular disease. Aerobic exercise is thought to act as prevention from cardiovascular disease by stabilizing blood pressure, lipoprotein density, lowering inflammatory responses and by improving the function of the cardiovascular system. However, with aerobic exercise alone it is difficult to increase lean body mass. A combination of aerobic exercise and resistance training, however, could be effective in reducing body fat, increasing lean body mass, and lowering inflammatory responses in the body. Organizations related to public health have emphasized the role of exercise as a non-pharmacological treatment for cardiovascular disease. The purpose of this article was to present findings on the effects of combined exercise on cardiovascular disease risk factors in elderly.

Methods. The search for articles was conducted in databases PubMed, PEDro, Cochrane Library and CINAHL with key words and their combinations in English language: combined exercise AND cardiovascular disease risk factors AND elderly and in references listed in relevant publications.

Results. We analysed five randomised controlled trials where they compared combined exercise with aerobic exercise, diet or with a group without treatment. In one study combined exercise compared to aerobic exercise improved lean body mass, torque in the knee and ankle joint and CRP levels, and improved hypertension and dyslipidemia in another study. Compared to no treatment, combined exercise improved body composition, systolic blood pressure, increased carotid flow velocity and wall shear ratio. In two other studies who also compared combined exercise with no treatment, improvement was noted in body composition, cholesterol and triglyceride levels in one, and in walking speed and ankle joint torque in the other, while blood pressure remained unchanged. In one study, combined exercise was compared to no exercise, and reduced visceral fat, weight, lower hip to waist ratio, triglyceride levels and blood pressure were observed in the exercise group combining aerobic and strength exercise with diet changes.

Discussion and conclusion. Combined exercise reduces risk factors for cardiovascular diseases to a greater extent than aerobic exercise or health education. Due to a low number and various quality of reviewed studies, further research is needed.

Keywords: aerobic exercise, resistance training, cardiovascular diseases, older adults

Vpliv fizioterapevtske obravnave na pomičnost bolnika s kognitivnim upadom

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Uvod. Dobra pomičnost je ključnega pomena za kvalitetno življenje starostnika. Med dejavniki, ki vplivajo na pomičnost, je poleg staranja, bolezni in poškodb tudi kognitivni upad. Zapleti, povezani z njimi, so pogost razlog za sprejem starostnika v bolnišnično oskrbo. Sprejem v bolnišnico starostniku predstavlja dodaten stres, kar se v praksi kaže kot dejavnik tveganja za zmanjšanje pomičnosti v času hospitalizacije. Z raziskavo smo želeli ugotoviti vpliv 14-dnevne fizioterapevtske obravnave na ohranitev ali izboljšanje bolnikove pomičnosti.

Metode. Uporabili smo kvantitativni retrospektivni dizajn. V raziskavo je bilo vključenih 36 bolnikov, od tega 25 žensk (73,5 %) in 9 moških (26,5 %). Razdelili smo jih na 3 skupine glede na število doseženih točk po smernicah validirane slovenske verzije Kratklega preizkusa spoznavnih sposobnosti (KPSS), in sicer: 23–19 točk – blagi kognitivni upad (17 bolnikov), 18–11 točk – zmerni kognitivni upad (12 bolnikov) in 10 točk ali manj – hud kognitivni upad (5 bolnikov). Bolniki, vključeni v raziskavo, so bili sprejeti na Enoto za gerontopsihiatrijo Univerzitetne psihiatrične klinike Ljubljana med oktobrom 2020 in aprilom 2021. Vključitveni kriteriji so bili starost nad 60 let, potrjen kognitivni upad s KPSS in vključitev v fizioterapevtsko obravnavo. Izključitveni kriteriji so bili poslabšanje kronične bolezni, akutno poslabšanje zdravstvenega stanja in padec med hospitalizacijo. Za oceno pomičnosti smo uporabili de Morton Mobility Index (de Morton indeks pomičnosti - DEMMI). Zaradi nenormalne porazdelitve analiziranih podatkov, smo za preverjanje razlik med prvim in drugim ocenjevanjem z DEMMI testom uporabili Wilcoxonov test. Prag statistične značilnosti smo postavili pri $p < 0,05$.

Rezultati. Pri drugem ocenjevanju je prišlo do izboljšanja rezultatov DEMMI testa v vseh treh skupinah. Najizrazitejše izboljšanje je vidno v skupini z zmernim kognitivnim upadom ($18 \leq \text{KPSS} \leq 11$ točk), ki je statistično značilno ($p = 0,005$). Statistično značilno izboljšanje zaznamo tudi v skupini z blagim kognitivnim upadom ($19 \leq \text{KPSS} \leq 23$ točk) ($p = 0,005$). Izboljšanje pri drugem ocenjevanju z DEMMI testom, ki se pokaže v skupini s hudim kognitivnim upadom, ni statistično značilno ($p = 0,109$).

Razprava in zaključek. Raziskave, ki smo jih zasledili v literaturi, kažejo, da je ustrezna fizioterapevtska obravnava pri osebah s kognitivnim upadom bistvenega pomena. Tudi izsledki naše raziskave potrjujejo, da z usmerjeno fizioterapevtsko obravnavo ohranimo ali celo izboljšamo pomičnost oseb s kognitivnim upadom ne glede na stopnjo le-tega.

Ključne besede: kognitivni upad, pomičnost, fizioterapija

The effect of physiotherapy on the mobility of patients with cognitive impairment

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Introduction. Good mobility is crucial for achieving a good quality of life among the elderly. Factors that affect mobility include aging, disease, and injury, but also cognitive decline. Complications associated with these factors are a common reason for the admission of an elderly person to hospital care. A common reason for admitting an elderly person to hospital care are complications associated with the factors mentioned above. Being admitted to the hospital causes additional stress among the elderly, which in practice manifests itself as a risk factor for reduced mobility during hospitalization. The aim of the present study was to determine the effect of a 14-day physical therapy aiming at maintaining or improving the patient's mobility.

Methods. We used a quantitative retrospective design. The study included 36 patients, 25 of whom were women (73.5 %) and 9 were men (26.5 %). They were divided into 3 groups, based on the number of points each individual achieved in the Mini-Mental State Examination test (MMSE). They were grouped according to the guidelines of validated Slovenian version of MMSE as follows: 23–19 points – mild cognitive impairment (17 patients), 18–11 points – moderate cognitive impairment (12 patients) and 10 points or less – severe cognitive impairment (5 patients). Patients included in the study were admitted to the gerontopsychiatric unit of the University Psychiatric Clinic Ljubljana between October 2020 and April 2021. Inclusion criteria were: aged 60 years or older, confirmed cognitive decline with MMSE, and inclusion in the physical therapy. Exclusion criteria included: worsening of chronic disease, acute deterioration of health or a fall during hospitalization. To assess the patient's mobility, we used the de Morton Mobility Index (DEMMI). Due to the abnormal distribution of the analysed data, the Wilcoxon signed-rank test was used to examine the differences between the first and second assessment with the DEMMI test. The statistical significance of $p < 0.05$ was taken into account.

Results. In the second assessment, the results of the DEMMI test in all three groups improved. The most visible improvement is observed in the group with a moderate cognitive decline ($18 \leq \text{MMSE} \leq 11$ points), which is statistically significant ($p = 0.005$). A statistically significant improvement was also observed in the group with mild cognitive impairment ($19 \leq \text{MMSE} \leq 23$ points) ($p = 0.005$). The improvement in the second assessment with the DEMMI test, which is evident in the group with severe cognitive impairment, is not statistically significant ($p = 0.109$).

Discussion and conclusions. Existing research shows the importance of adequate physiotherapy treatment of people with cognitive impairment. Our research has also shown that targeted physical therapy preserves or even improves the mobility of people with cognitive impairment, regardless of the degree of the latter.

Keywords: cognitive impairment, mobility, physiotherapy

Prisotnost dejavnikov tveganja za padce pri doma živečih starejših odraslih – pilotna raziskava

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Uvod. Padci starejših odraslih so pomemben javnozdravstveni in socialno-ekonomski problem, saj predstavljajo veliko breme zdravju starejših odraslih, prizadenejo poškodovance, njihove družine in družbo. Približno ena tretjina starejših ljudi, živečih v skupnosti pade vsaj enkrat letno. Padci imajo običajno daljnosežne posledice na življenje ljudi, saj pogosto vodijo v ireverzibilno slabljenje telesne in duševne funkcije, institucionalizacijo in smrt. Rehabilitacija posledic padcev je dolgotrajna in draga za zdravstveni sistem. Vzrok padcev je kompleksna kombinacija bioloških in vedenjskih dejavnikov in dejavnikov fizičnega ter socialno ekonomskega okolja. Glavni namen naše raziskave je bil ugotoviti, kakšna je ogroženost za padce in funkcijski status v raziskavo vključenih, doma živečih, starejših Slovencev. Posnetek stanja bomo uporabili za nadaljnje oblikovanje preventivne obravnave starejše osebe na domu.

Metode. V pilotno raziskavo smo vključili 5984 oseb (67 % Ž, 33 % M; povprečna starost, 79.7 let [SD, 7.7]), starejših od 64 let, iz 27 pilotnih okolij, iz vseh zdravstvenih regij. Ocena dejavnikov tveganja je bila sestavljena iz dveh delov; strukturiranega intervjuja s prevedenim STEADI vprašalnikom- Ocena tveganja za padce in ocene mišične moči, hoje in ravnotežja s funkcijskim testom - Časovno merjeni vstani in pojdi test. Končna ocena tveganja za padce je bila odvisna od števila doseženih točk na vprašalniku in rezultata funkcijskega testa.

Rezultati. Od vseh 5984 vključenih oseb smo oceno tveganja za padce pridobili za 4883 (81,60 %) oseb. Po analizi vprašalnikov smo ugotovili, da na domu živi 35 % (N= 1711) oseb z nizkim, 38,8 % (N= 1893) oseb s srednjim in 26,2 % (N=1279) oseb z visokim tveganjem za padce.

Razprava in zaključek. Iz analize podatkov lahko sklepamo, da na svojih domovih živi 65 % starejših, za katere lahko pričakujemo, da bodo v prihodnjem letu vsaj enkrat padli (srednja ali visoka ocena tveganja za padce). Naši zaključki podpirajo ohranitev obravnave padcev pri starejših osebah na domu tudi po zaključku pilotne raziskave. Pri obravnavi je nujno potrebno omogočiti multidisciplinarno obravnavo starejše osebe na domu. Tako bi lahko obrnili naraščajoči trend pojavnosti padcev pri starejših odraslih in delovali ekonomično, v prid aktivnemu in zdravemu staranju.

Ključne besede: padci, starejši odrasli zdravo staranje

Fall risk assessment for home-dwelling older adults - pilot study

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Introduction. Falls are an important public health and socio-economic problem, as it represents a major burden on the health of older adults, affecting the injured, their families and society. About one-third of older people living in the community fall at least once a year. Falls usually have far-reaching consequences for people's lives, often leading to irreversible impairment of physical and mental function, institutionalization and death. Rehabilitation of the consequences of falls is time consuming and expensive for the health care system. Fall causes are a complex combination of biological and behavioral factors and factors of the physical and socio-economic environment. The main purpose of our research was to assess risk for falls and functional status of elderly people, living at home. Needs assessment will help us at further designing of preventive treatment for the elderly at their homes.

Methods. The pilot study included 5984 participants (67 % F, 33 % M; mean age, 79.7 years [SD, 7.7]), older than 64 years, from 27 pilot environments, from all Slovenian health regions. Fall risk assessment consisted of two parts; 1) structured interview, with translated STEADI questionnaire- Risk assessment for falls and 2) muscle strength, gait and balance assessments with a functional test – Timed up and go test (TUG). Final assessment depended from the number of points scored on the questionnaire and the result of the functional test.

Results. The Fall risk assessment was obtained for 4883 (81.60 %) participants. 35 % (N = 1711) participants had low, 38.8 % (N = 1893) participants had medium and 26.2 % (N = 1279) participants had high risk of falls after the assessment.

Discussion and conclusions. From the analysis of the data we can conclude, there are 65 % of the included older adults, living at home, who can be expected to fall at least once in the coming year (medium or high risk of falls). Our conclusion supports maintenance of the treatment for falls in older adults, living at home continuously after the end of a pilot study. Treatment should enable multidisciplinary treatment. In this way, we could reverse the growing trend of falls incidence in older adults and operate economically for active and healthy aging.

Keywords: falls, elderly, healthy ageing

Učenje večje samostojnosti starejših odraslih že s pravilnim pristopom k premeščanju, posedanju in vstajanju

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Uvod. Staranje prebivalstva je že nekaj časa znan demografski pojav, ki ima posledice na različnih področjih. Posledice staranja so tudi slabša mobilnost in slabša samostojnost starejših, slednji pa potrebujejo več zunanje pomoči. Zdravstveno negovalno osebje ter drugi zdravstveni delavci navajajo velik nivo težav v mišično-skeletnem aparatu, ki so lahko posledica želje, da starejšim pomagajo tudi pri intervencijah, kot so premeščanje, posedanje in vstajanje. Posledica tega je, da osebje naredi večji del pomoči, kot je za starejšega potrebno, starejši pa pri tem ne napredujejo v samostojnosti, kar pa bi moral biti eden izmed terapevtskih ciljev. Na drugi strani pa se tudi kaže, da poučevanje izvajanja intervencij ne sledi znanstvenim dognanjem na področju biomehanike, ergonomije, rehabilitacije in drugih.

Metode. Pregledana je bila literature s področja opisane problematike ter izdelan biomehanski oz. biomehanskoergonomski model. Z modelom je bil najprej analiziran tradicionalni pristop k izvedbi intervencij premikanja, posedanja in vstajanja. Nadalje je bil pristop k izvedbi intervencij nadgrajen v obliki biomehansko-ergonomskega modela pristopa k starejšim, kjer so posamezne faze aktivacije analizirane in optimizirane.

Rezultati. Model fizikalno optimizira predpogoje za izvedbo premeščanja, posedanja in vstajanja. Kot bolj optimalen se pokaže pristop brez dviganja in vlečenja (rotacija delnih centrov gravitacije pri obračanju in aktivacija starejših, rotacija centra gravitacije brez dviganja s pomočjo pritiskov v smeri gravitacije pri posedanju), pristop iz strani namesto od spredaj (predvsem pri vstajanju, učenju samostojnosti) ter zaporedje postavitev telesnih segmentov pred izvedbo intervencij vključno z nadzorom izvajalca nad starejšim in ne obratno.

Razprava in zaključki. Posledica uporabe modela je pravilna in večja aktivacija starejših, posledično se izboljša mobilnost in samostojnost le-teh, preprečuje se padce, na drugi strani pa se fizično razbremeni osebje, to pa bo imelo za posledico manj težav v mišično-skeletnem aparatu.

Optimizacija izvedbe intervencij premikanja, posedanja in vstajanja s starejšimi lahko poveča varnost zaposlenih in starejših, prav tako pa se izboljša samostojnost in funkcionalnost starejših.

Ključne besede: intervencije mobilnosti, biomehanska analiza, ergonomija, varnost in zdravje pri delu

Learning of greater independence of the elderly with the right approach to moving, sitting and standing up

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Introduction. Aging of the population has been a well-known demographic phenomenon for some time, with its consequences in various areas. The consequences of aging are also poorer mobility and poorer independence of the elderly, and they need more external help. Nursing staff and other health care professionals indicate a high level of musculoskeletal problems, which may be due to a desire to help the elderly with interventions such as moving, sitting, and standing up. As a result, staff do more of the help than is needed for the elderly, and the elderly do not progress on their own, which should be one of the therapeutic goals. On the other hand, it also shows that teaching the implementation of interventions does not follow scientific findings in the field of biomechanics, ergonomics, rehabilitation and others.

Methods. The literature review was performed and a biomechanical or biomechanical-ergonomic model was developed. The model first analyzed the traditional approach to performing interventions of movement, sitting, and standing up. Furthermore, the approach to the implementation of interventions was upgraded in the form of a biomechanical-ergonomic model of the approach to the elderly, where individual phases of activation are analyzed and optimized.

Results. The model physically optimizes the prerequisites for performing moving, sitting and standing up. The approach without lifting and pulling (rotation of partial centers of gravity when turning and activation of the elderly, rotation of the center of gravity without lifting by use of gravity during sitting up), approach from the side instead of from the front (especially when getting up, learning independence) and the sequence of placement of body segments prior to performing interventions including the staff supervision of the elderly and not vice versa.

Discussion and conclusion. The use of the model results in the correct and greater activation of the elderly, consequently improving their mobility and independence, preventing falls, and on the other hand physically relieving staff, which will result in fewer problems in the musculoskeletal system. Optimizing the implementation of interventions for moving, sitting and standing up with the elderly can increase the safety of employees and the elderly, as well as improve the independence and functionality of the elderly.

Keywords: mobility interventions, biomechanical analysis, ergonomics, safety and health at work

TELE-Fizioterapija v centrih za starejše v času epidemije: pilotna študija

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Uvod. V centrih za starejše odrasle (CSO) je preventiva za preprečevanje širjenja okužbe SARS-CoV-2 temeljila na zmanjšanju socialnih stikov. Posledično je bila omejena skupinska rehabilitacija, pri kateri se obravnava več uporabnikov hkrati. To predstavlja izziv za obravnavo dosedanjega števila uporabnikov. Zaradi tega smo želeli s pomočjo obravnave na daljavo (TELE-FT) ugotoviti ali na ta način lahko vzdržujemo enako število fizioterapevtskih storitev (FS) kot s standardno (kontaktno) FT. Namen je bil tudi ugotoviti ali so uporabniki zadovoljni s TELE-FT.

Metode. V raziskavi je bilo vključenih 60 pacientov iz CSO Lucija, ki so bili razdeljeni v štiri skupine glede na njihovo stopnjo oskrbe (oskrba 1- Popolnoma samostojni uporabniki, oskrba 2 - Samostojni uporabniki vendar potrebujejo pomoč kot je kopanje itn., oskrba 3- Nesamostojni uporabniki oz. nepokretni, oskrba 4- Uporabniki z znaki demence). Po predhodnem pregledu, so uporabniki imeli s strani vodje fizioterapije dodeljene običajne FS (skupinske vaje, individualne vaje, elektroterapije, dihalne vaje itn.). V študiji smo med skupinami preiskovancev primerjali delež izvedenih FS pri posamezniku v času pilotne izvedbe TELE-FT. Slednjo smo izvedli v obliki podajanja napotkov preko video povezave v realnem času. Med skupinami smo primerjali tudi stopnjo zadovoljstva uporabnikov s TELE-FT s 5 stopenjsko lestvico (1- popolnoma nezadovoljen 5 – popolnoma zadovoljen). Za statistično primerjavo skupin smo uporabili dvosmerno analizo variance za ponovljene meritve (RM ANOVA). Ali je stopnja zadovoljstva povezana z upadom FS smo preverjali s Pearsonovim korelacijskim koeficientom.

Rezultati: Rezultati RM ANOVE so pokazali statistično značilen učinek dejavnika »Stopnja oskrbe« ($F = 4.01$, $p = 0.015$) ter pričakovano tudi dejavnika »FS« ($F=92.039$, $p<0.001$). Nadaljnja parna primerjava med skupinami preiskovancev z različno stopnjo oskrbe je pokazala značilno razliko v številu FS le med Stopnjo oskrbe 2 in Stopnjo oskrbe 3. Stopnja zadovoljstva je bila pozitivno povezana z deležem izvedenih FS v TELE-FT obliki ($r = 0,406$, $p = 0,002$), pri čemer upad števila obravnav pojasni zgolj 16,45 % variance zadovoljstva s TELE-FT.

Razprava in zaključek: Glede na število izvedenih posameznih FS se najmanjši upad kaže pri storitvah kot so skupinske vaje, individualne vadbe in dihalna fizioterapija. Pri tem je upad najmanjši pri pacientih prva stopnja oskrbe. Navedene storitve so ključne pri rehabilitaciji starejše populacije, zato smo ugotovili, da s TELE-FT spodbujamo starejše k redni vadbi. Stopnja zadovoljstva pacientov s TELE-FT je bila pozitivno povezana z deležem izvedenih FS. TELE-FT je sprejemljiva oblika obravnave med epidemijo SARS-CoV-2 predvsem pri samostojnih starejših.

Ključne besede: starejši ljudje, TELE-FT, standardna fizioterapija, stopnja oskrbe

Remote physiotherapy in elderly center during epidemic: a pilot study

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Introduction. In the Centers for the Elderly (CE), the main prevention for spread of SARS-CoV-2 infection was based on social distancing. As a result, group rehabilitation was limited, where several users were treated at the same time. This presented a challenge to address the needs of all the current users. For this reason, we wanted to use remote physiotherapy (TELE-FT) to determine whether we can maintain the same number of physiotherapy services (PS) as with the standard (contact) FT. The purpose was also to determine whether users are satisfied with TELE-FT.

Methods: The study included 60 patients from CE in Lucija who were divided into four groups according to the level of care (care 1 - Fully independent users, care 2 - Independent users requiring assistance (bathing), care 3 - Non-independent users / immobile, care 4 - Users with signs of dementia). After a preliminary examination, the users were assigned with PS according to the needs of the individual (group exercises, individual exercises, electrotherapy, etc.). We compared the number of PS provided during the implementation of the standard FT and TELE-FT. TELE-FT was performed via real-time video link instructions. The results were also compared according to the level of care of the subjects. We additionally assessed user satisfaction with TELE-FT (ratings from 1-5)). Two-way analysis of variance for repeated measurements (RM ANOVA) was used for statistical comparison of groups. Whether the satisfaction level is related to the FS decline was examined by the Pearson's correlation coefficient.

Results: The results of RM ANOVA showed a statistically significant effect on the »Level of care« ($F = 4.01$, $p = 0.015$) and as expected on the »PS« ($F = 92.039$, $p < 0.001$). Further comparison between groups of subjects with different levels of care showed a significant difference in the number of treatments performed only between Level of Care 2 and Level of Care 3. The level of satisfaction was positively related to the share of performed treatments in TELE-FT form ($r = 0.406$, $p = 0.002$), with the decrease in the number of treatments explaining only 16.45% of the variance of satisfaction with TELE-FT.

Discussion and conclusion: Reviewing the number of individual PS performed, the smallest decline is seen in services such as group exercises, individual exercises and respiratory physiotherapy, especially in patients who are in the first level of care i.e. independent. These services are crucial in the rehabilitation of elderly population, so we concluded that with TELE-FT we could motivate them to exercise more regularly. The level of patient satisfaction with TELE-FT was positively correlated with the number of treatments performed. TELE-FT is an acceptable form of treatment during the SARS-CoV-2 epidemic, especially in the independent elderly.

Keywords: elderly, TELE-FT, standard physiotherapy, level of care

Sekcija/Section
Gibanje in zdravje starejših odraslih
Physical activity and health of the elderly

Vabljeno predavanje

Zdravje starostnikov: trenutni trendi in izzivi, povezani z ocenjevalnimi metodami in ukrepi

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Ob nenehnem staranju svetovnega prebivalstva je pomembno raziskovati metode, ki lahko izboljšajo telesno zmogljivost in funkcionalno sposobnost starostnikov. Kljub številnim raziskavam na področju zdravja starejših odraslih ostaja veliko vprašanj neodgovorjenih. Individualno prilagojene intervencije, namenjene izboljšanju zdravja starejših odraslih, morajo biti podkrepjene z veljavno, zanesljivo in občutljivo oceno telesne funkcije. Mišična jakost in moč, stabilnost in ravnotežje ter mobilnost in kakovost gibanja so glavni stebri, ki jih je treba upoštevati pri ocenjevanju starejših odraslih. Za ocenjevanje starejših odraslih je bilo predlaganih več terenskih testov (na primer test »Vstani in pojdi« in test funkcionalnega doseganja) in obsežnejše testne baterije (kot je baterija testov Senior Fitness Test). Čeprav so ti testi enostavni za uporabo in zanesljivi, lahko napredni testi prispevajo k celovitejši oceni in s tem k optimizaciji nadaljnjih ukrepov. V prispevku bomo obravnavali trenutne izzive, povezane z oceno telesne sposobnosti in funkcije starostnikov. Razpravljali bomo o novih pristopih k ocenjevanju mišične jakosti in hitrega razvoja mišične sile, ravnotežju v mirni stoji ter posturalnih odzivih na motnje. Dotaknili se bomo tudi pomena spremljanja navad glede telesne dejavnosti pri starejših odraslih. Predstavljene bodo ugotovitve iz naših nedavnih raziskav, od obsežnih pregledov literature o diagnostičnih testih za napovedovanje tveganja padcev pri starejših odraslih, do pomembnosti upoštevanja dejavnikov, kot sta spol in težavnost naloge. V zadnjem delu predstavitve bomo obravnavali trenutno uveljavljene in znanstveno podprte intervencije, namenjene izboljšanju zdravja starejših odraslih. Poleg razprave o učinkih vadbe, električne stimulacije, vadbe z vibracijami in drugih učinkovitih orodij, bomo poudarili tudi priložnost za izboljšanje zdravja starejših s spodbujanjem redne telesne dejavnosti, in krepitevijo socialne integracije ter možnosti za spremembe na ravni nacionalnih zdravstvenih politik.

Ključne besede: telesna aktivnost; navade; metodologija; vadba; aktivno staranje

Invited lecture

Improving the health of the older adults: current trends and challenges related to assessment approaches and interventions

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With continuous ageing of the world's populations, it is important to investigate methods which may facilitate the physical ability and functional capacity of an older individual. Despite the large body of research on the health of the older adults, several unanswered questions remain. Individually-tailored interventions aimed at improving the health of the older adults must be underpinned by valid, reliable and sensitive assessment of physical function. Strength and power, stability and balance, as well as mobility and quality of movement, are the major pillars that should be considered within assessment of older adults. Several field-based tests (such as timed-up-and-go test and functional reach test) and batteries of tests (such as Senior Fitness test battery) have been suggested to be used for evaluating older adults. While these tests are simple to use and reliable, advanced tests have the potential to contribute towards a more comprehensive evaluation, and thereby to the optimization of interventions. This paper will discuss current challenges related to the assessment of physical ability and function of the older adults. We will discuss novel approaches to assessment of muscle strength and rapid force development, quiet stance balance, as well as postural responses to perturbations. We will also discuss the importance of monitoring physical activity habits in older adults. Findings from our recent research will be presented, ranging from comprehensive literature reviews on diagnostic tests to predict risk of falls in older adults, to the importance of considering factors such as gender and task difficulty. In the final part of the presentation, we will cover the current state-of-the-art interventions targeted at improving the health of the older adults. In addition to discussing the potential of exercise, electrical stimulation, vibration training and other effective tools, we will also stress the opportunity to improve the health of seniors by promoting regular physical activity and enhancing social integration, as well as opportunities for changes on the level of national healthcare policies.

Keywords: physical activity; habits; methodology; exercise; active ageing

Raziskovanje odrasle nevroplastičnosti kot posledica dolgotrajne fizične aktivnosti v pozni starosti

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Uvod. Naraščajoče število starejših ljudi v populaciji spremlja povečana prevalenca kroničnih bolezni (npr. demence), ki bodo v prihodnosti predstavljale velik izziv za zdravstveni sistem. Potrebujemo torej primerne intervencije za pomoč ljudem pri zdravem staranju, ki vključuje tudi visoko kvaliteto življenja. V našem interdisciplinarnem projektu smo na staranje pogledali z nevroznanstvenega, fiziološkega in nevropsihološkega vidika ter s perspektive športne znanosti. Raziskali smo potencial za nevroplastičnost pri odraslem organizmu, ki ga omogoča dolgotrajna fizična aktivnost.

Metode. V longitudinalni študiji, v kateri je sodelovalo 20 zdravih starejših oseb ($M=72,65$, $SD=4,31$ leta), smo raziskali vpliv vzdržljivostnega treninga in treninga moči, prav tako pa tudi plesnega treninga na možgansko strukturo, BDNF, spomin, ravnotežje in vzdržljivost. Meritve so bile izvedene pred začetkom faze treninga, po 6 mesecih, 18 mesecih in po 5 letih. Izvedli smo strukturne MRI slike (FSL segmentacija), krvno analizo in naslednje teste: test verbalnega učenja in spomina (Verbal Learning and Memory Test, VLMT), Test meje stabilnosti (Limits of Stability Test, LoS) in Test telesne zmogljivosti (Physical Working Capacity Test 130, PWC 130).

Rezultati. Pri obeh skupinah smo zaznali povečano prostornino leve amigdale ($F(3,36) = 3,760$, $p = ,019$, $f = 0,56$), vzdrževanje koncentracije BDNF v krvni plazmi, izboljšanje ravnotežja glede na test LoS v smislu reakcijskega časa ($F(3,42) = 6,379$, $p = 0,001$, $f = 0,67$), hitrosti gibanja ($F(3,42) = 4,925$, $p = 0,005$, $f = 0,59$), končne točke ($F(1,83, 25,58) = 9,221$, $p = 0,001$, $f = 0,81$), največjega odklona ($F(3,42) = 12,476$, $p < 0,001$, $f = 0,94$) in kontrole smeri ($F(3,42) = 6,542$, $p = 0,001$, $f = 0,68$). Prav tako pa tudi stabilizacijo izvedbe pri testu PWC 130. Spominska uspešnost se je pomembno izboljšala v plesni skupini, specifično pri uspešnosti prepoznavanja ($\chi^2(3, N=8) = 12,197$, $p = 0,007$).

Razprava in zaključki. Potrdili smo vpliv nevroplastičnosti v odraslem organizmu, ki je bil posledica treninga, ki je temeljil na nevrostrukturalnem, molekularnem, kognitivnem in koordinacijskem nivoju ter fenomenu pogojene adaptacije (ang. conditional adaptation phenomenon). Študija je pokazala, da dolgotrajen fizično aktiven življenjski slog pomaga pri ohranjanju zmogljivosti in s tem tudi višji kvaliteti življenja ter avtonomiji v starosti. Potrebno pa je poudariti, da je samo plesni trening pripomogel k izboljšanju kognitivnih sposobnosti.

Ključne besede: nevroplastičnost, kognicija, ples, starejši odrasli, preventiva demence

Investigations of adult neuroplasticity as an effect of long-term physical activity in old age

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Introduction: The growing number of elderly people in the population is accompanied by an increased prevalence of chronic diseases (e.g. dementia), which will confront the healthcare system with major challenges in the future. Therefore, appropriate interventions are needed to support healthy aging combined with a high quality of life. The potential of the adult organism for neuronal plasticity, induced by long-term physical activity, was examined in an interdisciplinary project on aging research from neuroscientific, physiological, neuropsychological and sports science perspectives.

Methods: In a longitudinal study with 20 healthy elderly people (M=72.65, SD=4.31 years) the influence of endurance and strength training as well as dance training on brain structure, BDNF, memory, balance ability and endurance performance was investigated. Measurements were performed before the start of the training phase, after 6 months, 18 months and 5 years. Structural MRI scans (FSL segmentation), blood analyses, the Verbal Learning and Memory Test (VLMT), Limits of Stability Test (LoS) and Physical Working Capacity Test 130 (PWC 130) were conducted.

Results: In both groups, we observed an increased volume in the left amygdala ($F(3,36)=3.760, p=.019, f=.56$), a maintenance of BDNF concentration in blood plasma, an improvement in balance ability according to LoS in terms of reaction time ($F(3,42) = 6.379, p = .001, f = .67$), movement velocity ($F(3,42) = 4.925, p = .005, f = .59$), endpoint ($F(1.83, 25.58) = 9.221, p = .001, f = .81$), maximum dislocation ($F(3,42) = 12.476, p < .001, f = .94$) and direction control ($F(3,42) = 6.542, p = .001, f = .68$) as well as a stabilization of the performance in PWC 130. Memory performance improved significantly in the dance group with regard to recognition performance ($\chi^2(3, N=8) = 12.197, p = .007$).

Discussion and conclusion: The neuroplasticity effect was confirmed as a result of both training measures based on neurostructural, molecular, cognitive, coordinative and conditional adaptation phenomena in the adult organism. The study showed that a long-term physically active lifestyle leads to preservation of performance and thus to a higher quality of life as well as autonomy in old age. It should be emphasized that only dance training contributed to cognitive performance enhancement.

Keywords: neuroplasticity, cognition, dance, seniors, dementia prevention

Samo-poročano in izmerjeno doseganje 24-urnih gibalnih smernic med starejšimi odraslimi

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Uvod. Telesna dejavnost (TD), sedentarnost in spanje so-vplivajo na duševno in telesno zdravje starostnikov. Nove 24-urne gibalne smernice za starostnike vključujejo priporočilo o ukvarjanju z zmerno do visoko intenzivno TD vsaj 150 minut na teden, omejevanje sedentarno preživetega časa na 8 ur na dan, ter med 7 in 8 ur spanja na dan. Namen pričujoče študije je bil ugotoviti kolikšen delež starostnikov dosega 24-urne gibalne smernice, ter primerjati samo-poročano in izmerjeno oceno doseganja smernic.

Metode. Preko centrov dnevnih aktivnosti smo k sodelovanju v raziskavi povabili zdrave starostnike. Preiskovance smo prosili naj nosijo senzor gibanja ActiGraph neprekinjeno (dan in noč) 6 zaporednih dni, vodijo dnevnik spanja in izpolnijo spletni Vprašalnik o spanju, sedenju in telesni dejavnosti (SST vprašalnik). Pridobljene podatke smo predstavili s pomočjo opisne statistike. Izračunali smo delež preiskovancev, ki dosega posamezno priporočilo in vsa 3 priporočila hkrati. Uporabili smo Cohen-ov kappa in določili stopnjo strinjanja med samo-poročanim in izmerjenim doseganjem smernic. Izračunali smo občutljivost in specifičnost samo-poročanega doseganja smernic v primerjavi z izmerjenim.

Rezultati. Enaintrideset preiskovancev (72 ± 6 let, 16 žensk) je nosilo senzor gibanja ActiGraph vsaj 5 dni in izpolnilo SST vprašalnik. Glede na izmerjene (in samo-poročane) vrednosti dosega priporočilo o TD 74 % (71 %), sedentarnosti 13 % (71 %) in spanju 45 % (55 %) preiskovancev. Celotne 24-urne gibalne smernice dosega glede na izmerjene podatke le 3 % preiskovancev in glede na samo-poročane podatke 32 %. Strinjanje glede doseganja priporočil med uporabljema metodama je bilo zmerno za priporočilo o TD (77 %; $\kappa = .433$) in spanju (71%; $\kappa = .425$) ter majhno za priporočilo o sedentarnosti (42%; $\kappa = .114$). Občutljivost SST vprašalnika za doseganje priporočila o TD, sedentarnosti in spanju je bila 83 %, 100 % in 79 %, ter specifičnost 63 %, 33 % in 65 %.

Razprava in zaključek. Naši rezultati kažejo na primerljivo oceno deleža tistih, ki dosega priporočilo o TD in spanju, medtem ko obstaja precejšnje razhajanje za priporočilo o sedentarnosti. Slednje je v skladu s preteklimi študijami, ki so pokazale, da starostniki podcenijo količino sedentarnosti. Prihodnje študije, ki bodo uporabljale SST vprašalnik na populaciji starostnikov naj izsledke o sedentarnosti tolmačijo z določeno mero zadržanosti. Strinjanje med SST vprašalnikom in ActiGraphom glede doseganja priporočil o TD in spanju je bilo zmerno, kar kaže na uporabnost omenjenih spremenljivk v populacijskih presejalnih programih in za raziskovalne namene. Glede na izmerjene vrednosti je priporočilo o TD doseglo tri-četr preiskovancev, priporočilo o spanju polovica, medtem ko je le nekaj preiskovancev (13 %) doseglo priporočilo o sedentarnosti. Celokupne 24-urne gibalne smernice je dosegel zgolj en preiskovanec (3 %), kar nakazuje na priložnost promocije integriranih gibalnih smernic v populaciji slovenskih starostnikov.

Ključne besede: vprašalnik o spanju, sedenju in telesni dejavnosti, pospeškometer, telesna dejavnost, sedentarnost, priporočila

Self-reported and device measured adherence to the 24-hour movement guidelines among older adults

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Introduction. Physical activity (PA), sedentary behaviour (SB) and sleep collectively affect mental and physical health of older adults. According to the novel 24-hour movement guidelines, older adults should engage in at least 150 minutes of moderate-to-vigorous PA per week, limit their sedentary time to 8 hours per day, and sleep between 7 and 8 hours per day. The aim of this study was to explore adherence to the 24-hour movement guidelines in a sample of Slovenian older adults, and to compare self-reported and device measured estimates of meeting the guidelines.

Methods. A convenience sample of generally healthy participants were recruited via Slovenian centres of daily activities for older adults. They were asked to wear research grade activity monitor ActiGraph for 6 days continuously (day and night), complete a sleep diary, and a web-based Daily activity behaviours questionnaire (DABQ). Descriptive statistics were used to calculate the proportion of participants meeting individual and overall (all 3) guidelines. Cohen's kappa was used to test the agreement between self-reported and device measured adherence to the guidelines. Sensitivity and specificity of self-reported adherence, when compared with device measured, were also calculated.

Results. Thirty-one participants (72 ± 6 years, 16 females) provided at least 5 days of valid data from ActiGraph and completed DABQ. According to ActiGraph (and DABQ) data, PA, SB and sleep recommendation was met by 74 % (71 %), 13 % (71 %) and 45 % (55 %) of participants, respectively. Overall 24-hour movement guidelines were met only by 3 % and 32 % of participants when estimated using ActiGraph and DABQ, respectively. Agreement on adherence between the methods was moderate for the PA (77 %; $\kappa = .433$) and sleep (71%; $\kappa = .425$) recommendations, and slight for the SB (42%; $\kappa = .114$) recommendation. The sensitivity of DABQ as 83 %, 100 % and 79 %, and specificity was 63 %, 33 % and 65 %, for the PA, SB and sleep recommendation, respectively.

Discussion and conclusions. DABQ and ActiGraph produced comparable estimates on a group level for meeting PA and sleep recommendations, while substantial discrepancy could be observed for the SB recommendation. In line with previous studies, older adults tended to underreport SB. Future studies using DABQ in older adults should interpret SB metric cautiously. Agreement between DABQ and ActiGraph for adherence to PA and sleep recommendations was moderate, indicating those metrics are accurate enough to be used as a population-based screening tool and for PA research. Based on the ActiGraph data, three-quarters of our sample met the PA recommendation, one-half met the sleep recommendation, while only a few (13 %) met the SB recommendation. The overall 24-hour movement guidelines were met by a single participant (3 %), which might indicate an opportunity for promotion of integrated movement guidelines among Slovenian older adults.

Keywords: daily activity behaviours questionnaire, accelerometer, physical activity, sedentary behavior, recommendations

Pozitivni učinki telesne aktivnosti starejših odraslih pri preprečevanju srčno-žilnih bolezni

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Izhodišča in namen. Kljub temu, da je možno opaziti napredek pri zdravljenju bolezni srca in ožilja, ostaja pojavnost novih bolezni koronarnih arterij povišana, ter predstavlja vodilni vzrok smrti v razvitih državah. Tri četrtine smrti zaradi bolezni srca in ožilja bi lahko preprečili z ustreznimi spremembami življenjskega sloga. Ti so najpogosteje kajenje, nezdrava prehrana, in telesna nedejavnost. Telesna aktivnost predstavlja enega izmed ključnih dejavnikov življenjskega stila, ki skrbi za ohranjanje in izboljšanje zdravja. Prav tako je dokazano, da sta intenzivnost in trajanje vadbe neposredno povezana z izboljšanjem rezultatov telesnega zdravja in zmanjšanjem umrljivosti. Kakorkoli pa v primerjavi z telesno neaktivnostjo, kakršnakoli telesna aktivnost zagotavlja zaščito pred dejavniki tveganja. Namen je, da s pregledom literature želimo izpostaviti vpliv gibanja in same telesne aktivnosti, ter kakšne so posledice le-te na zdravje in kvaliteto življenja. Ter kaj lahko naredi posameznik, da bi se izognil različnim dejavnikom tveganja.

Predstavitev vsebine. Svetovna zdravstvena organizacija (SZO) navaja, da lahko znatne zdravstvene koristi dosežemo s srednjo intenziteto fizične aktivnosti ali vsaj 150 minut le-te na teden ali s težko intenziteto fizične aktivnosti ali 75 minut le-te na teden. Starejša populacija se spopada z upadanjem fizičnih funkcij ter mišične mase, kar posledično zmanjša njihovo sposobnost opravljanja vsakodnevnih življenjskih aktivnosti in vzdrževanja samostojnosti. Redna telesna aktivnost pripomore k izboljšanju kroničnega obolenja, pri čemer je zelo pomembna promocija redne telesne aktivnosti. Redna telesna aktivnost pripomore k izboljšanju fizičnega zdravja in srčno-žilnih funkcij pri starejših. Vadbe, kot so fitnes, hoja in tek, lahko pomagajo pri izgubi odvečne teže, s tem pa tudi zmanjšajo ogroženost za nastanek srčno-žilnih obolenj. Hoja izboljša srčno funkcijo (srčni utrip ter krvni tlak). Tek izboljša moč in upočasni propadanje mišic.

Sklepne ugotovitve. Smrti zaradi bolezni srca in ožilja bi lahko preprečili z spremembami v življenjskem slogu. Najpomembnejše spremembe bi bile opustitev kajenja, uvedba zdrave prehrane in več telesne dejavnosti. Vse to bi pripomoglo k lažji obliki kroničnih bolezni z manj zapleti kot so diabetes, povišan krvni tlak, zmanjšana možnost za debelost in nastanek kapi. Telesna dejavnost je povezana z našim vsakodnevnim življenjem, aktivni smo med hišnimi opravili, službo in šolo. Vadba, ki jo načrtno izvajamo je strukturirana, ponavljajoča in seveda z določenim ciljem vanjo štejejo vse športe, hojo, tek, fitnes itd.. Prav ta vadba dokazano izboljšuje naše telesno zdravje in zmanjša umrljivost ne glede na starost v primerjavi z neaktivnostjo.

Ključne besede: srčno-žilne bolezni, staranje, telesna aktivnost

Positive effects of physical activity of older adults for the cardiovascular disease prevention

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Introduciton and purpose. Despite advances in the treatment of cardiovascular disease, the incidence of new coronary artery disease remains elevated, and is the leading cause of death in developed countries. Three-quarters of cardiovascular deaths could be prevented by appropriate lifestyle changes. These are most commonly smoking, unhealthy diet, and physical inactivity. Physical activity is one of the key lifestyle factors that cares about maintaining and improving health. It has also been shown that exercise intensity and duration are directly related to improving physical health outcomes and reduction of mortality. However, compared to physical inactivity, any physical activity provides protection against risk factors. With this we want to highlight the impact of movement and physical activity itself, and what are the consequences of it on health and quality of life. And what an individual can do to avoid various risk factors?

Presentation of content. The World Health Organisation (WHO) argued that substantial health benefits can be achieved by moderate intensity PA of at least 150 minutes per week, or vigorous intensity PA of at least 75 minutes per week, or any combination of moderate and vigorous intensity PA. The elderly population is struggling with declining physical functions and muscle mass, which in turn reduces their ability to perform daily life activities and maintain independence. Regular physical activity helps to improve chronic disease that is why the promotion of regular physical activity is very important. Regular physical activity helps to improve physical health and cardiovascular function in the elderly. Exercises such as fitness, walking and running can help in losing excess weight, and reducing the risk of developing cardiovascular disease. Walking improves heart function (heart rate and blood pressure). Running improves strength and slows down muscle wasting. They can adjust the intensity of the exercises as they wish.

Conclusion. Cardiovascular deaths could be prevented by lifestyle changes. The most important changes would be smoking cessation, the introduction of a healthy diet and more physical activity. All of this would help alleviate the form of chronic diseases with fewer complications such as diabetes, high blood pressure, reduced chance of obesity, and stroke. Physical activity is related to our daily lives, we are active during housework, work and school. The exercise we systematically perform is structured, repetitive and, of course, with a specific goal, we include all sports, walking, running, fitness, etc. This exercise has been proven to improve our physical health and reduce mortality regardless of age compared to no activity.

Keywords: cardiovascular diseases, ageing, physical activity

Vloga telesne dejavnosti v obdobju starejše odraslosti

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Uvod. Pomanjkanje telesne dejavnosti lahko vodi k številnim degenerativnim obolenjem, oslabitvi osnovnih življenjskih funkcij in k prezgodnjemu staranju. Pričakovana življenjska doba je vse daljša in telesna dejavnost nam lahko pomaga pri ohranjanju kakovostnega življenja v starosti, saj je varovalni dejavnik zdravja in ima vpliv tako na telesno kot tudi duševno počutje. Namen prispevka je predstaviti vlogo telesne dejavnosti in njene koristi v starejši odraslosti ter pregled smernic in priporočil o telesni dejavnosti starejših odraslih.

Metode. Uporabljen je bil pregled slovenske in angleške strokovne in znanstvene literature v podatkovnih bazah CINAHL, Medline, Cochrane ter v spletnem brskalniku Google Scholar, objavljenih med letoma 2010 in 2020. Literatura je bila iskana na podlagi naslednjih ključnih besed: »starejši odrasli«, »kakovost življenja« in »smernice telesne dejavnosti«. Za prikaz odločitev o uporabnosti pregledanih virov je bila uporabljena metoda PRISMA, osem od teh virov je bilo uporabljenih za nadaljnjo analizo.

Rezultati. Identificirani sta bili dve temi (1) koristi vadbe na zdravje starejših ljudi in (2) smernice o telesni dejavnosti starostnikov. Vadba ima v starosti fiziološke, psihološke in socialne koristi, zato pripomore k ohranjanju funkcionalne neodvisnosti in omogoča višjo raven kakovosti življenja. Rezultati kažejo na pozitiven vpliv telesne pripravljenosti na kakovost življenja v obdobju starejše odraslosti in obstaja tudi povezava z izboljšanjem kognitivnih sposobnosti ter kasnejšim razvojem demence. V času, ko se ves svet spopada s pandemijo, je potrebno pozornost usmeriti tudi na vpliv omejitev na omogočanje telesne dejavnosti. Vsak posameznik je edinstven in sam najbolje pozna zmožnosti telesne pripravljenosti, zato mora biti vadba prilagojena zdravstvenemu stanju ter upoštevati tudi starost in spol posameznika.

Razprava in zaključek. Z leti prenehajo s telesno dejavnostjo predvsem tisti posamezniki, ki so bili tudi v mlajših letih redko dejavni. Za povečanje telesne dejavnosti pri starejših odraslih je potrebna sprememba tako v razmišljanju kot v vedenju, saj sta redna in zadostna vadba ključnega pomena za ohranjanje zdravja ter kakovostnega in samostojnega življenja.

Ključne besede: starejši odrasli, kakovost življenja, smernice telesne dejavnosti

The role of physical activity in older adulthood

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Introduction. Lack of physical activity can lead to many degenerative diseases, weakening of basic life functions and premature aging. Life expectancy is getting longer and physical activity can help us maintain a quality of life in older age, as it is a protective factor of health and has an impact on both physical and mental well-being. The purpose of this paper is to present the role of physical activity and its benefits in older adulthood and to review guidelines and recommendations on physical activity for older adults.

Methods. Method used was review of Slovene and English professional and scientific literature in the CINAHL, Medline, Cochrane databases and in the Google scholar web browser, published between years 2010 and 2021. The literature was searched based on the following keywords: »older adults«, »quality of life« and »guidelines for physical activity«. The PRISMA method was used to display decisions about usefulness of reviewed sources and eight of these sources were selected for further analysis.

Results. Two themes were identified (1) the benefits of exercise on the health of older adults and (2) guidelines on physical activity in the elderly. Exercise has physiological, psychological and social benefits for older adults and it helps maintain functional independence and enables a higher level of quality of life. The results show a positive impact of physical fitness on quality of life in older adults and there are also links with improved cognitive abilities and subsequent development of dementia. At a time when whole world is facing a pandemic, attention should also be paid to the impact of the restrictions on the provision of physical activity. Each individual is unique and has the best knowledge of physical fitness, so the exercises must be adapted to the state of health and take into account the age and sex of the individual.

Discussion and conclusions. Over the years, physical activity ceases especially those individuals who were rarely active even in their younger years. To increase physical activity in older adults, we need a change in both thinking and behaviour, as regular and sufficient physical activity is crucial for maintaining health, quality and independent life.

Keywords: older adults, quality of life, guidelines for physical activity

Telesne mere slovenskih starejših ljudi, pomembne za ergonomsko oblikovanje stola

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Uvod. Stol je eden od osnovnih kosov pohištva, ki ga starostniki dnevno uporabljajo. Ergonomsko zasnovan stol omogoča starostniku varno in učinkovito vstajanje ter usedanje. Prvi korak pri ergonomskem načrtovanju stola je pridobivanje antropometričnih lastnosti uporabnika. Podatki o telesnih merah slovenskih starostnikov, še posebej najstarejših, primanjkujejo. Namen raziskave je pridobiti podatke o telesnih merah slovenskih starostnikov, ki so pomembni za ergonomsko načrtovanje stola.

Metode. V raziskavi je sodelovalo skupno 124 slovenskih starostnikov (72 % žensk; 83 ± 8 let). Ročno, z uporabo antropometričnega seta, smo izmerili dvajset telesnih mer starostnikov. Za vsako izmerjeno telesno mero smo izračunali 5. in 95. percentil. Razlike v telesnih merah med spoloma smo preverili s pomočjo t-testa za neodvisne vzorce. Dodatno smo izvedli primerjavo povprečnih vrednosti telesnih mer med slovenskimi, belgijskimi, avstralskimi, kitajskimi in arabskimi starostniki.

Rezultati. Povprečni indeks telesne mase slovenskih starostnikov je znašal $27,9 \pm 4,6$ kg/m². Pomerjeni vrednosti za 5. in 95. percentil sta za višino do poplitealne kotanje znašali od 35,3 do 45,9 cm, za debelino stegna od 7,0 do 15,7 cm, za komolčno višino sede od 52,0 do 66,3 cm, za višino ramen sede od 63,6 do 56,3 cm in za širino bokov od 34,2 do 46,8 cm. Med spoloma so bile prisotne značilne razlike v vseh izmerjenih telesnih merah z izjemo treh: širina ramen in kolkov sede ter indeks telesne mase. V primerjavi z avstralsko in kitajsko žensko populacijo so bile slovenske in belgijske starostnice višje ter so imele večjo višino do poplitealne kotanje. Debelina stegna in dolžina od poplitealne kotanje do zadnjice sta bili v avstralski populaciji starostnikov najmanjši. Višina do komolca in ramen sede je bila med slovenskimi starostniki v primerjavi z drugimi populacijami manjša. Širina ramen je bila najmanjša med kitajskimi starostniki. Dolžina dlani je bila primerljiva med vsemi populacijami starostnikov.

Razprava in zaključek. Razlike v telesnih merah med starostniki kažejo na potrebo po prilagojenem načrtovanju stola za starostnike glede na spol in narodnost. Podatki, pridobljeni v raziskavi, se lahko uporabijo za namen ergonomskega načrtovanja stola za starostnike v Sloveniji. Glavna omejitev izvedene raziskave je majhno število vključenih slovenskih starostnikov. Zaželeno so nadaljnje raziskave, ki bi vključevale večje število preiskovancev in bi vrednotile telesne mere skladno s standardom SIST EN ISO 7250-1:2018.

Ključne besede: antropometrija, ergonomija, starejši ljudje

Anthropometric data of Slovenian older adults relevant for ergonomic chair design

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Introduction. Chair is one of the basic pieces of furniture that older adults use daily. To ensure safe and effective transition from sitting to standing for older adults, ergonomic chair design is necessary. The basis for ergonomic chair design are the user's body dimensions. Anthropometric data of Slovenian older adults, especially for the middle and oldest old, are limited. The aim of this study was to obtain anthropometric data of Slovenian older adults that can be used for ergonomic chair design.

Methods. A total of 124 older adults (72% female; 83 ± 8 years old) participated in the study. Twenty body dimensions were measured manually, using an anthropometric set. The 5th and 95th percentiles were calculated for each body dimension. Anthropometric differences between male and female participants were calculated using independent-sample t-test. A comparison of mean body dimension values among Slovenian, Belgian, Australian, Chinese, and Arab older adults was performed.

Results. The mean body mass index of participants was 27.9 ± 4.6 kg/m². The 5th and 95th percentiles for popliteal height ranged from 35.3 to 45.9 cm, for thigh thickness from 7.0 to 15.7 cm, for sitting elbow height from 52.0 to 66.3 cm, for sitting shoulder height 63.6 to 56.3 cm, and for hip width from 34.2 to 46.8 cm. Significant differences between Slovenian male and female participants were recognized for all body dimensions except for shoulder and hip width and body mass index. Stature and popliteal height of Slovenian and Belgian female older adults were higher compared to Australian and Chinese female population. Thigh thickness and buttock-popliteal length were the smallest in Australian population whereas shoulder breadth was the smallest in Chinese population. Hand length was comparable in all populations.

Discussion and conclusion. Differences between male and female older adults as well as differences among older adults from different populations indicate a need for specific chair design based on user's body dimensions. Data obtained in this study can be used for the purpose of ergonomic chair design for older adults in Slovenia. The main limitation of the conducted study is small sample size of the participants included. Studies that assess anthropometric data in accordance with SIST EN ISO 7250-1:2018 on a larger sample size are needed to obtain a representative anthropometric database of older adults in Slovenia.

Keywords: body dimensions, ergonomics, older adults

Telesna dejavnost, sedentarnost in zmogljivost pri osebah po zamenjavi kolka in kolena: sistematičen pregled literature

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Uvod. Osteoartritis (OA) je pogosta degenerativna bolezen mišično-skeletnega sistema pri starejših odraslih, ki povzroča bolečine v sklepih in omejuje gibalno sposobnost. Osebe z OA so zato manj telesno dejavne in bolj sedentarne. Pogosta oblika zdravljenja hudih oblik OA je zamenjava sklepa z ustrezno rehabilitacijo. Oba postopka pripomoreta k značilno izboljšani kakovosti življenja posameznika. Dolgoročni cilji zdravljenja sta med drugim tudi sprememba življenjskega sloga - zmanjšan sedeči način življenja (SŽ) in povečana količina telesne dejavnosti (TD), ki sta glavna dejavnika tveganja za razvoj kroničnih nenalezljivih boleznih pri starejših. Področje TD in SŽ starostnikov in starejših odraslih po zamenjavi spodnjega uda je zaradi razširjenosti dobro raziskano, a zaradi raznolikih metodoloških in merskih postopkov v študijah rezultati še vedno niso povsem jasni. Da bi preučili dinamiko spreminjanja količine in intenzivnosti TD in SŽ po zamenjavi kolka ali kolena smo izvedli metaanalizo.

Metode. Opravljen je bil sistematični pregled z metaanalizo. Študije so bile izbrane na podlagi jasno določenih vključitvenih kriterijev. Za oceno metodološke kakovosti študij je bila uporabljena SIGN (angl. Scottish Intercollegiate Guidelines Network) lestvica. Uporabljena je bila metoda obratne variance z modelom naključnih učinkov. Razlike (med bolniki in zdravimi ali med časovnimi točkami) so bile izražene kot standardizirana razlika povprečja (SMD) z 95 % intervalom zaupanja (CI).

Rezultati. Vključenih je bilo petintrideset študij (35), ki so zadovoljevale kriterije. V obdobju od 3 do 6 mesecev po operaciji so bili rezultati 6-min testa hoje (+90,2 m; SMD = 0,87) statistično značilno višji ($p = 0,008$) v primerjavi z rezultatom pred operacijo. Šest (6) do 9 mesecev po operaciji se je količina zmerno do visoke telesne aktivnosti značilno povečala ($p < 0,001$) (SMD = 0,32). Prav tako količina nizko intenzivne telesne aktivnosti, a ne statistično značilno (SMD = 0,14; $p = 0,160$). Količina SŽ je v obeh obdobjih ostala enaka (SMD = -0,04). Rezultati testa vstani in pojdi (-1,91 s; SMD = -0,61) in 6-min testa hoje (+71,84 m; SMD = 0,62) so se v veliki meri izboljšali ($p < 0,001$) v primerjavi z rezultati pred operacijo. Po 12 ali več mesecih so bili pacienti v primerjavi s stanjem pred operacijo več telesno dejavni pri zmerno do visoki intenzivnosti (SMD = 0,70; $p = 0,001$) in so naredili več korakov (SMD = 0,52; +1425 korakov/dan; $p = 0,001$).

Razprava in zaključek. Raven zmogljivosti pred operacijo pacienti dosežejo v prvih treh 3 mesecih in jo povečajo v prvih šestih mesecih po operaciji. Podobno, a nekoliko zapoznel trend je viden tudi pri TD, ki v 6 mesecih po operaciji doseže predoperativno raven in jo do 12 mesecev po operaciji preseže. Sedentarnost po drugi strani doseže predoperativno raven v šestih mesecih po operaciji, a se kasneje ne zmanjša. V prihodnosti je potrebno raziskovati nove rehabilitacijske pristope, ki bodo dolgoročno vplivali na življenjski slog in posledično zdravje.

Ključne besede: sedentarnost, telesna aktivnost, staranje

Objectively measured physical activity, sedentary behavior and functional performance before and after lower-limb joint arthroplasty: a systematic review with meta-analysis

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Introduction. Osteoarthritis (OA) is the most common degenerative musculoskeletal disorder affecting mostly older adults. It causes joint pain, limits functional ability, decreases physical activity levels, and leads to increased sedentary behavior. To restore function and maintain a healthy lifestyle, hip and knee arthroplasty are being considered as viable treatment options. Due to pain relief, increased mobility and function, and higher quality of life after surgery, higher levels of physical activity (PA) and lower levels of sedentary behavior (SB) are expected. However, it remains unclear whether and to what extent patients change their lifestyle postoperatively. To examine the dynamics and levels of PA and SB before and after joint arthroplasty, meta-analyses of prospective studies were conducted.

Methods. The systematic review with meta-analysis was conducted in accordance with Cochrane Collaboration guidelines. The studies were included in the analyses based on the specific eligibility criteria. Differences (between patients and controls or between time points) were expressed as standardized mean difference (SMD) and corresponding 95 % confidence intervals (CI). Statistical heterogeneity between studies was assessed by calculating the I² statistic.

Results. Thirty-five studies met the inclusion criteria and were included in the review. From 3 to 6 months postoperatively, the 6-min walk score (+90.2 m; SMD = 0.87) improved largely and statistically significantly ($p = 0.008$) compared with preoperative values. Between 6 and 9 months after surgery, moderate/vigorous PA was statistically significantly ($p = 0.001$) increased compared to preoperative values (SMD = 0.32). Light physical activity also tended to be increased (SMD = 0.14; $p = 0.160$). Sedentary behavior was similar in both time periods (SMD = -0.04). Scores on the timed up and go test (-1.91 s; SMD = -0.61) and the 6-min walk (+71.84 m; SMD = 0.62) improved largely and statistically significantly ($p = 0.001$) compared with preoperative scores. Finally, 12 or more months after surgery, patients showed increased moderate/vigorous PA levels (SMD = 0.70; $p = 0.001$) and number of steps (SMD = 0.52; +1425 steps/day; $p = 0.001$).

Discussion and conclusion. Overall, objectively measured PA appears to increase with time postoperatively. Patients do not reach the preoperative level of PA until about 6 months, but the values of PA match and then exceed the preoperative level after this time. Functional performance, on the other hand, tends to increase earlier and continues to develop up to 6 months postoperatively. It is important to note that although determinants overcome preoperative levels at 6 and 12 months, adequate PA and SB may not be achieved at this time. For this reason, the problem of long-term inability to further increase PA and reduce SB should be addressed in the future along with novel rehabilitation protocols.

Keywords: sedentary behavior, physical activity, ageing

S staranjem povezana bolezen skeletnih mišic oskrbovancev domov starejših občanov

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Uvod. Sarkopenija je najpogostejša s staranjem povezana bolezen skeletnih mišic za katero je značilna klinično pomembna izguba mišične mase in mišične moči ter s tem povezane telesne zmogljivosti. Bolezen poveča potrebo po oskrbi starostnika, poveča se tveganje za padce in zlome, hospitalizacijo in pre-zgodnjo smrt. Namen raziskave je ovrednotiti razširjenost sarkopenije med oskrbovanci v domovih starejših občanov zahodne Slovenije in s tem spodbu-diti njeno zgodnejše odkrivanje.

Metode. V raziskavi je sodelovalo skupno 121 starostnikov ($83,8 \pm 7,6$ let, 69 % žensk), ki so bili sposobni samostojne hoje. Posameznikom smo izmerili moč stiska pesti, hitrost hoje na 4m in mišično maso s pomočjo metode bioelek-trične impedance. Izmerjene parametre smo vnesli v algoritem za vrednotenje sarkopenije Evropske delovne skupine za sarkopenijo (EWGSOP2). V vzorcu starostnikov smo ločeno po spolu določili odstotek tistih s sarkopenijo. Med starostniki s potrjeno boleznijo, smo določili delež tistih s hujšo obliko sarko-penije.

Rezultati. Sarkopenija je bila potrjena pri četrtini (31 od 121) preiskovancev. De-lež bolnikov s sarkopenijo je bil višji pri moških (35,1 %) v primerjavi z ženska-mi (24,1 %). Večina preiskovancev (90,3 %) s potrjeno sarkopenijo je imela raz-vito hujšo obliko bolezni.

Razprava in zaključek. Rezultati raziskave kažejo na problem zelo visokega de-leža oskrbovancev domov starejših občanov s hudo obliko sarkopenije. Zato je pomembno presejalno pregledovanje starostnikov v domovih starejših obča-nov z namenom zgodnjega odkrivanja sarkopenije. Posameznike z visokim tve-ganjem za pojav bolezni in tiste z blago obliko bolezni je smiselno vključiti v pro-grame za preprečitev slabšega poteka bolezni.

Ključne besede: sarkopenija, starejši odrasli, domovi starejših občanov

Age-related skeletal muscle disease among nursing homes residents

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Introduction. Sarcopenia is the most common age-related skeletal muscle disease characterized by clinically significant loss of muscle mass and muscle strength/physical performance. The disease increases the need for care of the elderly, increases the risk of falls and fractures, hospitalization, and premature death. The purpose of this research is to evaluate the prevalence of sarcopenia among nursing home residents in western Slovenia and thus to encourage its earlier detection.

Methods. A total of 121 residents (83.8 ± 7.6 years, 69 % women) who were able to walk independently participated in the study. Individuals were measured for grip strength, walking speed at 4m and muscle mass using the bioelectrical impedance method. Sarcopenia was assessed using the European Sarcopenia Working Group (EWGSOP2) algorithm. The percentage of sarcopenic participants was determined separately by gender. Among those with confirmed sarcopenia, the cases of severe disease we additionally determined.

Results. Sarcopenia was confirmed in 25 % (31 of 121) of study participants. The percentage of patients with sarcopenia was higher in men (35.1 %) compared to women (24.1 %). The majority of participants (90.3 %) with confirmed sarcopenia already had a severe form of the disease.

Discussion and conclusion. The results of this study indicate a very high percent of severe sarcopenia among residents in Slovenian nursing homes. Therefore, regular screening for sarcopenia is crucial to recognize and include individuals with early stage of the disease in programs to prevent the worsening of the disease.

Keywords: sarcopenia, elderly, nursing homes

Sekcija/Section
Prehrana in zdravje starejših odraslih
Nutrition and health of the elderly

Vabljeni predavanja

Zdravstveni učinki prehranske obravnave pri uporabnikih doma za starejše na trajni sondni prehrani

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Uvod. Neustrezna prehrana starejših prispeva k napredovanju številnih bolezni in je pomemben dejavnik pri razvoju sarkopenije in krhkosti. Izguba skeletne mišične mase je lahko posledica staranja, bolezni ali neaktivnosti. Pri osebah na popolni enteralni prehrani je pogosto posledica vseh treh dejavnikov. Zgodnja prehranska intervencija lahko zmanjša pogostost zapletov, trajanje hospitalizacij, pogostost ponovnih sprejemov, smrtnost in stroške oskrbe. Enteralna prehranska podpora je medicinsko zdravljenje, ki lahko ohranja življenje. Odločitve o poti, načinu in organizaciji prehranske podpore najbolje sprejemajo multidisciplinarnе prehranske skupine. Običajno se prične v bolnišnici in se nadaljuje kot dolgotrajna terapija na domu, ali v domski oskrbi. V Sloveniji se zaradi na videz nižje cene še vedno uporablja tudi doma pripravljena sondna hrana iz živil, kljub vedenju, da je manj učinkovita in manj varna kot komercialno pripravljene enteralne formule. V letu 2018 smo v naši bolnišnici prepoznali nezadostno hranjenje uporabnikov, ki so na trajnem sondnem hranjenju. Obrnili smo se na največji regijski dom starejših občanov Novo mesto (DSO Nm) in pričeli z obojestranskim sodelovanjem z namenom izboljšanja prehranske podpore uporabnikov. V prispevku bomo podali pregled nekaterih beleženih zdravstvenih učinkov kot rezultat tega sodelovanja.

Metode. Pri uporabnikih načrtujemo pregled trenda telesne mase, pojavnosti preležanin in pogostosti: rabe antibiotikov, napotitev k specialistom v bolnišnico in akutnih infektov (tudi Covid-19) za dvoletno obdobje pred in po pričetku vodenja v Ambulanti za klinično prehrano (AKP) Splošne bolnišnice Novo mesto (SB Nm).

Rezultati. Iz SB Nm je bilo v povprečju zadnjih treh let od vseh odpuščenih in nameščenih v DSO-je v DSO Nm premeščenih 28 % bolnikov. V povprečju smo iz različnih razlogov vstavili 38 perkutanih gastrostom. V 2018 so bile kot vodilni razlog najpogosteje navedene bolezni iz skupine pljučnih (v 35 %) in nevroloških bolezni (v 35 %) ter okvare možganov (6,5 %). V DSO Nm so sondno hrano iz živil zamenjali za komercialno pripravljeno enteralno prehrano in kupili tehtnico za tehtanje nepomičnih stanovalcev. V SB Nm smo od decembra 2018 izvedli osem AKP odprtih zgolj za uporabnike DSO Nm. Skupno smo pri 19 uporabnikih, s povprečno starostjo 75 let, opravili 61 obravnav. V povprečju se je število sprejemov v lokalno bolnišnico znižalo za 1,6-krat.

Razprava in zaključek. Pri prehranski oskrbi uporabnikov v DSO poleg primarnega sodelovanja medpoklicnega tima z uporabniki in njihovimi svojci stopa v ospredje tudi medinstitucionalno sodelovanje, saj le to lahko, kot tudi v našem primeru, prispeva k boljšim zdravstvenim izidom. Uporaba enteralnih formul ob timskem pristopu izboljša telesno maso, zmanjša število sprejemov v lokalno bolnišnico in ugodno vpliva na zdravje uporabnikov na trajni sondni prehrani.

Ključne besede: zdravstveni učinki, prehranska obravnava, sondno hranjenje, medinstitucionalno sodelovanje

Invited lecture

Health effects of nutritional treatment at residents in nursing home on permanent tube feeding

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Introduction. Inadequate nutrition in older persons contributes to the progression of many diseases, and is important contributing factor in development of sarcopenia and frailty. Loss of skeletal muscle mass occurs during aging, disease, or inactivity. At those on permanent tube feeding, it is often due to all three factors. Early nutrition intervention can reduce complication rates, length of hospital stay, readmission rates, mortality and costs. Enteral nutrition support is a medical treatment, that can be defined as a life-sustaining therapy. Decisions on route, content, and management of nutritional support are best made by multidisciplinary nutrition teams. Home enteral nutrition is usually started during a hospital stay and continued as a long-term home therapy. Although blenderized tube diets are less effective and less safe than commercially produced solutions and should not be utilized in patients on home enteral nutrition, they are still popular. In 2018 we identified insufficient feeding of patients on permanent tube feeding. In order to improve the long-term nutritional support of these users we contacted the management of the largest regional nursing home Novo mesto (NH Nm) and began mutual cooperation. In this paper, we will provide an overview of some recorded health effects of nutritional treatment at users on permanent tube feeding as result of this cooperation.

Methods. For the two years period before and after first nutritional management in our Clinic for clinical nutrition (ACP) we plan to review the trend of body weight, the frequency of: bedsores, antibiotic use, referrals to specialists and acute infections (including Covid-19).

Results. From all patients discharged and placed in nursing homes, in the last three years on average 28 % were transferred to the NH Nm. On average 38 percutaneous gastrostomes were inserted to the patients in our hospital for various reasons. In 2018, lung (35 %) and neurological diseases (in 35 %), followed by brain damage (6.5 %) were the most frequent indications for the placement of feeding tube. As result of mutual work, a home-made tube diets in NH Nm were replaced by a commercially produced enteral formula and a scale to weighing the immobile residents was purchased. Since December 2018, we performed eight ACPs opened only for the NH Nm residents. A total of 61 treatments were performed on 19 users, with an average age of 75 years. On average, the number of admissions to a local hospital decreased for 1.6 times.

Discussion and conclusion. In the nutritional care of residents in nursing home interinstitutional cooperation comes also to the forefront. This can contribute, as in our case, to better health outcomes. Use of enteral formula prescribed from nutritional support team improve weight, decrease hospital admissions and beneficially affect on health of users on a permanent tube feeding.

Keywords: health effects, nutritional management, tube feeding, interinstitutional cooperation

Vloga prehrane v prvih 8000 dneh življenja za zdravo starost

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Izhodišča in namen. Staranje predstavlja enega izmed največjih izzivov današnjega zdravstva. Prehrana v zgodnjem življenjskem obdobju ima pri staranju pomembno vlogo. Različni genetski, prehranski in okoljski dejavniki vplivajo na neurejeno izražanje genov in spremenjeno presnovo določenih snovi, kar privede do poškodb na molekularni ravni. Omenjene spremembe so vzročni dejavniki staranja in tako določajo življenjsko dobo posameznika. Prehrana v prvih 1000 dneh življenja je ena izmed ključnih komponent, s katero lahko vplivamo na naše zdravje in potencialno podaljšamo življenjsko dobo.

Predstavitev vsebine. Vedno bolj se zavedamo, da zdrave prehranjevalne navade in zdrav življenjski slog v obdobju pred nosečnostjo (za ženske in moške), med nosečnostjo, med dojenjem in vse do drugega leta otrokovega življenja (prvih 1000 dni) ter vse do začetka odraslosti (prvih 8000 dni) določajo zdravje posameznika (zmanjšajo tveganje za razvoj čezmerne hranjenosti, sladkorne bolezni, alergij, visokega krvnega tlaka, srčno-žilnih bolezni in drugih presnovnih bolezni). Pozitivnega učinka ne opažamo le v otroštvu, temveč tudi pozneje v življenju posameznika, kar imenujemo presnovno ali prehransko programiranje. Podrobno razumevanje obsega in načina, kako prehrana v zgodnjem otroštvu vpliva na proces staranja, nam bo omogočilo razvoj novih in učinkovitejših pristopov za izboljšanje zdravja in podaljševanje življenjske dobe. Za reševanje epidemije kroničnih bolezni je potreben celovit pristop. Številne države trpijo za t.i. dvojnim bremenom, na eni strani imamo veliko čezmerno hranjenih posameznikov, na drugi pa določeni še vedno trpijo za podhranjenostjo. Obe stanji vodita do duševnega in fizičnega poslabšanja stanja, večje stopnje nenaletljivih bolezni, zmanjšane produktivnosti, povečanih zdravstvenih stroškov in zmanjšane kakovosti življenja. Z uravnoteženo prehrano, kot je redno uživanje polnozrnatih žit, zelenjave, sadja in oreškov lahko zmanjšamo tveganje za smrtnost, med tem ko visok vnos (rdečega) mesa, predvsem predelanih mesnih izdelkov predstavlja povečano tveganje za smrtnost.

Sklepne ugotovitve. Kljub temu, da je ustrezna prehrana bistvenega pomena za zdravje posameznika, še vedno ni povsem jasno, kakšen vpliv imajo različne prehranske intervencije na podaljševanje življenjske dobe. Prehranske intervencije naj bodo personalizirane in prilagojene posameznikovim sposobnostim razumevanja, življenjskemu obdobju, duševnemu in fizičnemu zdravju ter okolju, v katerem živi. Ne smemo pozabiti, da se vpliv prehrane na posameznika začne še preden se človek rodi, zato bi za ugoden vpliv morali omenjene intervencije izvajati že pri prejšnjih generacijah. Zdravje in dobro počutje naslednjih generacij morata zato biti prioriteta vseh nas, saj s današnjimi prehranjevalnimi navadami krojimo usodo naših potomcev.

Ključne besede: prehrana v prvih 1000 dneh, prehransko programiranje, zdravo staranje

The role of nutrition in first 8000 days of life for healthy aging

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Introduction and purpose. Ageing is one of the greatest challenges in healthcare today that has been shown to be affected by early life nutrition. Genetic, nutrition and environmental factors have an influence on dysregulated gene expression, altered metabolite levels, and accumulated molecular damage. These changes are thought to be causal factors in aging, and it is believed that they determine the lifespan of humans. From these, early life nutrition is a key component affecting our health and has also the potential to increase lifespan.

Content presentation. Awareness is growing that a healthy eating habits and healthy lifestyle during pre-pregnancy period (for women and men), during pregnancy, during breastfeeding as well as up to the second year of child's life (first 1000 days) and all until the beginning of adulthood (first 8000 days) determine the optimal health of the child throughout life (reducing the chances of developing overweight, diabetes, allergies, hypertension, cardiovascular disease, and metabolic diseases). This effect has not been seen only during infancy but also beyond the adulthood and is called metabolic or nutritional programming. Further understanding of the extent and nature of how early life nutrition influences the ageing process will enable the development of novel and more effective approaches to improve health and extend human lifespan in the future. However, tackling the epidemic of chronic diseases requires a comprehensive life course approach. Many countries are plagued with the double burden of energy excess and undernutrition. This has resulted in mental and physical deterioration, increased noncommunicable disease rates, lost productivity, increased medical costs and reduced quality of life. Furthermore, a balanced nutrition with high intake of whole grains, vegetables, fruits, and nuts is associated with a reduced risk for all-cause mortality whereas a high intake of (red) meat, especially processed meat is positively related to all-cause mortality.

Conclusions. While adequate nutrition is fundamental for good health, it remains unclear what impact various nutrition interventions may have on prolonging good quality of life. Nutrition interventions should be person-centered, emphasizing the need to better understand an individual's intrinsic capacity, their functional abilities at various life stages, and the impact of mental, and physical health, and the environments they inhabit. We also need to keep in mind, that the impact of nutrition on the individual starts before this person is even born, so the interventions should start at the previous generations. The health and well-being of the next generations must therefore be a priority for all of us, as we are, with our current eating habits, shaping the fate of our offspring.

Keywords: nutrition in first 1000 days, nutritional programming, healthy aging

Vnos antioksidantov s prehrano in staranje

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Uvod. Staranje je progresivni biološki proces, ki vpliva na celično delitev in funkcijo. Starost je bila povezana s slabšo kvaliteto življenja, s povečanimi tveganji za nastanek kroničnih nenalezljivih bolezni in umrljivostjo. Oksidativni stres je stanje, pri katerem je telo izpostavljeno večji količini reaktivnih kisikovih spojin (ROS), kot jih je sposobno sproti nevtralizirati, in je znan dejavnik, ki pospešuje proces staranja. ROS se proizvajajo z metabolizmom kisika v telesu, poleg tega lahko v telo vstopajo tudi iz okolja. Okoljski dejavniki, kot so dolgotrajna izpostavljenost soncu, hormonsko neravnovesje, pomanjkanje hranil, ultravijolično sevanje, onesnaženost in kajenje povečujejo oksidativno breme. Škodljive vplive ROS pa je moč v veliki meri preprečiti. Namen prispevka je pregledati dokazane prehranske strategije za zmanjšanje vpliva ROS na telo.

Metode. Literaturo smo iskali v PubMed in Google Učenjaku s ključnimi besedami diet, aging, longevity, antioxidant in oxidative stress in njihovimi kombinacijami. Za pregledni članek smo uporabili članke v angleškem jeziku, objavljene po 2010.

Rezultati. Starost je bila povezana z zmanjšanim apetitom, uživanjem neuravnotežene prehrane, ki ji pogosto primanjkuje esencialnih hranil. Neuravnotežena prehrana poveča oksidativni stres, medtem ko uravnotežena prehrana z veliko rastlinskih živil ne povečuje oksidativnega stresa in telesu nudi eksogene antioksidante. Vnos antioksidantov je bil povezan z ugodnimi učinki na zdravje, kot so zmanjšano oksidativno breme, zmanjšano tveganje za nastanek srčno-žilnih obolenj, sladkorne bolezni tipa 2 in nevrodegenerativnih bolezni. Višji vnos antioksidantov je bil povezan tudi s podaljšano življenjsko dobo. Živila rastlinskega izvora so bogata s polifenoli, karotenoidi, askorbinsko kislino in vitaminom E, ki imajo visok antioksidativni potencial. Nutraceutiki, ki so obogateni z antioksidanti, imajo visoko koncentracijo antioksidantov. Višji vnos sadja in zelenjave je bil povezan s povečano antioksidativno kapaciteto krvne plazme. Največji doprinos antioksidantov v prehrani imajo pri ženskah kava in čaj, pri moških pa alkoholne pijače, kava in čaj, pri obeh spolih jim sledita sadje in zelenjava. Po drugi strani pa dodajanje hranil s prehranskimi dopolnili ni bilo povezano z zmanjšanimi tveganji za nastanek kroničnih nenalezljivih bolezni. Prav zato imajo nutraceutiki potencial, da v prehrani povišajo vnos antioksidantov in so bili povezani z zmanjšanimi tveganji za nastanek srčno-žilnih bolezni, z izboljšano presnovo in upočasnjenim staranjem.

Diskusija in zaključki. Izbira živil in kakovost prehrane je zelo pomemben dejavnik pri upočasnjevanju procesa staranja in izboljšani kvaliteti življenja v starosti. Poleg vnosa sadja in zelenjave, vključitev nutraceutikov v vsakdanjo prehrano poveča vnos antioksidantov, kar je bilo povezano z izboljšano kvaliteto življenja in podaljšanim življenjem.

Ključne besede: staranje, antioksidanti, prehrana, oksidativni stres

Dietary antioxidants and aging

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Introduction. Aging is a progressive biological process, which affects cell proliferation and functions. Higher age has been linked to lower quality of life, increased disease risk and increased mortality. Oxidative stress, a condition, when a cell is exposed to more reactive oxygen species (ROS) than it can instantly degrade, is a well-known accelerating factor of aging. Oxidative stress causes damage to the body cells and tissues, furthermore it is associated with chronic conditions such as low-grade inflammation, cardiovascular disease, cancer, asthma, diabetes, and neurodegenerative diseases. ROS are produced in the body by oxygen metabolism and can enter the body from the external environment. Environmental factors increasing oxidative load are chronic sun-exposure, hormonal imbalance, nutritional deficiencies, ultraviolet irradiation, pollution and smoking. The harmful effects induced by oxidative stress can be restrained in a greater part. The aim of present study is to review proven nutritional strategies to reduce ROS effects on the body.

Methods. PubMed and Google Scholar databases were searched with mesh terms diet, aging, longevity, antioxidant and oxidative stress and their combinations. English language articles published after 2010 were included in narrative review.

Results. Age is linked with the decreased appetite and consumption of an imbalanced diet, deficient in many essential nutrients. Unhealthy diet increases oxidative stress, on the other hand healthy balanced diet rich in plant food does not and provides exogenous antioxidants, which was associated with health benefits, such as decreased oxidative load, lower risk for cardiovascular disease, type 2 diabetes and neurodegenerative diseases. Furthermore, high antioxidants intake has been linked to a prolonged life span. Plant food is high in polyphenols, carotenoids, ascorbic acid and vitamin E with high antioxidant potential. Nutraceuticals such as fortified food with antioxidants have high antioxidant concentration. Higher fruit and vegetable intake was associated with higher total plasma antioxidant capacity. The main contributors to total antioxidant intake identified for women were coffee and tea, while for men alcoholic beverages, coffee and tea, followed by fruits and vegetables for both genders. On the other hand, many vitamin supplements failed to present any beneficial results against non-communicable diseases. Therefore, nutraceuticals have increasing antioxidant intake potential and were associated with lower cardiovascular risk, improved digestive system and with delayed aging process.

Discussion and conclusions. Food choices and diet quality are very important factors for delaying aging and increased life quality in older ages. Beside fruit and vegetable intake, implementing nutraceuticals in diet increases antioxidants intake, which are linked to better life quality and prolonged life.

Keywords: aging, antioxidant, diet, oxidative stress

Prehrana starejših ljudi z aterosklerozo

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Izhodišča in namen. Bolezni srca in ožilja imajo svojo podlago v aterosklerozi, v razvitem svetu, v zadnjem času pa vse bolj tudi v državah v razvoju, predstavljajo poglaviti vzrok obolenosti in umrljivosti. Pogostost bolezni srca in ožilja je v Sloveniji primerljiva s petnajsterico držav Evropske unije. Pri moških se pojavlja približno deset let prej, kot pri ženskah, pri katerih so srčno-žilne bolezni daleč najpomembnejši vzrok smrti. Bolezenski procesi in njihov razvoj je najpogosteje povezan z določenimi dejavniki tveganja, na katere lahko vsak posameznik vpliva sam. Med te uvrščamo prehrano, gibanje in telesno aktivnost, kajenje, stres. Namen prispevka je s pomočjo pregleda literature, raziskati kakšna prehrana je po najnovejših smernicah najprimernejša za starostnike, ki imajo diagnosticirano aterosklerozo. Prav tako želimo izpostaviti kakšna hrana ni priporočljiva in je dobro, da se jo v največji meri izogibajo oz. jo uživajo v manjših količinah. Poudarek bomodalitudinapomenpreventivepriodkrivanjuinpreprečevanjuateroskleroze.

Predstavitev vsebine. Ateroskleroza je bolezen žilne stene aorte ter srednjih in velikih arterij mišičnega in elastičnega tipa. Je napredujoč proces, ki lahko dolgo časa ostane brez simptomov in znakov, v napredovali fazi pa se kaže z eno ali več pojavnih oblik, kot so koronarna bolezen srca, možganska kap ali periferna žilna bolezen. Lahko se prične že v otroštvu in s starostjo napreduje, pospešujejo pa jo tudi dejavniki tveganja. Med glavne dejavnike tveganja uvrščamo predvsem hiperholesterolemijo, hiperlipidemijo in povečano koncentracijo lipoproteinov nizke gostote, arterijsko hipertenzijo, debelost, sladkorno bolezen, kajenje, pomanjkanje telesne aktivnosti.

Čeprav so razvite aterosklerotične spremembe nepopravljive, pa lahko predvsem z zdravim življenjskim slogom, torej z zdravo uravnoteženo prehrano in redno telesno aktivnostjo, vplivamo na hitrost napredovanja bolezni.

Sklepne ugotovitve. Pojav ateroskleroze je povezan z mnogimi dejavniki na katere lahko vplivamo in na dejavnike na katere sami ne moremo vplivati. V našem članku smo se navezali predvsem na vpliv ustreznega načina prehranjevanja. Pri pregledu člankov smo zasledili, da avtorji omenjajo številne diete, kot na primer DASH dieta, TLC dieta, Mediteranska dieta. Najprimernejši način prehranjevanja za bolnike z aterosklerozo je tak, ki vključuje živila iz vseh skupin prehranske piramide v zmernih količinah. Pomemben factor je preventive in ozaveščanje ljudi, saj so srčno-žilne bolezni, kot posledica ateroskleroze, eden izmed glavnih dejavnikov prezgodnje zbolelosti in umrljivosti v razvitem svetu, s tem pa tudi finančno breme zdravstvenega sistema.

Ključne besede: staranje, srčno žilne bolezni, telesna aktivnost, preventiva

Nutrition of the elderly with atherosclerosis

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Introduction and purpose. Atherosclerosis is a disease of the vascular wall of the aorta and the middle and large arteries of the muscular and elastic type. It is an advanced process that can remain without symptoms and signs for a long time, and in the advanced stage it is manifested by one or more manifestations, such as coronary heart disease, stroke or peripheral vascular disease. It can begin in childhood and progress with age, but it is also accelerated by risk factors. The main risk factors include hypercholesterolemia, hyperlipidemia and increased concentration of low-density lipoproteins, arterial hypertension, obesity, diabetes, smoking, lack of physical activity. Although the developed atherosclerotic changes are irreversible, we can influence the rate of disease progression, especially with a healthy lifestyle, ie a healthy balanced diet and regular physical activity.

Content presentation. Atherosclerosis is a disease affecting the vascular aortic wall and the middle and large elastic and muscular arteries. It is a progressive condition whose symptoms and signs may not occur for a longer period of time while the progressive stage may manifest itself via one or several of its manifestations, including coronary artery disease (CAD), a brain stroke, or Peripheral arterial disease (PAD). The disease may develop in childhood and progress with age, although the risk of the latter may be dramatically increased by certain risk factors. The main risk factors include hypercholesterolemia, hyperlipidemia and increased concentration of low-density lipoproteins, arterial hypertension, obesity, diabetes, smoking, and a lack of physical activity. Although atherosclerosis causes irreversible changes, one can significantly influence the progression of the latter with a healthy, balanced diet and regular physical exercise.

Conclusions. The occurrence of atherosclerosis is associated with many factors that we can influence and factors that we cannot influence ourselves. In our article, we focused mainly on the impact of proper diet. In reviewing the articles, we found that the authors mention a number of diets, such as the DASH diet, the TLC diet, the Mediterranean diet. The most appropriate diet for patients with atherosclerosis is one that includes foods from all groups of the food pyramid in moderation.

An important factor is prevention and awareness of people, as cardiovascular disease as a result of atherosclerosis is one of the main factors of premature morbidity and mortality in the developed world, and thus also the financial burden of the health system.

Keywords: aging, cardiovascular diseases, physical activity, prevention

Načini ureditve prehranske podpore v socialnovarstvenih zavodih

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Uvod. Število starostnikov se v zahodnih državah z leti povečuje. Pomen dobre prehranjenosti med starejšimi je velikega pomena. Prehranska podhranjenost je prisotna pri starostnikih v socialnovarstvenih zavodih v 35-85 %. Podhranjeni starostniki ob sprejemu v bolnišnico imajo petkrat višjo smrtnost v primerjavi s primerno prehranjenimi. Za obravnavo prehranske podhranjenosti je ključna vzpostavitev sistemskega prehranskega presejanja. Pri obravnavani prehransko podhranjenih pacientov je zelo pomembna ustrezna prehranska podpora, ki jo lahko nudijo različni prehranski strokovnjaki (dietetik, medicinska sestra, zdravnik). Prisotnost prehranskega tima v socialnovarstvenih zavodih je prej redkost, kot ustaljena praksa.

Metode. Uporabljena je bila deskriptivna metoda dela s kritičnim pregledom angleške znanstvene literature z uporabo podatkovnih baz PubMed, Cochrane Library, ScienceDirect in Google Scholar. Uporabljene ključne besede so bile: nutrition support teams, nursing care, nutritional care, mobile nutrition support team, mobile health clinics. Literatura, katera je bila vključena je morala: biti izdana med leti 1995 in 2020, prost in polni dostop do teksta in v angleškem jeziku. Za pregled in izbiro člankov smo uporabili metodološki pristop prizma.

Rezultati. Pri pregledu literature smo našli 1354 zadetkov, po upoštevanju vseh vključitvenih in izključitvenih kriterijih smo v naš pregled literature vključili 17 različnih strokovno-znanstvenih člankov. Pri pregledu literature smo zasledili, da je prisotnost podhranjenosti med pacienti v socialnovarstvenih zavodih prisotna v 35-38 %. Ugotavljanje in preprečevanje prehranske podhranjenosti v socialnovarstvenih zavodih lahko vključuje različne pristope. (individualni, multidisciplinarni in s pomočjo mobilne prehranske ekipe).

Diskusija in zaključek. Prehranska obravnava v socialnovarstvenih zavodih lahko poteka s pomočjo individualnega, multidisciplinarnega ali mobilnega prehranskega tima. Ne glede na pristop, ki je izbran pri prehranski obravnavi pacienta je ključen timski pristop (zdravnik, dietetik, medicinska sestra, kuharji). Pri načrtovanju prehrane je pomembno upoštevati starostne spremembe in prisotnost različnih bolezni. Ugotovljeno je bilo, da zgodnji prehranski pristop zmanjšuje komplikacije v poteku zdravljenja, zmanjšuje dobo hospitalizacije ob poslabšanju bolezni, zmanjšuje obolevnost in smrtnost med starostniki. Ureditve prehranske podpore zahteva določena finančna sredstva. Zaradi pomanjkanja finančnih sredstev vidimo smisel ureditve prehranske podpore s pomočjo mobilnega prehranskega tima. Mobilni prehranski tim dolgoročno zahteva manjše stroške delovanja, kot običajni sistemi ureditve prehranske podpore v socialnovarstvenih zavodih

Ključne besede: prehranska podpora, ureditev prehranske podpore, socialnovarstveni zavodi

Nutrition support teams in social care institutions

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Introduction. The number of elderly people in Western countries has been increasing over the past years. The proper nutrition status among the elderly is very important because malnourished elderly people have five times higher mortality on admission compared to well nourished. Nutritional malnourishment in social care institutions is present in a range of 35-85%. Detecting malnutrition is key to establishing systemic nutritional screening. Adequate nutritional support, which can be provided by various experts (dietitian, nurse, doctor), is of greatest importance when dealing with malnourished people. Unfortunately, the presence of a nutrition team in social care institutions is a rarity rather than a normal practice.

Methods. A systematic review of scientific literature was conducted using PubMed, Cochrane Library, ScienceDirect and Google Scholar databases. The keywords used were: nutrition support teams, nursing care, nutritional care, mobile nutrition support team, mobile health clinics. The literature that was included had to be written in English language, published between 1995 and 2020 and needed to provide free and full access to the text. A methodological 'PRISMA approach' was used to review and select the proper articles.

Results. In the literature review, our search resulted in 1354 articles. After taking into account all inclusion and exclusion criteria only 17 studies were included. When reviewing the literature, we found out that the presence of malnutrition among patients in social care institutions ranged between 35-38%. Identifying and preventing malnutrition in social care institutions can involve different approaches (individual, multidisciplinary and with the help of a mobile nutrition team).

Discussion and conclusion. Nutritional treatment in social care institutions can be carried out with the help of an individual, multidisciplinary or mobile nutrition team. Regardless of the approach chosen in the patient's nutritional treatment, teamwork (physician, dietitian, nurse, cooks) is the most important. When planning a diet, it is important to take into account age-related changes and the presence of various diseases. An early dietary approach has been found to reduce complications during treatment, reduce hospital stays with disease exacerbation, and reduce morbidity and mortality among the elderly. Nutritional support arrangements require certain financial resources. Due to the lack of financial resources, we propose arrangement of nutrition support with the help of mobile nutrition teams as it requires lower operating costs in the long run compared to conventional nutrition support systems in social welfare institutions.

Keywords: nutrition support, nutrition support arrangements, social care institutions

Slovenska nacionalna priporočila o prehrani in telesni dejavnosti ob sladkorni bolezni tipa 2

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Izhodišča in namen. Neenakosti pri svetovanju prehrane ob sladkorni bolezni tipa 2 (SBT2) so povzročale težave v vsakdanji praksi. Osebe s sladkorno boleznijo so bile zaradi različnih, lahko popolnoma nasprotujočih si nasvetov zmedene, s tem je upadalo zaupanje zdravstvenim strokovnjakom. Sekcija medicinskih sester in zdravstvenih tehnikov v endokrinologiji (pri Zbornici zdravstvene in babiške nege Slovenije) je pobudo za ureditev nefarmakoloških priporočil ob SBT2 predstavila Ministrstvu za zdravje, ki je podprlo delovanje delovne skupine za pripravo prvih nacionalnih priporočil. Deset inštitucij, štirinajst strokovnjakov in nekaj zunanjih sodelavcev je v treh letih delovanja pripravilo Priporočila o prehrani in telesni dejavnosti ob SBT2.

Predstavitev vsebine. Vsebina priporočil je razdeljena na dva dela. Prvi del predstavljajo priporočila na podlagi podatkov iz raziskav in uveljavljenih priporočil mednarodnih združenj. Drugi del priporočil zdravstvenega strokovnjaka usmerja, kako znanstvena dognanja in strokovna priporočila umestiti v vsakdanjo prakso. V priporočilih vlogo zdravstvenega svetovalca v odnosu do osebe s sladkorno boleznijo predstavljata osebi Zofi in Florjan. Priporočila tako zajamejo področja ustrezne prehrane in telesne dejavnosti pri SBT2, opredelijo cilje in načine svetovanja, opredelijo kadrovske potrebe in ustrezna znanja za izvajanje prehranske terapije. Priporočila zajemajo tudi usmeritve o ustreznem življenjskem slogu svetovalca, kar ima za posledico ugodne rezultate pri motiviranju za spremembe v življenjskem slogu osebe s sladkorno boleznijo in na učinkovitost slednjih. Po naših podatkih so to edina nacionalna priporočila, ki vključujejo komponento implementacije v vsakdanjo prakso.

Skupne ugotovitve. Nacionalno, z različnimi strokami in partnerji usklajena priporočila dajejo temeljni okvir svetovanju o ustreznih nefarmakoloških ukrepih ob SBT2. V priporočilih so izpostavljena nova dejstva, ki imajo znanstveno utemeljitev in/ali konsenz skupine. Namen poenotenih priporočil je i) poenotiti strokovne informacije, ki jih oseba s sladkorno boleznijo prejme s strani zdravstvenega strokovnjaka, ii) zdravstvene strokovnjake opremiti s preverjenimi in strokovnimi informacijami v poplavi nepreverjenih in tržno naravnanih in iii) postaviti strokovne informacije pred lastna prepričanja (preprečevanje subjektivizma, avtoritativnosti in stigmatiziranja). Najpomembnejša komponenta priporočil je omogočiti zdravstvenemu svetovalcu ustvarjanje dobrega partnerskega odnosa z osebo s SBT2 in oblikovanje načrta zdravljenja, ki ga oseba s SBT2 boleznijo zmore.

Ključne besede: sladkorna bolezen tipa 2, nefarmakološko zdravljenje, nacionalna priporočila, prehrana, telesna dejavnost

Slovenian national recommendations about nutrition and physical activity for diabetes mellitus type 2

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Introduction and purpose. Inequalities in dietary counseling in the case of type 2 diabetes mellitus (T2DM) have caused problems in everyday practice. People with T2DM have been confused by different contradictory advice, which caused declining trust in health professionals. Association of Nurses and Medical Technicians in Endocrinology (Nurses and Midwives Association of Slovenia) presented the initiative for the regulation of non-pharmacological recommendations T2DM to the Ministry of Health, which supported the work of a working group to prepare the first national recommendations. Ten institutions, fourteen experts and a few external consultants have made Recommendations on Diet and Physical Activity for Type 2 Diabetes in the last three years.

Content presentation. The content of the recommendations is divided into two parts. The first part consists of recommendations based on research data and established recommendations of international associations. The second part of the recommendations directs a health professional how to put scientific findings and expert recommendations into everyday practice. In the recommendations, the role of a health advisor in relation to a person with diabetes is represented by two characters, Zofi and Florjan. The recommendations cover the areas of proper nutrition and physical activity in T2DM, define the goals and methods of counseling, regulated staffing needs and relevant knowledge for the implementation of nutritional therapy. The recommendations also include guidelines on the appropriate lifestyle of the counselor, which results in favorable results in motivating the person with T2DM for changes in lifestyle and in those changes being effective. According to our data, these are the only national recommendations that include a component of implementation in everyday practice.

Conclusion. Recommendations present a basic framework for advising on appropriate non-pharmacological measures for treatment of T2DM. New facts that have a scientific basis and/or consensus of the group are presented. The purpose of the unified recommendations is i) to unify the professional information that people with T2DM obtain from secondary health professionals, ii) to provide the health professionals with verified and scientific information to withstand the floods of untested and commercial information, and iii) to put professional information before the individual beliefs (prevention of subjectivism, authority in stigmatization). The most important component of recommendations is enabling health professionals to create good partnerships with person with T2DM and to design treatment plans that people with T2DM can handle.

Keywords: type 2 diabetes mellitus, non-pharmacological treatment, national recommendations, diet, physical activity

Preučevanje antioksidativnega potenciala laškega in peščenega smilja

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Uvod. S staranjem je telo podvrženo progresivnemu upadu številnih fizioloških funkcij, kar pomembno vpliva na delovanje organizma. Pogost problem, s katerim se soočajo starostniki, je upad apetita, kar lahko vodi do nižjega vnosa antioksidantov in manjše odpornosti na oksidativni stres. Laški in peščeni smilj se zaradi visoke vsebnosti antioksidantov že vrsto let uporabljata v zdravilne namene. Ker starostniki delež antioksidantov lažje zaužijejo v obliki tekočin, bi pitje čaja iz smilja morda lahko bila dobra alternativa drugim prehranskim virom. Namen te študije je preveriti, kakšen je antioksidativni potencial čaja laškega in peščenega smilja in kakšno zaščito nudi pred oksidativnim stresom.

Metode. Iz posušenih listov in cvetov laškega in peščenega smilja smo pripravili čaj, in sicer smo 0,5 g posušenih delov rastline poparili s 100 ml vode. Poparkom smo z DPPH testom določili antioksidativni potencial in nadaljevali z eksperimenti na celičnih linijah CaCo-2, U937 in CCD112CoN. Omenjene celične linije smo za 24 ur izpostavili poparkom različnih koncentracij ter določili njihovo citotoksičnost ter zaščitni učinek delovanja čaja pred povzročenim oksidativnim stresom s testom DCFH-DA. Eksperimentalno delo smo zaključili s testom RT-PCR, s čimer smo določili vpliv čajev na izražanje encimskih endogenih antioksidantov.

Rezultati. Maksimalno inhibicijo prostega radikala DPPH smo tako pri laškem ($80 \pm 2 \%$) kot peščenem smilju ($73 \pm 6 \%$) zaznali pri največji koncentraciji čaja, pri nižjih koncentracijah pa je bil učinkovitejši laški smilj. Test citotoksičnosti je pokazal, da peščeni in laški smilj nista citotoksična. Največji zaščitni učinek pred povzročenim oksidativnim stresom smo pri obeh vrstah čaja zaznali pri celicah U937. Čaj laškega smilja je pri koncentraciji 5 % (v/v) povzročil upad ROS na $64,1 \pm 1,5 \%$, peščeni smilja pa pri koncentraciji 2 % (v/v) upad na $88,3 \pm 2,3 \%$. Največji razkorak v izražanju genov, superoksid dismutaze, glutation reduktaze in katalaze, smo zaznali v primarnih človeških celicah, kjer je laški smilj povzročil 2–2,5-kratno povečanje ekspresije preučevanih genov, vpliv peščenega smilja pa je bil ravno nasproten.

Razprava in zaključki. Glede na rezultate laboratorijskih eksperimentov lahko potrdimo, da sta laški in peščeni smilj dober vir antioksidantov, pri čemer ima laški smilj večji antioksidativni potencial in izkazuje večjo zaščito pred oksidativnim stresom. Zaključimo lahko, da bi čaj iz smilja lahko bil dobra alternativa zelenemu čaju/kavi, učinke in vivo pa bi bilo potrebno potrditi v nadaljnjih študijah.

Ključne besede: smilj, antioksidanti, oksidativni stress

Analysis of antioxidative potential of *Helichrysum italicum* and *Helichrysum arenarium*

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Introduction. Aging is associated with a progressive decline in various physiological functions, that can profoundly affect organism's homeostasis. It was reported that elderly often have decreased appetite, which is strongly connected to lower intake of antioxidants and weakened resistance to oxidative stress. *Helichrysum italicum* (abbrev. as. HI) and *Helichrysum arenarium* (abbrev. as HA) are known for high content of antioxidants and have been used for medicinal purposes for decades. Elderly easily consume a portion of antioxidants with fluids, therefore *Helichrysum* tea could be a suitable alternative to other food sources. The purpose of this study is to evaluate antioxidative potential and protective effects against oxidative stress of HI and HA infusions.

Methods. Dried flowers and leaves of HA and HI were used to prepare infusions with 0.5 grams of dried plant material per 100 ml of boiling water. DPPH assay was performed to measure antioxidative potential. CaCo-2, U937 and CCD112CoN cell cultures were then treated with different infusion concentrations for 24 hours, and cell viability was determined. To determine the protective effects of HA and HI infusions against oxidative stress, DCFH-DA assay was used. Experimental work was concluded by evaluating effects of HI and HA infusions on the expression of endogenous enzymatic antioxidants, by using RT-PCR.

Results. Maximal inhibition of DPPH free radical was seen in HI ($80 \pm 2 \%$) and HA ($73 \pm 6 \%$), when the highest concentration of infusions were used, whereas in lower concentrations HI was more effective. Cell viability assay revealed that HA and HI were not cytotoxic. The highest protective effects from oxidative stress were measured in U937 cell culture, where HI infusion at 5 % (v/v) reduced ROS to $64.1 \pm 1.5 \%$, and HA infusions at 2 % (v/v) to $88.3 \pm 2.3 \%$. The greatest difference in gene expression (superoxide dismutase, glutathione reductase and catalase) was seen in primary colon cells where HI caused a significant 2-2.5-fold upregulation of all three enzymes; HA, on the contrary, downregulated all three genes.

Discussion and conclusion. The results of laboratory experiments confirmed that HI and HA are good sources of antioxidants, however HI has greater antioxidative potential and exhibits better protection against oxidative stress. We can conclude that HI tea could serve as an alternative to green tea and coffee, however, further studies should be conducted to clarify the effects in vivo.

Keywords: *Helichrysum*, antioxidants, oxidative stress

Pomembnost edukacije starejših odraslih s sladkorno boleznijo

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Uvod. Sladkorna bolezen je kronična nenalezljiva bolezen sodobnega časa. Ob tem lahko skoraj govorimo o pandemiji, saj je predvsem sladkorna bolezen tipa 2 med vodilnimi obolenji sodobnega časa. Za njo zbolijo odrasli po 40. letu starosti, vzrok za njeno obolenostjo pa je predvsem neustrezen življenjski slog. Zato je tukaj izrednega pomena ustrezna edukacija starejših, pa tudi že mlajših generacij, da poznajo preventivo, kako se pred njo zavarovati.

Metode. Raziskava je kvantitativna in temelji na deskriptivni ter kavzalno-eksperimentalni metodi dela. Podatki za analizo empiričnega dela so pridobljeni s tehniko anketiranja, ki smo jih računalniško obdelali ter grafično prikazali. V raziskavo je bilo vključenih 90 pacientov, ki se zdravijo za sladkorno boleznijo v Splošni bolnišnici Celje.

Rezultati. Z raziskavo smo ugotovili, da so sladkorni pacienti dojemljivi za sprejemanje novih informacij in znanja, saj se zavedajo, da le na takšen način ohranjajo svoje zdravje kar se da optimalno. Zavedajo se, da je njihovo zdravje odvisno od upoštevanja vseh zdravstvenih nasvetov, ki jih dobijo s strani zdravstvenega osebja, s katerimi so zelo zadovoljni. Ugotovljeno je bilo, da so prav zdravstveni delavci tisti, ki skrbijo za podporo in motivacijo sladkornih bolnikov ter njihovih svojcev.

Razprava in zaključek. Pojem edukacija pomeni vzgoja in izobraževanje in za ustrezno edukacijo sladkornih bolnikov mora imeti zdravstveni delavec širok obseg znanja. Prav ustrezna edukacija je izrednega pomena za ohranjanje in preprečevanje poslabšanja zdravstvenega stanja pacienta s sladkorno boleznijo. Pacienti s sladkorno boleznijo so običajno starejše osebe, ki se pogosto niti ne zavedajo resnosti bolezni in kako zelo pomembno vlogo imajo sami pri preprečevanju nastanka kroničnih zapletov zaradi same bolezni. Pomembno je njihovo sodelovanje in vključevanje v sam proces zdravljenja, katero bo ob ustrezni edukaciji še toliko bolj uspešno.

Ključne besede: sladkorna bolezen, edukacija, zdravstvena vzgoja, pacient

The importance of educating older adults with diabetes

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Introduction. Diabetes is a chronic non-communicable disease of modern times. At the same time, one can almost speak of a pandemic, because type 2 diabetes is one of the leading diseases of modern times. It affects adults after the age of 40, and the cause of its morbidity is mainly inappropriate lifestyle. Therefore, it is extremely important here to properly educate both the older and younger generation so that they know how to prevent themselves.

Methods. The research is quantitative and based on descriptive and causal non-experimental method of work. The data for the analysis of the empirical work was obtained using a survey technique, which was processed and graphically displayed on a computer. The study included 90 patients treated for diabetes in Celje General Hospital.

Results. Research has shown that diabetic patients are receptive to new information and knowledge, as they are aware that this is the only way they can maintain their health as optimal as possible. They are aware that their health depends on following all the medical advice they receive from the medical staff with whom they are very satisfied. It was noted that it is the medical personnel who are concerned about supporting and motivating the diabetic patients and their relatives.

Discussion and conclusion. The term training means education and to train diabetic patients properly, the medical staff must have a wide range of knowledge. Adequate training is extremely important in maintaining and preventing the deterioration of health of a patient with diabetes. Diabetic patients are usually elderly people who are often unaware of how severe the disease is and how important they themselves are in preventing the development of chronic complications from the disease. It is important that they cooperate and be involved in the treatment process itself, which will be even more successful with the right education.

Keywords: diabetes, training, health education, patient

Kvaliteta življenja starejših ljudi v programih medgeneracijskega sodelovanja in učenja

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Uvod. Demografske spremembe in teža starajoče se družbe kliče po strategijah in dolgoročnih rešitvah, kako zagotoviti kakovostno življenje starejših generacij in ohraniti medgeneracijsko solidarnost na nivoju vzdržnosti družbe kot celote. Zdravo in aktivno staranje ni samo kazalec zdravstvenega stanja, pomeni predvsem vključenost starejših v družbene procese v lokalni in širši skupnosti, kjer imajo možnosti in sredstva za razvijanje novih znanj, veščin in spretnosti, ki osmišljajo in bogatijo njihovo življenje.

Metode. V raziskavo, ki je potekala od meseca marca do aprila 2021, je bilo vključenih 60 samostojno živečih starostnikov iz vzhodne slovenske regije. Z uporabo anketnega vprašalnika o pogostnosti uživanja živil in pijač smo ocenili njihove prehranjevalne navade in druge, ki so povezane s kakovostjo življenja.

Rezultati. Večina starejših ljudi samih nakupuje hrano in si doma pripravlja obroke hrane. Manj kot četrtini starejših se je v času pandemije povečala telesna masa, pogosto uživajo ocvrto hrano, premalo krat uživajo ribe, kaše in kosmiče. Večina med njimi se počuti zaskrbljena zaradi situacije, od tega se jih je polovica cepila in petina je prebolela virusno bolezen Covid-19.

Razprava in zaključek. Poklic dietetika je premalo zastopan v delovnih procesih, in prav vključevanje dietetika v različne programe, delavnice in promocije je velikapriložnost za sodelovanje in učenje v lokalni in širši skupnosti. Dietetik se lahko vključuje kot strokovni sodelavec na primarni ravni zdravstvenega sistema ter programih in projektih, katerih cilj je ozaveščanje o pomenu zdravega prehranjevanja. S prenosom strokovnih znanj in veščin lahko vpliva na obvladovanje neustreznih prehranjevalnih navad, ki vodijo do nedohranjenosti, krhkosti in drugih presnovnih pomanjkljivosti, in s tem pomembno vpliva na kvaliteto življenja starejših ljudi. V procesu učenja in druženja se poglobljajo znanja in medosebni odnosi, kar je za starejše velikega pomena pri osmišljanju njihovega življenja. V luči pandemije novega korona virusa in ugotovitev o ranljivosti starejše populacije je potrebno uskladiti vse možnosti z namenom, da se zaščiti in obvaruje starejše ter ohrani njihovo dostojanstvo.

Ključne besede: zdravo staranje, medgeneracijsko sodelovanje, prehranjevalne navade, bolezen covid-19

Quality of life of the elderly in intergenerational cooperation and learning programs

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Introduction. Demographic change and the weight of an aging society require strategies and longterm solutions to ensure a quality life for the older generations and to maintain intergenerational solidarity at the level of sustainability of society as a whole. Healthy and active aging is not only an indicator of health status, but also means the inclusion of the elderly in social processes in the local and wider community, where they have opportunities and resources to develop new knowledge, skills and enrich their lives.

Methods. The survey was conducted from March to April 2021, which included 60 self-employed elderly people from eastern Slovenia. A questionnaire on the frequency of food and beverage consumption was used to assess their eating habits and others related to their quality of life.

Results. Older people buy food and prepare meals regularly. Less than a quarter of the elderly gained weight during the pandemic often ate fried foods and rarely ate fish, porridge and cereals. Most are concerned about the situation, half have been vaccinated and a fifth have survived the Covid-19 viral disease.

Discussion and conclusion. The profession of dietitian is under represented in work processes, and the inclusion of dietitian in various programs, workshops and promotions is a great opportunity to participate and learn in the local and wider community. Through the transfer of professional knowledge and skills, dietitians can influence management of inappropriate eating habits that lead to malnutrition, fragility and other metabolic deficiencies, and thus significantly affect the quality of life of older people. In the process of learning and socializing, knowledge and interpersonal relationships deepen, which is of great importance for the elderly in making their lives meaningful. A dietitian can be involved as a professional associate at the primary level in the health system and in programs and projects aimed at raising awareness of importance of healthy eating.

Keywords: healthy aging, intergenerational cooperation, food habits, covid-19 illness

Vnos prostih sladkorjev pri starejših odraslih v osrednji Sloveniji v primerjavi s priporočili

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Uvod: Debelost in z njo povezana tveganja za nastanek kroničnih nenalezljivih bolezni so veliko breme družbe. Da bi zmanjšali tveganja za njihov nastanek, Svetovna zdravstvena organizacija (SZO) omejuje dnevni energijski vnos (EV) iz prostih sladkorjev (PS) na največ 10 %, ker gre za energijsko bogata, a hranilno prazna živila. Pri starejši populaciji, ki ima zaradi fizioloških sprememb staranja že tako povečana tveganja za nastanek kroničnih nenalezljivih bolezni, je omejitev vnosa PS še pomembnejša.

Metode: Pri 108 starejših posameznikih, starih povprečno $66,6 \pm 5,3$ let, z območja Ljubljane, ki so se ocenili kot zdrave, smo opravili osnovne antropometrične meritve (telesno višino (TV), telesno maso (TM), obseg pasu (OP)) in preverili prehranjevalne navade z vnaprej pripravljenim frekvenčnim vprašalnikom o pogostosti uživanja živil (FFQ) in prehransko anketo 24-urnega priklica jedilnika preteklega dne (24h-priklic). Količino PS za posamezna živila smo določili z verificirano metodo po Louie. EV iz PS je bil določen na podlagi FFQ, razen za določitev EV iz sladkorja in medu za dosladkanje, za kar so bili uporabljeni podatki 24h-priklicev, ker so bili podatki o tem v FFQ pomanjkljivi. EV iz PS smo primerjali s priporočili SZO. Z analizo variance (ANOVA) in korelacijo smo preverili povezavo med EV iz PS in kazalniki ogroženosti za kronične nenalezljive bolezni (indeks telesne mase, TV, OP, OP/TV), ki smo jih določili iz antropometričnih podatkov.

Rezultati: Večina udeležencev (57,4 %) je presegala priporočila SZO o največ 10 % EV iz PS. Povprečni EV iz PS je znašal $14,1 \pm 10,2$ %, glavni viri PS so bili čokolada s 23 % deležem PS, bomboni s 16 % deležem PS in sadni sok z 12 % deležem PS. Statistične analize niso pokazale povezav med EV iz PS in kazalniki ogroženosti za kronične nenalezljive bolezni. Sicer pa sta tako OP (pri ženskah $87,2 \pm 10,6$ cm, pri moških $101,0 \pm 8,6$ cm) kot OP/TV (pri ženskah $0,54 \pm 0,07$, pri moških $0,59 \pm 0,05$) kazala na zvečano ogroženost za kronične nenalezljive bolezni sodelujočih v raziskavi, in sicer so bili moški nekoliko bolj ogroženi kot ženske, čeprav je bil EV iz PS pri moških nižji ($12,5 \pm 8,0$ %) kot pri ženskah ($14,8 \pm 10,9$ %).

Razprava in zaključek: Dejstvo, da je več kot polovica udeležencev presegala priporočila SZO o vnosu PS, je zaskrbljujoče tako z vidika EV kot tudi dejstva, da so izbrani viri PS energijsko gosti, a osiromašeni hranilnih snovi, ki so pomembne za uravnoteženo prehrano v tem starostnem obdobju. Ker so naši preiskovanci zase menili, da živijo zdravo, ugotavljamo, da je starostnike pomembno ozaveščati o zdravih izbirah živil.

Ključne besede: starejši odrasli, prosti sladkorji, priporočila SZO

Comparison of free sugar intake of older people from central Slovenia with recommendations

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Introduction: Obesity and the associated risks of chronic non-communicable diseases are important burden to society. To reduce the risk of their occurrence, World Health Organization (WHO) recommends that energy intake (EI) from free sugars (FS) which are energy-rich but nutritionally empty food is below 10 %. In the elderly population with already increased risk for chronic noncommunicable diseases due to physiological changes in aging, FS intake is even more important.

Methods: On a sample of 108 elderly with the average age of 66.6 ± 5.3 years from the wider area of Ljubljana, who assessed themselves as healthy, basic anthropometric measurements were conducted (body height (BH), body weight (BW), waist circumference (WC)) as well as their eating habits were captured with pre-prepared food frequency questionnaires (FFQ) and structured 24-hour diet recall interviews (24h-recall). FS content for each foodstuff was determined by a verified method according to Louie. EI from FS was based on the data from FFQ, however due to insufficient data about table sugar and honey used as sweeteners in FFQ, their contribution was determined from 24h-recall data. EI from FS was compared to WHO recommendations. The relation between EI from FS and risk indicators for chronic non-communicable diseases (body mass index, BH, WC, WC/BH) determined from anthropometric data was assessed by analysis of variance (ANOVA) and correlation.

Results: Majority of participants (57.4 %) exceeded WHO recommendations about 10 % EI from FS. Average daily EI from FS was 14.1 ± 10.2 %, main sources of FS were chocolate with 23 % contribution of FS, candy with 16 % contribution of FS and fruit juice with 12 % contribution of FS. Statistical analysis show that there is no correlation between EI from FS and analysed risk indicators for chronic non-communicable diseases. However, both WC (87.2 ± 10.6 cm for female, 101.0 ± 8.6 cm for male) and WC/BH (0.54 ± 0.07 for female, 0.59 ± 0.05 for male) indicate on an elevated risk for chronic noncommunicable diseases among the participants in the study, male participants having higher risk than female participants, nevertheless that the EI from FS was lower by male participants (12.5 ± 8.0 %) than female participants (14.8 ± 10.9 %).

Discussion and conclusion: The finding that more than half of participants exceeded WHO recommendation about FS intake is worrying both from the EI itself as well as from the fact that consumed FS are energy dense food with low content of nutrients, important for balanced diet of elderly. As the participants assess their lifestyle as healthy, we found it is important to raise awareness of healthy food choices for older people.

Keywords: elderly, free sugar, WHO recommendation

Črevesna mikrobiota pri starejših odraslih

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Uvod. Človeški prebavni trakt predstavlja največjo mikrobno združbo v človeškem telesu. Črevesne bakterije nadzorujejo pridobivanje, sintezo in absorpcijo številnih hranil in presnovkov, kot so žolčne kisline, lipidi, aminokisline, vitamini in kratkoverižne maščobne kisline. Staranje je gensko reguliran proces, ki vodi do upada fizioloških funkcij. Eden najpogostejših učinkov staranja je imunska deregulacija, povezana s starostjo. Črevesna disbioza lahko sproži imunski odziv in kronično vnetje nizke stopnje, kar vodi do degenerativnih patologij, povezanih s starostjo in nezdravega staranja. Ustrezen prehranski status je pomemben za ohranjanje delovanja imunskega sistema in preprečevanje šibkosti ter slabšanja kognitivnih funkcij pri starostnikih.

Metode. Znanstveno literaturo smo poiskali v podatkovnih bazah PubMed, GoogleScholar in ScienceDirect, pri čemer smo uporabili naslednje ključne besede in njihove kombinacije: črevesna mikrobiota (angl. »gut microbiota«), starostniki (angl. »elderly«), dolgoživost (angl. »longevity«), Alzheimerjeva bolezen (angl. »Alzheimer's disease«). Osredotočili smo se na spremembe črevesne mikrobiote med staranjem, vpliv prehrane in njeno povezavo s patologijami.

Rezultati. Raznolikost črevesne mikrobiote se povečuje od rojstva in pri treh letih je njena sestava podobna sestavi odraslega človeka. Pri starostnikih lahko spremembe v prehranskih navadah, prebavi, absorpciji hranil in imunske aktivnosti, vplivajo na sestavo črevesne mikrobiote. Os mikrobiota-črevesje-možgani je dvosmerni komunikacijski sistem, ki je povezan preko živčnih, imunskih, endokrinih in presnovnih poti in ima ključno vlogo pri modulaciji možganskih funkcij. Raziskave kažejo na povezavo med črevesno mikrobioto in Alzheimerjevo boleznijo (AB), za katero je značilno kopičenje amiloid- β in tau v možganih, kar vpliva na poslabšanje kognitivnih funkcij. Črevesna disbioza, ki jo povzroči povečana prepustnost črevesne in krvno-možganske pregrade, lahko vpliva na patogenezo AB in drugih nevrodegenerativnih motenj. Prehranske strategije z namenom modulacije črevesne mikrobiote in imunskega sistema pri starostnikih, so še posebno pomembne zaradi njihove večje dovzetnosti za bolezni, podhranjenost, poslabšanje funkcij črevesne mikrobiote in pro-vnetnega stanja imunskega sistema. Intervencije z antibiotiki, infekcije z mikrobi, prebiotiki, probiotiki in fekalna transplantacija mikrobiote vplivajo tako na sestavo črevesne mikrobiote kot tudi na kognitivne okvare, povezane z AB. Analiza črevesne mikrobiote in njena modulacija z namenom izboljšanja zdravja, sta pomembna elementa v procesu izboljšanja zdravja starostnikov.

Razprava in zaključek. Prehranske strategije za starostnike bi morale upoštevati prehranske potrebe in pomanjkanja hranil, pa tudi črevesno mikrobioto, imunski sistem in kognitivne funkcije. Potrebni so več raziskav, da bi bolje razumeli spremembe v črevesni mikrobioti skozi življenjsko dobo in njeno povezavo s patologijami.

Ključne besede: mikrobiota, starejši odrasli, zdravje

The gut microbiota in the elderly

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Introduction. The human gastrointestinal tract represents the biggest microbial community in the human body. Gut bacteria regulate extraction, synthesis and absorption of many nutrients and metabolites, such as bile acids, lipids, amino acids, vitamins, and short-chain fatty acids. Aging is a genetically-determined process that leads to a decline of physiological functions. One of the most recognized effects of aging is the age-associated immune deregulation. Gut dysbiosis can trigger the immune response and chronic low-grade inflammation, leading to age-related degenerative pathologies and unhealthy aging. An adequate nutritional status is important to maintain the functionality of the immune system and preventing frailty and cognitive function impairment in the elderly.

Methods. A scientific literature search was performed by accessing the databases PubMed, GoogleScholar and ScienceDirect using the following keywords and their combinations: »gut microbiota«, »elderly«, »longevity«, »Alzheimer's disease«, »nutrition«, limiting the search to the last 10 years. The review was focused on the changes of gut microbiota during aging, the effect of nutrition and its link to pathologies.

Results. Gut microbiota diversity increases from birth and at about the age of three, the gut microbiota composition is mostly mature. In the elderly, changes in dietary habits, digestion, nutrient absorption and immune activity can affect gut microbiota composition. The microbiota-gut-brain axis is a bidirectional communication system that is connected via neural, immune, endocrine, and metabolic pathways and plays a key role in the modulation of brain functions. Research shows a link between the gut microbiota and Alzheimer's disease (AD), which is characterized by the accumulation of amyloid- β and tau in the brain, leading to cognitive impairment. The increased gut and blood-brain barrier permeability induced by gut dysbiosis may affect pathogenesis of AD and other neurodegenerative disorders. Nutritional strategies aiming at microbiota and immune modulation in the elderly are especially relevant due to their higher susceptibility to disease, malnutrition, impairment of the gut microbiota and a pro-inflammatory status of the immune system. Animal studies show that interventions with antibiotics, microbial infections, prebiotics, probiotics and fecal microbiota transplantation not only affect gut microbiota composition, but also influence cognitive impairment related to AD. Analysis of the gut microbiota and its potential for modulation to improve health are important elements in the process of improving health of the elderly.

Discussion and conclusions. Nutritional strategies for the elderly should consider the nutritional deficiencies and needs, but also the gut microbiota, the immune system and cognitive function. More research is needed to better understand the changes in gut microbiota over the lifespan and associated pathologies.

Keywords: microbiota, elderly, health

Povezava med prehranskim vnosom hranil in sarkopenijo pri starejših odraslih

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Uvod. Raziskovanje vpliva spremenljivih dejavnikov, ki bi bili lahko učinkoviti pri preprečevanju in zdravljenju sarkopenije, je vse večje. Čeprav je vedno več dokazov o pomembnosti prehrane pri zdravljenju sarkopenije, so študije, ki preučujejo razmerje med vnosom hranil in sarkopenijo pri starejših odraslih, omejene. Cilj te študije je bil preučiti povezavo med prehranskim vnosom hranil in prisotnostjo sarkopenije pri starejših odraslih.

Metode. V asociacijsko študijo je bilo vključenih 115 starejših odraslih (≥ 65 let), od katerih je bilo 26 uvrščenih v sarkopenično skupino. Sarkopenija je bila ocenjena v skladu z diagnostičnimi merili Evropske delovne skupine za sarkopenijo pri starejših (EWGSOP). Dnevni vnos hranil je bil ocenjen s 3-dnevnim tehtanjem vnosa živil v dveh zaporednih delovnih dnevih in enem dnevu vikenda. Vnos živil v gramih je bil pretvorjen v količino energije, makrohranil in mikrohranil z uporabo spletnega orodja za oceno prehrane Odprta platforma za klinično prehrano (OPKP). Za oceno prehranskega stanja je bila uporabljena mini prehranska anamneza (MNA). Ocenjene so bile razlike med sarkopenično in nesarkopenično skupino v vnosu hranil in prehranskem stanju. Dejavnike tveganja za sarkopenijo smo določili z uporabo logistične regresije.

Rezultati. Količine vnosa sedmih hranil (n-3 maščobne kisline, vitamin D, vitamin K, vitamin C, vitamin B1, vitamin B7 in vitamin B9) so bile statistično značilno nižje v sarkopenični skupini v primerjavi s kontrolno skupino ($p < .05$). Povečano tveganje za sarkopenijo ($R^2 = .756$) je bilo ugotovljeno pri starejših odraslih z nizkim prehranskim vnosom n-3 maščobnih kislin. Na povečano tveganje za sarkopenijo je vplival prehranski vnos n-3 maščobnih kislin, starost, indeks telesne mase, prisotnost diabetesa tipa 2, hipertenzija in stopnja telesne aktivnosti.

Razprava in zaključek. Sarkopenična skupina se je v primerjavi s kontrolno skupino starejših odraslih razlikovala glede vnosa sedmih hranil. Raziskave nakazujejo, da zagotavljanje ustreznih hranil pripomore k ohranjanju in zaščiti pred procesom upadanja mišične mase in kakovosti pri starejših odraslih, tako v nadzorovanih randomiziranih kot kohortnih študijah. Na podlagi ugotovitev o pomembnosti prehrane na vpliv razvoja sarkopenije, lahko načrtovani prehranski vnos predstavlja izvedljiv ukrep za preprečevanje ali zmanjševanje starostnega upada mišične mase in funkcije.

Ključne besede: prehrana, sarkopenija, n-3 maščobne kisline, vitamin D, prehranska anamneza

Association between dietary nutrient intake and sarcopenia in older adults

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Introduction. There is increasing interest in modifiable factors that may be effective in both the prevention and treatment of sarcopenia. Although there is a growing evidence of the importance of nutrition in the treatment of sarcopenia, studies examining the relationship between nutrient intake and sarcopenia in older adults are limited. The aim of this study was to examine the association between nutrient intake and sarcopenia in older adults.

Methods. The case-control observational study included 115 older adults (≥ 65 years), 26 of whom were classified as sarcopenic. Sarcopenia was assessed according to the European Working Group on Sarcopenia in Older People (EWGSOP) diagnostic criteria. Habitual dietary intake was assessed with the 3-day weighed dietary record over two weekdays and one weekend day. The weight of food intake in grams was converted into energy, macronutrient and micronutrient amounts using an online OPEN (Open Platform for Clinical Nutrition) dietary assessment tool. The mini nutritional assessment (MNA) was used to assess the nutritional status. Differences in nutrient intake and nutritional status between the sarcopenic and non-sarcopenic groups were evaluated. Risk factors were determined using logistic regression with sarcopenic status as the outcome.

Results. Seven nutrients (n-3 fatty acid, vitamin D, vitamin K, vitamin C, vitamin B1, vitamin B7, and vitamin B9) were all statistically significantly lower in the sarcopenic compared to the nonsarcopenic group ($p < .05$). An increased risk of sarcopenia ($R^2 = .756$) was found in older adults with low dietary intakes of n-3 fatty acids. After accounting for possible covariates, the evidence for an association between n-3 fatty acid and sarcopenia is partially explained by age, body mass index, presence of diabetes mellitus, hypertension, and physical activity level.

Discussion and Conclusions. Sarcopenic older adults differed in terms of intake of seven nutrients compared with non-sarcopenic older adults. Adequate intake in some of these nutrients have been repeatedly shown to be valuable in preserving muscle mass and protecting against normal decline in the elderly, both in randomized controlled trials and in cohort analyses. Given that nutrition may influence the development of sarcopenia, nutrition intervention may represent a feasible measure for preventing or postponing age-related decline in muscle mass and function.

Keywords: nutrition, sarcopenia, n-3 fatty acid, vitamin D, nutritional assessment

Podcenjen pojav podhranjenosti pri starejših ljudeh

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Uvod. Fenomen staranja bo v naslednjih desetletjih dosegal statistični vrhunec. Privedel bo do potrebe po dodatnem razvoju na področju dejavnikov na katere je moč vplivati, predvsem presnovnih motenj, izmed katerih je najpogostejši pojav podhranjenosti pri starostnikih. Podhranjenost že v današnjem času povzroča veliko finančno breme in bistveno zmanjšuje kvaliteto življenja starostnikov. Samemu pojavu podhranjenosti se ne daje ustrezne pozornosti, navkljub dejstvu da mora spremljanje prehranskega statusa postati prednostna naloga, za katero so razviti validirani presejalni testi, kateri se na slovenskem področju skromno uporabljajo.

Metode. S pomočjo kvantitativne metodologije in uporabe standardiziranega raziskovalnega instrumenta (Mini Nutritional Assessment) smo izvedli ne slučajnostno vzorčenje v hospitalnem okolju pri osebah starejših od 60 let v obdobju I meseca leta 2020. Raziskovalna vprašanja smo potrdili s pomočjo Fisherjevega testa. Dobljene podatke smo obdelali s programskim orodjem IBM SPSS.

Rezultati. Ugotovili smo, da je podhranjenih več kot polovica starostnikov, da je indeks telesne mase potrebno primerjati s telesno setavo za izračun prehranjenosti pri starostnikih, da so nepokretni rizična populacijska skupina pri katerih so potrebne aktivne intervencije, da so starostniki ki so odvisni od pomoči druge osebe slabše hidrirani. Potrdili smo, da so dejavniki, ki vplivajo na podhranjenost: moški spol, stres, nevropsihološke težave, zmanjšan vnos hrane ter razjeda zaradi stresa. Sodelovalo je 40 starostnikov, ki so bili hospitalizirani iz domov starejših v bolnišnici. Starost anketiranih se je gibala od 63 do 94 let in je višja pri ženskem spolu. S pomočjo MNA vprašalnika smo dobili rezultate poglobljene stopnje prehranjenosti anketiranih starostnikov, ki so zaskrbljujoči, saj je podhranjenost prisotna pri več kot polovici (n=21, 52,5 %) anketiranih ter tvegana pri skoraj četrtini (n=9, 22,5 %) anketiranih. Po rezultatih MNA je normalno prehranjenih le četrtina (n=10, 25 %) vseh anketiranih.

Razprava in zaključki. S primerno prehrano pri starostnikih, ki je drugačna od drugih populacijskih skupin, lahko starostniku omogočimo optimizacijo zdravja in ohranimo funkcionalno zmogljivost. Na področju presnovnih motenj in primerne prehrane pri starostnikih je zaznana nizka ozaveščenost laikov. Potrebno je zgodnje intenzivno preprečevanje manifestacije podhranjenosti pri starostnikih.

Ključne besede: podhranjenost, starejši ljudje, presnovne motnje, mini prehranska anamneza

Underestimated malnutrition phenomenon among elderly population

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Introduction. Aging phenomenon will reach statistical peak in coming decades and will cause a growing need for additional development in the area of influential factors, mainly metabolic disorders, of which among elderly population the most common is malnutrition. The latter already represents big financial burden as well as significantly reduces the quality of elderly population's life. Malnutrition is not treated with proper attention, despite the fact that monitoring of nutritional status should become a priority task. For this task exist developed validated screening tests but their use in slovenian territory is rather weak.

Methods. As a research tool the screened and standardized questionnaire in the form of Mini Nutrition Assessment has been used for Identification of Malnutrition among elderly Population. We have performed nonsporadic sampling in hospital environment among persons older than 60 years over a period of one month in 2020. Collected data has been processed with IBM SPSS software tool.

Results. More than half of elderly population is struggling with malnutrition; that the Body mass index should be compared with the body composition to calculate nutrition in the elderly. Immobile persons represent high risk population group, where active interventions are needed; Elderly people, which are dependent on the help of third person, are less hydrated. We have confirmed following factors to be affecting malnutrition: male gender, stress, neuropsychological problems, reduced food intake and stress ulcer. There were 40 seniors housed in a nursing home. The age of the respondents ranged from 63 to 94. The median age is higher in females. The results of the in-depth level of nutrition of the surveyed elderly are worrying, as malnutrition is present in more than half ($n = 21$, 52.5%) of respondents and risky in almost a quarter ($n = 9$, 22.5%) of respondents. Only a quarter ($n = 10$, 25%) of all respondents were normally fed.

Discussion and conclusion. With appropriate nutrition among elderly population, which is different from nutrition of other population groups, we can enable optimizing health as well as maintain functional capacity. In the field of metabolic disorders and suitable nutrition among elderly population, there is a low awareness among laymen. That is why early intensive prevention of malnutrition manifestation is needed.

Keywords: malnutrition, elderly, metabolic disorders, mini nutritional assessment

Sekcija/Section

**Psihologija / sociala in zdravje starejših
odraslih**

Psychology / social and health of the elderly

Vabljeno predavanje

Skupinsko socialno učenje - učinkovita metoda za zdravo in kakovostno staranje

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Izhodišča in namen. Na področju preventive in promocije zdravja starejših se veliko govori in piše o pomenu varovalnih dejavnikov. Večinoma s temi dejavniki mislimo na zdrave navade. Danes dobro poznamo pomen rednega gibanja, zdrave prehrane, duševne blaginje in dobrih medčloveških odnosov. Manj uspešni pa smo pri vpeljevanju teh navad v vsakdanji praksi. Šolska izobraževalna metoda za usmerjanje življenjskega in sožitnega sloga namreč ne deluje. Metoda skupinskega socialnega učenja pa ta prepad med teorijo in prakso premošča.

Predstavitev vsebine. V tem prispevku bomo predstavili metodo skupinskega socialnega učenja. Razvil jo je Jože Ramovš s svojo raziskovalno skupino na Inštitutu Antona Trstenjaka za gerontologijo in medgeneracijsko sožitje. Namenjena je celostni preventivi telesnega, duševnega in socialnega zdravja v starosti. Prav tako pa jo uporabljamo in razvijamo tudi na področju usposabljanja družinskih oskrbovalcev. Temelji na gerontološkem znanju o staranju in starosti, antropološkem znanju o pomenu medgeneracijskih odnosov, psihološkem znanju o pomenu človekovih izkušenj in nevroloških spoznanjih o nevronskega utrjevanju učnega procesa. Na področju celostne preventive zdravega staranja uporabljamo metodo skupinskega socialnega učenja v tako imenovanih širiteljskih programih za kakovostno staranje. Potekajo v skupinah z okrog 10 starejšimi ljudmi, med katerimi sta dva prostovoljca – širitelja, usposobljena za oblikovanje in vodenje skupine ter izvajanje določenega programa. V zadnjih 20 letih smo razvili 15 tovrstnih programov, ki jih je izvajalo več sto skupin po vsej Sloveniji ter na Hrvaškem. Navedli bomo štiri izmed njih. Program Preprečevanje padcev v starosti je namenjen preventive telesnega zdravja, spodbujanju zdravega gibanja in preprečevanju padcev ter s tem povezanih poškodb v starosti. V programu Starajmo se trezno delamo na celostni preventivi zasvojenosti in oamljanja. Ta problem je v starosti v razvitem svetu čedalje bolj pereč, epidemija covid-19 pa ga je še poglobila. K razvoju programa Domoljubje nas je vzpodbudilo sodelovanje s slovensko vojsko. Bistvo programa je zdravo zakoreninjenje v svoje človeško bistvo, v svojo družino, v delovno, prijateljsko in druge skupine z osebnimi odnosi ter v krajevno, narodno in druge skupnosti, s katerimi je človek povezan v sožitju. Domoljubje je namreč zakoreninjena svoboda. V obdobju epidemije pa smo v odgovor na spremenjene razmere razvili program Povezani od blizu in na daleč. Ker je epidemija zelo ogrozila redno tedensko srečevanje skupin za kakovostno staranje, smo v tem programu razvili metode za druženje in povezovanje starejših na daljavo. Pri tem smo izbrali najpomembnejše teme za krepitev duševnega zdravja.

Sklepne ugotovitve. Izkušnja in evalvacije kažejo, da metoda skupinskega socialnega učenja učinkovito povezuje ljudi, preprečuje osamljenost, prenaša znanje in teorije v vsakdanje življenje in vpeljuje zdrave navade.

Ključne besede: skupinsko socialno učenje, preventiva, navade, zdrav življenjski slog, kakovostno staranje

Invited lecture

In-group social learning method and its use for healthy and quality ageing

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Introduction and purpose. While talking about health prevention and promotion, we face an ongoing discussion on protective factors. With protective factors we mostly mean the healthy habits. Nowadays, we understand well the importance of regular exercise, healthy diet, psychological wellbeing and good interpersonal relations. But we are less successful in the implementation of these habits into the everyday practice. In making a lasting lifestyle and interpersonal relations changes, school-like lectures are ineffective. On the other hand, in-group social learning method has a potential to bridge this gap between the theory and practice.

Content presentation. The method of in-group social learning was developed by Jože Ramovš and his team at Anton Trstenjak Institute of Gerontology and Intergenerational Relations. Its purpose is holistic, physical, psychological and social health prevention in old age. The same method was used and developed for informal carers training. The method is based on gerontological knowledge on aging, anthropological knowledge on intergenerational relations, psychological knowledge on importance of experience sharing and neurological knowledge on reinforcement of learning process. In the field of holistic health prevention in old age we use the method in multiplier programs for quality ageing. The programs are carried out in groups of around 10 older persons among which there are two volunteers – multipliers, who have been educated in the group formation, leadership and have knowledge on how to implement a specific program. During the last 20 years, we developed 15 such programs, which have been carried out across Slovenia and Croatia. To explain some: The purpose of Fall prevention program is physical health prevention, promotion of regular exercise and prevention of injuries due to falls in old age. The program Ageing without addictions is holistic preventive program in the field of addictions. The problem of addictions is getting more and more prevalent among older people across developed countries and covid-19 pandemic further worsened the condition. We were encouraged to develop the program Patriotism by retired members of Slovenian army. The core of the program is healthy rootedness in our human essence, family, friends, working and other groups and rootedness in local, national and other communities. The last program we developed, called Connected from close and afar, was an answer to changed conditions during covid-19 outbreak. Since due to the pandemic older people could not meet in groups, we adapted the methodology for them to connect from afar. At the same time, we provided them with topics for strengthening of the psychological health.

Conclusions. Experience and evaluation research show that in-group social learning method is effective method for connecting people, tracking loneliness, transfer of knowledge from theory into everyday life and health prevention and promotion by introduction of healthy habits.

Keywords: in-group social learning, prevention, habits, healthy lifestyle, quality ageing

Vpliv glasbene terapije na paciente z demenco: sistematični pregled literature

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Uvod. Velik delež (20 % - 40 %) stanovalcev domov za starejše občane in pacientov v bolnišnicah, ki trpijo za demenco razvijejo nevropsihiatrične simptome kot denimo: tesnoba, depresija, razdražljivost, apatija, blodnje. Vse to predstavlja velik izziv, dodaten stres in breme za osebje zdravstvene nege in posledično tudi višje stroške zdravljenja. Cilj sistematičnega pregleda je ugotoviti, kakšne učinke ima glasbena terapija na nevropsihiatrične simptome dementnih pacientov.

Metode. Iskanje literature je bilo opravljeno v podatkovnih bazah: MEDLINE, Wiley Online Library, CINHALL in ScienceDirect. Ključne besede za iskanje so bile demenca, glasbena terapija, nevropsihiatrični simptomi, tesnoba, depresija. Kriteriji po katerih smo izbirali članke so bili naslednji: članki objavljeni v znanstvenih revijah, članki izključno v angleškem jeziku, članki objavljeni med januarjem 2011 in januarjem 2021, članki, v katerih so omenjene osebe s postavljenjo klinično diagnozo demenca, raziskave, kjer je bila intervencija glasbena terapija za blažitev nevropsihiatričnih simptomov, članki so morali biti ocenjeni najmanj s 5 točkami po AMSTAR lestvici.

Rezultati. Pregledali smo 3257 naslovov člankov, po vključitvi kriterijev smo kvalitativno pregledali 12 člankov, v katerih je sodelovalo 5.978 bolnikov. Rezultati kažejo, da je imela glasbena terapija znatne pozitivne učinke na zmanjševanje nevropsihiatričnih simptomov ljudi z demenco. Nekatere študije so pokazale, da ni prišlo do bistvenih izboljšav kognitivnih funkcij ali izboljšanja pri vsakodnevni opravi, rezultati na področju kakovosti življenja pa so bili dvoumni.

Diskusija in zaključek. Glasbena terapija je učinkovita in izboljšuje nevropsihiatrične simptome pacientom z demenco, zato bi lahko bila dobra strategija zdravljenja v prihodnosti. Vendar so še vedno potrebne nadaljnje randomizirane študije.

Ključne besede: demenca, glasbena terapija, nevropsihiatrični simptomi, depresija, tesnoba

Effects of music therapy on patients with dementia: A systematic review

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Introduction. A high percentage (20 % to 40 %) of residents in nursing homes care and patients in acute hospitals suffering from dementia develop neuropsychiatric symptoms such as anxiety, depression, agitation, apathy and delusions. Neuropsychiatric symptoms are complex, stressful and challenging to manage, which increase caregiver's burden and the cost associated with dementia care. This systematic literature review aims to investigate the effects of music therapy on neuropsychiatric symptoms of patients with dementia.

Methods. A literature search was performed in databases: MEDLINE, Wiley Online Library, CINHAI and ScienceDirect. The search keywords included dementia, music therapy, neuropsychiatric symptoms, anxiety, depression. The search was limited to scientific articles; only articles in English language; only systematic reviews; articles published from January 2011 to January 2021; articles with full text available; articles about residents, who were clinically diagnosed with dementia; articles on study intervention: music therapy; outcomes of study: reported at least one effect of music therapy on neuropsychiatric symptoms; reviews were required to have an AMSTAR rating of five points or greater.

Results. We screened 3257 titles, only 12 articles, involving in total 5.978 patients, met the inclusion criteria for review. Overall, the studies showed that music therapy has a significant impact on decreasing neuropsychiatric symptoms of people with dementia. Some of studies found out that there were no significant improvements on cognition or daily functioning and the results on quality of life were ambiguous.

Discussion and conclusions. Music therapy is beneficial and improves neuropsychiatric symptoms of people with dementia, therefore it could be a powerful treatment strategy in the future. However further randomized studies are still needed.

Keywords: dementia, music therapy, neuropsychiatric symptoms, depression, anxiety

Vpliv igre vlog na strokovno usposobljenost študentov zdravstvene nege

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Uvod. Kot pripravo ali kot del kliničnega usposabljanja se v študij zdravstvene nege vpeljujejo sodobne učne metode, med katere sodijo tudi metode izkustvenega učenja kot sta simulacija in igra vlog. Namen raziskave je bil opisati vpliv delavnic igre vlog na znanje in spretnosti študentov zdravstvene nege. Zastavili smo dve hipotezi: 1) Z igro vlog se izboljšajo profesionalne kompetence; 2) Igra vlog je učinkovita metoda učenja.

Metode. Izvedli smo opisno kvantitativno raziskavo, podatki so bili zbrani z anketnim vprašalnikom. V raziskavo je bilo vključenih 264 študentov prvega letnika zdravstvene nege, pri katerih so bile izvedene delavnice igre vlog iz področja gerontološke zdravstvene nege. Vprašalnik je bil sestavljen za namen evalvacije delavnic igre vlog, ki potekajo v okviru študijskega programa pri predmetu Zdravstvena nega starostnika. Notranja konsistenca vprašalnika je 0.844 (n=27).

Rezultati. Anketiranci so bili prepričani, da so z igro vlog pridobili in utrdili znanje ter povezali teorijo s prakso. Posebej so izpostavili pridobljene sposobnosti komuniciranja v skupini, konstruktivno refleksijo, povečanje občutljivosti za lastna čustva ter empatijo. Anketiranci so bili prepričani, da delavnice igre vlog pozitivno vplivajo na obravnavo pacientov in pripomorejo k razvoju profesionalnih kompetenc predvsem na področju komunikacije s starejšim pacientom in vživljanja v njegovo vlogo.

Razprava in zaključki. Z raziskavo smo ugotovili, da anketiranci ocenjujejo uporabo metode igre vlog kot učinkovito obliko učenja ter pridobivanja in utrjevanja spretnosti na področju zdravstvene nege starejših odraslih. Študentje imajo v okviru delavnic igre vlog priložnost razvijati profesionalne kompetence, predvsem komunikacijske veščine s starejšim pacientom ter komunikacije v timu, izboljšati kognitivno znanje, povezovati teoretično in praktično znanje, utrjevati spretnosti v varnem učnem okolju ter v fazi refleksije priložnost za izmenjavo mnenj in spoznanj. Študentje bodo pridobljene izkušnje po metodi igre vlog lahko uporabili pri delu s starejšim pacientom v kliničnem okolju.

Ključne besede: igra vlog, kompetence, medicinske sestre, zdravstvena nega

The impact of role play on the professional competence of nursing students

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Introduction. As a preparation or as part of clinical training, modern learning methods are introduced into nursing studies, including experiential learning methods such as simulation and role play. The purpose of the study was to describe the impact of role play workshops on the knowledge and skills of nursing students. We set two hypotheses: 1) Role play improves professional competencies; 2) Role play is an effective learning method.

Methods. We conducted a descriptive quantitative survey, the data were collected with a questionnaire. The study included 264 first-year nursing students who underwent role-play workshops in the field of gerontological nursing. The questionnaire was compiled for the purpose of evaluating role-playing workshops that take place within the study program in the subject Nursing of the Elderly. The internal consistency of the questionnaire is 0.844 ($n = 27$).

Results. Respondents were convinced that through role-playing they gained and consolidated knowledge and connected theory with practice. They especially emphasized the acquired ability to communicate in a group, constructive reflection, increasing sensitivity to one's own emotions and empathy. Respondents were convinced that role-playing workshops have a positive effect on the treatment of patients and contribute to the development of professional competencies, especially in the field of communication with the elderly patient and empathy for his role.

Discussion and conclusions. With the research we found out that respondents assess the use of the role-play method as an effective form of learning, as well as acquiring and consolidating skills in the field of nursing care for older adults. During the role play workshops, students have the opportunity to develop professional competencies, especially communication skills with an elderly patient and communication in a team, improve cognitive skills, combine theoretical and practical knowledge, consolidate skills in a safe learning environment and the opportunity to exchange opinions and knowledge. Students will be able to use the experience gained through the role-play method when working with an elderly patient in a clinical setting.

Keywords: role play, competencies, nurses, nursing

Skrb za starejše in delo s tem delom prebivalstva

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Uvod. Porast deleža starejših prebivalcev postavlja pred družbo vrsto novih problemov. V prvih dveh kronoloških obdobjih starosti je velik del ljudi vitalen, kljub upokojitvi aktiven in lahko na podlagi svojih izkušenj veliko prispeva v družbi. Za ta mlajši del populacije starejših je potrebno najti organizirane in formalne možnosti, da svoje kapacitete še izkoristijo na trgu dela in v prostovoljstvu ter jim tako povečati možnost za njihovo kakovostno staranje.

Metode. Naš cilj je, da s pregledom področja skrbi za starejše v Slovenski družbi ugotovimo, kaj lahko kot družba, kot politika, kot strokovne ustanove in kot posamezniki storimo, da bo življenje starejše generacije v vseh obdobjih starosti varno, kot se le da aktivno in kvalitetno. To lahko razjasnimo z odgovori na dve vprašanji: - Kako se v naši državi formalno in neformalno rešuje probleme starejšega dela populacije? - Kje imajo starejši prebivalci naše družbe v svojem bivanju največ problemov?

Rezultati. Izboljševanje reševanja problemov starejših udejanjamo z naslednjimi formalnimi in neformalnimi oblikami dejavnosti: prva socialna pomoč, ki jo izvajajo centri za socialno delo in domovi za starejše, osebna pomoč posameznikom, pomoč družinam s starejšimi člani na domu, pomoč na domu in socialni servis, oskrbovana stanovanja, domovi za starejše. Starejši imajo največ problemov na naslednjih področjih: premajhna kapaciteta v domovih za ostarele, nezadostna finančna in strokovna pomoč neformalnim oskrbovalcem, redukcije socialnih mrež starih ljudi in pomanjkanje socialne komponente oskrbe, porast negativnega odnosa do starejših, diskriminacije in zlorab, neustrezen pokojninski sistem.

Razprava in zaključek. Zaradi večanja potreb bo nujno odpreti nove domove za ostarele, urediti finančno in strokovno pomoč neformalnim oskrbovalcem in oskrbo starejših usmerjati ne le v medicinsko ampak tudi v socialno komponento, če se le da medgeneracijsko. Predvsem lahko tu izpostavimo pomembnost družinske oskrbe njenih starejših članov. Kot posamezniki in tudi sistemsko moramo stremeti za tem, da starejšim omogočimo čim bolj kakovostno preživljanje starosti. Poskrbeti moramo za zakonske okvire, ki bodo vitalnim starostnikom omogočale aktivno participacijo v družbi, tako na trgu dela kot v okviru prostovoljstva. Socialna komponenta oskrbe starejših je pomembna in ranljivejšim starejšim pomaga prebroditi krizo ob izločitvi iz njihovega okolja in redukciji njihove socialne mreže ter družinskih stikov. Tu je mesto za socialno pedagoško delo s starostniki, tako v institucijah kot v neformalnih oblikah oskrbe za ohranjanje njihovih kognitivnih sposobnosti in preprečevanje osamljenosti.

Ključne besede: rast števila starejših, formalna in neformalna oskrba starejših, socialno pedagoško delo s starejšimi

Caring for the elderly and work with this part of the population

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Introduction. The increase in the share of the elderly poses a number of new problems for society. In the first two chronological periods of age, a large proportion of people are vital, active despite retirement, and can make a significant contribution to society based on their experience. For this younger part of the elderly population, it is necessary to find organized and formal opportunities to use their capacities on the labor market and in volunteering, thus increasing their chances for quality aging.

Methods. Our goal is to review the field of care for the elderly in Slovenian society to determine what we can do as a society, as a policy makers, as professional institutions and as individuals to make the life of the older generation safe at all ages, as active and quality as possible. This can be clarified by answering two questions: How are the problems of the elderly part of the population formally and informally solved in our country? Where do the elderly residents of our society have the most problems in their stay?

Results. We improve problem solving of the elderly with the following formal and informal forms of activity: - first social assistance provided by social work centers and homes for the elderly, - personal assistance to individuals, - help for families with elderly members at home, - home help and social service, - serviced housing, - homes for the elderly. Older people have the most problems in the following areas: - insufficient capacity in homes for elderly, - Insufficient financial and professional assistance to informal carers, - the reduction of social networks of the elderly and the lack of a social component of care, - an increase in negative attitudes towards the elderly, discrimination and abuse, - inadequate pension system.

Discussion and conclusions. Due to the increasing needs, it will be necessary to open new homes for the elderly, arrange financial and professional assistance to informal caregivers and direct the care of the elderly not only to the medical but also to the social component, if possible intergenerationally. Above all, we can highlight here the importance of family care for its elderly members. As individuals and also systemically, we must strive to enable the elderly to spend their old age as well as possible. We need to provide legal frameworks that will enable vital elderly people to actively participate in society, both in the labor market and in the context of volunteering. The social component of care for the elderly is important and helps more vulnerable older people to overcome the crisis by being excluded from their environment and reducing their social network and family contacts. Here is a place for social pedagogical work with the elderly, both in institutions and in informal forms of care to maintain their cognitive abilities and prevent loneliness.

Keywords: the increase of the elderly, formal and informal care, social and pedagogical work with the elderly

Percepcija duhovne oskrbe s strani zaposlenih v zdravstveni negi v socialno varstvenih zavodih

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Uvod. Pri načrtovanju celostne zdravstvene in socialne oskrbe človeka se v ospredje s starostjo poleg fizične, psihične in socialne dimenzije postavlja tudi duhovna dimenzija dobrega počutja. Številni avtorji navajajo, da imajo zaposleni v zdravstveni negi eno pomembnejših vlog v nujenju duhovne oskrbe. Zato je namen prispevka ugotoviti, kako zaposleni v zdravstveni negi, ki delujejo v socialno varstvenih zavodih zaznavajo duhovno oskrbo.

Metode. V raziskavi je sodelovalo 214 zaposlenih v zdravstveni negi (tehnik zdravstvene nege in medicinske sestre) iz 12 socialno varstvenih zavodov v Sloveniji. Uporabljen je bil vprašalnik »Nurses' perceptions about providing spiritual care«. Slednji vsebuje 23 trditve, ki sestavljajo 6 vsebinskih sklopov: i) Osebna prepričanja o religiji/duhovnosti; ii) Poznavanje konceptov duhovnosti in religije; iii) Sproščenost v pogovorih o duhovnih/verskih vprašanjih s pacientom; iv) Izvajanje duhovnih/verskih intervencij v vsakodnevni praksi; v) Podpora zdravstvenega tima pri izvajanju duhovnih/verskih intervencij v praksi; vi) Duhovnost v formalnih programih izobraževanja s področja zdravstvene nege. Posamezne trditve so anketiranci ocenjevali na 5-stopenjski Likertovi lestvici (1 – močno se ne strinjam do 5 – močno se strinjam). Izvedli smo opisno in inferenčno statistiko (Mann-Whitney U in Spearmanov koeficient korelacije). Vrednosti $p < 0,05$ so veljale za statistično značilne.

Rezultati. Zaposleni v zdravstveni negi so menja, da dokaj dobro poznajo koncepte duhovnosti in religije ($\bar{x}=3,78$, $s=0,67$), so pa menja, da je koncept duhovnosti in duhovne oskrbe v formalnih programih izobraževanja zdravstvene nege dokaj slabo zastopan ($\bar{x}=2,76$, $s=0,89$). Osebna prepričanja do duhovnosti pozitivno in statistično pomembno korelirajo predvsem s poznavanjem konceptov duhovnosti in religije ($r=0,645$, $p=0,000$), sproščenostjo v pogovorih o duhovnih/verskih vprašanjih s pacientom ($r=0,559$, $p=0,000$) in izvajanjem duhovnih/verskih intervencij v vsakodnevni praksi ($r=0,551$, $p=0,000$). Ženske v primerjavi z moškimi bolje poznajo koncepte duhovnosti in religije ($U=1885,000$; $p=0,000$), v večji meri izvajajo intervencije s področja duhovne oskrbe v vsakodnevni praksi ($U=2191,500$; $p=0,008$) in se znotraj zdravstvenega tima redno pogovarjajo o duhovnih potrebah svojih oskrbovancev ($U=2100,500$; $p=0,002$).

Razprava in zaključek. Zaposleni v zdravstveni negi zaznavajo, da je pri delu z oskrbovanci v socialno varstvenih zavodih duhovna oskrba pomemben element obravnave. To področje pa je med formalnim izobraževanjem v zdravstveni negi nekoliko zapostavljeno. Raziskava je sicer pokazala, da na percepcijo duhovne oskrbe v največji meri vplivata spol in osebna prepričanja o religiji/duhovnosti. Oblikovanje dodatnih programov izobraževanja in osveščanje zdravstvenih delavcev bi lahko prispevalo k okrepitvi duhovnega vidika obravnave, saj predhodne raziskave potrjujejo pomen te dimenzije za zdravje in dobro počutje oskrbovancev.

Ključne besede: duhovnost, duhovna oskrba, starostniki, dom za ostarele, medicinska sestra

Nurses' perception of spiritual care in social welfare institutions

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Introduction. In planning holistic health and social care for an individual, the focus is on the physical, mental and social dimensions as well as the spiritual dimension of well-being in old age. Many authors state that nurses play one of the most important roles in spiritual care. Therefore, the purpose of this paper is to explore how nurses working in social welfare institutions perceive spiritual care.

Methods. 214 nurses (nursing technicians and registered nurses) from 12 social welfare institutions in Slovenia participated in the study. A questionnaire »Nurses' perceptions about providing spiritual care« was used. This contains 23 statements consisting of six domains: i) Personal beliefs about religion/spirituality, ii) Knowledge of the concepts of spirituality and religion, iii) Comfort level in discussing spiritual/religious issues with the patient, iv) Implementation of spiritual/religious interventions into practice, v) Support for spiritual/religious interventions in practice, vi) Spirituality in nursing education program. Individual statements were rated by respondents on a 5-point Likert scale (1 – strongly disagree to 5 – strongly agree). We performed descriptive and inferential statistics (Mann-Whitney U and Spearman correlation coefficient). Values of $p < 0.05$ were considered statistically significant.

Results. Nurses believe they are fairly familiar with the concepts of spirituality and religion ($\bar{x}=3.78$, $s=0.67$), but emphasize that the concept of spirituality and spiritual care is rather poorly represented in formal nursing education programs ($\bar{x}=2.76$, $s=0.89$). Personal beliefs about spirituality correlate positively and statistically significantly especially with knowledge of the concepts of spirituality and religion ($r=0.645$, $p<0.001$), comfort level in discussing spiritual/religious issues with patients ($r=0.559$, $p<0.001$), and implementation of spiritual/religious interventions in daily practice ($r=0.551$, $p<0.001$). Compared to men, women are more familiar with the concepts of spirituality and religion ($U= 1885.000$; $p<0.001$), implement spiritual care interventions in daily practice to a greater extent ($U= 2191.500$; $p=0,008$) and regularly discuss the spiritual needs of their patients within the health care team ($U= 2100.500$; $p=0,002$).

Discussion and conclusions. Nurses perceive spiritual care as an important element of care when working with patients in social welfare institutions. However, this area is somewhat neglected in formal nursing education. Research has shown that perceptions of spiritual care are largely influenced by gender and personal beliefs about religion/spirituality. Designing additional educational programs and raising awareness among health professionals could help strengthen the spiritual aspect of care, as previous research confirms the importance of this dimension to patient health and well-being.

Keywords: spirituality, spiritual care, elderly people, nursing home, nurse

Brezplačni programi v podporo ranljivim družinam vseh generacij

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Izhodišča in namen. S prispevkom želimo izpostaviti pomen interventnih programov pri opolnomočenju ranljivih skupin pri iskanju psihosocialne pomoči in podpore. Namen prispevka je nasloviti pomen mreže različnih programov v podporo družinskim članom vseh generacij in posameznikom v stiski, ki se srečujejo z različnimi življenjskimi preizkušnjami in izzivi ter pri katerih potrebujejo strokovno pomoč.

Predstavitev vsebine. Velik problem lahko identificiramo ravno na področju dolgih čakalnih dob ne plačljivih, psihosocialnih storitev, kot tudi slabi informiranost o dostopnosti psihosocialnih programov v pomoč ranljivim družinam. Zaradi tega prihaja do razslojevanja, namreč, plačljive storitve si lahko privoščijo le finančno močnejše družine in posamezniki. S temi programi želi država doseči ranljive skupine in zmanjšati neenakost pri dostopnosti tovrstnih storitev. V prispevku bomo predstavili brezplačne programe namenjene ranljivim ciljnim skupinam, ki nudijo različne oblike pomoči in podpore ter ozaveščenost o možnostih njihovega vključevanja. Programi sooblikovani za posamezna področja oziroma posamezne ranljive ciljne skupine in so financirani s strani Ministrstva za delo, družino, socialne zadeve in enake možnosti. Pristojno ministrstvo vsako leto sofinancira okoli 170 različnih socialnovarstvenih programov, ki so namenjeni preprečevanju in reševanju socialnih stisk posameznih ranljivih skupin prebivalstva ter v določenih primerih tudi vzdrževanju sprejemljivega socialnega stanja posameznikov. Izvajajo jih pretežno nevladne organizacije, izjemoma tudi javni socialnovarstveni zavodi in predstavljajo dopolnitev ali alternativo socialno varstvenim storitvam ter se sofinancirajo preko javnih razpisov. V sklopu socialno varstvenih programov je oblikovana tudi mreža programov za starejše, ki so ogroženi s socialno izključenostjo ali potrebujejo podporo in pomoč v vsakodnevem življenju, vključno z drugimi programi pomoči starejših oseb, ki se znajdejo v stiski, kot tudi za podporo njihovim svojcem. Prav tako v okviru sredstev Operativnega programa za izvajanje evropske kohezijske politike v obdobju 2014 – 2020, pristojno ministrstvo sofinancira petnajst Večgeneracijskih centrov, ki se smiselno dopolnjujejo z vsebinami omenjenih programov in so namenjeni informiranju, družabništvu, ozaveščanju, svetovanju in izobraževanju vseh generacij ter nudenje podpore in preprečevanju socialne izključenosti ranljivih skupin.

Sklepne ugotovitve. Namen različnih programov je tudi, da bi družinske člane ozavestili in informirali o pomembnosti dobrih in zdravih družinskih odnosov, saj je pozitivna komunikacija in razumevanje med generacijami oziroma medgeneracijski dialog pot k boljšim medosebnim odnosom in spremembi simptomatičnih vzorcev vedenja. Omenimo lahko, da se v zadnjem letu zaradi pandemije veliko družin sooča s travmatičnimi dogodki in izgubami, kot so izguba socialne ter ekonomske varnosti, izguba zdravja, lahko tudi izguba bližnjega, kar še posebej velja za starejše.

Ključne besede: brezplačni programi, starejši, večgeneracijski centri

Free programs in support of vulnerable families of all generations

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Introduction and purpose. With this article, we want to emphasize the importance of free programs in empowering vulnerable groups in seeking psychosocial help and support. The purpose of this paper is to address the importance of a network of different programs to support family members of all generations and individuals in need who are facing various life trials and challenges and in need of professional help.

Content presentation. A major problem can be identified in the area of long waiting periods for unpaid, psychosocial services, as well as poor information about the availability of psychosocial programs to help vulnerable families. This leads to stratification, namely, only financially stronger families and individuals can afford paid services. Through these programs, the state wants to reach vulnerable groups and reduce inequalities in access to such services. In this article, we will present free programs for vulnerable target groups, which offer various forms of help and support, as well as awareness of the possibilities of their inclusion. The programs are designed for individual areas or individual vulnerable target groups and are funded by the Ministry of Labor, Family, Social Affairs and Equal Opportunities. Every year, the competent ministry co-finances around 170 different social protection programs, which are intended to prevent and solve the social hardships of individual vulnerable groups of the population and, in certain cases, to maintain an acceptable social status of individuals. They are implemented mainly by non-governmental organizations, exceptionally also public social welfare institutions, and represent a supplement or alternative to social welfare services and are co-financed through public tenders. As part of social welfare programs, a network of programs for the elderly at risk of social exclusion or in need of support and assistance in daily life has been set up, including other assistance programs for the elderly in need, as well as support for their relatives. Also within the funds of the Operational Program for the Implementation of European Cohesion Policy in the period 2014-2020, the competent ministry co-finances fifteen Multigenerational Centers, which are meaningfully supplemented with the contents of these programs and are intended to inform, socialize, raise awareness, advise and educate all generations and preventing the social exclusion of vulnerable groups.

Conclusions. The purpose of various programs is also to raise awareness and inform family members about the importance of good and healthy family relationships, as positive communication and understanding between generations or intergenerational dialogue is a way to better interpersonal relationships and change symptomatic patterns of behavior. It can be mentioned that in the last year, for the sake of a pandemic, many families face traumatic events and losses, such as loss of social and economic security, loss of health, and even loss of a loved one, which is especially true for the elderly.

Keywords: free programs, elderly, multigenerational centers

Krhkost, dobro počutje in pripravljenost za uporabo digitalne tehnologije v domovih za starejše

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Uvod. Staranje prebivalstva prinaša nove izzive kot sta krhkost in osamljenost starejših odraslih. Krhkost napoveduje slabše psihosocialno dobro počutje, osamljeni starejši odrasli pa bodo v prihodnosti verjetneje krhki in šibkega zdravja. Obetavna tehnologija je vse bolj pomembna pri zdravem staranju. Vendar mnogi starejši odrasli niso pripravljeni uporabljati ali sprejeti digitalne tehnologije. V okviru projekta Piloti za zdravo in aktivno staranje (PHArA-ON) 2020 smo preučili psihosocialno počutje in krhkost starejših odraslih ter njihovo pripravljenost za uporabo tehnologije v namene zdravja in dobrega počutja, da bi oblikovali nove in obstoječe tehnološke rešitve.

Metode. Dvainšestdeset oseb brez večjih kognitivnih težav, starih 65 ali več, iz treh domov starejših občanov je s podporo raziskovalca izpolnilo dvodelni vprašalnik. Prvi del vprašalnika je preučeval psihosocialno dobro počutje s pomočjo WHO-5 in UCLA lestvico osamljenosti, krhkost pa z Indeksom krhkosti. Drugi del vprašalnika je preučeval pripravljenost za uporabo tehnologije s prilagojeno različico vprašalnika Ocenjevanja ovir v zdravstvu in predstavitvenih video posnetkov izbranih tehnologij.

Rezultati. Vsako od 12 predstavljenih tehnologij bi uporabljalo med 50 % in do 89 % starejših odraslih, vključno z naprednimi tehnologijami kot so senzorji za pasivno spremljanje (84 %), glasovno aktivirani asistenti (83 %), nosljivi senzorji (npr. Pametne zapestnice; 83 %) in roboti za (socialno) podporo (61 %). Posamezniki z boljšim počutjem so poročali o večji pripravljenosti za uporabo tehnologije za spremljanje zdravja ($r_s = .26, p = 0.04$) in o nižjem nezadovoljstvu s tehnologijo v svoji okolici ($r_s = -.47, p < 0.001$), medtem ko so tisti z višjim zaznanim nadzorom – zmožnostjo aktivnega posredovanja v okolju – poročali o nižji pripravljenosti uporabe tehnologije za komunikacijo ($r_s = -.28, p = 0.03$). Starejši, ki so poročali o večji pripravljenosti za uporabo tehnologije za en namen (npr. dostop do zdravstvenih informacij), bi verjetneje uporabljali tehnologijo tudi za druge namene (npr. komunikacijo) ($r_s = .53-.60, \text{vsi } p < 0.05$). Pripravljenost za uporabo tehnologije se je razlikovala med domovi starejših občanov, ne pa tudi med spoloma, stari starejši odrasli pa so bili manj pripravljeni uporabljati tehnologijo kot mlajši starejši odrasli ($r_s = -.44, p < 0.001$).

Razprava in zaključki. Starejši odrasli s slabšim počutjem so manj pripravljeni uporabljati tehnologijo, čeprav bi ta lahko še posebej koristila njihovemu počutju. Niso pa vsi pozitivni vidiki dobrega počutja povezani z večjo pripravljenostjo za uporabo tehnologije – tisti z občutkom večjega nadzora bodo manj verjetno uporabljali določene tehnologije (tj. za komunikacijo). To kaže, da je osebam s slabšim počutjem potrebno tehnologijo predstaviti z drugačnim pristopom in da je potrebno upoštevati določene značilnosti starejših odraslih kot so psihosocialne potrebe in kontekst.

Ključne besede: aktivno staranje, digitalna tehnologija, psihosocialno dobro počutje

Frailty, well-being, and readiness to use digital technologies in retirement homes

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Introduction. Europe's aging population brings new challenges such as frailty and loneliness of older adults. Frailty leads to lower psychosocial and physical well-being, and lonely older adults are more likely to become frail and ill in the future. Promising technologies are increasingly important for healthy aging; however, many older adults are not willing to use or adopt smart technologies. Within the Pilots for Healthy and Active Ageing Horizon (PHArA-ON) 2020 project, we examined older adults' psychosocial well-being, frailty, and readiness to use technology for health and wellbeing, to shape new and existing technological solutions.

Methods. Sixty-two individuals without major cognitive issues aged 65 or older from three retirement homes in Slovenia completed a two-part questionnaire with the support of a researcher. The first part of the questionnaire examined psychosocial well-being with WHO-5 and UCLA Loneliness Scale, and frailty with The Frailty Index. The second part of the questionnaire examined readiness to use technologies, using a modified version of the Health Care Barriers Instrument and demonstration videos of selected technologies.

Results. Each of the 12 presented technologies would be used by at least 50 % and up to 89 % of older adults, including advanced technologies, such as sensors for passive monitoring (84 %), voice-activated assistant (83 %), wearables (e.g., smart bracelets; 83 %), and robots for (social) support (61 %). Individuals with higher wellbeing reported greater readiness to use technologies for health monitoring ($r_s = .26, p = 0.04$) and lower dissatisfaction with technology in their surroundings ($r_s = -.47, p < 0.001$), while those with higher perceived control—the ability to actively intervene in their environment—reported lower readiness to use technologies for communication ($r_s = -.28, p = 0.03$). People who reported greater readiness to use technology for one purpose (e.g., accessing health information) were more likely to adopt technologies for other purposes (e.g., communication) ($r_s = .53-.60, \text{all } p < 0.05$). The readiness to use technology differed between retirement homes but not between genders, and old older adults were less willing to use technology than younger older adults ($r_s = -.44, p < 0.001$).

Discussion and conclusions. Older adults with lower well-being are less willing to use technology, even though it might be more beneficial to their well-being. However, not all of the positive aspects of well-being are associated with greater readiness to use technologies – those with a greater feeling of control are less likely to use certain technologies (i.e., for communication). This suggests that a different approach is needed in presenting technologies to those with lower well-being, and that particular characteristic of older adults, such as psychosocial needs and context, need to be considered.

Keywords: active ageing, digital technology, psychosocial well-being

Metode higiene urinskih katetrov za ponovno uporabo v domačem okolju

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Uvod. Intermitentna katetrizacija je pogost postopek samonadzora nad praznjenjem mehurja, ko spontana mikcija ni mogoča. Pogosto je izvedena na čist način z uporabo katetrov za enkratno ali ponovno uporabo. Bistveno pri večkratni uporabi je skrb za čistočo in dezinfekcijo in posledična varnost za pacienta. Ponovna uporaba katetrov namreč lahko predstavlja potencialno nevarnost za kolonizacijo z mikroorganizmi in manjšo varnost teh katetrov v primerjavi s tistimi za enkratno uporabo. V praksi najdemo lahko različna navodila za higieno katetrov. Cilj raziskave je bil izvesti pregled literature s področja higiene urinskih katetrov za ponovno uporabo v domačem okolju.

Metode. Izveden je bil pregled literature. Iskalni pojmi so bili (v slovenskem in angleškem jeziku): sečni mehur, intermitentna katetrizacija, površina katetra, okužbe sečil, domače okolje, ki smo jih razvrstili v štiristopenjsko strategijo iskanja literature – PICO. Uporabljen je bil logični operater (AND) in kombinacije različnih iskalnih pojmov ter njihovih sopomenk in nadpomenk. Iskanje smo omejili na angleški in slovenski jezik. Drugih omejitev se nismo poslužili, saj je bilo zadetkov malo. Pregled literature je bil opravljen novembra 2020.

Rezultati. S sistematičnim iskanjem literature v različnih bazah podatkov, pomembnih za področje zdravstvene nege (PubMed, CINAHL, Cochrane Library) smo identificirali 2893 potencialno ustreznih zadetkov. Po filtraciji se je za ustrezne izkazalo le 7 zadetkov. Z dodatnim iskanjem smo našli še 2 zadetka in oba tudi vključili v raziskavo. Skupno smo tako analizirali 9 prispevkov in sicer: 2 pregleda literature, od tega je bil eden sistematični; 5 eksperimentalnih študij in 2 strokovna prispevka. Kakovost raziskav je bila ocenjena s pomočjo orodja CASP.

Razprava in zaključek. V literaturi najdemo različne metode higiene katetrov za večkratno uporabo na domu: dezinfekcijsko milo in voda, alkohol, aseptične solucije (klorheksidin, cetremid), sterilizacijo z mikrovalovi, spiranje zgolj z vodo in kombinacije vseh teh metod. Za občasno dezinfekcijo pripomočka opisujejo uporabo natrijevega hipoklorida, varikine razredčene z vodo v razmerju 1:4, hidrogen preoksid 0,6 %, betadine razredčen z vodo v razmerju 1:2, benzetonijev klorid (0.02 – 0.05 %) s sterilnim glicerinom, namakanje v 1:100 soluciji savlon (klorheksidin 1,5 % in cetrimid 15 %). Za čiščenje pripomočkov se v praksi uporablja tudi naravna sredstva, ki imajo protivnetni, bakteriostatični ali baktericidni učinek kot npr. belo vino, 50 % kis, žajbelj ali brinove jagode. Vendar v literaturi ni dovolj prepričljivih dokazov, s katerimi bi bilo mogoče pacientom priporočiti optimalno metodo čiščenja katetrov za ponovno uporabo v domačem okolju. Večina razpoložljive literature je namreč slabo metodološko zasnovane. Glede na negotovosti vezane na higieno katetrov za večkratno uporabo, zato le-ti ne bi smeli biti primarna izbira pacientov.

Ključne besede: mehur, intermitentna katetrizacija, površina katetra, okužbe sečil, domače okolje

Methods of hygiene of urinary catheters for reuse in the home environment

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Introduction. Intermittent catheterization is a common procedure of self-control of bladder emptying when spontaneous urination is not possible. It is often performed in a clean manner using disposable or reusable catheters. Care for cleanliness and disinfection and consequent safety for the patient is essential for repeated use. Namely, the re-use of catheters can pose a potential risk of colonization with microorganisms and lower safety of these catheters compared to single-use ones. In practice, various instructions for catheter hygiene can be found. The aim of the research was to review the literature in the field of hygiene of urinary catheters for reuse in the home environment.

Methods. A literature review was performed. Search terms were (in Slovenian and English): bladder, intermittent catheterization, catheter surface, urinary tract infections, home environment, which were classified into a four - step literature search strategy - PICO. A logical operator (AND) and combinations of different search terms and their synonyms and superlatives were used. We limited the search to English and Slovenian. We did not use other restrictions, as there were few hits. A literature review was conducted in November 2020.

Results. By systematically searching the literature in various databases relevant to the field of nursing (PubMed, CINAHL, Cochrane Library), we identified 2893 potentially relevant hits. After filtration, only 7 hits proved to be adequate. With an additional search, we found 2 more hits and both were also included in the survey. In total, we analyzed 9 papers, namely: 2 literature reviews, one of which was systematic; 5 experimental studies and 2 expert papers. The quality of the research was assessed using the CASP tool.

Discussion and conclusion. In the literature we find different methods of hygiene of reusable catheters at home: disinfectant soap and water, alcohol, aseptic solutions (chlorhexidine, cetremide), microwave sterilization, rinsing with water only and combinations of all these methods. For occasional disinfection of the device, the use of sodium hypochloride, varicine diluted with water in a ratio of 1: 4, hydrogen peroxide 0.6 %, betadine diluted with water in a ratio of 1: 2, benzethonium chloride (0.02 - 0.05 %) with sterile glycerin, soaking in 1: 100 saline solution (chlorhexidine 1.5 % and cetrimide 15 %). In practice, natural agents that have an anti-inflammatory, bacteriostatic or bactericidal effect, such as e.g. white wine, 50 % vinegar, sage or juniper berries. However, there is insufficient convincing evidence in the literature to recommend to patients the optimal method of catheter cleaning for reuse in the home environment. Most of the available literature is poorly methodologically designed. Given the uncertainties surrounding the hygiene of reusable catheters, they should not be the primary choice of patients.

Keywords: bladder, intermittent catheterization, catheter surface, urinary tract infections, home environment

Duševno zdravje starejših v času pandemije COVID-19

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Uvod. Pandemija COVID-19 močno posega v življenje vseh, tudi starejših, in sicer so med pandemijo omejeni socialni stiki, gibanje, otežen je dostop do določenih storitev. Poleg tega se med pandemijo zmanjšujejo občutki varnosti in predvidljivosti ter krepijo strahovi, negotovost, tesnoba, pritiski. Namen študije je bil raziskati značilnosti duševnega blagostanja in tveganja za pojav depresivne motnje starejših v času pandemije COVID-19.

Metode. V raziskavi smo uporabili slovenske podatke osmih valov panelne spletne raziskave SI-PANDA, in sicer 1. val: od 4.-6. 12. 2020 ($n = 1001$); 2. val: od 18. - 21. 12. 2020 ($n = 1001$); 3. val: od 4. - 5. 1. 2021 ($n = 1002$); 4. val: od 15. - 17. 1. 2021 ($n = 1001$); 5. val: od 29. - 30. 1. 2021 ($n = 1003$); 6. val: od 12. -15. 2. 2021 ($n = 1003$); 7. val: od 26. 2. -1. 3. 2021 ($n = 1000$); 8. val: od 12. -15. 3. 2021 ($n = 1002$). Vzorec je zajel odrasle osebe v starosti od 18 do 74 let. V vseh osmih valovih smo uporabili lestvico The World Health Organisation–Five Well Being Index (WHO-5), ki je kratka samoporočana lestvica trenutnega duševnega blagostanja in ima tudi primerno veljavnost za presejanje na depresijo. V analizi smo uporabili povprečje za merjenje blagostanja in oblikovali tri skupine glede na tveganje za duševne težave: skupina s povečanim tveganjem za depresijo, skupina s povečanim tveganjem za težave v duševnem zdravju in skupina brez težav v duševnem zdravju. Podatke smo analizirali s programom SPSS 25, uporabili smo Mantel-Haenszel test za linearni trend in test hi-kvadrat.

Rezultati. Rezultati kažejo, da se je od 1. do 8. vala (od 4. 12. 2020 do 15. 3. 2021) duševno blagostanje na celotnem vzorcu rahlo izboljšalo (M-H test za trend, $p < 0,001$), tako pri moških kot pri ženskah in v vseh starostnih skupinah. Poleg tega se nakazuje trend zmanjšanja tveganja za pojav depresivne motnje med prebivalci, ki so stari med 30 in 64 let. Pri starostni skupini od 65 do 74 let pa tega upada ni bilo opaziti, kar nakazuje, da se tveganje za depresivno motnjo od 1. do 8. vala v tej starostni skupini ni pomembno spremenilo.

Razprava in zaključek. Na duševno zdravje in duševne težave vplivajo raznoliki dejavniki, ki so verjetno različni tudi med starostnimi skupinami. Tuje raziskave nakazujejo, da se je v času pandemije povečal pojav duševnih težav in motenj, medtem ko so izsledki o spremembah v duševnem blagostanju manj enotni – v nekaterih okoljih sprememb pred in med pandemijo namreč niso zaznali. Naša raziskava je bila prvič izvedena v času pandemije, zato primerjave s stanjem pred pandemijo niso mogoče. Potrebne bi bile dodatne raziskave na posameznih starostnih skupinah, tudi na starejši, ki bi pojasnile dejavnike za duševne motnje in duševno blagostanje v času pandemije.

Ključne besede: duševno blagostanje, duševne motnje, starejši, WHO-5

Mental health of the elderly during the COVID-19 pandemic

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Introduction. The COVID-19 pandemic greatly affects the lives of everyone, including the elderly. In addition, feelings of security and predictability are reduced during a pandemic, and fears, insecurity, anxiety, and pressures are heightened. The purpose of the study was to investigate the characteristics of mental well-being and the risk of developing depression in the elderly during the COVID-19 pandemic.

Methods. Data from eight waves of the Slovenian panel web survey SI-PANDA was used, namely the 1st wave: from 4th to 6th December 2020 (n = 1001); 2nd wave: from 18th to 21st December 2020 (n = 1001); 3rd wave: from 4th to 5th January 2021 (n = 1002); 4th wave: from 15th to 17th January 2021 (n = 1001); 5th wave: from 29th to 30th January 2021 (n = 1003); 6th wave: from 12th to 15th February (n = 1003); 7th wave: from 26th February to 1st March 2021 (n = 1000); 8th wave: from 12th to 15th March 2021 (n = 1002). The sample included adults aged 18 to 74 years. In all eight waves, we used The World Health Organisation-Five Well Being Index (WHO 5), which is a short self-reported scale of current mental well-being and also has appropriate validity for screening for depression. In the analysis, we used the average measure for well-being and formed three groups according to the risk of mental health problems: the group with an increased risk of depression, the group with an increased risk of mental health problems, and the group without mental health problems. Data were analyzed using the SPSS 25, we applied the Mantel Haenszel linear trend test and the chi square test.

Results. The results show that from the 1st to the 8th wave of the study (from December 4th 2020 to March 15th 2021), mental well being in the whole sample improved slightly (M H test for trend, $p < 0,001$), both in men and women, across all age groups. In addition, there is a declining trend in the risk of developing depression among the population aged between 30 and 64 years. However, this decrease was not observed in the 65–74 age group, which indicates that the risk of depressive disorder from wave 1 to 8 did not change significantly in this age group.

Discussion and conclusions. Mental health and mental health problems are affected by a variety of factors that are likely to vary between age groups as well. Foreign research suggests that the incidence of mental health problems and disorders increased during the pandemic, while the findings on changes in mental well being are less uniform – in some settings, changes were not detected before and during the pandemic. The first wave of our research was already conducted during the pandemic, so comparisons with the pre pandemic situation are not possible. Additional research would be needed on individual age groups, including the elderly, to clarify the factors for mental disorders and mental well being during a pandemic.

Keywords: mental well being, mental disorders, the elderly, WHO-5

Vključevanje potreb LGBT+ starejših v izobraževanje na področju zdravstvene in socialne oskrbe

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Uvod. Nenormativna spolna usmerjenost, spolna identiteta in spolni izraz na presečišču s starostjo, predstavljajo različna tveganja za diskriminacijo in socialno izključenost, hkrati pa ima lahko veliko negativnih posledic za zdravje in občutek varnosti človeka. Na stara leta se lahko stanje še poslabša, saj se LGBT+ starejši redkeje poslužujejo različnih oblik pomoči, ki bi lahko sprožile razkritje. Raziskave kažejo, da se neenakosti na področju zdravstvenega in socialnega varstva LGBT+ starejših ohranjajo zaradi pomanjkanja vključujočih storitev in kulturnih kompetenc zdravstvenih in socialnovarstvenih praktikov.

Metode. Partnerji na evropskem projektu Being me smo naslovili predstavljenе izzive in z uporabo inovativne participatorne metode »svetovna kavarna« (način skupinskega dialoga) raziskali dobre prakse izobraževanja o potrebah in specifičnih življenjskih okoljih LGBT+ starejših. Dve »svetovni kavarni« sta bili organizirani v letu 2018 s skupno 78 deležniki (LGBT+ starejši, praktiki, raziskovalci, študentje, profesorji in učitelji). Izvedena je bila tudi evalvacija obeh dogodkov z uporabo anketnih vprašalnikov. Znotraj projekta so bili raziskani tudi nacionalni konteksti sodelujočih partneric ter objavljena dva sistematična pregleda literature na temo pristopov k izobraževanju o LGBT+ starejših ter učinkov izobraževanj na zdravstvene in socialnovarstvene kadre.

Rezultati. Na prvi svetovni kavarni so udeleženci delili svoje osebne izkušnje z oskrbo, izpostavili vlogo učiteljev na področju zdravstva in socialnega varstva ter oblikovali prve ideje, s katerim znanjem in spretnostmi opremiti bodoče praktike, da bodo nudili bolj vključujočo in varno oskrbo. Druga svetovna kavarna je bila namenjena raziskovanju konkretnih metod in uporabnih virov za izvedbo treningov in uporabo v izobraževanju. Sistematični pregled literature ter obe svetovni kavarni, so vodili v razvoj spletnih učnih gradiv ter načel dobre prakse za vse, ki izobražujejo na področju zdravstva in socialnega varstva. Metoda svetovne kavarne se je izkazala za učinkovit pristop k združevanju raznolikih pogledov sodelujočih in participativni razvoj učnih vsebin, kar se je izrazilo tudi v rezultatih evalvacije.

Razprava in zaključek. LGBT+ starejši predstavljajo en vidik vse bolj raznolike skupine ljudi, katerih potrebe po zdravstvenih in socialnih storitvah se v starajoči družbi povečujejo. Izobraževanje zaposlenih na teh področjih, bo moralo v prihodnosti nasloviti potrebe LGBT+ starejših, saj igrajo ponudniki teh storitev ključno vlogo pri zagotavljanju LGBT+ starejšim prijazne in vključujoče oskrbe.

Ključne besede: LGBT+ starejši, vključujoča oskrba, izobraževanje, svetovna kavarna

Integrating the needs of LGBT+ older adults in to health and social care education

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Introduction. Non-normative sexual orientation, gender identity and gender expression at the intersection of old age, represent diverse risks of discrimination and social exclusion, and at the same time can include many negative consequences for a person's health and sense of security. In old age, the situation may worsen, as LGBT+ older adults are less likely to access various forms of support that could trigger coming out of the closet. Research shows that inequalities in health and social care of LGBT+ older adults persist due to the lack of inclusive services and cultural competence of health and social care practitioners.

Methods. The partners of the European project "Being Me" took up the challenges presented and explored good educational practices on the needs and specific living conditions of LGBT+ older adults using the innovative participatory method "World Café" (a method of group dialog). In 2018, two "World Cafés" were organized with a total of 78 stakeholders (LGBT+ older adults, practitioners, researchers, students, professors and teachers). An evaluation of both events was conducted using questionnaires. The project also included research into the national contexts of the participating partners and the publication of two systematic literature reviews on approaches to education on LGBT+ older adults and the impact of such education on health and social care staff.

Results. In the first World Café, participants shared their personal experiences of care, highlighted the role of teachers in health and social care, and formulated initial ideas about the knowledge and skills that future practitioners should be equipped with to provide more inclusive and safe care. The second World Café was dedicated to researching specific methods and useful resources for delivering trainings and using them in education. A systematic review of the literature and both World Cafés led to the development of online learning materials and principles of good practice for all who educate in the field of health and social care. The World Café method has proved to be an effective approach to linking the diverse views of participants and the participatory development of learning content, as evidenced in the evaluation findings.

Discussion and conclusions. LGBT+ older adults represent one aspect of an increasingly diverse group of people whose need for health and social care services is growing in an aging society. In the future, staff training in these areas will need to address the needs of LGBT+ older adults, as providers of these services have a key role in delivering friendly and inclusive care to LGBT+ older adults.

Keywords: LGBT+ older adults, inclusive care, education, World Café

Raziskava o doživljanju higienskih zahtev v času epidemije COVID-19 med starejšimi odraslimi

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Uvod. Epidemija COVID-19 je v naš vsakdanjik prinesla številne izzive in spremembe. Izrazito je spremenila naš način življenja, zaradi česar lahko marsikomu predstavlja velik izziv za duševno in telesno zdravje. V raziskavi smo ugotavljali kako starejši odrasli doživljajo higienske zahteve v času epidemije COVID-19.

Metode. Uporabljena je bila kvantitativna metoda s pomočjo anketnega vprašalnika, ki je vključeval socialno – demografske podatke, podatke o vedenju v trgovini v času epidemije COVID-19, podatke o ravnanju z živili v času epidemije COVID-19, podatke o higieni v času epidemije COVID-19 in podatke o preboljenju nalezljive bolezni COVID-19. V raziskavo je bilo povabljenih 80 starejših odraslih, starih 65 let ali več.

Rezultati. Od vseh povabljenih, se 6 oseb ni odzvalo na reševanje ankete. Od skupno 74 rešenih anket smo izločili 16 anket, ki niso bile v celoti izpolnjene. V raziskavi je sodelovalo skupaj 58 anketirancev, od tega 19 (32,8 %) moških in 39 (67,2 %) žensk. Rezultati so pokazali, da se je vedenje pri 91 % starejših odraslih v trgovini v času epidemije spremenilo. Anketirani spremembe opažajo predvsem v nošenju mask, zagotavljanju medsebojne razdalje, razkuževanju rok in redkejšem obisku trgovin. Večina anketirancev (78 %) gre v trgovino po živila redkeje kot pred epidemijo, zaradi strahu pred okužbo. V trgovini se 98 % anketirancev dotika le tistih živil, ki jih imajo namen kupiti, saj se bojijo prenosa in okužbe z virusom. Tretjina anketirancev vrečke iz trgovine ne nosi v kuhinjo in dobra tretjina (32 %) vseh anketirancev jo razkuži, ker menijo, da se na ta način obvarujejo pred okužbo z boleznijo COVID-19. Ravno tako smo ugotovili, da se je izboljšala higiena rok. Roke si zaradi strahu pred okužbo pogosteje umiva in razkužuje 86 % anketirancev. Skoraj vsi anketirani (97 %) so si v času epidemije kupili razkužilo za roke. Od vseh anketiranih je 17 oseb prebolelo nalezljivo bolezen COVID-19, pri čemer nismo zaznali povezave med težjim potekom bolezni in posledično zaradi bolezni spremenjen odnos do higienskih ukrepov.

Razprava in zaključek. Rezultati raziskave kažejo na to, da imajo starejši odrasli strah pred okužbo z nalezljivo boleznijo COVID-19, kar vpliva tako na ravnanje z živili v trgovini kot tudi na pripravo živil doma. Strah pred okužbo z nalezljivo boleznijo COVID-19 se odraža tudi v izboljšani higieni rok. Potrebne so jasne informacije in navodila potrošnikom glede ravnanja z živili v času epidemije in predvsem način komunikacije, ki ljudi opolnomoči in pomiri.

Ključne besede: zdravje, starejši odrasli, higienski ukrepi, epidemija COVID-19

A study on the experiences of hygiene requirements among older persons during the COVID-19 epidemic

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Introduction. The COVID – 19 epidemic has brought many challenges and changes into our lives. It has significantly changed our lifestyles, which is why many people can see it as a challenge to their mental and physical health. In our research, we were investigating the experiences of hygiene requirements among older persons during the COVID-19 epidemic.

Methods. The study was based on a quantitative methodology. A questionnaire was used to carry out a survey. It contained socio – demographic data, data on behavior in trade during COVID-19 epidemic, data on food handling during COVID–19 epidemic, data on hygiene during COVID–19 epidemic, and data about overcoming disease COVID–19. We invited 80 older persons aged 65 or above.

Results. Of all the invited older persons, 6 did not respond to the survey. There were 74 respondents, of which we excluded 16 surveys that were not fully completed. There were 58 respondents included in the study, of which 19 (32.8 %) men and 39 (67.2 %) women. The results showed that behaviour in store during COVID–19 epidemic has changed for 91 % older persons. Respondents observed changes in wearing masks, keeping social distancing, hand disinfection, and infrequent visits to stores. Most respondents (78 %) go to the grocery store less often than before the COVID-19 epidemic, due to risk of infection. In stores, 98 % respondents touch only those foods that they intend to buy, as they are afraid of infection and virus transmission. One-third of respondents do not carry a shopping bag into the kitchen and more than one-third (32 %) of all respondents disinfect it, because in this way, they believe that they protect themselves from COVID-19 infection. We have also found that hand hygiene was improved. Due to the fear of infection, 86 % of respondents wash and disinfect their hands more frequently. Almost all respondents (97 %) bought hand sanitiser during the epidemic. Of all respondents, 17 people overcame COVID-19 infection. We were not able to detect a connection between more severe cases of the disease and changed attitudes towards hygiene measures.

Discussion and conclusions. The results have shown that older persons are afraid of COVID-19 infection. The fear has an impact on food handling in stores as well as on food preparation at home. Fear of COVID-19 infection is also reflected in improved hand hygiene. People need clear information and directions regarding the handling of food during epidemic, and above all, a way of communication that empowers and reassures people.

Keywords: health, elderly, hygiene requirements, COVID-19 epidemic

Program spodbujanja samooskrbe pri osebah s srčnim popuščanjem

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Uvod. Statistični podatki kažejo na to, da je srčno popuščanje velik javnozdravstveni problem, pri populaciji, ki še naprej ostaja, pa bo bolezen le še naraščala. Samooskrba vključuje dejavnosti, ki jih bolnik izvaja za vzdrževanje življenja, zdravega delovanja in dobrega počutja. Samooskrbo pri srčnem popuščanju lahko opredelimo kot postopek odločanja, ki vpliva na ukrepe, ki ohranjajo fiziološko stabilnost, olajšajo zaznavanje simptomov in odziv na njih. Obvladovanje srčnega popuščanja je pogosto zapleteno, saj vključuje zapleten režim zdravljenja.

Metode. Uporabljena je bila deskriptivna metoda dela s pregledom slovenske in tuje literature z uporabo Cochrane Library, CINAHL, PubMed in MedNar. Pri iskanju literature je bil uporabljen tudi spletni brskalnik Google Scholar. Iskali smo literaturo, ki je bila izdana od leta 2010 do leta 2020, poudarek je bil na novejši literaturi.

Rezultati. S preventivnimi dejavnostmi in ukrepi samooskrbe, se zmanjšajo neposredni in posredni izdatki za zdravstveno varstvo, zmanjša se hospitalizacija ter poveča z zdravjem povezana kakovost življenja bolnikov. Z različnimi strategijami spoprijemanja bolezni (selektivno zanikanje, postavljanje ciljev) so bolniki s srčnim popuščanjem dosegli boljši klinični izvid. V prihodnosti lahko pričakujemo močno povečanje potreb po ustreznih terapevtskih orodjih in pristopih, v povezavi s srčnim popuščanjem. Predvsem potreba po edukaciji, nadzoru nad samooskrbi ter titraciji terapije. Potrebne so rešitve, ki bodo omogočale ustrezno obravnavo bolnika s srčnim popuščanjem.

Razprava in zaključek. Srčno popuščanje je zdravstveno stanje s pogostimi hospitalizacijami, visoko umrljivostjo in velikimi stroški obravnave. Izredno pomembno je vključevanje teh bolnikov v programe zdravstvene vzgoje, ki jih spodbujajo, da bi začeli aktivno skrbeti za svoje zdravje, pridobili potrebna znanja in veščine ter izoblikovali pozitivna stališča in vedenjske vzorce za zdrav življenjski slog. Le s skupnim delovanjem vseh deležnikov s področja zdravstva, gospodarstva, nevladnega sektorja in drugih lahko dosežemo boljše zdravje vseh nas.

Ključne besede: srčno popuščanje, promocija zdravja, samooskrba

Self-care promotion program for people with heart failure

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Introduction. Statistics show that heart failure is a major public health problem, and in the population that continues to remain, the disease will only increase. Self-care includes activities performed by the patient to maintain life, healthy functioning, and well-being. Self-care in heart failure can be defined as a decision-making process that influences measures that maintain physiological stability, facilitate the perception of symptoms and the response to them. Coping with heart failure is often complicated, because it involves a complex treatment regimen.

Methods. A descriptive method of working with a review of Slovenian and foreign literature using the Cochrane Library, CINAHL, PubMed and MedNar. The Google Scholar web browser was also used to search the literature. We were looking for literature that was published from 2010 to 2020, the focus was on more recent literature.

Results. Preventive activities in self-care measures reduce direct and indirect health care expenditure, so hospitalization is increased due to the health-related quality of life of patients. With different coping strategies (selective denial, goal setting) patients with heart failure achieved a better clinical outcome. In the future, we can expect a big increase in the need for appropriate therapeutic tools and approaches, in connection with heart failure. Above all, the need for education, self-care control and therapy titration. Solutions that will allow patients with heart failure to be treated appropriately are needed.

Discussion and Conclusion. Heart failure is a medical condition with frequent hospitalizations, high mortality, and high treatment costs. It is extremely important to involve patients in health education programs that encourage them to take active care of their health, to acquire the necessary knowledge and skills, and to form a positive attitude and behavioral patterns for a healthy lifestyle. Only through the joint action of all stakeholders in the field of health, the economy, the non-governmental sector and others can we achieve better health for all of us.

Keywords: heart failure, health promotion, self-care, self-management

Uporaba osebne varovalne opreme med epidemijo v domovih starejših občanov – pogled študentov

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Uvod. Širjenje okužb z novim koronavirusom spomladi 2020 je imelo velik vpliv na življenje stanovalcev in delo zaposlenih v slovenskih domovih za starejše. Okužbe so se pojavile v 99 % domov za starejše in 58 % vseh smrti zaradi COVID-19 v tem letu predstavljajo njihovi stanovalci. Že pred epidemijo so se te institucije srečevale s pomanjkanjem zaposlenih, epidemija pa je ta problem le še poslabšala (več dela s strogimi zaščitnimi ukrepi in manj zaposlenih zaradi okužb). Zaposleni so zaradi številnih dodatnih ukrepov doživljali tudi povečano obremenitev. Dosledna in pravilna uporaba osebne varovalne opreme ima ključno vlogo pri obvladovanju okužb in ohranjanju zdravja stanovalcev in zaposlenih, lahko pa predstavlja velik izziv za obe strani. Njena uporaba in izvajanje drugih ukrepov za omejitev okužbe močno omejujejo socialne stike stanovalcev. Namen tega prispevka je preučiti izzive in težave, s katerimi so se srečevali stanovalci, osebje in študenti v domovih za starejše pri uporabi osebne varovalne opreme in izvajanju drugih ukrepov za omejitev širjenja okužbe.

Metode. Spomladi 2021 so bili izvedeni poglobljeni intervjuji z desetimi študenti zdravstvene nege in medicine, ki so delali v domovih za starejše v okviru tako imenovanih Covid odprav. Intervjuji so bili transkribirani in nato kodirani s programom NVivo. Izvedena je bila analiza vsebine, ključne ugotovitve so podprte s citati intervjuvancev.

Rezultati. Študenti so opazili, da so se zaposleni in stanovalci domov za starejše soočali z različnimi izzivi v boju proti COVID-19. Kot glavne težave zaposlenih so navedli pomanjkanje resursov in informacij ter organizacijske in psihološke obremenitve. Pri stanovalcih so zaznali socialno izoliranost in pomanjkanje osebne stika z negovalci.

Razprava in zaključki. Uporaba osebne varovalne opreme in izvajanje drugih ukrepov za omejevanje širjenja okužb sta zelo pomembna za preprečevanje širjenja bolezni, kot je COVID-19. Za učinkovito implementacijo pa so potrebni pogoji, kot so zadostna sredstva, ustrezna organizacija in smernice, znanje zaposlenih in doslednost pri uporabi ustrezne osebne varovalne opreme. Pomembno je upoštevati pomen socialnih stikov za stanovalce in zmanjšati socialno izolacijo. Za učinkovitejše spopadanje z boleznimi, kot je COVID-19, je treba preučiti težave zaposlenih in stanovalcev v domovih za starejše, da jih je mogoče ustrezno nasloviti in načrtovati morebitno ponovno soočenje z njimi. Ugotovitve lahko služijo kot izhodišče za oblikovanje priporočil za kakovostnejše in varnejše delo ter bivanje v teh ustanovah. Prav tako je smiselno nadaljenje raziskovanje na tem področju.

Ključne besede: koronavirus, težave, starejši, Covid odprava, socialnovarstvene institucije

Use of personal protective equipment during the COVID-19 epidemic in nursing homes – a students' perspective

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Introduction. Spreading of the new coronavirus among the community after spring 2020 considerably impacted the lives of residents and the work of staff in Slovenia's nursing homes. Infections were detected in 99% of all nursing homes, with their residents accounting for 58% of deaths due to COVID-19 in 2020. Even before the epidemic, nursing homes were understaffed – the epidemic exacerbated this problem (more work with strict protective measures and less staff due to illness). Those who were still working also faced a bigger workload following the introduction of many additional preventive measures. Consistent and proper use of personal protective equipment is vital for managing infections and keeping residents and staff healthy, which may prove challenging for them both. The use of personal protective equipment and implementation of measures to limit the spread of the virus also seriously constrains residents' ability to socialise. The aim of this paper is to explore the challenges and issues encountered by residents, staff and students in nursing homes while using personal protective equipment and implementing other measures to limit the spread of infection.

Methods. In spring 2021, in-depth interviews were conducted with ten nursing and medical students who had worked or were working in nursing homes as part of 'Covid expeditions'. The interviews were transcribed and then coded using NVivo software. Content analysis was performed and key findings were supported with interviewee quotes.

Results. Students found the nursing home staff and residents have faced several challenges in combating COVID-19. They identified the lack of resources and information, the organisational and psychological burdens on staff, the social isolation and the lack of personal contact with caregivers as the biggest problems for residents.

Discussion and conclusions. While personal protective equipment use and the application of other measures to limit the spread of the virus is very important to prevent the transfer of diseases such as COVID-19, if their implementation is to be effective conditions like sufficient resources, adequate organisation and guidelines, enough staff knowledge and the consistent use of appropriate personal protective equipment must be ensured. It is important to consider the importance of the residents' social life and prevent excessive social isolation. To effectively control diseases like COVID-19, it is necessary to study the problems that arise in such situations among the staff and residents of nursing homes, especially those occurring while implementing infection-prevention measures and using personal protective equipment to help manage similar situations in the future. Our findings may serve as a basis for both recommendations for better and safer working and living in these facilities for staff and residents alike and for future research in this field.

Keywords: coronavirus, problems, elderly, Covid expedition, social welfare institutions

Absentizem starejših zaposlenih v Sloveniji v primerjavi z EU

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Uvod. Število izgubljenih delovnih dni zaradi bolniške odsotnosti alarmantno hitro narašča in s tem posledično tudi izdatki za plačilo nadomestil tako v breme delodajalca kot tudi v breme zdravstvene blagajne. Izdatki zdravstvene blagajne za nadomestila bolniške odsotnosti so v letu 2020 znašali skoraj 444,3 milijona evrov in so se od leta 2015 povečali za več kot 80 % (ZZZS, 2020). Samo v zadnjem letu so se stroški povečali za kar 16,4 %. Največji porast izgubljenih delovnih dni v breme ZZZS je zabeležen pri zavarovancih starih nad 50 let, pri čemer je eden ključnih razlogov predvsem porast števila zaposlenih v tej starosti. Po drugi strani pa nekatere raziskave kažejo, da zaposleni starejši odrasli nimajo nujno višje stopnje absentizma in so zaradi izkušenj, zrelosti in večje delovne etike bolj produktivni. Namen prispevka je osvetliti problematiko absentizma starejših delavcev v Sloveniji (55+) ter na podlagi primerjave z drugimi EU državami raziskati dejavnike problematičnega stanja.

Metode. Analizo sekundarnih podatkov o absentizmu pridobljenih s strani NIJZ, Eurostat, Umar in ZZZS dopolnjujemo s sistematičnim pregledom primerljivih raziskav s področja absentizma starejših zaposlenih. Članke smo iskali v bazah: JSTORE, SAGE, PubMed, Emerald in Google Scholar. Uporabili smo naslednje ključne besede: absentizem, starejši zaposleni, dejavniki absentizma in identificirali 7 relevantnih študij.

Rezultati. V obdobju 2015-2019 se je odstotek bolniškega staleža v Sloveniji povečal za 22,4 %. Največji odstotek (% BS) in število izgubljenih dni (IO) na zaposlenega beležimo v starostni skupini od 55 do 64 let, največji prirastek pa pri zaposlenih, starih 65 let in več. V letu 2019 pa je bil v primerjavi s predhodnim letom največji prirastek pri zaposlenih med 55 in 59 letom starosti (NIJZ 2020). V primerjavi z EU-27 je bil absentizem zaradi bolezni ali invalidnosti v Sloveniji v letu 2019 za 3,5 odstotne točke višji, v letu 2020 pa že za 3,9 odstotne točke višji od evropskega povprečja. V tujih študijah pa na drugi strani ugotavljajo ravno nasprotno, da imajo zaposleni starejši odrasli praviloma nižje stopnje kratkoročnega absentizma.

Razprava in zaključek. Očitna razhajanja med stanjem v Sloveniji in izsledki raziskav v EU nakazujejo potrebo po poglobljeni analizi dejavnikov absentizma delovnega in institucionalnega okolja starejših zaposlenih v Sloveniji. Postavlja se vprašanje, ali je visoka stopnja absentizma res samo posledica bolezni, ali so prisotni še drugi vzroki, povezani z delom, kot na primer nezadovoljstvo, preveliki pritiski in obremenitve na delovnem mestu, diskriminacija,...in posledično beg v absentizem. Na teh izhodiščih bi bilo potrebno tako na državni kot institucionalni ravni oblikovati strategije in ukrepe, s katerimi bi zmanjšali negativne vplive tega procesa in spodbudili daljšo delovno aktivnost starejših zaposlenih.

Ključne besede: absentizem, starejši zaposleni, Slovenija, EU, primerjalna študija

Absenteeism of older employees in Slovenia compared to EU

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Introduction. The number of lost working days due to sick leave is growing alarmingly fast, and consequently also the expenses for the payment of benefits both at the expense of the employer and the health insurance fund. Expenditures of the health insurance fund for sick leave compensations amounted to almost EUR 444.3 million in 2020 and have increased by more than 80 percent since 2015 (ZZZS, 2020). In the last year alone, costs have increased by as much as 16,4 percent. The largest increase in lost working days at the expense of the ZZZS was recorded among insured persons aged 50+, with one of the key reasons being the increase in the number of employees at that age. On the other hand, research in EU shows that employed older adults do not necessarily have a higher absenteeism rates and are more productive due to experience, maturity, and better work ethic. The purpose of this paper is to shed light on the issue of absenteeism of older workers in Slovenia (55+) and, based on a comparison with other EU countries, to investigate the absenteeism factors.

Methods. The analysis of secondary data on absenteeism obtained by the NIJZ, Eurostat, Umar and ZZZS is supplemented by a systematic review of comparable research in the field of absenteeism of older employees. We searched for articles in the databases: JSTORE, SAGE, PubMed, Emerald and Google Scholar, using the following keywords: absenteeism, older employees, factors of absenteeism, and identified 7 relevant studies.

Results. In the period 2015-2019, the percentage of sick leave in Slovenia increased by 22.4 %. The highest percentage (% BS) and the number of lost days (IO) per employee are recorded in the age group from 55 to 64 years, and the largest increase is recorded with employees aged 65 and over. In 2019, compared to the previous year, the largest increase was in employees between 55 and 59 years of age (NIJZ 2020). Compared to the EU-27, absenteeism due to illness or disability in Slovenia in 2019 was 3,5 percentage points higher, and in 2020 it was already 3,9 percentage points higher than the European average. In all 7 foreign studies, on the other hand, they find just the opposite, that employed older adults tend to have lower rates of short-term absenteeism.

Discussion and conclusions. Obvious discrepancies between the situation in Slovenia and the results of research in the EU indicate the need for an in-depth analysis of the factors of absenteeism of older employees in Slovenia. The question arises as to whether the high rate of absenteeism is really only due to illness, or are there other causes related to work, such as dissatisfaction, excessive pressures and burdens in the workplace, discrimination,... that in turn result as escape into absenteeism. Based on the in-depth analysis, strategies and measures should be developed at both the state and institutional level, aiming to reduce the negative impacts of this process and encourage longer work activity of older employees.

Keywords: absenteeism, older employees, Slovenia, EU, comparative study

Zaposlitveni in ekonomski položaj ter duševno zdravje starejših odraslih v Sloveniji v času pandemije

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Uvod. Globalno gledano je COVID-19 terjal največ žrtev med starejšimi. Poleg tega so ukrepi socialnega distanciranja zmanjšali oporo družine, socialne stike in socialno oskrbo, kar je med starejšimi vodilo v osamljenost in dodaten psihološki stres. Delovna neaktivnost in razširjena brezposelnost sta starejšim delavcem zmanjšali možnosti, da ostanejo v zaposleni, ali si najdejo novo zaposlitev. Ker pandemija predstavlja svojevrsten naravni eksperiment, je namen te raziskave analizirati povezanost med pandemijo COVID-19, duševnim zdravjem in zaposlitvenim ter ekonomskim položajem delovno aktivnih starejših odraslih v Sloveniji.

Metode. Analiza povezanosti temelji na anketnih mikropodatkih SHARE Corona Survey, ki vsebuje podatke za 27 držav EU in Izrael in obsega podatke, ki so bili zbrani v prvem valu pandemije med marcem in junijem 2020. Ugotovitve na podlagi analize teh podatkov primerjamo z rezultati prvega vala Raziskave o vplivu pandemije na življenje (SI-PANDA), ki se je izvajala v Sloveniji. Analiza mikropodatkov na podlagi SHARE Corona Survey se osredotoča na dva vidika življenja starejših odraslih: duševno zdravje in spremembe v zaposlitvenem in ekonomskem položaju.

Rezultati. Rezultati kažejo, da se je pandemija COVID-19 odrazila na duševnem zdravju starejših odraslih v Sloveniji, čeprav manj v primerjavi z mlajšimi starostnimi skupinami. Po podatkih SI-PANDA je v starostni skupini 50–64 let o težavah z duševnim zdravjem poročalo 30,2 % vseh anketiranih, v starostni skupini 65–74 let pa 19,8 % vseh anketiranih. To je pod povprečjem vseh anketiranih v Sloveniji (33,9 %) in bistveno manj kot pri najmlajših anketirancih (50,2 % v starostni skupini 18–29 let). Zanimivo je, da je bil delež starejših, ki so poročali o depresivnih motnjah v času pandemije, po podatkih raziskave SHARE Corona, tako v Sloveniji kot tudi v drugih evropskih državah podoben ali celo nižji kot v obdobju pred pandemijo. Pandemija COVID-19 je imela izrazitejši učinke na zaposlitveni in ekonomski položaj starejših odraslih v Sloveniji. Po podatkih raziskave SHARE Corona je bila Slovenija med državami z največ incidenco izgubo zaposlitve (vključujoč začasno prenehanje dela) med delavci, starimi 50 let ali več, pri čemer so bile najbolj prizadete ženske, samozaposleni in manj izobraženi delavci. To je negativno vplivalo tudi na finančni položaj starejših odraslih. Kot kažejo podatki raziskave SI-PANDA, je 28,5 % anketiranih v starostni skupini 50–64 let poročalo o slabšem finančnem položaju, kar je nad slovenskim povprečjem (25,1 %).

Razprava in zaključek. Kriza COVID-19 in post-krizne negotovosti v Sloveniji bodo zahtevale odločne ukrepe na področju aktivnega staranja in podaljšanja delovne aktivnosti za starejše odrasle. Preden se lotimo izvajanja ukrepov sektorskih politik, je treba izvesti poglobljeno analizo virov depresivni hmotenjs s posebnim poudarkom na ugotavljanju vpliva negotovosti pri zaposlovanju in znanje neposredne ali prihodnje socialne varnosti.

Ključne besede: starejši odrasli, pandemija, duševno zdravje

Work and economic situation and mental health of elderly adults in Slovenia during covid-19 pandemic

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Introduction. Globally, COVID-19 claimed the most casualties among the elderly. Due to measures of social distancing, they have also experienced reduced family support, social contacts and professional social care. Moreover, inactivity and widespread unemployment have reduced their chances to stay at work or find a new job. As the pandemic represents an unique natural experiment, the purpose of this research is to analyse the relationship between the COVID-19 pandemic, mental health and the employment and economic situation of working older adults in Slovenia.

Methods. The analysis of the influence of the COVID-19 pandemic on elderly adults in Slovenia is based on SHARE Corona Survey microdata data for 27 EU countries and Israel and includes data collected in the first wave of the pandemic between March and June 2020. The findings based on the analysis of these data are compared with the results of the first wave of the SI-PANDA Survey, which was carried out in Slovenia. The surveys include data for the pandemic period, using data from March and June 2020. The analysis focuses on two aspects of life of elderly adults: mental health and changes in work and economic situation.

Results. The results show that the COVID-19 pandemic affected mental health of elderly adults in Slovenia, although less when compared to younger age groups. According to the SI-PANDA data, 30.2% and 19.8% of 50-64-year-olds and 65-74-year-olds, respectively, reported about mental health problems, which is, however, below the average (33.9%) and significantly below the reports for the youngest population (50.2% for the 18-29-year-olds). Interestingly, when compared to the pre-COVID-19 situation, the SHARE Corona survey data show that both in Slovenia and also in other European countries the reports of depressive disorder of elderly adults during the first wave of pandemic were similar or even lower. The COVID-19 pandemic had more pronounced effects on work and economic situation of elderly adults in Slovenia. According to the SHARE Corona survey data, Slovenia was among the countries with the highest incidence of job loss (including temporary job loss) among workers aged 50 or more, by which at most affected were women, self-employed, and less educated workers. This had also negative effects on financial situation of elderly adults. As shown in SI-PANDA survey data, 28.4% of 50-64-year-olds reported of worse financial situation, which is above Slovenian average (25.1%).

Discussion and conclusions. COVID-19 crisis and post-crisis uncertainties in Slovenia will require decisive actions in the area of active ageing and prolongation of work activity for elderly adults. Before embarking on the implementation of policy measures, a deeper analysis of sources of depressive disorders should be undertaken, with a specific focus on the impact of employment uncertainty and the perceptions of immediate or future social security.

Keywords: elderly, pandemia, mental health

Zadovoljstvo starejših s spanjem, zdravjem in kakovostjo življenja

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Uvod. Kakovostno spanje je osnova za fizično in psihično zdravje, medtem, ko so posledice slabega spanca lahko utrujenost, depresivnost in zmanjšana sposobnost opravljanja dela. Motnje spanja so pri starejših pogostejše, prav tako pogosto napačno obravnavane, vendar pa lahko resno vplivajo na zdravje in kakovost življenja starejših. Namen raziskave je bil ugotoviti v kolikšni meri so starejši zadovoljni s spanjem, zdravjem in kakovostjo življenja.

Metode. V raziskavi je sodelovalo 200 oseb starejših od 65 let. Kot raziskovalni instrument je bil uporabljen vprašalnik PSQI. Raziskava je potekala od julija do decembra 2018. Podatki so bili analizirani s pomočjo računalniškega programa IBM SPSS Statistics. Za testiranje hipotez je bil uporabljen t-test za dva neodvisna vzorca.

Rezultati. Ugotovljeno je bilo, da je 49 % starejših zadovoljnih ali zelo zadovoljnih s spanjem, 43 % je zadovoljnih ali zelo zadovoljnih z zdravjem, 44 % je zadovoljnih ali zelo zadovoljnih s svojimi sposobnostmi za delo, 49 % z izvajanjem dnevnih aktivnosti in 57 % jih je zadovoljnih ali zelo zadovoljnih s kakovostjo življenja. Rezultat t-testa je pokazal, da so starejši, ki nimajo težav s spanjem statistično značilno bolj zadovoljni s svojim zdravjem ($t = 4,518$, $p < 0,001$) in z zmožnostjo izvajanja ($t = 3,060$, $p = 0,007$) kot tisti starejši, ki imajo težave s spanjem.

Razprava in zaključek: Približno polovica starejših je zadovoljna s spanjem, zdravjem, izvajanjem dnevnih aktivnosti in kakovostjo življenja. Starejši, ki so manj zadovoljni s spanjem v večini navajajo, da se zbudijo sredi noči ali zgodaj zjutraj, prav tako ne morejo zaspati v manj kot 30 minutah 3 ali večkrat na teden. Motnje spanja lahko privedejo do sprememb psihofizičnih funkcij, kot tudi drugih zdravstvenih težav. Glede na to, da je spanje eden ključnih dejavnikov za zdravje življenje je še kako pomembno zgodnje prepoznavanje in zdravljenje le-teh.

Ključne besede: starejši, zadovoljstvo, spanje, zdravje, kakovost življenja

Satisfaction of the elderly with sleep, health and quality of life

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Introduction. Quality sleep is the basis for physical and mental health, while the consequences of poor sleep can be fatigue, depression, and reduced ability to perform work. Sleep disorders are more common in the elderly and often misunderstood, but they can seriously affect the health and quality of life of the elderly. The study's purpose was to determine the extent to which older people are satisfied with sleep, health, and quality of life.

Methods. The study involved 200 people over the age of 65. The PSQI questionnaire was used as a research instrument. The survey was conducted from July to December 2018. The data were analyzed using the computer program IBM SPSS Statistics. A t-test for two independent samples was used to test the hypotheses.

Results. It was found that 49 % of the elderly are satisfied or very satisfied with sleep, 43 % are satisfied or very satisfied with their health, 44 % are satisfied or very satisfied with their ability to work, 49 % with daily activities, and 57 % are satisfied or very satisfied with the quality of life. The result of the t-test showed that the elderly who did not have sleep problems were statistically significantly more satisfied with their health ($t = 4,518$, $p < 0,001$) and with the ability to perform ($t = 3,060$, $p = 0,007$) than those older who have trouble sleeping.

Discussion and conclusion. About half of the elderly are satisfied with sleep, health, daily activities, and quality of life. Older people who are less satisfied with sleep mostly state that they wake up in the middle of the night or early in the morning and cannot fall asleep in less than 30 minutes 3 or more times a week. Sleep disorders can lead to changes in psychophysical functions as well as other health problems. Given that sleep is one of the key factors for a healthy life, early identification and treatment are even more important.

Keywords: elderly, satisfaction, sleep, health, quality of life

Povezanost raka ustne votline in kakovosti življenja pri starejših odraslih

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Uvod. Ena najtežjih bolezní ustne votline je rak. V veliki meri ga povzroča kajenje in uživanje alkohola. Na njegov razvoj najverjetneje vpliva slaba ustna higiena, pri mlajših pacientih in nekadilcih tudi humani papiloma virus, pomembno vlogo imajo tudi dedni dejavniki in vplivi okolja. Moški zaradi življenjskega sloga obolevajo pogosteje kot ženske, a se bolezen širi tudi med žensko populacijo in mlajše od 50 let. Zdravljenje je pogosto multimodalno s ciljem okrevanja, zmanjševanja zapletov in vzpodbujanja pacientove neodvisnosti. Namen raziskave je bil pregledati literaturo o povezanosti nastanka raka v ustni votlini med starejšimi odraslimi s slogom življenja in oceno kakovosti pacientovega življenja po vključitvi v delovno in socialno okolje.

Metode. Opravljen je bil pregled literature, objavljene od 2015 do 2020, v slovenskem in angleškem jeziku. Uporabljene so bile relevantne baze podatkov znanstvene in strokovne literature, spletne strani strokovnih organizacij, elektronski in drugi tiskani viri. Iskalni niz je vključeval besede/besedne zveze, kot so: rak, življenjski slog, preventiva, kakovost življenja. Za natančnejši postopek iskanja literature je bil uporabljen prilagojen shematski prikaz, ki ga omogoča shema PRISMA.

Rezultati. Identificirani zadetki so bili opisani, analizirani in evalvirani. Rezultati nakazujejo delno povezanost med pojavnostjo raka v ustni votlini pri starejših odraslih in njihovim življenjskim slogom. Okrevanje pacienta po operaciji raka v ustni votlini ne zajema samo zadovoljevanja njegovih fizioloških potreb, ampak tudi skrb za pacientove psihološke, sociološke in duševne potrebe s ciljem izboljšanja kakovosti življenja.

Razprava in zaključek. Na zmanjševanje obolevnosti oziroma nastanka raka v ustni votlini pomembno vpliva vrsta dejavnikov. To so način življenja, skrb za zdravje, preventivna dejavnost, pravočasno ukrepanje pri zaznavi sprememb, ki v napredovani fazi zmanjšujejo možnosti ozdravljenja. V samem procesu zdravljenja je pomembna psihična priprava pacienta in njegova informiranost ter razumevanje poteka bolezní. Vključevanje pacienta v proces ponovne komunikacije, sprejemanje samega sebe, v okolje je namreč pogosto dolgotrajno in zahteva sodelovanje tako strokovnjakov, pacienta in njegove družine. Nobe-na »cena« ni previsoka s pričakovanim oziroma želenim učinkom – s kakovostnim življenjem.

Ključne besede: rak, življenjski slog, preventiva, kakovost življenja

The impact of oral cancer on the quality of life of older patients

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Introduction. Oral cancer is one of the most severe illnesses of the oral cavity. It is predominantly caused by smoking and alcohol consumption. Poor oral hygiene could also be one of the causes. In younger patients and non-smokers, the human papilloma virus has been identified to cause the disease, moreover, hereditary and environmental factors also play an important role. Due to their lifestyle, men suffer from the disease more frequently, however, it also affects women and people under 50. The treatment process is typically multimodal with a view to recovery, lowering the occurrence of complications and achieving patient independence. The objective of the study was to make a review of literature dealing with connections between oral cancer in older patients and their way of life, as well as to assess their quality of life after their return to their work and social environments.

Methods. A review literature in both Slovenian and English language, published between 2015 and 2020, has been carried out. Relevant databases of scientific and professional literature, webpages of professional organizations and various other digital and printed sources have been used. The search included words and phrases such as cancer, lifestyle, prevention, quality of life. To achieve a more precise searching procedure, the PRISM scheme has been used.

Results. The identified hits have been described, analysed and evaluated. The results demonstrate a partial connection between the incidence of oral cancer in older patients and their lifestyle. The recovery process of patients after an oral cancer operation does not include only satisfying their physiological needs but also taking care of their psychological, social and mental needs in order to improve the quality of their lives.

Discussion and conclusion. There are many important factors that significantly influence lowering the risk of oral cancer. Among the most important ones are lifestyle, taking care of health, prevention activities, timely action when noticing changes that would lower the recovery chances in more advanced stages. In the treatment process, the psychological preparation of the patient is of vital importance, as well as their understanding of the disease. Patients' reintegration into their environment, development of communication skills and accepting themselves is frequently a long process that demands the cooperation of professionals, patient and their family members. There is no price that is too high to pay if the desired result is quality life.

Keywords: cancer, lifestyle, prevention, quality of life

Socialna vključenost starejših, kot element zdravja na odmaknjenih področjih mnenje deležnikov

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Izhodišča in namen. Starajočemu se prebivalstvu se ni več moč izogniti, potrebno se je odgovorno odzvati. Aktivno in zdravo staranje (AZS) sega na različna področja kot so npr. sociala, zdravstvo, dolgotrajna oskrba, skrb za dobro počutje, zdrav način življenja, kultura in turizem. Odmaknjena področja alpskega sveta (AS) imajo svoje specifikke, ki jih je potrebno poznati, prepoznati in pri pripravi odzivov tudi upoštevati. Pri iskanju ustreznih rešitev igra pomembno vlogo medsektorsko in multidisciplinarno vključevanje deležnikov. V sklopu projekta ASTAHG je bilo pri analizi mnenja deležnikov med drugim raziskovano področje socialne vključenosti.

Predstavitev vsebine. NIJZ je bil od leta 2018 vključen v triletni projekt ASTAHG. Ključna aktivnost projekta je bilo usklajevanje in povezovanje deležnikov v AS. Slednje je vključevalo organe različnih sektorjev. V času trajanja projekta je NIJZ s pomočjo ankete o mnenju deležnikov posegel na različna področja (tudi socialne vključenosti), s predhodno identificiranimi deležniki gorenjske in goriške regije. Mnenje deležnikov je bilo kasneje nadgrajeno z intervjuji. Respondenti so se opredelili do trditve glede prispevka k večji socialni vključenosti ter izmenjave znanj in pomoči v njihovi skupnosti. Predstavili so tudi svoj pogled na program »Starejši za starejše«. Sledila so vprašanja o izzivih za krepitev možnosti medsebojne izmenjave znanj in pomoči starejšim v lokalnem okolju. Zadnje vprašanje je naslavljalo sodelovanje s partnerji v lokalnem okolju na področju socialne vključenosti. Rezultati kažejo na željo po večji socialni vključenosti starejših z medsebojno izmenjavo znanj in pomoči. Kot ključna za doseg večje socialne vključenosti so bila izpostavljena društva in prostovoljci, ki pa se v praksi soočajo s pomankanjem članov. Strinjali so se, da je potrebno starejšim omogočiti pogoje, da čim dlje ostanejo v domačem okolju. Pri tem je nepogrešljiva strokovna pomoč, ki se približa uporabnikom, ker bi jo le redki poiskali sami. Za okrepitev socialne vključenosti starejših se respondenti povezujejo z deležniki različnih sektorjev.

Sklepne ugotovitve. Socialno vključenost je pomembno raziskovati in o njej govoriti, saj je to del našega vsakdana. Kvalitetna socialna vključenost starejših predstavlja pomemben del zdravega staranja. K dvigu socialne vključenosti starejših pomembno vpliva tudi medgeneracijsko sodelovanje. Staranje posameznika se začne z rojstvom. V odmaknjenih področjih AS starejši potrebujejo večjo podporo skupnosti. Prepoznavanje potreb, skupno medsektorsko in multidisciplinarno povezovanje ter pristop od spodaj navzgor z upoštevanjem regijskih specifik so po mnenju avtorjev ključ do uspeha implementacije ustreznih, starejšim primernih regionalnih politik AZS, kar je bil tudi namen ASTAHG projekta.

Ključne besede: Aktivno in zdravo staranje, odmaknjena področja, socialna vključenost, vključevanje deležnikov

Social inclusion of older adults as an element of health in remote areas - stakeholders' views

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Introduction and purpose. An ageing of population can no longer be avoided, it should be addressed responsibly. Active and Healthy Ageing (AHA) cuts across different areas such as social, health, long-term care, wellbeing, healthy lifestyles, culture and tourism. The remote areas of the Alpine Space (AS) have their own specialties that need to be identified and taken into account when developing responses. Cross-sectoral and multidisciplinary stakeholder involvement plays an important role in finding appropriate solutions. The ASTAHG project has analyzed stakeholders' views about different areas one of that was social inclusion.

Content presentation. Since 2018, the NIJZ has been involved in a three-year ASTAHG project. A key activity of the project was the coordination and networking of stakeholders and involving authorities from different sectors. During the project, NIJZ intervened in various areas (including social) through a stakeholder opinion survey with previously identified stakeholders in the Gorenjska and Goriška regions. At final stage interviews with key stakeholders were done. Respondents commented on the claims about the contribution to increase social inclusion, knowledge sharing and support in their community and presented their views on the "Elderly for elderly" program. Questions on the challenges to strengthen opportunities for knowledge sharing and support for older adults in the local environment follows. The last question addressed cooperation with partners in the local environment in the field of social inclusion. The results show a desire for greater social inclusion of older adults through mutual exchange of knowledge and support. Societies and volunteers were highlighted as key to achieving greater social inclusion, but they face a lack of society members. They agreed on the need to enable the older adults to remain in their home environment as long as possible. Professional help is indispensable in this context, as it brings people closer to the users. Stakeholders are working with respondents from different sectors to strengthen the social inclusion of older adults.

Conclusions. Social inclusion it is part of our everyday lives, because of that is important to research and talk about it. Quality social inclusion of older people is an important part of healthy ageing. Intergenerational cooperation also has an important role in improving the social inclusion of older adults. Ageing begins at birth. In remote areas of the AS older adults need more community support. In addition, identification of needs, joint cross-sectoral and multidisciplinary networking and a bottom-up approach that take into account regional specificities are (according to the authors) the key to the success of the implementation of appropriate older adult's friendly regional policies of the AHA, which was also the aim of the ASTAHG project.

Keywords: active and healthy ageing, remote areas, social inclusion, stakeholder involvement

Vpliv duševnih motenj pri starejših odraslih na zdravje in kakovost življenja

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Uvod. Povečanje pričakovane življenjske dobe poudarja pomen telesnega in duševnega zdravja v obdobju starosti. Starost spremljajo številne težave, s katerimi se morajo odrasli v pozni starosti soočiti ter se prilagajati. Prav tako obstajajo dokazi o povečanju obolevnosti, umrljivosti, hospitalizaciji in izgubi funkcionalnega stanja v povezavi s pogostimi duševnimi motnjami pri starejših bolnikih. Duševno zdravje vključuje naše čustveno, psihološko in socialno počutje.

Metode. V raziskavi smo uporabili kvalitativni raziskovalni pristop znanstvene literature. Za analizo člankov smo uporabili vključitvene in izključitvene kriterije. Literaturo smo dostopali v podatkovnih bazah PubMed, Proquest in Medline s pomočjo ključnih besed: Uporabljene so bile ključne besede v slovenskem jeziku (Duševne motnje, obdobje starosti, zdravje, kakovost življenja) in v angleškem jeziku (Mental disorders, age period, health, quality of life). Ključne besede so povezovali z Boolovimi operatorji and in or.

Rezultati. Z analizo literature je bilo ugotovljeno, da so najpogostejša duševna in nevrološka stanja v starostnem obdobju demenca in depresija, ki prizadeneta približno 5 % starejše svetovne populacije. Z 3,8 % njima sledi pojav anksioznih motenj. Prav tako obstaja velika povezava med simptomi depresije in nekaterimi kroničnimi boleznimi, predvsem z miokardnim infarktom in možgansko kapjo, namreč ti dve bolezenski stanja sta povezani s hudimi in trajnimi posledica invalidnostjo in visoko stopnjo umrljivosti.

Razprava in zaključek. Sočasno obstoječe duševne in fizične razmere lahko zmanjšajo kakovost življenja ter vodijo k daljšemu trajanju bolezni in slabšim zdravstvenim izidoma. Čeprav odrasli s starostjo ohranjajo zadovoljivo življenjska stanja, se tveganja z osamljenostjo in duševnimi motnjami s starostjo povečujejo.

Ključne besede: duševne motnje, starejši odrasli, kakovost življenja

The impact of mental disorders in older adults on health and quality of life

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Introduction. Increasing life expectancy emphasizes the importance of physical and mental health in old age. Age is accompanied by a number of problems that adults have to face and adapt to at a later age. There is also evidence of increased morbidity, mortality, hospitalization, and loss of functional status associated with frequent mental disorders in elderly patients. Mental health includes our emotional, psychological and social well-being.

Methods. In the research we used a qualitative research approach of scientific literature. Inclusion and exclusion criteria were used to analyze the articles. The literature was accessed in the databases: PubMed, Proquest and Medline with the help of keywords: Keywords were used in Slovene (Mental disorders, age, health, quality of life) and in English (Mental disorders, age period, health, quality of life). The keywords were associated with the Boolean operators and and or.

Results. An analysis of the literature found that the most common mental and neurological conditions in old age are dementia and depression, which affect approximately 5% of the elderly world population. With 3.8%, they are followed by the appearance of anxiety disorders. There is also a strong link between the symptoms of depression and some chronic diseases, especially myocardial infarction and stroke, namely these two disease states are associated with severe and lasting consequences of disability and high mortality rates.

Discussion and conclusion. Coexisting mental and physical conditions can reduce the quality of life and lead to longer disease duration and poorer health outcomes. Although adults maintain satisfactory living conditions with age, the risks of loneliness and mental disorders increase with age.

Keywords: mental disorders, older adults, quality of life

Preventiva in rehabilitacija v okviru dolgotrajne oskrbe v Sloveniji

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Uvod. Naše delo je obsežnejši pregled stanja dolgotrajne oskrbe v Sloveniji, v katerem opisujemo obstoječe socialno in zdravstveno varstvo, ter preventivne in rehabilitacijske storitve v okviru dolgotrajne oskrbe.

Metode. Uporabljen je bil sistematičen pregled literature v navedeni bibliografski bazi COBISS. Omejitveni kriteriji so bili naslednji: literatura je bila povzeta od leta 2010 do 2020, avtorji so s področja javnega zdravja, naslov, povzetek in vsebina vsebujejo vsebino o dolgotrajni oskrbi. Ključne besede za iskanje so bile 'starejši', 'demografija' IN 'starejši', 'dolgotrajna oskrba' IN 'starejši', 'kultura' IN 'starejši', 'preventiva' IN 'starejši', 'preventiva' IN 'dolgotrajna oskrba', 'rehabilitacija' IN 'starejši', 'rehabilitacija' IN 'dolgotrajna oskrba', 'financiranje' IN 'dolgotrajna oskrba', 'vlada' IN 'dolgotrajna oskrba'. Sistematični pregled je bil narejen po smernicah PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) in po smernicah Polita and Becka. To delo so ugotovitve, ki izhajajo iz evropskega projekta z imenom INTERLINKS, (angl. INTERfaces and LINKS between prevention, rehabilitation, quality of services and informal care), ki obravnava zdravstvene sisteme in dolgotrajno oskrbo starejših ljudi v Evropi. Članek je prilagojen na razmere v Sloveniji.

Rezultati. Pregledana literatura je zajemala 7320 člankov, knjig, zakonov in rezultatov nacionalne statistike, od tega je bilo končnih 44 zadetkov. Rezultati so pokazali, najprej, da demografski razvoj do leta 2050 vključuje tako relativno kot absolutno povečanje starejših in zelo starih ljudi v Sloveniji, in s tem pričakujemo, da bo vse večje število ljudi s potrebami po dolgotrajni oskrbi. Trenutno imamo že veliko dejavnosti (npr. pomoč pri osebni higieni na domu, patronažno varstvo, socialno mreženje ipd.) in različne izvajalce (patronažne medicinske sestre, zdravstvene tehnike, socialne delavce ipd.), ki se ukvarjajo z vprašanji, ki so elementi dolgotrajne oskrbe, vendar celovitega obsega te dejavnosti in izvajalcev še nimamo. Na nacionalni ravni se trenutno pripravlja zakonodaja o dolgotrajni oskrbi v Sloveniji. Trenutno se dejavnosti financirajo iz večih virov: centralnega proračuna, občinskega proračuna, neposrednih plačil in drugih virov, kot so prostovoljni prispevki, donacije in sponzorstvo.

Diskusija in zaključek. Dolgotrajna oskrba v Sloveniji je na začetku svojega delovanja. Očitno je, da je sistem zelo zapleten in razdrobljen, in še vedno ne more zadovoljiti vsa povpraševanja. Obstoječe storitve in koristi niso povezane z enotnim sistemom. Upamo, da bo sistem uredila zakonodaja, zakon o dolgotrajni oskrbi, ki je že napisan in čakamo na njegovo sprejetje.

Ključne besede: demografija, patronažne medicinske sestre, socialni delavci, dom za starejše, akutna obravnava

Prevention and Rehabilitation in the context of Long-Term Care (LTC) in Slovenia

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Introduction. Our work is a more extensive overview of the state of long-term care in Slovenia, describing existing social and health care, and preventive and rehabilitation services in the context of long-term care.

Methods. A systematic review of the literature in that bibliographic COBISS database was used. The restrictive criteria were as follows: the literature was summarised from 2010 to 2020, the authors included in the field of public health, title, summary and content containing content on long-term care. The key words for the search were “elderly”, “demography” AND “elderly”, “long-term care” AND “elderly”, “culture” AND “elderly”, “prevention” AND “elderly”, “prevention” AND “long-term care”, “rehabilitation” AND “elderly”, “rehabilitation” AND “long-term care”, “government” AND “long-term care”, and “funding” AND “long-term care”. The systematic review was carried out according to the Prisma (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines. This work is a result of the findings of a European project called INTERLINKS (Engl. INTERfaces and LINKS between prevention, rehabilitation, quality of services and informal care), which deals with health systems and long-term care for older people in Europe. This article is adapted to the situation in Slovenia.

Results. The reviewed literature covered 7320 articles, books, laws and results of national statistics, of which 44 were final. The results showed, firstly, that demographic development by 2050 includes both a relative and an absolute increase in older and very old people in Slovenia, and thus we expect an increasing number of people with long-term care needs. We already have a number of activities (e.g. help with personal hygiene at home, community care, social networking, etc.) and various providers (Community nurses, health technicians, social workers, etc.) who deal with issues that are elements of long-term care, but we do not yet have the full scope of this activity and the operators. Legislation on long-term care in Slovenia is currently being prepared at national level. Currently, activities are financed from a number of sources: central budget, municipal budget, direct payments and other sources such as voluntary contributions, grants and sponsorship.

Discussion and conclusion. Long-term care in Slovenia is at the beginning of its operation. It is obvious that the system is very complex and fragmented, and still cannot meet all demand. Existing services and benefits are not linked to a single system. We hope that the system will be treated by legislation, a long-term care law, that has already been written and we are waiting for its adoption.

Keywords: demography, community nurse, social workers, home for older people, acute care

Staranje in zdravje pri ljudeh z intelektualno oviro

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Izhodišče in namen. V zahodnem svetu raziskave kažejo, da se povečuje življenjska doba ljudi z intelektualno oviro. Pričakovana življenjska doba pri ljudeh z intelektualno oviro je skoraj enaka, kot pri splošni populaciji. Še vedno pa v svetu obstaja tako imenovana »zdravstvena neenakost«. Na zdravje starejših ljudi z intelektualno oviro obremenilno vpliva več dejavnikov: genetske predispozicije za posamezna zdravstvena stanja, manj ugodne socialne okoliščine, težave v komunikaciji in posledično težje prepoznavanje bolezenskih znakov in za njihove potrebe neprilagodjene zdravstvene in socialne storitve. Raziskave kažejo, da se med ljudmi, starejšimi od 70 let z intelektualno oviro, povečuje delež »zdravih« starostnikov. Predvideva se, da je to posledica napredka v medicini, znanosti, izobraževanju in tehnologiji. Izboljšal se je dostop do zdravstvenih storitev, izboljšala se je osebna nega, povečala se je socialna vključenost, ljudje z intelektualno oviro živijo v bolj varnem in spodbudnem okolju in so bolj ozaveščeni o zdravem načinu življenja ter se bolje zavedajo lastnega vpliva na krepitev in ohranjanje zdravja. Ne gre pa zanemariti dejstva, da se pa pri ljudeh z intelektualno oviro pojavlja lahko dvojna diskriminacija: zaradi intelektualne ovire in zaradi starosti. Namen prispevka je predstaviti poglede starejših uporabnikov v CUDV Radovljica na njihovo starost in zdravje.

Predstavitev vsebine. V prispevku bodo na podlagi izsledkov raziskav, predstavljena teoretična izhodišča, o staranju ljudi z intelektualno oviro. Opisano bo tudi bivanje starejših ljudi z intelektualno oviro v CUDV Radovljica ter na kakšen način se za njih izvajata zdravstvena in socialna oskrba. Predstavljeni bodo njihovi pogledi na lastno starost in zdravje.

Sklepne ugotovitve. Zvišuje se življenjska doba ljudi z intelektualno oviro in njihova kvaliteta življenja. Ljudje z intelektualno oviro so orientirani predvsem na sedanost, starost in posledične zdravstvene ovire jih ne skrbijo. V programu bivanja odraslih oseb z intelektualno oviro se srečujemo z vedno večjim številom starejših ljudi, ki potrebujejo našo oskrbo. Ohranjanje dobrega zdravja je za to skupino zelo pomembno. Potrebujejo posebne pristope in prilagoditve v programu, da lahko zagotavljamo pogoje za njihovo kakovostno staranje in visoko kvaliteto življenja.

Ključne besede: intelektualna ovira, staranje, zdravje, »kakovostno staranje«, dvojna diskriminacija

Aging and health in people with intellectual disabilities

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Introduction and purpose. Contemporary research shows that the life expectancy of people with intellectual disabilities living in the Western world has increased to almost the same age as the general population. However, people with intellectual disabilities are often burdened by many factors at higher levels than their peers in the general population. These include genetic predispositions to certain health conditions, a greater difficulty socializing, or even communicating with others. Communication difficulties can make it harder to recognize and diagnose particular health concerns and further apply an appropriate social service to improve the situation. This experience can provoke trauma in people with intellectual disabilities, further contributing to a so-called “health inequity” that still exists despite recent improvements. Research shows an increasing proportion of “healthy elderly” people. People with intellectual disabilities have benefited from this trend as well as other social developments concerning their treatment. These improvements include greater access to general health services, advancements in personal care, increased social awareness and inclusion, and the development of safe yet stimulating environments tailored to their specific needs. Family members and care providers have also begun promoting healthier lifestyles and diets among people with intellectual disabilities. While these developments are both positive and significant, discrimination against both seniors and the intellectually disabled persists, and those who represent both demographics experience double discrimination. The purpose of this paper is to present the views of seniors with intellectual disabilities in CUDV Radovljica on their age and health.

Content presentation. This paper draws from research from academic papers on the topic. It will present testimonies from seniors with intellectual disabilities about their experience at CUDV Radovljica and their views on old age and health. Finally, it will provide an analysis of the health and social care provided at this facility.

Conclusion. The life expectancy of people with intellectual disabilities continues to grow as their quality of life progressively improves. People with intellectual disabilities mainly focused on the present; their age and consequent health concerns do not emotionally burden them. The CUDV Radovljica program is facing an increasing number of seniors in need of care. Maintaining the health of these seniors is vital. It requires specific approaches and adjustments in the program to provide the best conditions for quality aging.

Keywords: intellectual disability, seniors, health, “quality aging”, discrimination

Vpliv epidemije COVID-19 na pojavnost depresivnih simptomov pri starejših odraslih v referenčni ambulanti

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Uvod. Depresija je vse bolj razširjena psihična motnja, s katero se sooča že več kot 264 milijonov ljudi po vsem svetu. Učinki depresije so lahko dolgotrajni in ponavljajoči, kar zelo vpliva na kvaliteto življenja. Glavna strategija za boj proti COVID-19 večine držav po svetu je socialna distanca, kar je glavni vzrok za vse večjo osamljenost ljudi, posledično nastanek depresivne motnje, zlasti pri starejših odraslih. Po izsledkih raziskave SI-PANDA (2021) je bilo ugotovljeno, da je pri 15,8 % pacientov s kroničnimi boleznimi povečana uporaba antidepresivov, ki jih ni predpisal zdravnik. Vsekakor je socialna distanca pomemben in učinkovit ukrep za zajezitev epidemije, vendar pa se moramo zavedati, da pri ljudeh pušča psihične posledice. Skozi epidemijo je pri starejših odraslih raven depresivne motnje v duševnem zdravju nihala, vendar se je v 12. valu po poročanju SI-PANDA raven duševnih motenj znižala.

Metode: Pri pisanju članka smo uporabili deskriptivno metodo pregleda literature slovenskih in tujih raziskav s področja vpliva epidemije COVID-19 na razvoj depresivnih simptomov pri starejših odraslih, pri katerih se prej depresivni simptomi niso kazali. Iskanje literature je potekalo s pomočjo bibliografskega sistema COBISS, ter pregledom literature v tujih bazah, kot so Medline, CINAHL, PubMed, Wiley, Sicris in EBSCOhost. Literaturo smo iskali za obdobje 2019 do 2021. Ključne besede, ki smo jih uporabili so bile: COVID-19, depresija, starejši odrasli, stres, osamljenost.

Rezultati: Ugotovili smo, da so starejši odrasli v času epidemije COVID-19 bolj izpostavljeni dejavnikom tveganja, kot so osamljenost, stres in socialna distanca. Ti dejavniki so glavni sprožilci za razvoj depresivnih simptomov. Velik vpliv na psihično zdravje starejših ljudi imajo mediji, kateri poleg opravljanja koristnega dela, informiranja javnosti, lahko tudi negativno vplivajo na javnost z nenehnim poročanjem o širjenju bolezni ter o številu smrtnih primerov, kar izolirane osebe lahko spravi v obup. Depresivni simptomi pa se pojavljajo tudi, če so ljudje dalj časa samoizolirani, brezvoljni, osamljeni in od vseh pozabljeni. Kakšne posledice je s seboj prinesla epidemija COVID-19 ne le ekonomske, pač pa tudi psihične, bomo lahko še mesece ugotavljali, saj vse, kar doživljamo, vpliva na naše telo in dušo.

Razprava in zaključki: Ob pregledu tujih raziskav smo ugotovili, da obstaja korelacija med epidemijo in epidemiološkimi ukrepi ter depresivnimi simptomi, kar je v nasprotju s slovensko raziskavo, ki kaže, da se je prisotnost teh simptomov v 12. valu raziskave znižala pri vseh starostnih skupinah, nasploh pa je bila v starostni skupini od 65 do 74 let najnižja. Depresivni simptomi v začetni fazi velikokrat niso pravočasno odkriti pri polovici oseb, kar kaže na potrebno po učinkovitejši preventivni obravnavi v Referenčni ambulanti družinske medicine s presejanjem in svetovanjem.

Ključne besede: COVID-19, depresija, starejši odrasli, stres, osamljenost

The influence of the COVID-19 epidemic on the occurrence of depressive symptoms in the elderly adults in the reference dispensary

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Introduction: Depression is an increasingly common mental disorder that is already facing more than 264 million people worldwide. The effects of depression can be long-lasting and recurrent, which greatly affects the quality of life. The main strategy to combat COVID-19 in most countries around the world is social distance, which is the main cause of increasing human loneliness, resulting in depression, especially in the elderly. According to the results of the SI-PANDA study (2021), it was found that 15.8 % of patients with chronic diseases have increased use of antidepressants not prescribed by a doctor. Certainly, social distance is an important and effective measure to contain the epidemic, but we must be aware that it has psychological consequences for people. Throughout the epidemic, the level of depressive mental health disorder fluctuated in older adults, but in the 12th wave, according to SI-PANDA (2021), the level of mental disorder decreased.

Methods: In writing the article, we used a descriptive method of reviewing the literature of Slovenian and foreign research in the field of the impact of the COVID-19 epidemic on the development of depressive symptoms in the elderly. Literature is searched using the COBISS bibliographic system, and literature is reviewed in foreign databases such as Medline, CINAHL, PubMed, Wiley, Sicris and EBSCOhost. We searched the literature for the period 2019 to 2021. The key words we used were: covid-19, depressive symptoms, elderly, stress, loneliness.

Results. We found that the elderly are more exposed to risk factors such as loneliness, stress, and social distance during the COVID-19 epidemic. These factors are the main triggers for the development of depressive symptoms. The media have a great influence on the mental health of the elderly, which, in addition to doing useful work, informing the public, can also have a negative impact on the public by constantly reporting the spread of the disease and the number of deaths, which can lead isolated people to despair. However, it also occurs when people are self-isolated, listless, lonely and forgotten by everyone for a long time. We will be able to determine for months the consequences of the COVID-19 epidemic, not only economic, but also psychological, because everything we experience affects our body and soul.

Discussion and conclusion Upon review foreign research, we found that there is a correlation between epidemic and epidemiological measures and depressive symptoms, which is in contrast to the Slovenian study (SI-PANDA), which shows that the presence of these symptoms in the 12th wave of the study decreased in all age groups. Generally was lowest in the 65 to 74 age group. Depressive symptoms in the initial phase are often not detected in time in half of the persons, which indicates the need for more effective preventive treatment in the Reference dispensary of Family Medicine with screening and counseling.

Keywords: COVID-19, depressive symptoms, elderly, stress, loneliness

Prepoznavanje pomembnosti svetovanja o prehrani starejšim s KOPB v primarnem zdravstvenem varstvu

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Uvod. Kronična obstruktivna pljučna bolezen (KOPB) pri posamezniku spremeni presnovne procese in poveča potrebo po energiji ter vnosu beljakovin, na presnovo in upad mišic pa neugodno vpliva tudi proces staranja. Pri pacientu s KOPB obstaja tveganje za podhranjenost, zato ima pomembno vlogo pri urejeni in dobro vodeni bolezni tudi zdravstveno osebje v primarni zdravstveni dejavnosti.

Metode. Raziskava je temeljila na kvalitativnem pristopu, metodi deskripcije. Za merski instrument, s katerim so bili zbrani podatki za empirični del raziskave, je bila uporabljena predloga za polstrukturiran intervju. Raziskava je bila izvedena med medicinskimi sestrami in zdravstveniki v zdravstvenem domu, v raziskavi pa je sodelovalo 7 intervjuvancev, ki sodelujejo pri obravnavi pacientov s KOPB.

Rezultati. V raziskavi je bilo ugotovljeno, da je ocena pomembnosti svetovanja o prehrani starejšim odraslim s KOPB pri intervjuvancih nizka, kar se odraža v nezadostni informiranosti pacientov s KOPB glede ustreznega načina prehranjevanja pri njihovi bolezni. Rezultati raziskave so tudi pokazali, da se intervjuvanci zavedajo njihove zdravstveno vzgojne vloge pri obravnavi pacientov s KOPB, vendar imajo po njihovi samooceni premalo znanja o ustrezni prehrani pri KOPB, kot razlog pa so navedli pomanjkanje možnosti za udeležbo na izobraževanjih z omenjeno tematiko.

Razprava in zaključek. Izguba telesne mase pri pacientu s KOPB je povezana s povečanim tveganjem za nastanek zapletov in umrljivosti. Pri starejših odraslih je težko popravljiva, zato je ključnega pomena prepoznati starejše odrasle paciente s KOPB zaradi nevarnosti, povezane s podhranjenostjo in prepoznavanja tistih z že izraženim stanjem. Prehranska podpora (poleg ustrezne telesne dejavnosti) predstavlja osnovo za kakovostno rehabilitacijo pacientov s KOPB, kjer ima ključno vlogo kompetentno zdravstveno osebje, ki sodeluje pri celostni obravnavi pacienta s KOPB.

Ključne besede: KOPB, prehrana, zdravstvena vzgoja, pacient

Recognizing the importance of nutrition counseling for the elderly with COPD in primary care

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Introduction. Chronic obstructive pulmonary disease (COPD) alters a person's metabolic processes and increases the need for energy and protein intake, while metabolism and muscle wasting are also affected by the aging process. A patient with COPD is at risk of malnutrition, therefore the medical staff in the family practice also plays an important role in the orderly and well-managed disease.

Methods. The study was based on a qualitative approach, the method of description. A semistructured interview template was used as a measurement tool to collect data for the empirical part of the study. The study was conducted among nurses and paramedics in a health center. There were 7 participants in the study who are involved in the treatment of COPD patients.

Results. The study revealed that the respondents' perception of the importance of nutritional counseling for older adults with COPD was low, which was reflected in the inadequate information provided to COPD patients on appropriate nutrition for their disease. The findings of the study also revealed that the respondents were aware of their role as health educators in the management of COPD patients, but self-assessed to have inadequate knowledge about proper nutrition in COPD, citing lack of opportunities to attend training on the subject.

Discussion and Conclusion. Weight loss in a COPD patient is associated with an increased risk of complications and mortality. Therefore, it is critical to identify older adult COPD patients because of the dangers associated with malnutrition and to recognize those with a pre-existing condition. Nutritional support (alongside appropriate physical activity) is the foundation for quality rehabilitation of patients with COPD, with a key role played by competent health-care professionals involved in the comprehensive management of patients with COPD.

Keywords: COPD, nutrition, health education, patient

Javnozdravstveni izzivi starejše populacije na področju duševnega zdravja v Sloveniji

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Uvod in namen. S podaljševanjem pričakovane življenjske dobe se spreminja starostna struktura prebivalstva, delež starejših od 65 let, pa hitro narašča. Posledično se bodo povečali izdatki za pokojnine, zdravstvene storitve in storitve dolgotrajne oskrbe, pa tudi potrebe po prilagajanju okolja. Ključni izzivi na področju duševnega zdravja starejših so: naraščajoči trendi duševnih motenj, kot so depresija in demenca, socialna izključenost (prispeva k slabšemu informiranju, ozaveščenosti in dostopu do preventivnih programov ter programov pomoči); visoko tveganje revščine po upokojitvi (zlasti pri ženskah) ter prisotnost stigme in diskriminacije starejših. Slednje posledično omejuje dostop do zaposlitve, zdravstvenega varstva, izobraževanja, socialnih storitev ter prispeva k izključitvi iz odločanja. Razlike so v kazalnikih duševnega zdravja med slovenskimi regijami, kar potrjujejo tudi konstantno višje stopnje samomora med starejšimi v vzhodnih slovenskih regijah, zlasti med moškimi. Starejšim je dostop do zdravja še bolj otežen zaradi slabega poznavanja IKT. V Sloveniji zaostajamo po deležu zaposlenih v socialnem sektorju, kar je povezano predvsem z zaostankom v razvoju dolgotrajne oskrbe v domačem okolju.

Vsebina predstavitve. Državni zbor RS je leta 2018 sprejel Resolucijo o nacionalnem programu duševnega zdravja 2018–2028 (ReNPDZ). Vloga ReNPDZ je podpora promocijskim in preventivnim ukrepom, krepitevi in vzpostavitvi podpornega okolja za dobro duševno zdravje starejših, pa tudi ustanovitev centrov za duševno zdravje, ki dopolnjujejo obstoječo mrežo. Leta 2020 je bila v skladu z ReNPDZ in razvojem akcijskega načrta ustanovljena Interdisciplinarna delovna skupina na področju promocije duševnega zdravja in preprečevanja duševnih motenj pri starejših. Člani skupine so predstavniki strokovnih institucij, vladnih in nevladnih organizacij ter ciljne skupine/uporabnikov. S skupnimi močmi so bile opredeljene potrebe ciljne populacije in postavljeni glavni cilji.

Sklepne ugotovitve. Za izboljšanje kazalnikov duševnega zdravja bo treba zagotoviti: večjo vključenost starejših v vsakodnevne dejavnosti v lokalnem okolju; boljšo dostopnost preventivnih programov ter programov promocije zdravja, vključno s programi motenj spomina, podporo svojcem in njihovo razbremenitev, pa tudi opolnomočenje strokovne in laične javnosti, ki dnevno prihaja v stik s starejšimi. Nenazadnje je že od zgodnje mladosti in v vseh porah družbe nujno preprečevati različne oblike sistemske diskriminacije posameznikov na podlagi starosti.

Ključne besede: starejši, duševno zdravje, preventiva, potrebe

Public health challenges of the ageing population in the field of mental health in Slovenia

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Introduction and purpose. With the increase in life expectancy, there are changes in the age structure of the population, and the share of the population over the age of 65 is growing rapidly. As a result, expenditure on pensions, health services and long-term care services will increase, as will increase the need for adapting the environment. The main challenges in the field of mental health of the elderly are the growing trends of mental disorders such as depression and dementia, social exclusion (leads to the poorer information, awareness and access to prevention and assistance programs); a high risk of poverty after retirement (especially for women) and the presence of stigma and discrimination against the elderly. Latter consequently restricts access to the employment, health care, education, social services and contributes to the exclusion from decision-making. There are also differences in mental health indicators between Slovenian regions, as confirmed by the consistently higher suicide rates among the elderly in the eastern Slovenian regions, especially among men. Elderly are further restricted in access to health due to poor knowledge of ICT. In Slovenia, we lag behind in the share of employees in social sector, which is mainly related to the lag in the development of long-term care at home-environment.

Content presentation. In 2018, the National Assembly of the Republic of Slovenia adopted the Resolution on the National Mental Health Program 2018–2028 (ReNPDZ). The role of the ReNPDZ is a support of promotion and prevention measures, strengthening and the establishment of a supportive environment for good mental health of the elderly, as well as the establishment of the Centers for Mental Health, which complements the existing network. In 2020, in accordance with the ReNPDZ and the development of an Action plan, an Interdisciplinary Working Group in the field of mental health promotion and prevention of the mental disorders in the elderly was established. Members are representatives of professional institutions, governmental and non-governmental organizations and the target group/users. With common efforts, the needs of the target population were defined, and main goals were set.

Conclusions. To improve mental health indicators, it will be necessary to ensure: greater involvement of the elderly in everyday activities in the local environment; better accessibility and accessibility of prevention / health promotion programs, including memory impairment, support for relatives and their relief, as well as empowerment of all other professional and lay public who daily come into contact with the elderly. Finally, it is essential, since early age and through whole society, to prevent systemic discrimination against individuals based on age, which can take many different shapes (stereotypes, prejudices, abuses, neglect).

Keywords: elderly, mental health, prevention, needs

Koronavirus in hiperbarna kisikovna terapija – dokazana učinkovitost HBOTa v zdravljenju COVID-19

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Izhodišča in namen. Uporaba čistega kisika pri tlaku, ki je višji od atmosferskega (hiperbarični kisik), se je izkazala uporabna kot primarna metoda zdravljenja ali kot dodatna terapija pri različnih motnjah. Hiperbarični kisik poveča kisik, ki je na voljo hipoksičnim ali anoksičnim tkivom. Zdravljenje je treba začeti v akutni fazi motenj. Uporaba HBOT za zdravljenje COVID-19 je podprta z različnimi mednarodnimi kliničnimi raziskavami, Svetovna zdravstvena organizacija pa jo je priznala kot nefarmakološko zdravljenje COVID-19. Dosedanji rezultati nakazujejo višjo stopnjo okrevanja bolnikov, ki prejemajo HBOT. Mnogi zdravniki, ki se borijo z odločitvijo, da bolnika priključijo na ventilator, pa žal ne poznajo možnosti uporabe HBOT.

Predstavitev vsebine. SARS-COVID 2 ni „pljučnica“ niti ARDS. COVID-19 povzroča dolgotrajno in progresivno hipoksijo tako, da se veže na skupine hema v rdečih krvnih celicah. Zato pri pacientih drastično pade saturacija kisika v krvi, saj se kisik ne more vezati in prenašati do tkiv. Zdravniki ugotavljajo, da je za zdravljenje virusne pljučnice na prvem mestu odločilna reoksigenacija z uporabo hiperbarične oksigenacije pri srednjih in nizkih parcialnih tlakih, odvisno od resnosti bolezni (1,2-1,5 bara), vendar dolgotrajno do 120 minut ter ponovljeno zdravljenje dva do trikrat na dan. Pri terapiji z HBO je splošni tlak v pljučih enak tlaku okolice in ni mehanskih poškodb pljuč kot pri ventilatorju, zato je to terapija izbire. Drugo težavo pri okužbi z virusom SARS-COVID 2 povzroča sestavni del virusa z genskimi delci, ki v prvi vrsti napadajo pnevmocite tipa II, kar vodi do uničenja eritrocitov in sproščanja velikih količin železa v plazmo in tkiva. Zmanjšanje hemoglobina in števila eritrocitov v sistemskem obtoku drastično pogloblja že obstoječo hipoksijo, ki ogroža delovanje organov, posebej občutljivih na hipoksijo (možgani, ledvice, srce). Terapevtsko gledano je reoksigenacija še vedno ključnega pomena, strokovnjaki svetujejo hiperbarično oksigenacijo 1, 2 do 1,5 ATA tlaka, za 90-120 minut dvakrat ali trikrat na dan najmanj pet dni. Prednost ima tudi zdravljenje z eritropoetinoim, ki povečuje proizvodnjo eritrocitov in s tem količino kisika. Hemoglobin tudi veže presežek železa, ki je posledica razgradnje eritrocitov, iz obtoka in s tem zmanjšuje toksični učinek železa.

Sklepne ugotovitve. Obstaja velika verjetnost, da bomo, glede na to, kako HBOT deluje, pri zdravljenju procesov, ki so skupni mnogim boleznim, uspešni. Odlične možnosti pa bomo imeli le, če bomo terapijo poznali in jo pravilno odmerjali.

Ključne besede: HBOT (hiperbarična kisikova terapija), COVID-19, zdravje starejših odraslih

Coronavirus & hyperbaric oxygen therapy - proven effectiveness of HBOT in treating COVID-19

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Introduction and purpose. The administration of pure oxygen at higher than atmospheric pressure (hyperbaric oxygen) had been found useful as a primary method of treatment or as adjunctive therapy in a variety of disorders. Hyperbaric oxygen increases the oxygen available to hypoxic or anoxic tissues; in the case of anaerobic infections, it provides an environment in which the organisms cannot survive. The treatment should be started in the acute stage of the disorders. The use of HBOT for the treatment of COVID-19 is supported by various clinical trials and recognized by the World Health Organization as a non-drug treatment for COVID-19. Many doctors who are struggling with the decision of placing a patient on a ventilator aren't even aware of the HBOT option.

Content presentation. SARS-COVID 2 is not 'pneumonia' nor ARDS. COVID-19 causes prolonged and progressive hypoxia by binding to the heme groups in the red blood cells. People are desaturating due to failure of the blood to carry oxygen. Treatment of viral pneumonia is in the first place decisive reoxygenation with the use of hyperbaric oxygenation at medium and low partial pressures depending on the severity of the disease (1.2-1.5 bar), but long lasting up to 120 minutes and repeated treatment two to three times a day. The HBOT is the therapy of choice, because the general pressure in the lungs is equal to the ambient pressure and there is no mechanical damage to the lungs as with a respirator. Another problem with SARS-COVID 2 virus infection is a component of the virus with gene particles that primarily attack pneumocyte type II, leading to the destruction of erythrocytes and the release of large amounts of iron into both plasma and tissues. The decrease in hemoglobin and the number of erythrocytes in the systemic circulation drastically deepens the already existing hypoxia, which endangers the function of organs particularly sensitive to hypoxia (brain, kidneys, heart). The problem gets complicated in patients who already have chronic hypoxia. Therapeutically speaking, reoxygenation is still crucial and preferable hyperbaric oxygenation. The advantage of giving erythropoietin is that it increases the production of erythrocytes and the amount of oxygen. A patient must be managed on maximum oxygen flow through a hyperbaric chamber on 100 % oxygen at 1.2 to 1.5 ATA pressure, for 90-120 minutes twice or three times per day for minimum five days. Hemoglobin consumes the excess iron from the circulation caused by the breakdown of erythrocytes and thus reduces the toxic effect of iron.

Conclusion. Based on how HBOT works, it is highly probable that HBOT could help you if dosed properly.

Keywords: HBOT (hyperbaric oxygen therapy), COVID-19, health of the elderly

Povezanost nekaterih družbenih dejavnikov z zdravstveno pismenostjo starejših oseb v Sloveniji

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Uvod. Zdravstvena pismenost je pomembna determinanta zdravja. Obsega znanje, motivacijo in kompetence posameznikov za dostopanje do zdravstvenih informacij, njihovo razumevanje, presojo in uporabo za vsakodnevne odločitve, povezane s krepitvijo zdravja, preprečevanjem bolezni in zdravstveno oskrbo. Nizka stopnja zdravstvene pismenosti je povezana s slabšim znanjem o zdravju, težjim obvladovanjem lastne bolezni, neustrezno uporabo zdravstvenih storitev, slabšim zdravjem in preživetjem ter tudi z zvišanimi stroški zdravstvenega varstva. Pri starejših je prevalenca nizke stopnje zdravstvene pismenosti višja. Poleg upada kognitivnih zmožnosti pri starejših, ki je povezan s stopnjo njihove zdravstvene pismenosti, raziskave kažejo na pomembno povezanost med stopnjo zdravstvene pismenosti in družbenimi dejavniki, pri čemer najmočnejšino povednik je nezdravstvena pismenost pri starejših finančna depriacija. V prispevku smo se osredotočili na analizo zdravstvene pismenosti pri starejših v Sloveniji v povezavi z nekaterimi družbenimi dejavniki.

Metode. Leta 2020 je bila v Sloveniji izvedena prva Nacionalna raziskava zdravstvene pismenosti na reprezentativnem vzorcu odraslih prebivalcev. Podatki so bili pridobljeni z anketnim vprašalnikom, razvitim v Evropski mreži za merjenje populacijske in organizacijske zdravstvene pismenosti. Zdravstvena pismenost je bila izmerjena na podlagi vprašalnika s 47 trditvami. Vzorec starejših (starih 65 let in več) obsega 826 enot.

Rezultati. Samo ocena ekonomskih zmožnosti starejših statistično značilno korelira s tremi spremenljivkami, in sicer Zdravstvena pismenost na področju poznavanja zdravstvenega varstva ($r=0,327$, $p<0,001$), Zdravstvena pismenost na področju preprečevanja bolezni ($r=0,302$, $p<0,001$) in Zdravstvena pismenost na področju promocije zdravja ($r=0,334^{**}$, $p<0,001$). Višja stopnja zdravstvene pismenosti je pri tistih starejših, ki si s finančnega vidika lažje privoščijo nakup zdravil ali si lažje plačajo zdravniški pregled. Z analizo variance smo potrdili tudi statistično značilno povezanost med številom ljudi, ki so starejšim na razpolago v primeru, da bi le-ti potrebovali pomoč ter Zdravstveno pismenostjo na področju poznavanja zdravstvenega varstva in ($F=9,446$, $p<0,001$), Zdravstveno pismenostjo na področju preprečevanja bolezni ($F=15,207$, $p<0,001$) in Zdravstveno pismenostjo na področju promocije zdravja ($F=12,519$, $p<0,001$).

Razprava in zaključek. Družbeni dejavniki so povezani s stopnjo zdravstvene pismenosti starejših v Sloveniji in s tem tudi z njihovimi odločitvami, povezanimi z zdravjem. Zato je pri razvoju in implementaciji intervencij za opolnomočenje starejših pri skrbi za njihovo zdravje in čim bolj kakovostno življenje pomembno tudi upoštevanje stopnje njihove zdravstvene pismenosti in hkrati različnih družbenih dejavnikov, ki nanjo pomembno vplivajo, s čimer lahko pomembno prispevamo k zmanjševanju neenakosti v zdravju starejših.

Gljučne besede: zdravstvena pismenost, starejši, socialne determinante

The correlation between some social determinants and health literacy of the elderly in Slovenia

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Introduction. Health literacy is an important determinant of health. It encompasses the knowledge, motivation, and competencies of individuals to access, understand, appraise, and apply health information to day-to-day decisions related to health promotion, disease prevention, and health care. Low levels of health literacy are associated with poor health knowledge, difficulty managing one's own illness, inadequate use of health services, poorer health and survival, as well as increased health care costs. In the elderly, the prevalence of low level of health literacy is higher. In addition to the decline in cognitive abilities in the elderly associated with their health literacy level, researches show a significant association between health literacy level and social determinants, with financial deprivation being the strongest predictor of limited health literacy in the elderly. In this paper, we focus on the analysis of health literacy in the elderly in Slovenia in connection with some social determinants.

Methods. In 2020, the first National Health Literacy Survey was conducted in Slovenia on a representative sample of the adult population. Data were obtained from a questionnaire developed in the European Network on Measuring Population and Organizational Health Literacy. Health literacy was measured on the basis of a 47-item health literacy questionnaire. The sample of the elderly (aged 65 and over) comprises 826 units.

Results. Self-assessment of economic abilities of the elderly is statistically significantly correlated with three variables, namely Health literacy in health care ($r = 0.327$, $p < 0,001$), Health literacy in disease prevention ($r = 0.302$, $p < 0,001$) and Health literacy in health promotion ($r = 0.334^{**}$, $p < 0,001$). Higher levels of health literacy are found in those older people who can more easily afford to buy medicines or pay more for a medical examination. The analysis of variance also confirmed a statistically significant relationship between the number of people available to the elderly in case they need help and Health literacy in the field of health care knowledge and ($F = 9,446$, $p < 0,001$), Health literacy in the field of disease prevention ($F = 15.207$, $p < 0,001$) and Health literacy in the field of health promotion ($F = 12.519$, $p < 0,001$).

Discussion and conclusions. Social determinants are related to the level of health literacy of the elderly in Slovenia and thus also to their health-related decisions. Therefore, in the development and implementation of interventions to empower the elderly to care for their health and for better quality of their life, it is important to take into account their level of health literacy and various social determinants that significantly affect it, so we can make an important contribution to reducing inequalities in health in elderly.

Keywords: health literacy, elderly, social determinants

Pristopi k zmanjšanju občutka osamljenosti in krepitvi duševnega zdravja starostnikov

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Uvod. Starostniki predstavljajo populacijo s povečanim tveganjem za samomor, med pomembnejšimi psihološkimi dejavniki tveganja pri starostniki pa sta socialna izolacija in osamljenost. Osamljenost je pomemben javnozdravstveni problem, saj napoveduje nizko kakovost življenja starejše populacije, poleg tega pa je prepoznana tudi kot napovednik umrljivosti pri starostnikih. Gre torej za kompleksen pojav, ki izpostavlja potrebo po oblikovanju učinkovitih pristopov in intervencij za zmanjšanje osamljenosti pri starostnikih. Namen prispevka je predstaviti raziskavo, v kateri želimo preučiti različne pristope k zmanjšanju socialne izolacije in osamljenosti starostnikov ter identificirati najučinkovitejše načine, s katerimi bi lahko preko zmanjšanja osamljenosti delovali preventivno na področju razvoja težav v duševnem zdravju, duševnih bolezni in samomorilnega vedenja.

Metode. V raziskavo smo vključili starostnike, starejše od 65 let, ki jih lahko razdelimo v več podskupin glede na starost in obliko bivanja. Starostniki sodelujejo v dveh raziskovalnih sklopih. Kvantitativni sklop raziskave predstavlja izpolnjevanje vprašalnika, ki zajema vprašanja o demografskih podatkih udeležencev; lestvice, ki merijo duševno zdravje udeležencev, ocenjujejo tveganje za samomor ter osamljenost starostnikov; ter vprašanja o vključenosti posameznikov v različne aktivnosti in njihovo ocenjevanje učinkovitosti tovrstnih aktivnosti pri zmanjšanju občutka osamljenosti in izboljšanju duševnega zdravja. Kvalitativni sklop raziskave pa zajema fokusne skupine na temo pristopov k zmanjšanju občutka osamljenosti, ter potreb in predlogov za izboljšanje učinkovitosti tovrstnih pristopov.

Rezultati. V preliminarni rezultatih naše študije se kot najučinkovitejše kažejo skupinske intervencije s poudarkom na izobraževanju, usposabljanju in nudenju psihološke podpore posameznikom, kar je v skladu tudi z nekaterimi drugimi tujimi raziskavami, ki potrjujejo največjo učinkovitost edukativnih intervencij. Na podlagi zbranih informacij v naši raziskavi in izsledkov tujih raziskav bomo v nadaljnji fazi oblikovali intervencije za zmanjšanje občutka osamljenosti starostnikov, jih pilotno izvedli in evalvirali učinke intervencije.

Razprava in zaključek. Predlagana raziskava se osredotoča na izjemno ranljivo skupino, pri kateri je količnik samomora konsistentno višji kot v drugih starostnih skupinah, z vidika staranja prebivalstva pa postaja ta problematika vedno bolj pereča. Preventivni ukrepi, ki bi bili specifično usmerjeni v preventivo samomora, krepitev duševnega zdravja ter zmanjšanja osamljenosti starostnikov so razmeroma slabo raziskani, še posebej ob dejstvu, da je kulturni kontekst pri oblikovanju intervencij ključen, če želimo oblikovati učinkovite preventivne intervencije. Raziskava tako nadgrajuje obstoječa znanja o preventivi samomora v ranljivi skupini starostnikov, ki jih bomo neposredno prenesli v prakso z implementacijo intervencij za starostnike.

Ključne besede: osamljenost, duševno zdravje, starostniki

Approaches to reduce loneliness and strengthen mental health of the elderly

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Introduction. The elderly represent a population with an increased risk for suicide. Social isolation and loneliness are among the most important psychological risk factors for suicide among the elderly. Loneliness is a major public health problem as it predicts the low quality of life of the older population, and it is also recognized as a predictor of mortality in the elderly. It is therefore a complex phenomenon that highlights the need to develop effective approaches and interventions to reduce loneliness in the elderly. The purpose of this paper is to present research in which we examine different approaches for reducing social isolation and loneliness and identify the most effective ways with which preventive action could be taken to reduce mental health problems, mental illness, and suicidal behaviour through the reduction of loneliness.

Methods. The study included the elderly over the age of 65, which can be divided into several subgroups according to age and living arrangements. The elderly participate in two research parts. The quantitative part represents the completion of a questionnaire covering questions about the demographic data of the participants; scales that measure the mental health of participants, assess the risk of suicide and loneliness of the elderly; and questions about the involvement of participants in various activities and their assessment of the effectiveness of such activities in reducing loneliness and improving mental health. The qualitative part of the research includes focus groups on the topic of approaches to reduce loneliness, as well as the needs and ideas for improving the effectiveness of such approaches.

Results. In the preliminary results of our study, group interventions were shown to be most effective, with an emphasis on education, training, and psychological support for individuals, which is also in line with some other research confirming the highest effectiveness of educational interventions. Based on the information gathered in our research and the results of other studies, we will in the next phase design interventions to reduce the feeling of loneliness of the elderly, conduct the pilot implementation and evaluate the effects of the intervention.

Discussion and conclusions. The proposed research focuses on an extremely vulnerable group, in which the suicide rate is consistently higher than in other age groups. In terms of an ageing population, these issues are becoming very relevant. However, preventive strategies specifically targeting suicide prevention, strengthening mental health and reducing loneliness among the elderly, are poorly researched, especially given the cultural context, which can be crucial in designing effective preventive interventions. Our research will advance the existing knowledge regarding suicide prevention in a vulnerable group of the elderly, which we will directly transfer into practice by implementing interventions for the elderly.

Keywords: loneliness, mental health, elderly

Pomen subjektivnih mer merjenja učinkov intervencij promocije zdravja pri delu za starejše odrasle

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Uvod. S staranjem, ki je fiziološki proces in ga ne moremo preprečiti, prihaja do pešanja telesnih, duševnih in drugih zmožnosti posameznika. Upočasnitev tega procesa je povezana s telesno aktivnostjo posameznika, zato je ključnega pomena, da starejše odrasle spodbudimo k aktivnemu staranju. Z vključevanjem v programe promocije zdravja (pri delu) jih bomo podprli v neodvisnem in polnem zdravem življenju. Po uvedbi intervencij je potrebno oceniti učinkovitost ukrepov. Učinke intervencij lahko merimo s številnimi merami in/ali načini merjenja: subjektivnimi metodami (vprašalniki, ankete,...) in/ali objektivnimi metodami (merilniki srčnega utripa, krvne preiskave, pedometri, tehtnica,...). Raziskave z objektivno metodo so običajno dražje in pogosto logistično težje izvedljive - predvsem v delovnih okoljih. Delovna okolja namreč zgolj redko omogočajo daljše prekinitve delovnih procesov ali sočasno odsotnosti večjega števila zaposlenih.

Metode. Za pregled v praksi uporabljenih subjektivnih mer učinkov programov promocije zdravja (pri delu) smo uporabili metodo PRISMA. Analiza temelji na pregledu člankov v sledečih bazah: SAGE, PUBMED, JSTOR in WILEY. Pri iskanju smo uporabili naslednje ključne besede oz. besedne zveze: zaposleni ali delovno mesto; zdravje ali promocija ali dobro počutje; program ali intervencija; samoporočanje; ukrep. V prvem koraku smo po pregledu izvlečkov in naslovov pri identificiranih 79 raziskavah upoštevali izključitvene kriterije izločili 50 člankov, ostalih 29 smo vključili v končno analizo. Upoštevali smo naslednje izločitvene kriterije: nedostopnost celotnega članka, uporaba kvalitativne metode in uporaba izključno objektivnih mer.

Rezultati. V končno analizo smo vključili 29 intervencij, katerih učinki so bili merjeni (med drugim tudi) s subjektivnimi merami. Največ intervencij je s področja merjenja telesne aktivnosti, zdrave prehrane, zmanjšanja telesne mase, obvladovanja stresa, uživanja alkohola, medosebnih odnosov in zmanjšanja konfliktov. Pregled je pokazal, da v kolikor so vprašanja v vprašalnikih za subjektivno ocenjevanje jasno opredeljena, točkovana in pravilno uporabljena, je njihova zanesljivost visoka – z vrednostmi Crombach alpha med 0,60 do 0,86.

Razprava in zaključek. Z razvojem spletnega anketiranja in njegove rabe preko mobilnih naprav, postaja opcija samoporočanja vse bolj privlačna zaradi stroškovne, časovne in logistične učinkovitosti, ter izogibanja napakam, kot je npr. dvojno poročanje. Obenem je merjenje učinkov preko samoporočanja (lahko) veljavno in zanesljivo in posledično privlačna alternativa merjenja učinkov ukrepov promocije zdravja v delovnih okoljih med starejšimi odraslimi. Navsezadnje s kliničnimi merami sicer lahko natančno izmerimo npr. telesno maso, ne pa sreče ob doseženem cilju - zmanjšanju telesne mase, to dvoje je potrebno obravnavati kot eno celoto. Zato je pomembno, da subjektivne mere učinkov ukrepov promocije zdravja (pri delu) katalogiziramo.

Ključne besede: intervencija, promocija zdravja pri delu, učinki, subjektivne mere

The importance of subjective measures of workplace health promotion interventions effectiveness for older adults

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Introduction. Aging is a physiological process that cannot be stopped. With age, a person loses some of its physical and mental abilities. Slowing down the process of aging is related to an individual's physical activity. Thus, it is crucial to encourage older adults in active ageing. By engaging older adults in health promotion programs (especially at a workplace in case of older workers), we support them in an independent and healthy life. After implementation of intervention, it is necessary to assess the effectiveness of the measures. The effects can be measured by various measures and/or measurement methods: subjective methods (questionnaires, surveys,...) and/or objective methods (heart rate monitors, blood tests, pedometers,...). Data collection made by an objective method is generally more expensive and often logistically more difficult to carry out, especially in the workplace setting. Namely, work environments rarely allow longer interruptions or the simultaneous absence of a large number of employees.

Methods. The PRISMA method was used to review the subjective measures of the effects of (workplace) health promotion programs used in practice. The analysis that was made is based on a review of articles in SAGE, PUBMED, JSTOR and WILEY databases. Following keywords were used: employee or workplace or worksite; health or promotion or well-being or wellness; program or intervention; measure; self-reporting. In the first step the review of the abstracts and titles resulted in 79 studies. Taking into account the exclusion criteria, we eliminated 50 articles, and the remaining 29 were included in the analysis. We considered the following exclusion criteria: lack of access to a full text, the use of qualitative methods, and the exclusive use of objective measures.

Results. In the final analysis, we included 29 interventions, the effects of which were measured (among other things) by subjective measures. Most interventions are from the areas of physical activity, healthy eating, weight loss, stress management, consume alcohol and conflict reduction. The review showed that if the questions in the subjective assessment questionnaires are clearly defined, scored, and applied correctly, their reliability is high – with Crombach alpha between 0.60 and 0.86.

Discussion and conclusion. With the development of online surveying and its use via mobile devices, the self-reporting option is becoming increasingly attractive due to cost, time, and logistics efficiency, and the avoidance of errors such as e.g., double reporting. At the same time, self-reporting can be valid and reliable and thus represent an attractive alternative to objective measuring of the effects of health promotion measures in work environments among older adults. After all, clinical measures can accurately measure, e.g., weight, but not happiness in achieving the goal – weight loss, whereby these two should be considered as a whole. Therefore, it is important to catalogue the subjective measures of the effects of health promotion measures (at work).

Keywords: intervention, workplace health promotion, effect, subjective measure

Sekcija/Section
Tehnološke in ostale IKT rešitve in zdravje
starejših odraslih
Technological and ICT solutions and health
of the elderly

Vabljeni predavanja

Gradnja napovednih modelov s pomočjo masovnih podatkov o staranju populacije

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Uvod. S povečanjem starosti prebivalstva po vsem svetu živi vse več ljudi s sladkorno boleznijo tipa 2. Sladkorna bolezen tipa 2 je vodilna bolezen, ki povzroča umrljivost in obolevnost po vsem svetu in predstavlja veliko gospodarsko breme za zdravstvene sisteme. Namen te študije je bil razviti in potrditi model napovedovanja tveganja za sladkorno bolezen tipa 2.

Metode. Opravljena je bila sekundarna analiza podatkov. Podatki Ankete o zdravju, staranju in upokojevanju v Evropi, valovi 1 do 7, zbrani med letoma 2004 in 2017, so bili uporabljeni za razvoj in potrditev prognostičnih modelov za 10-letno napoved sladkorne bolezni tipa 2 v evropskih državah.

Rezultati. Vzorec 16.363 udeležencev je bil uporabljen za razvoj in potrditev globalnega reguliranega modela logistične regresije. Model je dosegel površino pod krivuljo, ki je znašala 0,702 (95 % IZ: 0,698 0,706). Izmerjena zmogljivost lokalnih specifičnih modelov, kjer se je površina pod krivuljo gibala od 0,578 (0,565 - 0,592) do 0,768 (0,749 - 0,787). Danski model je bil ocenjen kot model z najboljšo uspešnostjo napovedovanja, pri čemer je bil indeks telesne mase edina spremenljivka, ki je bila izbrana v vseh navzkrižnih validacijah, čemur je sledilo uživanje alkohola v zadnjih šestih mesecih in status kajenja, ki sta bila izbrana med 48 % in 47 % modelov.

Razprava in zaključek. Ugotovitve študije dokazujejo pomembnost ponovne kalibracije modelov in prednosti združevanja podatkov iz več držav v namen zmanjšanja razlik in posledično povečanja natančnosti rezultatov.

Ključne besede: sladkorna bolezen tipa 2; napovedni modeli; starejše osebe; zdravstveno varstvo

Invited lecture

Using aging population big data to develop prediction models

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Introduction. With the increase of the population age worldwide, there are more and more people living with the type 2 diabetes mellitus. Type 2 diabetes mellitus is leading disease, causing mortality and morbidity worldwide and presents a major economic burden for healthcare systems. The aim of this study was to develop and validate a type 2 diabetes mellitus risk prediction model.

Methods. A secondary data analysis was performed. Data from the Survey of Health, Ageing and Retirement in Europe waves 1 to 7 collected between 2004 and 2017 were used to develop and validate prognostic models for 10-year type 2 diabetes mellitus prediction in European countries.

Results. Sample of 16,363 participants was used to develop and validate a global regularized logistic regression model. Model achieved an area under the receiver operating characteristic curve of 0.702 (95 % CI: 0.698 – 0.706). Measured performance of local country-specific models where an area under the receiver operating characteristic curve ranged from 0.578 (0.565 - 0.592) to 0.768 (0.749 0.787). The Danish model was assessed as model with the best prediction performance where body mass index was the only variable that was selected in all cross-validation runs, followed by alcohol consumption in the last six months and smoking status which were selected in 48 % and 47% of the models.

Discussion and conclusion. Study findings demonstrate the importance of re-calibration of the models as well as strengths of pooling the data from multiple countries to reduce the variance and consequently increase the precision of the results.

Keywords: type 2 diabetes; prediction model; elderly person; healthcare

Odnos starejših ljudi do informacijsko komunikacijske tehnologije

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Uvod. Informacijsko komunikacijska tehnologija (IKT) napreduje izjemno hitro in je prisotna že v vseh življenjskih obdobjih. V vsakdanu starostnika se je pojavila potreba po vključitvi IKT, ki bi jim omogočala lažji dostop do novih informacij. Večina starostnikov ni bila neposredno vključena v novo dobo interneta ali IKT, saj v svojem izobraževalnem, delovnem in / ali osebnem življenju niso pogosto uporabljali računalnikov ali interneta. Kljub strahu kako bodo starostniki to sprejeli so se tudi z njihove strani pričele porajati želje po znanju in uporabi IKT.

Metode. Uporabljena je bila opisna metoda s sistematičnim pregledom literature. Zbiranje enot za analizo je potekalo s pomočjo DiKUL v mednarodnih bazah podatkov Medline, ScienceDirect, CINAHL with full text in Google Scholar. Iskali smo tudi s pomočjo baze podatkov COBIB.SI. Za iskanje so bile uporabljene ključne besede »starostnik«, »informacijsko komunikacijska tehnologija« in »zdravje« z Boolovima operatorjema »IN« ter »ALL«. Ključne besede uporabljene v angleščini so bile »elderly«, »information communication technology« in »health« z Boolovima operatorjema »AND« in »OR«. Vključitveni kriterij je bila tudi vsebinska ustreznost in aktualnost. Pregledanih je bilo 19 člankov in po vsebinskem pregledu smo uvrstili 10 člankov. V nadaljevanju smo izključili tiste članke, ki niso izpolnjevali vključitvenih kriterijev.

Rezultati. Uporaba IKT starostnikom koristi in pripomore k izboljšanju in olajšanju vsakodnevnih aktivnosti. Ob pojavu težav pri uporabi IKT si želijo podporo in pomoč svojcev, znancev oz. drugih oseb. Starostniki so izrazili strah pred vdorom v zasebnost in s tem povezana varnost na področju uporabe IKT. V primeru nadgradnje tehnologije jih skrbi ali bodo lahko sledili napredku. Slednje je lahko še posebej izpostavljeno, saj se bojijo tudi družbene diskriminacije. Pri spodbujanju uporabe IKT pri starostnikih je treba upoštevati zasnovo naprav, ampak tudi njihov socialno – ekološki kontekst.

Razprava in zaključek. V zadnjem času se število starostnikov uporabnikov IKT povečuje. Študije nakazujejo pozitivne učinke uporabe IKT, predvsem za zmanjšanje občutka osamljenosti in depresije. Pri oblikovanju IKT namenjenih starostnikom je potrebno upoštevati omejitve glede kognitivnih in fizičnih omejitev. Starostniki lahko zaradi senzoričnih, fizičnih in kognitivnih sprememb, povezanih s starostjo, naletijo na posebne ovire pri učenju o IKT, internetu in računalnikih. Z uporabo bi lahko deloma razbremenili zdravstveni sistem in s tem pripomogli k zgodnejšemu odkrivanju zdravstvenih zapletov in posledično nižanju stroškov v zdravstvenem sistemu. Odnos starostnika do IKT ima pomembne implikacije za oblikovanje in vpeljavo v prakso prilagojenih oblik IKT povezanih z zdravjem. Nova tehnologija lahko do neke mere nadomesti osebo, ki skrbi za starostnika in mu omogoča večji občutek samostojnosti ter varnosti.

Ključne besede: starejši ljudje, informacijsko komunikacijska tehnologija, zdravje, varnost

Elderly's attitude towards information communication technology

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Introduction. Information and communication technology (ICT) is advancing extremely fast and is present at all stages of life. The need for the inclusion of ICT has also appeared in the everyday life of the elderly, which enables them easier access to new information and resources. Most older people were not directly involved in the new age of the Internet or the ICT, as they did not use computers or the Internet often in their educational, work and / or personal lives. Despite the fear of how the elderly will accept this, desires for knowledge and use have also started to come from their side, as they are interested in the benefits of ICT.

Methods. A descriptive method with a systematic literature review was performed. The units for analysis took place with the help of DiKUL in the international databases Medline, ScienceDirect, CINAHL with full text and Google Scholar. We also searched using the COBIB.SI database. The keywords “elderly”, “information and communication technology” and “health” with Boolean operators “AND” and “OR” were used in Slovene and in English. The inclusion criterion was also the content relevance. 19 articles were reviewed and after the content analysis, we ranked 10 articles. Subsequently, we excluded those articles that did not meet the inclusion criteria.

Results. The use of ICT benefits the elderly, improves and facilitates daily activities. When problems arise in the use of ICT, they want the support and help of relatives. The elderly expressed fear of invasion of privacy and related security in the use of ICT. In the case of technology upgrades, they are concerned about whether they will be able to keep up with progress. The latter may be particularly exposed, as they also fear discrimination from society, which makes it easier to follow the progress of ICT development. In promoting the use of ICT in the elderly, the design of the devices must be taken into account, but also their social context.

Discussion and conclusion. The number of elderly ICT users has been increasing. Studies suggest positive effects of using ICT, especially to reduce feelings of loneliness. Restrictions on the cognitive and physical limitations of the elderly need to be taken into account when designing ICTs for the elderly. Older people may face special barriers to learning about ICT, the Internet and computers due to age-related sensory, physical and cognitive changes. Elderly people are often concerned about privacy when using ICT, but using it could partially relieve the health care system and help to detect health complications earlier and consequently reduce costs in the health care system. The attitude of the elderly towards ICT has important implications for the design and implementation of adapted forms of ICT related to health. New technology can to some extent replace the person caring for the elderly and give them a greater sense of independence and security.

Keywords: elderly, information communication technology, health, safety

Neintruzivna identifikacija padcev s pomočjo pametnih tal

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Uvod. Padci so pri starostnikih pogost pojav in veljajo za vodilni vzrok poškodb oseb nad 65 letom starosti. Padec je pri starostnikih kritični dogodek, ki lahko povzroči hude telesne poškodbe in je lahko vzrok za dramatične psihološke posledice, ki reducirajo neodvisnost oškodovane osebe. Dogodek padca je pereč problem in mnogo tehnoloških rešitev obravnava njegovo zaznavo, saj se velika večina ostarelih oseb ob padcu ne zmore samostojno postaviti v začetni pokončni položaj in potrebuje takojšnjo pomoč. Predstavili bomo razvoj sistema za identifikacijo padca, ki sloni na metodah strojnega učenja in pametnih tal z vgrajenimi senzorji za zaznavanje sile. Omejili smo se na detekcijo padca preko zaznavanja sile, ker ohrani zasebnost uporabnikov in omogoči prostost uporabnika oziroma nobene obveze po nosljivi tehnologiji.

Metode. Raziskava se osredotoča na prototipu tal 120cm x 120cm sestavljen iz dveh slojev, spodnji sloj je penasta izolacijska podlaga, zgornji sloj pa sestavljen iz ploskev laminata. V prototipu je vgrajenih 16 senzorjev sile in mikrokrmilnik, ki izmeri silo povzročeno proti tlom in posreduje meritve zunanjemu sistemu za shranjevanje in obdelavo podatkov. Prototip tal je bil uporabljen za registracijo primerov padca v primerno opremljeni telovadnici. Dogodka se je udeležilo 60 prostovoljcev, vsak je simuliral 7 dogodkov padca. Simulirani dogodki padca so bili izbrani iz priporočil opredeljenih v predhodni raziskavi.

Rezultati. Ob dogodku zbiranja podatkov je bila ustvarjena podatkovna zbirka sestavljena iz 420 primerov padca, vsak padec je povezan z demografskimi podatki udeleženca. Podatkovna zbirka je bila uporabljena za učenje in testiranje modelov strojnega učenja pri zaznavi padca na prototipu tal.

Razprava in zaključek. Preliminarni rezultati so obetavni, vendar je sistem še v začetnih fazah razvoja. Trenutni modeli strojnega učenja so bili učeni na podatkih simuliranih padcev in ne nepričakovanih padcev. Poleg tega podatkovna zbirka ne vsebuje primerov padca starejših oseb (+60), ki lahko različno vplivajo na sistem. Detekcija padcev predstavlja poglobitno vrednost razvijajočega se sistema, vendar omogočata dodatni lastnosti neintruzivnost nadzornega sistema vgrajenega v tleh in pristop k varovanju zasebnosti uporabnikov širšo uporabo predlaganega sistema.

Ključne besede: detekcija padca, pametna tla, zasebnost, umetna inteligenca

Privacy preserving fall sensing

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Introduction: Falls are unpredictable accidental events. Common in childhood, rare in adulthood, but a significant problem among the elderly. Although several factors reinforce fall prevention, the fall could be an inevitable effect of other health related complications. Therefore, immediate identification of a fall event could prevent severe consequences of fall related injuries and other dangerous episodes. Fall detection is commonly addressed using technology designed to differentiate a fall event from activities of daily living. However, technology adoption by older adults is lower than in other demographic segments, and fall detection systems based on wearable sensors require active user interaction through battery charging, wearing, and maintenance. Therefore passive solutions that do not require active user interaction should encounter fewer barriers to adoption. We present the recent development of a fall detection system embedded in a composite floor designed to be easy to install, modular, and cost effective. Moreover, we plan to take advantage of the peculiarity of sensing only the force applied to the floor, to develop a privacy aware solution, that guarantees privacy, and gives data ownership solely to the end user.

Methods: Our research is centered on a pilot implementation named smart floor, a floor system measuring 120cm×120cm, with a standard laminate flooring surface over a layer of rolled foam insulating subfloor. Below this layer, 16 force sensors are placed and wired to an Arduino micro-controller. The force applied on the floor, for example, by walking across, is measured and sent to an external system for data capture and processing. The smart floor was used to acquire data about simulated falls. The data was collected on a data gathering event organized in a properly equipped gym. Each participant performed seven different fall events selected from the guidelines defined in a previous study.

Results: Data acquired in the data collection process was grouped in a dataset consisting of 420 fall event records, each record associated with participants' demographic characteristics. The dataset was used to train artificial intelligence models to detect fall events occurring on the smart floor.

Discussion and conclusions: The preliminary results are promising, but the smart floor is quite distant from the end implementation. Current artificial intelligence models were trained with data about simulated falls and not real accidental falls that may be affected by objects within the environment. Moreover, the collected dataset does not include older persons (+60) fall events, which may affect the system differently. Undeniably, fall detection is the main value of the developing system. However, the floor as a non-intrusive monitoring system and the privacy approach could be determinant aspects for the adoption of the proposed smart floor.

Keywords: fall detection, smart floor, privacy, artificial intelligence

Ali je v Sloveniji uporaba IKT v zdravstvene namene povezana z boljšim zdravjem?

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Izhodišča in namen. Med prebivalci razvitih družb, tudi med starejšimi, postaja v zadnjih letih uporaba IKT v zdravstvene namene vse bolj pogosta in priljubljena. Razvoj IKT na področju zdravja in zdravstva lahko tistim, ki zdravstvene informacije in storitve v največji meri potrebujejo – starejšim in bolnim – pomembno pripomore k preventivi in obvladovanju bolezni. Iz tega razloga je pomembno preučiti, ali je iskanje informacij s pomočjo IKT tehnologije povezano z boljšim oz. slabšim zdravstvenim stanjem.

Predstavitev vsebine. V naši raziskavi nas je zanimalo: 1) pogostost iskanja informacij s pomočjo IKT; 2) povezava med IKT iskanjem zdravstvenih informacij in zdravstvenim stanjem; 3) moderatorska vloga starosti za odnos med pogostostjo iskanja zdravstvenih informacij in zdravstvenim stanjem posameznika; in 4) ali je ob kontroli sociodemografskih dejavnikov IKT iskanje zdravstvenih informacij povezano z zdravstvenim stanjem posameznika. Uporabili smo reprezentativni nacionalni vzorec prebivalcev Slovenije starih 18 let ali več iz leta 2018 (N = 1047). Izvedli smo deskriptivno in multivariatno analizo.

Sklepne ugotovitve. Ugotovili smo, da v Sloveniji večina prebivalcev uporablja IKT za pridobivanje zdravstvenih informacij, da je IKT v zdravstvene namene najpogosteje uporabljajo tisti s slabšim zdravjem, da starost pogojuje odnos med iskanjem informacij in zdravstvenim stanjem ter da zdravstveni status ob kontroli sociodemografskih spremenljivk v multivariatnem modelu ni statistično značilen dejavnik uporabe IKT v zdravstvene namene. V prispevku izpostavimo, da lahko IKT pomembno pripomore k izboljšanju zdravja prebivalcev Sloveniji in dostopnosti do zdravstvenih storitev, seveda pa lahko tudi boljše zdravje posamezniku pripomore (omogoči) lažji in učinkovitejši dostop, iskanje in uporabo IKT zdravstvenih informacij. Potrebne so nadaljnje raziskave, ki bi preučile, ali obstaja vzročno posledični učinek IKT iskanja in uporabe zdravstvenih informacij na zdravje ljudi. Ob tem bi bilo pomembno preučiti, ali gre za učinke predvsem na posamezne dimenzije zdravja, ali pa na splošno zdravstveno stanje. Prispevek sklenemo z razpravo o pomenu IKT na področju zdravstvenih storitev in pomenu za pozitivne zdravstvene izide populacije, še posebej ranljivejših skupin ter podamo predloge za krepitev informiranja prebivalstva z možnostmi, ki jih na področju krepitev zdravja ter preprečevanja bolezni ponuja IKT.

Ključne besede: neenakosti v zdravju, eZdravje, uporaba IKT v zdravstvene namene, starejši odrasli

Is the ICT use for health purposes in Slovenia linked to better health?

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Introduction and purpose. In recent years, the use of ICT for health purposes has become increasingly common and popular among the residents of developed societies, including the elderly. The development of ICT in health and health-care can contribute to disease prevention and control for those who need health information and services the most – the elderly and those with poor health. For this reason, it is vital to examine whether the search for information using ICT technology is associated with better health.

Content presentation. In our study, we were interested in: 1) the frequency of searching for information with ICT; 2) the link between ICT seeking health information and health status; 3) the moderating role of age for the link between the frequency of searching for health information and the health status of the individual, and 4) whether the search for health information is related to the health status after controlling the sociodemographic determinants of ICT use. We used a representative national sample of the adult population of Slovenia from 2018 (N = 1047). We performed descriptive and multivariate analysis.

Conclusions. We found that in Slovenia, 1) the majority of the population uses ICT to obtain health information; 2) those with poorer health most often use ICT for health purposes; 3) age impacts the link between information seeking and health status; and 4) when controlled for sociodemographic determinants in the multivariate model, health status proved not to be statistically significantly associated with ICT use for health purposes. In our paper, we argue that ICT can significantly improve the Slovenian population's health and access to health services. At the same time, we also emphasize that better health can also enable easier and more efficient access, search and use of ICT health information. Further research is needed to examine whether there is a causal effect of ICT search and use of health information on health outcomes. It is also crucial that future studies examine whether the health effects are mainly for specific dimensions of health or whether they improve overall health status. The paper concludes with a discussion on the importance of ICT in health services and its importance for positive population health outcomes, especially for vulnerable groups. We also provide suggestions for achieving a more well-informed population concerning the opportunities offered by ICT in the field of health promotion and disease prevention.

Keywords: health inequalities, eHealth, ICT use for health purposes, the elderly

Aplikacije za pomoč starejšim ljudem z demenco

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Uvod. Leta 2018 je bilo ocenjeno, da je na svetu okoli 50 milijonov oseb z demenco, katerih stroški zdravljenja so narasli na eno milijardo ameriških dolarjev. Zaradi čedalje večjega števila starostnikov pa se bo številka v prihodnosti le še povečevala. Raziskave dokazujejo, da so nekatere specifične mobilne aplikacije na pametnih napravah lahko v pomoč bolnikom z demenco, pri čemer lahko uporaba le teh zmanjša tudi finančno breme bolezni. Ker starostniki velikokrat nimajo ustreznih znanj za njihovo uporabo in ker demenca vpliva na njihove kognitivne sposobnosti, igrata zasnova in vsebina aplikacij za demenco ključno vlogo.

Metode. Uporabljena je bila deskriptivna metoda dela s kritičnim pregledom angleške znanstvene literature z uporabo podatkovnih baz Cochrane Library, Google Scholar, PubMed, ScienceDirect in Wiley Online Library. Uporabljene so bile ključne besede: apps for dementia, apps for elderly with dementia, apps for dementia prevention. Med besedami smo uporabili Boolean logični operator AND. Literatura, ki je bila vključena, je morala biti: izdana med leti 2013 in 2020, imeti prost in polni dostop do teksta in biti napisana v angleškem jeziku.

Rezultati. Pri pregledu literature smo našli 1140 zadetkov. V pregled literature smo vključili 8 različnih strokovno-znanstvenih člankov, ki so ustrezali določenim kriterijem in so preučevali področje uporabe aplikacij namenjenim osebam z demenco. Ugotovili smo, da se na tržišču pojavljajo mobilne aplikacije, ki so namenjene za: diagnosticiranje oseb z demenco, preventivni uporabi proti razvoju demence, krepitvi kognitivnih sposobnosti oseb z demenco in aplikacije namenjene za pomoč obolelim pri vsakdanjih aktivnostih. Število takšnih aplikacij narašča, vendar pa večina prosto dostopnih aplikacij ne pokriva vseh specifičnih potreb oseb z demenco, niso prilagojene za uporabo starostnikom in nimajo dovolj bogate informacijske vrednosti.

Razprava in zaključek. Iz rezultatov raziskav vidimo, da lahko ustrezno zasnovana tehnologija dokazano izboljša nekatere vidike fizičnega, duševnega in socialnega zdravja osebam, ki so diagnosticirane z demenco. Lahko pripomore k hitrejši diagnozi in oceni bolezni, k lažjemu soočanju z boleznijo in h krepitvi kognitivnih funkcij ter preprečevanju napredovanja bolezni. Tako se lahko zmanjša psihološko in finančno breme pacientom in njihovim skrbnikom in razbremeni zdravstveni sistem. Menimo, da je za nastanek takšnih aplikacij ključno sodelovanje med zdravstvenimi in tehnološkimi strokovnjaki ter pacienti. Potrebno bi bilo narediti še več raziskav o učinkovitosti aplikacij ter prilagoditi njihove funkcije specifičnim potrebam oseb s kognitivnim primanjkljajem.

Ključne besede: aplikacije za demenco, starejši ljudje z demenco, aplikacije za starejše ljudi z demenco

Apps that help elderly with dementia

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Introduction. In the year 2018 it was estimated that at the global level were 50 million patients diagnosed with dementia, and the cost of their treatment had risen to over one billion US dollars. With the growth of the elderly population, that number shall only grow higher in the future. Research shows that specific mobile apps on smart devices could be used to help patients with dementia. The usage could reduce the financial cost of this illness, also. On average elderly people do not have satisfactory knowledge for the usage of the apps, and dementia influences their cognitive functions.

Methods. We used a descriptive method with critical analysis of English scientific literature with the usage of databases Cochrane Library, Google Scholar, PubMed, ScienceDirect and Wiley Online Library. The keywords used were: apps for dementia, apps for elderly with dementia, apps for dementia prevention. Between the words was used the Boolean logical operator AND. We included the literature from the 2013 and 2020 years, which were free and fully accessible.

Results. We detected 1140 articles after the inclusion of all criteria. Only 8 scientific articles met the inclusion criteria and talked about apps for patients with dementia which were included in this analysis. In the smart mobile marketplace, exist several mobile apps, which are used for: diagnosing people with dementia, preventive usage for developing dementia, enhancing cognitive functions and apps for helping with everyday activities. Most free and accessible usage apps do not cover all the specific needs of people diagnosed with dementia. We expect that in the near future, there shall be a rise in such mobile apps.

Discussion and conclusions. Based on the appropriate design and the technology, app's could be designed for better physical, mental and social aspects of persons diagnosed with dementia. Mobile apps that are used for preventive strengthening of cognitive functions or for control and slowing the progress of dementia have proved to be an adequate tool for quick and efficient assessment of dementia. The development of such apps is crucial for healthcare workers as well as technological scientists and patients. More research should be done in relation to app efficiency and to adjustments of their functions for the specific patients needs.

Keywords: Apps for dementia, elderly with dementia, apps for elderly with dementia

Dejavniki uporabe interneta za iskanje zdravstvenih informacij: starejši ljudje in preostala populacija

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Izhodišča in namen. Uporaba informacijsko-komunikacijske tehnologije (IKT), vključno z internetom in aplikacijami, postaja pomemben vir iskanja zdravstvenih informacij. Hkrati pa raziskave kažejo, da je IKT iskanje zdravstvenih informacij pogojeno s številnimi, tudi sociodemografskimi dejavniki. Pogostost iskanja informacij povezanih z zdravjem na spletu ali v aplikacijah se med drugim razlikuje glede na starost (starejše generacije manj pogosto uporabljajo IKT, vključno z iskanjem informacij o zdravju), spol in partnerski status.

Predstavitev vsebine. V naši raziskavi nas je zanimala pogostost iskanja informacij, povezanih z zdravjem na spletu/aplikacijah glede na tri sociodemografske spremenljivke: starost, spol in partnerski status. Analizirali smo reprezentativni vzorec prebivalcev Slovenije v okviru raziskave SJM 2018/I. Podatki so bili zbrani med 14. marcem 2018 in 12. junijem 2018. Vzorec je zajemal posameznike starejše od 18 let, živče v zasebnih gospodinjstvih, ne glede na njihovo narodnost, državljanstvo, jezik ali pravni status v Sloveniji. Izvedli smo bivariatno analizo s hi-kvadrat testi. Sklepne ugotovitve Ugotovili smo, da v Sloveniji trije prebivalci od petih iščejo zdravstvene informacije na spletu/aplikacijah vsaj mesečno, slabih 15% je ne iskalcev. Delež tistih, ki nikoli ne uporablja spleta/aplikacij za iskanje zdravstvenih informacij s starostno kategorijo narašča. Medtem ko je ta delež najnižji pri kategoriji mladih (9,4 %), naraste na 13,6 % v srednji starostni kategoriji in doseže najvišji delež v najstarejši kategoriji, kjer je v primerjavi z mladimi neuporabnikov več kot dvakrat več (22,2 %). Zanimivo je, da je tudi kategorija najpogostejših iskalcev informacij največja ravno v najvišji starostni kategoriji. IKT zdravstvene informacije pogosteje iščejo ženske kot moški, glede na partnerski status pa ni statistično značilnih razlik.

Sklepne ugotovitve. Na podlagi rezultatov sklenemo, da je v Sloveniji potrebno okrepiti ozaveščanje odločevalcev, zdravstvenih delavcev in javnosti o pomenu dostopnosti in iskanja informacij o zdravju ter se v večji meri osredotočati na sociodemografske dejavnike in ovire, ki prispevajo k neenakostim v pogostosti uporabe IKT v zdravstvene namene.

Ključne besede: starejši ljudje, uporaba IKT, iskanje zdravstvenih informacij, sociodemografski dejavniki

Factors of online health information search among the elderly and the rest of the population

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Introduction and purpose. The use of information and communication technology (ICT), including the use of the Internet and applications, is becoming an important health information source. At the same time, research shows that various sociodemographic determinants predict online health information. The frequency of searching for health-related information online or in applications varies, among other things, according to age (older generations use ICT less often, including seeking health information), gender, and partner status.

Content presentation. In our research, we examined the frequency of searching for health-related information online or with applications according to three sociodemographic variables: age, gender, and partner status. We analysed a representative sample of the population of Slovenia within the Slovenian Public Opinion survey 2018. Data were collected between 14 March 2018 and 12 June 2018. The sample included individuals over the age of 18 living in private households, regardless of their nationality, citizenship, language or legal status in Slovenia. We performed bivariate analyses with chi-square tests. Conclusions We found that in Slovenia, three out of five people search for health information online or via applications at least monthly, while just under 15% never search for information. The proportion of those who never use the Internet/applications to search for health information increases with age. While this share is the lowest in the youth category (9.4%), it increases to 13.6% in the middle age category and reaches the highest proportion in the oldest category, where there are more than twice as many non-users as there are among young people (22.2%). Interestingly, the category of the most frequent information seekers is also the largest in the oldest age category. ICT is more often searched for by women than men, while there are no statistically significant differences according to partner status.

Conclusions. Based on our results, we conclude that in Slovenia, we need to raise awareness among decision-makers, health professionals and the public about the importance of access to and search for health information. There is also a need to focus on sociodemographic factors and barriers that contribute to inequalities in ICT use for health purposes.

Keywords: elderly, ICT use, search for health information, sociodemographic determinants

Digitalna dostopnost do zdravstvenih informacij in storitev e-zdravja za vsakogar

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Uvod. Z informatizacijo, digitizacijo in avtomatizacijo se številne zdravstvene informacije selijo na splet. V svetovnem merilu se povečuje število starejših, ki se pogosto srečujejo vsaj s kakšno od zmanjšanih zmožnosti. Pri zagotavljanju dostopnosti in uporabnosti spletnih mest, ki zdravstvene informacije nudijo, je zato potrebno misliti tudi na takšne osebe. Z raziskavo smo želeli ugotoviti ali so, in v kolikšni meri, informacije in storitve na spletu, povezane z zdravjem, dostopne osebam z zmanjšanimi zmožnostmi. V ta namen smo ocenjevali dostopnost spletnih strani izbranih slovenskih zdravstvenih organizacij. Rezultate smo nato primerjali s tistimi, ki so jih navajali avtorji izbranih tujih člankov.

Metode. Pregled literature smo opravili z deskriptivno metodo dela, pri tem smo pregledali slovensko in tujo strokovno literaturo, objavljeno med leti 2010 in 2020. V končni izbor je bilo vključenih osem člankov. V raziskovalnem delu je bilo za ocenjevanje izbranih sedem domačih spletnih strani zdravstvenih organizacij v Sloveniji. Za pregled dostopnosti spletnih strani smo uporabili avtomatsko spletno orodje WAVE. Orodje je ocenilo dostopnost glede na smernice WCAG 2.1.

Rezultati. V vseh osmih člankih so avtorji pri analizah ugotovili prevladujoče število neustrezno dostopnih strani. Skupaj so v osmih člankih avtorji pregledali 1131 spletnih strani iz 11 držav po svetu. Najbolj pogoste neskladnosti so ugotovili v načelih »zaznavanje« in »delovanje«. V naši raziskavi so vse pregledane spletne strani vsebovale napake. Pri sedmih straneh je avtomatsko spletno orodje skupno zaznalo 70 napak, 123 opozoril in 182 kontrastnih napak.

Razprava in zaključek. Avtorji študij ugotavljajo številne pomanjkljivosti glede zagotavljanja dostopnosti spletnih strani. Do podobnih ugotovitev smo prišli tudi v naši raziskavi. Raziskovalci opozarjajo na potrebne spremembe pri zasnovi spletnih strani in nacionalnih politik pri nadzoru in vrednotenju smernic. Kljub zaznamim neskladnostim, lahko rečemo, da so izbrane analizirane slovenske spletne strani zdravstvenih organizacij in eZdravja v primerjavi s svetovnimi dobro ali bolje dostopne. Naš prispevek tako vidimo kot ozaveščanje in pozivanje k večji dostopnosti do zdravstvenih in tudi drugih informacij, ki bi morale biti dostopne na spletu vsem. Izpostaviti je potrebno tudi omejitev naše raziskave, saj je bilo ocenjevanje dostopnosti domačih strani izvedeno le za sedem zdravstvenih organizacij z uporabo avtomatskega orodja. Smiselno bi bilo opraviti nacionalno analizo, ki bi poleg pregleda z avtomatskimi spletnimi orodji vključevala še dodatni strokovni pregled, kar bi dalo boljšo sliko o dostopnosti digitalnih zdravstvenih informacij in storitev.

Ključne besede: staranje, digitalizacija, avtomatska spletna orodja, spletni dostop

Digital access to health information and e-health services for everyone

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Introduction. Computerisation, digitisation, and automation have moved a lot of health information online. Globally, the number of elderly people that are facing at least some form of disability is increasing. When ensuring the accessibility and usability of websites that provide such information, it is necessary to think about such people. With this research, we wanted to explore whether, and to what extent, health-related online information and services are accessible to people with disabilities. For this purpose, we assessed the accessibility of seven selected Slovenian healthcare institution websites. The results were compared to those reported by the authors of selected foreign articles.

Methods. We evaluated the literature using a descriptive method of work, going through Slovenian and foreign scientific literature published between 2010 and 2020. Eight articles were included. For the practical part of this work, seven home pages of Slovenian healthcare institutions were selected for review. We used a WAVE automated web tool to review the accessibility of the home pages. The tool assessed accessibility according to WCAG guidelines 2.1.

Results. The analysis of all eight articles showed that majority of the reviewed websites are inaccessible. The Authors of the studies reviewed a total of 1131 websites from 11 countries around the world. The most common discrepancies were found in the principles of “perception” and “operation”. All web pages in our survey contained errors. In the seven reviewed pages, the automated online tool detected 70 errors, 123 alerts, and 182 contrast errors.

Discussion and conclusion. The authors of the studies identified a number of shortcomings in ensuring the accessibility of websites. We came to similar conclusions in our research. The authors pointed out necessary changes to the design of websites and to national policies, in the monitoring and evaluation of guidelines. Despite perceived discrepancies, we can say that the analysed Slovenian health institution websites and eZdravje are as good or more accessible in comparison to the global ones reviewed by the comparison studies. We see our contribution as raising awareness and calling for greater accessibility to health and other information that should be available online to everyone. It is necessary to point out the limitation of our research, as the assessment of the accessibility of home pages was performed for only seven healthcare institutions using an automatic tool. We suggest a national analysis which would include, in addition to an automated tools review, an additional review by a web accessibility expert in order to provide a clearer picture of the availability of digital health information and services.

Keywords: ageing, digitalisation, automated web tool, web access

Posterji

Poster presentations

Vpliv nekaloričnih sladil na metabolizem maščob v jetrnih celicah

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Uvod. Pri starostnikih je uporaba nekaloričnih sladil pogosta, saj se mnogi v skladu s priporočili izogibajo vnosu enostavnih sladkorjev, hkrati pa je ravno pri njih potrebno zagotoviti, da je hrana okusna, saj imajo sicer pogosto prenizek vnos hranil. Poleg tega so izdelki, ki vsebujejo nekalorična sladila, tako razširjeni, da se mnogi posamezniki sploh ne zavedajo, da jih uživajo. Čeprav so sladila lahko varna za uživanje, narašča tudi število dokazov, ki kažejo, da niso nujno zdrava, ne znižujejo oziroma ne preprečujejo povečanja telesne mase in na nivo glukoze ne vplivajo pozitivno. Na živalskih modelih je bilo ob rednem uživanju pokazano povišanje serumskih trigliceridov ter inzulina na tešče ter spremenjene ravni adipogenih beljakovin. Namen te študije je preveriti, kakšen vpliv imajo izbrana pogosto uporabljena nekalorična sladila na metabolizem maščob v človeških jetrnih celicah.

Metode. Izbrali smo štiri na trgu dostopna sladila in sicer eritritol, stevio ter dve komercialno pripravljene sladili, sestavljeni iz mešanice več umetnih sladil, Huxol Original (vsebuje natrijev ciklamat, natrijev saharin) in Natreen Classic (vsebuje ciklamat, saharin, taumatin). V jetrnih celicah HepG2 smo po 24-urni izpostavitvi najvišjim necitotoksičnim koncentracijam z RT-PCR preučili njihov učinek na izražanje genov, povezanih z metabolizmom maščob, z uporabo barvila OilRedO pa smo izmerili vpliv na skladiščenje maščob v maščobnih kapljicah. Vsi poskusi so bili izvedeni brez palmitata ter ob njegovi prisotnosti.

Rezultati. Vsa sladila so za približno dvakrat povišala izražanje perilipina-2. Huxol je dodatno povzročil več kot 8-kratno povišanje izražanja diacilglicerol-O-aciltransferaze, dodatek eritritola v gojišče pa je izražanje tega gena zavrl. Obenem so vsa sladila povzročila tudi 2 do 4-kratno povišanje izražanja karnitoil palmitoil transferaze 2. Količina lipidnih kapljic v celicah je bila bistveno povišana ob dodatku palmitata v gojišče v primerjavi s kontrolnim gojiščem, sladila pa niso povzročila nadaljnje spremembe pri kopičenju maščob v kapljice.

Razprava in zaključki. Čeprav se izpostavljenost jetrnih celic različnim sladilom ni odrazila v spremenjenem kopičenju maščob, spremembe v izražanju povezanih genov kljub temu kažejo, da sladila imajo pomemben učinek na metabolizem maščob. Ker se je hkrati povišalo izražanje genov, ki spodbujajo beta-oksidacijo ter genov, ki spodbujajo skladiščenje maščob, bi bilo dolgoročneje učinke ter s tem varnost uporabe z vidika zdravja jeter, potrebno preveriti v nadaljnjih raziskavah.

Gljučne besede: nekalorična sladila, zamaščenost jeter, genska ekspresija

The effect of non-nutritive sweeteners on lipid metabolism in liver cells

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Introduction. The use of non-nutritive sweeteners is common in the elderly population, since they often want to avoid sugar intake, as it is also recommended. On the other hand, to avoid overall low energy/nutrient intake, it is for this population important that the food is palatable. Additionally, due to the widespread use in a variety of food products, the consumers are sometimes unaware of the consumption. Although these sweeteners are generally safe to consume, there is also evidence supporting the opposite – they do not lower body weight and do not prevent its increase and glucose levels may also be elevated. In animal models, they have been shown to increase serum triglycerides and fasting insulin levels and interfere with the levels of adipogenic proteins, when consumed regularly. In the present study we investigated the effects of the selected sweeteners on the lipid metabolism in human liver cells.

Methods. Four sweeteners available on the Slovenian market were selected, namely erythritol, stevia and two commercially available mixed sweeteners Huxol Original (containing sodium cyclamate, sodium saccharin) and Natreen Classic (containing cyclamate, saccharin, thaumatin). Using RT-PCR we studied the effect on the expression of genes related to lipid metabolism and measured the accumulation of OilRedO stained lipid droplets in HepG2 liver cell line exposed to the highest noncytotoxic concentration of each tested compound for 24 h. All experiments were performed both in the presence and absence of sodium palmitate.

Results. All four tested sweeteners caused an approximately 2-fold up-regulation of perilipin-2. In addition, Huxol caused more than 8-fold up-regulation of diacylglycerol-O-acyltransferase, whereas erythritol suppressed its expression. Further, increased expression of carnitine palmitoyltransferase 1 and 2 were detected for all sweeteners. The accumulation of lipid droplets was significantly increased when palmitate was added to the media, but there was no further increase with the addition of the sweeteners.

Discussion and conclusions. Treatment of liver cells with the selected non-nutritive sweeteners did not reflect in altered lipid accumulation. The observed changes in gene expression, however, point to their important impact on lipid metabolism. As genes related to the beta-oxidation as well as those related to the fat storage were up-regulated, long-term effects should be further investigated to confirm their safe use in terms of liver health.

Keywords: non-nutritive sweeteners, fatty liver disease, gene expression

Ohranjanje motoričnih spretnosti pri starejših ljudeh v Psihiatrični bolnišnici Idrija

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Izhodišča in namen. Starostnik, še posebej oseba z demenco, je deležen upada motoričnih spretnosti. Z napredovanjem bolezni, posamezniki posledično tudi telesno pešajo. Tako niso več sposobni opravljati osnovnih življenjskih dejavnosti. Zato vse bolj potrebujejo pomoč, nadzor in vodenje druge osebe. To je lahko s strani svojcev ali pa s strani strokovno usposobljene osebe. Plakat ima namen predstaviti skrb za gibljivost osebe z demenco na zdravljenju v Psihiatrični bolnišnici Idrija. Izhodišča za oblikovanje plakata izvirajo iz prepričanja, da ohranjanje telesne gibljivosti predstavlja za starostnika podaljševanje kvalitete njegovega življenja, kljub omejenemu bivalnemu okolju. Slednje se nanaša na bivanje v sobi, oddelku ali v okolici bolnišnice, kasneje pa tudi v njegovem domačem okolju.

Predstavitev vsebine. Zaposleni na gerontopsihiatričnem oddelku se dnevno srečujemo s posamezniki pri katerih so opazne težave na področju telesne moči, ravnotežja, prožnosti in vzdržljivosti. Slednje so posledica starosti, različnih bolezenskih stanj, lahko pa tudi zdravil. Našteto ima velik pomen pri ohranjanju starostnikove samostojnosti v osnovnih življenjskih dejavnostih ter ohranjanju vsesplošnega zdravja. Pri starejših lahko moč ohranjamo oz. izboljšujemo na različne načine. Eden od načinov je trening moči. Najlažji način, kako ga vključimo v njihov vsakdan, je npr. že vzpenjanje po stopnicah ali delo na vrtu, ki ga imamo tudi v bolnišnici. Ker vemo, da aerobna vadba izboljšuje bolnikovo psihofizično stanje, se zaposleni poslužujemo različnih gibalnih vaj za izboljšanje oz. ohranjanje motoričnih funkcij. Zaradi zagotavljanja varnosti (predvsem v največji meri zaradi preprečitve padca), se v skrajnih primerih osebo občasno tudi fizično omeji. Posledično je nujno, da ne zanemarimo njegove telesne kondicije. Veliko pozornost namenimo tudi vajam za ravnotežje, ki so še kako pomembne pri preprečevanju padcev. Morebitni padci, povezani z izgubo ravnotežja zaradi krhkosti in telesne sestave, v starosti hitro privedejo v invalidnost, izgubo neodvisnosti in celo večjo umrljivost. Prav tako telesna aktivnost pomaga ublažiti nemir in tesnobo. Pripomore k preložitvi starostnega upada hitrosti obdelave živčnega sistema in izboljšanju reakcijskega časa. Redna vadba lahko pomembno prispeva k zdravljenju številnih duševnih bolezni, vključno z depresijo in anksiozno nevrozo. Poster bo predstavil ves nabor vaj in ukrepov za boljšo gibljivost, ki so jih bolniki deležni na gerontopsihiatričnem oddelku Psihiatrične bolnišnice v Idriji.

Sklepne ugotovitve. Zaradi dejstva, da je starostnik, še posebej pacient z demenco, vedno bolj odvisen od drugih, je skrb za njegove motorične sposobnosti nepogrešljiv dejavnik pri skrbi za njegovo zdravje. Kljub intenzivni pozornosti za to področje, pa zaposleni ugotavljamo, da je tega v naši bolnišnici še vedno premalo, ter se posledično izkazuje potreba po fizioterapevtskih storitvah. Fizikalna vadba je življenjsko pomembna za obolele z demenco in za njihovo dobro počutje, saj pomaga ohranjati njihovo fizično delovanje čim dlje.

Ključne besede: starejši ljudje, motorične spretnosti, gibanje, skrb za zdravje, Psihiatrična bolnišnica Idrija

Preserving motor skills in elderly people in Psychiatric Hospital Idrija

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Introduction. An elderly person, especially with dementia, suffers the decline of motoric skills. With the disease progresses, the individuals lose physical vitality because they are not active in daily activities as before. They increasingly need help, supervision and guidance from another person. This help could be from family members or from a professionally qualified person's side. The aim of a poster is to present the mobility treatment of an individual with dementia at the Psychiatric Hospital in Idrija. Idea for this poster arises from the belief that maintenance of physical mobility, for the elderly, could be prolongation of their quality of life, despite the limited living environment. The latter refers to staying in a room, patient care ward or in the around the hospital, later also in their home environment.

Content presentation. Daily, gerontopsychiatric ward staff see individuals who have problems with physical strength, balance, flexibility, and endurance. The latter can be caused by age, various medical conditions, or medication. This is important for maintaining independence in basic life activities and overall health. Elderly can improve or maintain strength in different ways. One way is training. The easiest way to incorporate it into their daily lives is e.g. climbing up the stairs or working in the garden, which we also have in the hospital. Because we know that aerobic exercises improves a patient's psychophysical condition, we can use a variety of movement exercises to improve or maintain motor function. In order to ensure safety (especially to prevent falls), in extreme cases, the person may be physically restrained from time to time. As a result, it is imperative that we do not neglect their physical condition. We also pay a lot of attention to balance exercises, which are even more important in preventing falls. Possible falls associated with loss of balance due to fragility and body composition, with ageing rapidly lead to disability, loss of independence and even higher mortality. Physical activity also helps alleviate restlessness and anxiety, helps to postpone the age decline of the processing speed of the nervous system and improve the reaction time. Regular exercise can make an important contribution in the treatment of several mental illnesses, including depression and anxiety neurosis. The poster will present the full range of exercises and measures for better mobility that patients receive at the Gerontopsychiatric ward of the Psychiatric Hospital in Idrija.

Conclusions. The fact that an elderly person, especially with dementia, is increasingly dependent on others, makes care for their motor skills as indispensable factor. Despite the intense focus on this, we found out that only care and excises in our hospital are not enough. Even more there is a need for additional physiotherapy services. Physical exercise is vitally important to people with dementia and for their well-being, because it helps maintain their physical functioning as long as possible.

Keywords: an elderly person, motoric skills, movement, health care, psychiatric hospital Idrija

Kakovost življenja pacientov s sladkorno boleznijo in s kronično rano

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Uvod. Sladkorna bolezen tipa II; diabetes mellitus, je znana presnovna motnja in nenalezljiva kronična bolezen. Sladkorna bolezen tipa II vpliva na kakovost življenja posameznikov, kar je težko neposredno meriti, ker ni natančnih kriterijev merjenja in ocenjevanja. Zapleti sladkorne bolezni tipa II so tudi kronične rane. To so posebne vrste ran, ki izredno slabo celijo v dolgem času zaradi prekomernega vnetja, trdovratnih okužb, odpornosti na zdravlila in nezmožnosti celjenja. So kompleksen izziv za paciente in tudi za profesionalne oskrbovalce ran, saj se ne celijo v doglednem času in predstavljajo velik finančni problem v zdravstvenem sistemu po celem svetu in predstavljajo breme družbi. Namen je ugotoviti vpliv kronične rane na kvaliteto življenja posameznikov.

Metode. Raziskava je temeljila na kvalitativnem raziskovalnem pristopu z deskriptivno metodo raziskovanja. Do literature smo dostopali preko elektronske povezave v knjižnici Celje. Material za raziskovalno nalogo smo zbirali preko spleta v podatkovnih bazah EBSCO, ProQuest in Google učenjak. Uporabili smo omejitvene kriterije: recenzirani članki, celotno besedilo, leto objave za leto 2015 - 2021, jezik (angleščina), če je na voljo za prenos, znanstvene revije, s ključnimi besedami »quality of life«, »diabetes«, »wound«. Po pregledu, vključitvenih in izključitvenih kriterijih je bilo v raziskavo vključenih 11 člankov. Raziskava je potekala v mesecu aprilu in maju 2021. Za prikaz rezultatov smo uporabili program MS Word.

Rezultati. Za pregledni znanstveni članek smo uporabili, pregledali in obdelali 29 člankov, že na spletu smo izključili vse članke, kjer nismo mogli dostopati do polne vsebine člankov, ali so bili v tujem jeziku ali ni šlo za znanstveno besedilo. Pregled podatkovnih baz nam je dal 29 zadetkov, po pregledu smo izločili 13 člankov, ki niso vsebovali osnovnih kriterijev. Ostalih 16 člankov smo prebrali in pregledali in po vključitvenih in izključitvenih kriterijih izključili še 8 člankov. Ostalih 10 člankov smo vključili v raziskavo za pregledni članek.

Razprava in zaključek. Sladkorna bolezen tipa II je kronična bolezen, ki močno vpliva na zdravstveno stanje, počutje in navsezadnje tudi na kakovost življenja vsakega, ki to bolezen ima. Osebe s sladkorno boleznijo tipa II imajo (pre)malo znanja in bolezen težko spremljajo. Več bi morali narediti na preventivi bolezni, spremljanju, korekciji in uporabi zdravil, ki jih prejema pacient. Sladkorna bolezen tipa II je povezana z tudi drugimi boleznimi, stanji, težavami in simptomi in tudi kroničnimi ranami. Kronične rane med drugim spremlja bolečina, ki močno vpliva na kakovost življenja. Boleča, dolgotrajna kronična rana za mnoge paciente prinašajo olajšanje in večjo kakovost življenja le z amputacijo, s čimer se izognejo dolgotrajnemu zdravljenju, prevezam in bolečini.

Ključne besede: kakovost življenja, staranje, sladkorna bolezen

Quality of life of diabetic patients with chronic wounds

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Introduction. Type II diabetes; diabetes mellitus, is a known metabolic disorder and non-communicable chronic disease. Diabetes type II affects quality of life of individuals, which is difficult to measure directly because there are no precise criteria for measurement and evaluation. Complications of type II diabetes are also chronic wounds. Chronic wounds are special types of wounds that heal extremely poorly over time due to excessive inflammation, stubborn infections, drug resistance and inability to heal. They are a complex challenge for patients as well as for professional wound care workers, as they do not heal in the near future and pose a major financial problem in the healthcare system worldwide and represent a burden to society. The purpose is to determine the impact of a chronic wound on the quality of life of individuals.

Methods. The research was based on a qualitative research approach with a descriptive research method. The literature was accessed via an electronic link in the Celje library. Material for the research paper was collected online in the databases EBSCO and MEDLINE, ProQuest and Google Scholar. We used restrictive criteria: peer-reviewed articles, full text, year of publication for 2015-2021, language (English), if available for download, scientific journals, with the keywords “quality of life”, “diabetes”, “wound”. Following the review, inclusion and exclusion criteria, 11 articles were included in the survey. The survey was conducted in April and May 2021. MS Word was used to display the results.

Results. We have used, reviewed and processed 29 articles online, we excluded all articles where we could not access the full content of the articles, they were in a foreign language or it was not a scientific text. A review of the databases gave us 29 results, after the review we eliminated 13 articles that did not contain basic criteria. The remaining 16 articles were read and reviewed and 8 more articles were excluded according to the inclusion and exclusion criteria. The remaining 10 articles were included in the survey for the review article.

Discussion and conclusion. Type II diabetes is a chronic disease that has a profound effect on the health, well-being and, ultimately, on the quality of life of anyone who has the disease. People with type II diabetes have (too) little knowledge and it is difficult for them to monitor the disease. More should be done on disease prevention, monitoring, correction and use of medications received by the patient. Type II diabetes is also associated with other diseases, conditions, problems and symptoms as well as chronic wounds. Chronic wounds are accompanied, among other things, by pain, which greatly affects the quality of life. Painful, long-lasting chronic wounds for many patients bring relief and a better quality of life only through amputation, thus avoiding long-term treatment, dressings, and pain.

Keywords: quality of life, ageing, diabetes mellitus

Uporaba eteričnih olj v komplementarni medicini

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Uvod. Eterična olja so močno koncentrirane, hlapljive in aromatične tekočine, pridobljene iz različnih delov rastlin: semen, lupine, lubja, listov, stebel, korenin, cvetja, sadežev. Pridobivajo se največ z destilacijo, ekstrakcijo s topilom pa tudi s hidrofuzijo ali pritiskom. Rastline eterična olja uporabljajo za zaščito pred soncem, zaščito pred temperaturnimi ekstremi, odbijajo insekte, zdravijo sebe po poškodbah živali, ki se hranijo z njimi, privabljajo živali za polucijo, odbijajo mikrobe in jih uporabljajo za zaščito v dolgih obdobjih z manj hranili. Čistost eteričnih olj je pogojena s kemičnimi sestavinami posameznega olja, na te pa vplivajo različni dejavniki. Ti dejavniki so različni deli rastlin, ki so bili uporabljeni pri pridelavi eteričnega olja, zemlje, v kateri je rastlina rastle, drugih rastlin, s katerimi je rastlina rastle, gnojil, geografske regije, klime, višine, opravevanja, obdobja in način žetve in navsezadnje način destilacije.

Metode. Raziskava je temeljila na kvalitativnem raziskovalnem pristopu z deskriptivno metodo raziskovanja. Pri raziskovalni nalogi je bila uporabljena znanstvena literatura s področja medicine. Do literature smo dostopali preko elektronske povezave v knjižnici Celje. Material za raziskovalno nalogo smo zbirali preko spleta v bazah EBSCO in MEDLINE uporabili smo tudi monografije. Ključne besedne zveze so bile: »essential oil«, »patient« in »medicine« v angleškem jeziku. Omejitveni kriteriji iskanja so bili v obdobju januar 2015 do januar 2020. Iskali smo celotno besedilo člankov.

Rezultati. Z namenom ožjenja podatkov so bili uporabljeni omejitveni kriteriji: recenzirani članki, celotno besedilo, leto objave, angleški jezik, če je na voljo za prenos in znanstvene revije. Iskanje je pokazalo 44 člankov. Po pregledu smo izločili 14 člankov, ki niso vsebovali vključitvenih in izključitvenih kriterijev, niso bili javno dostopni ali pa je šlo za drug tip člankov. Pregled na spletu se je omejil na 30 člankov, katere smo pregledali, prebrali in jih v raziskavo vključili 9.

Razprava in zaključek. Eterična olja se lahko uporabljajo na različne načine kot so topično, aromatično in interno. Preden se odločimo za nakup in uporabo eteričnih olj, se dobro pozanimamo o čistosti, terapevtskih oznakah, proizvajalcih in prodajalcih in navsezadnje, o načinu uporabe eteričnega olja. Eterična olja sivke, pomaranče ali poprove mete so uporabljena v številnih raziskavah in kažejo dobre rezultate v podporni terapiji pacientom. V naši raziskavi smo hoteli ugotoviti, ali eterična olja lahko pomagajo ljudem z različnimi diagnozami in simptomi. Ugotovili smo, da se izvaja ogromno študij z eteričnimi olji, vseeno pa se jih težko primerja med seboj. Raziskovalci tudi ugotavljajo, da bi morale biti študije večje, bolj organizirane in večkrat ponovljene, da bi lahko ugotovili resnično in na dokazih slonečo učinkovitost eteričnih olj.

Ključne besede: eterična olja, komplementarna medicina

The use of essential oils in complementary medicine

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Introduction. Essential oils are highly concentrated, volatile and aromatic liquids obtained from various parts of plants: seeds, shells, bark, leaves, stems, roots, flowers, fruits. They are obtained mostly by distillation, solvent extraction and also by hydrofusion or pressure. Plants use essential oils for protection from sun, protection against temperature extremes, to repel insects, to treat themselves after injuries by animals that feed on them, to attract animals for pollination, repel microbes and use them for protection for long periods with less nutrients. The purity of essential oils is determined by the chemical constituents of each oil, which are influenced by various factors. These factors are the different parts of the plants used in the production of the essential oil, the soil in which the plant grew, other plants with which the plant grew, fertilizers, geographical regions, climate, altitude, pollination, harvest periods and methods, and finally distillation method.

Methods. The research was based on a qualitative research approach with a descriptive research method. The scientific literature in the field of medicine was used in the research project. The literature was accessed via an electronic link in the Celje library. Material for the research paper was collected online in the EBSCO and MEDLINE databases, and monographs were also used. The key phrases were: “essential oil”, “patient” and “medicine” in English language. The restrictive search criteria were in the period January 2015 to January 2020. We searched for the full text of the articles.

Results. In order to narrow the data, restrictive criteria were used: peer-reviewed articles, full text, year of publication, English, if available for download, and scientific journals. Search found 44 articles. After the review, we excluded 14 articles that did not contain inclusion and exclusion criteria, were not publicly available, or were other types of articles. The online review was limited to 30 articles, which we reviewed, read, and included in the survey 9.

Discussion and conclusion. Essential oils can be used in a variety of ways such as topically, aromatically and internally. Before we decide to buy and use essential oils, we must be well acquainted with the purity, therapeutic labels, manufacturers and sellers, and finally, about how to use the essential oil. The essential oils of lavender, orange or peppermint have been used in many studies and show good results in supportive therapy for patients. In our study, we wanted to find out if essential oils can help people with different diagnoses and symptoms. We have found that a huge number of studies are being conducted with essential oils, yet they are difficult to compare with each other. Researchers also note that studies should be larger, more organized, and repeated in order to determine the true and evidence-based effectiveness of essential oils.

Keywords: essential oils, complementary medicine

Razširjenost sarkopenične debelosti pri pacientih pred kirurškimi ortopedskimi posegi

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Uvod. Sarkopenična debelost je sindrom, za katerega je značilna povečana količina maščevja ob sočasni zmanjšani količini puste mišične mase. Izsledki raziskav kažejo, da imajo odrasli s sarkopenično debelostjo povečano tveganje za padce in zlome, prav tako je povezana s kardiovaskularnimi obolenji ter zapleti po ortopedskem kirurškem zdravljenju. Namen raziskave je bil preučiti razširjenost sarkopenične debelosti pri elektivnih kirurških pacientih v Ortopedski bolnišnici Valdoltra.

Metode. V raziskavi je sodelovalo 196 preiskovancev (77 moškega in 119 ženskega spola, povprečna starost moških je bila 65 ± 8 let in 66 ± 10 let za ženske), ki so bili predvideni za operativni poseg zamenjave kolčnega, kolenskega sklepa ali za operativni poseg na hrbtenici v Ortopedski bolnišnici Valdoltra. Preiskovancem so bile opravljene antropometrične meritve (telesna masa, telesna višina, ITM, obseg pasu). S pomočjo prenosne bioimpedančne tehtnice Tanita (Body composition monitor BC-730) smo izmerili sestavo telesa: delež puste mišične mase, delež maščobne mase in vode. Razmerje med maščobno maso (FM) in pusto mišično maso (FFM) (FM/FFM) smo uporabili za diagnozo sarkopenične debelosti. Posamezniki z razmerjem večjim od 0,80 so bili uvrščeni v kategorijo sarkopenično debelih. Raziskavo je odobrila etična komisija Ortopedske bolnišnice Valdoltra, št. odobritve 6/2019.

Rezultati. Telesna masa preiskovancev je znašala $93,2 \pm 16,0$ kg, obseg pasu 109 ± 14 cm, ITM $31,4 \pm 4,8$ kg/m² oziroma $78,9 \pm 12,9$ kg, 101 ± 11 cm, ITM $30,8 \pm 5,0$ kg/m² za preiskovanke. Iz meritve telesne sestave smo pridobili pusto mišično maso moških preiskovancev $59,7 \pm 7,1$ kg, pri ženskah $43,3 \pm 4,6$ kg ter delež maščobne mase pri moških $31,7 \pm 6,5$ % in $41,2 \pm 4,7$ % pri ženskah. Razmerje FM/FFM pri ženskah je znašalo $0,75 \pm 0,15/0,75 \pm 0,15$, pri moških pa $0,50 \pm 0,16$. Pri 39 preiskovankah in treh preiskovancih je bilo razmerje med FM/FFM večje od 0,80. Pri preiskovancih, ki so bili predvideni za operativni poseg zamenjave kolenskega sklepa, je bila sarkopenična debelost najpogostejša ($n = 18$; 27 %), sledi mu operativni poseg na hrbtenici ($n = 13$; 25 %). Kljub temu da je v raziskavi sodelovalo največ preiskovancev, ki so predvideni za operativni poseg na kolku, je razširjenost sarkopenične debelosti pri tej skupini preiskovancev najnižja ($n = 11$; 14 %).

Razprava in zaključek. Izsledki raziskave kažejo, da se sarkopenična debelost pogosteje pojavlja pri ženskah, kar potrjujejo tudi izsledki drugih raziskav. Vzrok razlike v spolu še ni pojasnjen, verjetno je posledica hormonskih sprememb po obdobju menopavze. Raziskava je pokazala nepričakovane rezultate o razširjenosti sarkopenične debelosti me dpacienti, ki so predvideni za operativni poseg na hrbtenici, najverjetneje kot posledica odlašanja pacientov z operativnim posegom. Zaradi staranja prebivalstva, epidemije debelosti in sprememb življenjskega sloga sarkopenična debelost postaja vedno večji diagnostični in terapevtski izziv.

Ključne besede: sarkopenična debelost, kirurški pacienti, staranje

Prevalence of sarcopenic obesity in patients undergoing ortopedic surgery

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Introduction. Sarcopenic obesity is a syndrome characterized by an increased amount of fat with a concomitant decrease in lean muscle mass. Studies have shown that adults with sarcopenic obesity have an increased risk of falls and fractures, it is associated with cardiovascular disease and complications after orthopedic surgical treatments. The aim of the study was to investigate the prevalence of sarcopenic obesity in elective surgical patients at Valdoltra Orthopaedic Hospital.

Methods. The study included 196 participants (77 men and 119 women, mean age 65 ± 8 years in men and 66 ± 10 years in women) scheduled for hip or knee replacement surgery and patients scheduled for spine surgery in Orthopedic hospital Valdoltra. Anthropometric measurements were performed (body weight, height, BMI, waist circumference). A Tanita portable body composition monitor (Body Composition Monitor BC-730) was used to measure body composition: fat-free mass, percentage of fat mass and water were calculated. The ratio between fat mass (FM) and fat-free mass (FFM), (FM/FFM) was used to diagnose sarcopenic obesity. Individuals with a ratio greater than 0.80 were classified as sarcopenic obese. The research was approved by the Ethics Committee of Valdoltra Orthopedic Hospital, No. Approval 6/2019.

Results. The weight of the male subjects was 93.2 ± 16.0 kg, waist circumference 109 ± 14 cm, BMI 31.4 ± 4.8 kg/m² and for the female subjects 78.9 ± 12.9 kg, 101 ± 11 cm, BMI $30, 8 \pm 5.0$ kg/m². The mean FFM of male subjects was 59.7 ± 7.1 kg, for females 43.3 ± 4.6 kg and the percentage of fat mass was 31.7 ± 6.5 % for males and $41.2 \pm 4, 7$ % for females. The ratio FM/FFM was 0.75 ± 0.15 in females and 0.50 ± 0.16 in males. In 39 female and three male subjects, the ratio FM/FFM was greater than 0.80. Among subjects scheduled for knee replacement surgery, sarcopenic obesity was the most common (27 %), followed by spine surgery (25 %). Despite the fact that the majority of subjects were scheduled for hip replacement surgery, the prevalence of sarcopenic obesity was lowest in this group (14 %).

Discussion and conclusions. The results of the study showed that sarcopenic obesity is more common in women, which is also confirmed by the results of other studies. The reason for the difference between the gender is not clear, but it is probably due to hormonal changes during menopause. The study showed unexpected results on the prevalence of sarcopenic obesity in patients scheduled for spine surgery, most likely due to delayed surgery. Due to the aging population, obesity epidemic, and lifestyle changes, sarcopenic obesity is increasingly becoming a diagnostic and therapeutic challenge.

Keywords: sarcopenic obesity, surgery patients, ageing

Zdravstveno vedenje in kakovost življenja starejših odraslih na primeru pacientov v rehabilitacijskem centru

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Uvod. Razvoj medicine in njenih dosežkov, gospodarske in družbene spremembe ter dvig življenjskega standarda vodijo k daljšanju življenjske dobe, kar je povezano tudi z rastjo družbe "tretje starosti". Zaradi takšnega stanja je potrebno socialno politiko usmeriti ne le v daljšanje življenjske dobe, temveč tudi v ukrepe za izboljšanje kakovosti življenja starejših. Ključno vlogo v procesu oblikovanja in varovanja zdravja igrajo predvsem življenjski slog, navade in z zdravjem povezana vedenja ljudi. Cilj študije je bil oceniti zdravstvena vedenja starejših in vpliv teh vedenj na kakovost življenja.

Material in metode. V raziskavi je sodelovalo 125 starejših ljudi. Raziskava je bil izvedena v Rehabilitacijsko-medicinskem centru na Poljskem, od februarja do maja 2019. Uporabljen je bil avtorski vprašalnik, Lestvica za oceno kakovosti življenja - WHOQOL-BREF in Lestvica zdravstvenih vedenj.

Rezultati. Zdravstvena vedenja pomembno vplivajo na kakovost življenja ($p < 0,004$). Razlika se je pokazala pri temi kakovosti življenja, na katero so vplivali: starost ($p < 0,001$), zakonski stan ($p < 0,001$), poklicna dejavnost ($p < 0,001$), število spremljajočih bolezni ($p < 0,001$). Na drugi strani pa se je pri temi vedenj, povezanih z zdravjem, razlikovanje nanašalo na vpliv izobrazbe ($p < 0,002$) in poklicne dejavnosti ($p < 0,045$).

Razprava in zaključki. Pridobljeni rezultati raziskave so lahko pomembni pri ohranjanju optimalnega zdravja starejših, kar bi lahko posredno izboljšalo kakovost njihovega življenja. Omogočili bodo tudi pridobivanje znanja, ki omogoča izvajanje ustreznih programov zdravstvenega izobraževanja s strani usposobljenega zdravstvenega osebja.

Ključne besede: zdravstvena vedenje, kakovost življenja, starejši ljudje, vprašalnik WHOQOL-AGE

Health behaviors and quality of life of the elderly on the example of patients of the Rehabilitation Center

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Introduction. The development of medicine and its achievements, progressive economic and social changes and the raising standard of living lead to the extension of human life, which is associated with the growth of the “third-age” society. Due to this state of affairs, it is necessary to focus social policy not only on extending life, but also on taking measures to improve the quality of life of elderly people. The key role in the process of shaping and protecting health is played primarily by people’s lifestyle, habits and health behaviors. The aim. The aim of the study was to assess the health behaviors of elderly people and their impact on the quality of life.

Material and methods. The study involved 125 elderly people. The tests were carried out in the Rehabilitation and Medical Center in Poland, from February to May 2019. The research was carried out using the author’s questionnaire, the WHOQOL-BREF life quality assessment scale and the Inventory of Health Behaviors.

Results. Health behaviors had a significant effect on the quality of life ($p < 0.004$). The differentiation occurred in the issue of quality of life, which was influenced by: age ($p < 0.001$), marital status ($p < 0.001$), professional activity ($p < 0.001$), number of co-morbidities ($p < 0.001$). On the other hand, in the issue of health-related behaviors, the differentiation concerned the influence of education ($p < 0.002$) and professional activity ($p < 0.045$).

Discussion and conclusions. The obtained research results may be important in maintaining optimal health of the elderly, which will indirectly improve their quality of life. They will also allow for the acquisition of knowledge, which makes it possible to implement appropriate health education programs by qualified medical staff.

Keywords: health behaviours, quality of life, elderly people, WHOQOL-AGE questionnaire

Starostniki in prehranska dopolnila: koristi in tveganja

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Uvod: Velik delež starostnikov zgolj s prehrano ne zaužije zadostne količine hranil. Z večanjem ozavešanja o pomenu zdrave prehrane za zdravje, oglaševanja in proste dostopnosti prehranskih dopolnil, se vse pogosteje tudi starostniki poslužujejo uporabe le-teh. V tem pregledu bomo izpostavili koristi, ki jih prinaša uživanje prehranskih dopolnil starostnikom in nekaj primerov, kjer je potrebna previdnost.

Metode: Literaturo smo iskali v bazi PubMed in v svetovnem spletu s ključnimi besedami »prehranska dopolnila« – »dietary/food supplements«, »starostniki« – »elderly«, »zakonodaja« – »legislation«, »interakcije« – »interactions« in njihovimi kombinacijami. Za pregledni članek smo uporabili članke v angleškem jeziku, objavljene po letu 2000.

Rezultati in diskusija: Določena zdravstvena stanja, ki pogosto pestijo starostnike, se lahko izboljšajo ob uporabi prehranskih dopolnil. Klinične študije so pokazale, da dolgoročna uporaba multivitaminskih pripravkov pri starejši populaciji prispeva k zmanjšanju tveganja za razvoj s starostjo pogojenih bolezni. Prav tako uporabo omega-3 nenasičenih maščobnih kislin povezujejo z zmanjšanim tveganjem za razvoj srčno-žilnih zapletov. Dodatno uživanje pripravkov s proteini v kombinaciji z gibanjem tudi občutno vpliva na preprečevanje zmanjšanja mišične mase in upada moči v nogah pri starejših. Nekatere študije potrjujejo tudi blagodejne učinke flavonoidov na izboljšanje kognitivnih funkcij. Kljub številnim potencialnim koristim, ki jih prinaša uporaba prehranskih dopolnil pri starostnikih, se je potrebno zavedati tudi določenih pasti. Poleg tveganja za prekoračenje priporočenih dnevnih vnosov določenih hranil, je zlasti problematična tudi sočasna (nenadzorovana) uporaba z zdravili na recept, ki lahko nemalokrat vodi do pojava interakcij dopolnil z zdravili. Posebna previdnost je potrebna pri uporabi rastlinskih dopolnil, ki vsebujejo šentjanževko, grenivko, granatno jabolko ali črni poper, saj lahko ti vplivajo na metabolizem številnih zdravil. Dopolnila z brusnico, ginkom, česnom, koencimom Q10 ali omega-3 maščobnimi kislinami pa lahko povečajo tveganje za krvavitve ob sočasni antikoagulantni terapiji.

Zaključki: Glede na tveganja, ki se lahko pojavijo ob uporabi prehranskih dopolnil, je priporočljivo, da starostniki prejmejo ustrezno svetovanje ob vpeljavi novega prehranskega dopolnila s strani zdravstvenih delavcev v lekarnah ali specializiranih prodajalnah. Tudi sicer je smiselno, da se starostniki naročijo na posvet pri registriranemu dietetiku, ki jim lahko določi prehransko stanje in na podlagi izvidov svetuje o primerni rabi dopolnil pri posamezniku.

Ključne besede: prehranska dopolnila, starostniki, indikacije, interakcije

Elderly and dietary supplements: benefits and risks

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Introduction: A large percentage of older adults do not receive recommended amounts of many nutrients from food alone. Due to increased awareness of the importance of nutrition to health, along with the advertising and over-the-counter accessibility of the dietary supplements, their use is increasing among the elderly. The purpose of this review is to determine the major benefits of dietary supplementation specific to older adults, as well as to highlight the potential risks that may occur with their use.

Methods: PubMed database and the world wide web were searched with mesh terms »prehranska dopolnila« – »dietary/food supplements«, »starostniki« – »elderly«, »zakonodaja« – »legislation«, »interakcije« – »interactions« and their combinations. English language articles published after 2000 were included in narrative review.

Results and discussion: Under certain circumstances, older adults may benefit from supplementation. Clinical studies have indicated a possible reduction in the risk of developing age-related diseases among older people who reported long-term use of multivitamin supplements. Higher plasma levels of omega-3 polyunsaturated fatty acids have also been associated with fewer cardiovascular deaths in older people taking omega-3 supplements. Dietary protein supplementation combined with physical activity had a strong effect in preventing age-related muscle mass attenuation and leg strength loss in older people. Finally, beneficial effects of purified flavonoids on cognitive function have been reported in some studies. Although there are potential benefits to taking supplements, there are also potential drawbacks. In addition to the increased risk of nutrient overdose, concomitant use of dietary supplements and prescription medications is common in this population and can increase the risk for drug-nutrient interactions and adverse events. Particular caution should be taken when using herbal supplements containing St. John's Wort, grapefruit, pomegranate, or black pepper, as these can affect the metabolism of numerous drugs. Supplements containing cranberry, Ginkgo, garlic, coenzyme Q10, or omega-3 fatty acids, on the other hand, may increase the risk of bleeding when used together with anticoagulant medications.

Conclusion: Given the risks associated with dietary supplement use, decisions about the appropriateness of supplementation for older adults should be made by healthcare providers in pharmacies or specialty stores. It is advisable that older adults consult with registered dietitians who can properly assess the patient's nutritional status and recommend the best supplements based on individual need.

Keywords: dietary supplements, elderly, indications, interactions

Kakovost življenja in sobolevnost pri bolnikih v institucionalnem varstvu

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Uvod. Standard oskrbe bolnikov v domovih za ostarele in hospicu se povečuje iz leta v leto, kar izboljša tudi kakovost življenja bolnikov. Na kakovost življenja močno vplivajo stopnja zavedanja, aktivnosti, bogastvo izkušenj, ustvarjalnost, sodelovanje v družinskem in družbenem življenju. Bolezni starejših so lahko posledica procesov staranja, vendar so poleg tega vzročno povezane z obstoječimi boleznimi, katerih število se s starostjo pogosto povečuje. Namen študije je bil oceniti vpliv sobolevnosti na oceno kakovosti življenja pri bolnikih, starejših od 60 let, ki bivajo v hospicu in negovalni ustanovi.

Metode. V raziskavi je sodelovalo 111 ljudi, med njimi 60 bolnikov, ki so bivali v hospicu in 51 bolnikov, ki so bivali v negovalni ustanovi. Uporabljena je bila metoda diagnostične ankete oziroma tehnika anketiranja, ki je obsegala 18 lastnih vprašanj in lestvico za oceno kakovosti življenja WHOQOL-AGE, sestavljeno iz 13 vprašanj.

Rezultati. Statistično značilna povezava se je pokazala med sobolevnostjo in kakovostjo življenja preiskovancev ($\rho = -0,200$; $p < 0,0354$). Več ko je bilo entitet bolezni, nižja je bila kakovost življenja. Ugotovljeno je bilo tudi, da daljše kot je bilo obdobje nastanka osnovne bolezni, višja je bila kakovost življenja anketirancev. To je veljalo za obe splošne ocene kakovosti življenja ($\rho = 0,337$; $p < 0,0003$) oz. kakovost življenja polestvice 1 ($\rho = 0,440$; $p < 0,0001$) in kakovost življenja podlestvice 2 ($\rho = 0,191$; $p < 0,0445$).

Zaključek. Terapevti si morajo prizadevati, da se bolnik čim prej prilagodi novemu kraju bivanja, kar bo privedlo do večje kakovosti bolnikovega življenja. Ključnega pomena je zgodnje prepoznavanje prisotnosti soobolenosti ter uvedba ustreznih metod zdravljenja, ki bodo ublažile simptome in izboljšale kakovost življenja.

Ključne besede: hospic, zavod za oskrbo in zdravljenje, kakovost življenja, sobolevnost

The quality of life and the multiple morbidity in patients of institutional care

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Introduction. Every year, the standard of care for patients in nursing homes and hospices increases, which also improves the patients' quality of life. Most frequently, economic conditions contribute greatly to the well-being of the patients. The quality of life is greatly influenced by the level of awareness, activity, richness of experiences, creativity, participation in family and social life. The ailments in elderly people may be a consequence of the aging processes, but they are also causally related to the existing diseases, the number of which often increases with the advancement of age. The aim. The aim of the study was to assess the impact of multiple diseases on the assessment of the quality of life in patients over 60 years of age staying in the Hospice and the Care and Treatment Institution.

Material and methods. 111 people participated in the research, including 60 patients staying in the hospice department and 51 patients staying in the department of the Care and Treatment Institute. The research used the method of diagnostic survey as a survey technique, which consisted of 18 own questions, and the WHOQOL-AGE quality of life assessment scale, consisting of 13 questions.

Results. A statistically significant relationship was demonstrated between the multi-morbidity and the quality of life in the subjects: $\rho = -0.200$; $p < 0.0354$. The more disease entities there were, the lower was the quality of life. It was also found that the longer was the period of onset of the underlying disease, the higher was the quality of life of the respondents. This was true for both the overall quality of life $\rho = 0.337$; $p < 0.0003$ and the quality of life of the subscale 1 $\rho = 0.440$; $p < 0.0001$ and of the subscale 2 $\rho = 0.191$; $p < 0.0445$.

Discussion and conclusions. The therapeutic team should strive for the patient to adapt to the new place of stay as soon as possible, which will result in higher quality of the patient's life. Multiple diseases should be identified as soon as possible and appropriate treatment methods should be implemented, which will alleviate symptoms and improve the quality of life.

Keywords: hospice, nursing and treatment institution, quality of life, multi-morbidity

Primerjava aplikacij za pomoč starejšim odraslim

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Uvod. Pandemija COVID-19 je korenito spremenila obstoječo infrastrukturo medicinske prakse, saj so se klinike in bolnišnice po vsem svetu osredotočile na virtualne vire za pomoč pri oskrbi pacientov. Tehnologija je postala ključnega pomena za naše počutje. Cilj tega prispevka je predstaviti primerjavo aplikacij, namenjenih starejšim odraslim pri njihovih osnovnih življenjskih dejavnostih.

Metode. Izvedena je bila kvantitativna deskriptivna raziskovalna metoda s kritičnim pregledom angleške znanstvene in strokovne literature z uporabo naslednjih zbirk podatkov DiKul, PubMed, Researchgate in ScienceDirect. Literatura smo iskali od marca 2021 do aprila 2021. Merila za vključitev literature so bili članki, objavljeni med letoma 2016 in 2021, z odprtim in prostim dostop ter članki z jasno opredeljenimi cilji in metodami v angleškem jeziku. Merila za izključitev so bili članki, objavljeni pred letom 2016, članki s plačljivim dostopom in članki, ki niso bili v angleškem jeziku. Pregledali smo 51 člankov in jih izločili 35, ki niso ustrezali našim merilom. Vključili smo 16 člankov. Podatki so bili analizirani z metodo analize vsebine.

Rezultati. Rezultati so pokazali, da na trgu obstaja nekaj različnih aplikacij za različne vrste bolezni. Vse so zasnovane tako, da olajšajo življenje starejšim. Obstajajo dokazi, da aplikacije pomagajo tako starejšemu prebivalstvu, kot tudi zdravstvenim delavcem. Prednosti pregledanih aplikacij so pomagati zmanjšati stopnjo pozabljanja in napak pri jemanju zdravil ter povečajo neodvisnost pri upravljanju z zdravili. Vendar pa imajo trenutno aplikacije, ki so na voljo na mobilnih telefonih, očitne pomanjkljivosti v njihovi količini, obsegu storitev in izgledu. Rezultati kažejo, da je v vsaki aplikaciji, ki smo jo vključili v ta pregled, mogoče izboljšati.

Razprava in zaključki. Pomembno je premostiti vrzel med starejšimi odraslimi in sodobnimi tehnologijami, ki jo dosežemo z aplikacijami zasnovanimi posebno za starejšo populacijo, ki temeljijo na čustveni ravni, ter z zagotavljanjem ustreznega programa za usposabljanje starejše populacije za uporabo pametnih telefonov. V prihodnosti bi se morale raziskave osredotočiti na testiranje mobilnih zdravstvenih intervencij pri bolnikih s tveganjem, zaradi slabega upoštevanja navodil in obvestil ter standardizacije opozoril in protokolov za zdravstvene delavce.

Ključne besede: starejši odrasli, tehnologija, mobilna aplikacija, IKT

Uporabnost mobilnih aplikacij za spremljanje sladkorne bolezni pri pacientih

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Uvod. Uporaba sodobne in formacijsko komunikacijske tehnologije je zelo vplivno orodje za spodbujanje zdravega načina življenja. V zadnjih letih se je uporaba le-te močno povečala tudi pri starejši populaciji. Socialni mediji so odprli vrata informacijam in bistveno spremenili način komuniciranja. Mobilne aplikacije, so le eden od številnih socialnih medijev, ki so na voljo pacientom in postajajo standard izobraževanja pacientov. Gre za majhne specializirane programe, prenesena na mobilno napravo, namenjene uporabi pri diagnosticiranju, obravnavi in preventivi bolezni. Prednosti so v dostopnosti, enostavnosti in sposobnosti doseči svetovno populacijo. Novi mediji imajo v vsakdanjem življenju vse večjo vlogo tudi pri starejših. Število pacientov s sladkorno boleznijo je v zadnjih 40-ih letih naraslo za več kot 300 milijonov. Ta bolezen lahko vodi do mnogih resnih zapletov. V zadnjih letih se je število mobilnih aplikacij za paciente s sladkorno boleznijo zelo povečalo. Prav uporaba teh mobilnih aplikacij bi lahko predstavljala potencialno rešitev za obravnavo pacientov.

Metode. Uporabljena je bila deskriptivna metoda dela s pregledom literature. Iskanje literature je potekalo v podatkovnih bazah CINAHL, Medline in ScienceDirect s pomočjo iskalnika DiKul. Vključeni so bili recenzirani članki objavljeni po letu 2015 in napisani v angleškem jeziku. Uporabljene so bile kombinacije naslednjih ključnih besed: mobile application, diabetes in usability.

Rezultati. Raziskave kažejo na pozitivno oceno uporabnikov glede uporabnosti predvsem pri enostavnosti in učinkovitost mobilnih aplikacij. Prepoznane so kot sredstvo za spodbujanje pri večji samooskrbi, izboljšanju obvladovanja bolezni, omogočanju lažjega doseganja ciljev ter povečanju motivacije pri spremembi načina življenja. Uporabnost se je pokazala tudi pri zmanjšanju povprečne vrednosti krvnega sladkorja in zmanjšanju hipoglikemičnih dogodkih. Ovire pri uporabi mobilnih aplikacij predstavljajo predvsem splošno ne zavedanje o uporabi aplikacij kot zdravstvenem orodju, dostopnost do interneta, tehnološka pismenost ter ročno vnašanje vrednost krvnega sladkorja.

Razprava in zaključek. Pacientom s sladkorno boleznijo uporaba mobilnih aplikacij pomeni novost, na začetku celo zahtevno opravilo. Hkrati pa predstavlja možnost za boljše obvladovanje bolezni, izboljšanje zdravega načina življenja ter večji nadzor nad nivojem krvnega sladkorja. Vzrok za manj pogosto uporabo mobilnih aplikacij je predvsem pomanjkanje tehnološkega znanja pri starejših ter pridružene fiziološke omejitve (slabše ročne spretnosti, oslavljen vid, zmanjšana kognitivna funkcija). Glede na staranje populacije je potrebno prepoznati mnenja in stališča starejših uporabnikov ter jih upoštevati pri razvoju njim namenjenih mobilnih aplikacij.

Ključne besede: sladkorna bolezen, zdravstvene aplikacije, uporabnost, samooskrba

Usability of mobile applications to support patients with diabetes

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Introduction. The use of modern information communication technology is a powerful tool for promotion of a healthy lifestyle. In the last few years the use of technology has increased even among elderly people. Social media has made information more accessible and changed the course of communication. Mobile applications are just one of many tools that the patients can use, and they are becoming more important in patient education. These applications are small specialized programmes that are used to diagnose, treat and prevent diseases. They are accessible, easy to use and have the potential to reach global population. Social media now plays an important role even with the elderly. The number of patients that are suffering from diabetes has increased for over 300 millions over the past 40 years. Diabetes can cause many serious complications. Lately, more and more mobile applications for diabetic patients have become available, and they could represent a potential solution to treating patients with diabetes.

Methods. The descriptive method of work with literature review was used. The search through the literature was conducted by using the following databases: CINAHL, Medline and ScienceDirect using DiKul search engine. The articles included in the review had to be written in English and published after 2015. The keywords “mobile application”, “diabetes” and “usability” with Boolean operators “AND” and “OR” were used.

Results. The researches show that in the users’ opinions mobile applications are efficient and easy to use. Patients see them as tools to promote better self-care, they make it easier to keep the disease under control, help to achieve their goals and motivate them towards a healthier lifestyle. There have also been positive results with keeping the blood sugar levels more stable and patients suffering from less hypoglycemic episodes. The biggest obstacles for using mobile applications are: not seeing the applications as a legitimate tool for healthcare, internet accessibility, internet literacy and manual data entering.

Discussion and conclusion. Patients with diabetes see the mobile applications as something new, sometimes even difficult to use. But at the same time they represent a possibility for better disease management, a way to a healthier lifestyle and better blood sugar levels control. Internet illiteracy and physical incapacities (sight problems, problems with hands, cognitive impairment) are the most common causes for patients to not use the applications. The world population is aging, so it is very important to take older users’ opinions and perspectives into consideration when developing new applications and systems.

Keywords: diabetes, mobile health application, usability, self-management

Comparison of applications used to help the elderly

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Introduction. The COVID-19 pandemic has radically changed the existing infrastructure of medical practice, as clinics and hospitals around the world have focused on virtual resources to help care for patients. Technology has become critical to our wellbeing. Specifically, the technology for older adults is addressed for content that the elderly have the most needs in. The aim of this literature review is to present a comparison of applications designed to help older adults in their basic life activities.

Methods. A quantitative descriptive research method with critical review of English scientific and professional literature was performed using the following databases DiKul, PubMed, Researchgate and ScienceDirect. The literature search took place from March 2021 to April 2021. Literature inclusion criteria were articles published between 2016 and 2021, open and free access and articles with clearly defined objectives and methods in English language. The exclusion criteria were articles published before 2016, articles with paid access and articles that were not in English language. We reviewed 51 articles and excluded 35 articles that did not match our criteria. We included 16 articles. Data was analyzed using a content analysis method.

Results. The results showed that there are a few different apps for different conditions in the market. All of them are designed to make life easier for elderly. There is evidence that apps are helping elderly population as much as they help health workers. The benefits of reviewed apps are to help reduce rates of forgetting and of medication errors, and also increases perceived independence in managing medication. However, currently available applications for smart mobile terminals used by the aged, which serve as the important carrier of various internet services for elderly people, have obvious defects in quantity, service range, and charm. Results show that in any app that we included in this review there is room for improvement.

Discussion and Conclusions. It is important to bridge the gap between the elderly people and modern technologies, which is achieved through more products designed based on emotional care and construction, and by providing an appropriate training program for the elderly population to use a smartphone. In the future, research should focus on testing mobile health interventions in patients at risk for poor adherence and on standardizing alerts and protocols for clinicians.

Keywords: elderly, technology, mobile app, ICT

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