

HEALTH OF THE WORKING-AGE POPULATION

ZDRAVJE DELOVNO AKTIVNE POPULACIJE



SCIENTIFIC AND PROFESSIONAL
INTERNATIONAL CONFERENCE

ZNANSTVENA IN STROKOVNA
MEDNARODNA KONFERENCA

Zbornik povzetkov
Book of Abstracts

*health of the working-age population
zdravje delovno aktivne populacije*



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Inštitut za medicino in šport

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dravje delovno
aktivne populacije
Health of the working-age
population

*4. znanstvena in strokovna konferenca
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Uvodne misli

Preface

Zdravje je vse bolj javni interes, interes družbe. Sodobna družba si vse bolj prizadeva z različnimi ukrepi ozaveščati ljudi o zdravem načinu življenja, kar je svojevrsten paradoks, saj ravno sodobni način življenja botruje slabšanju zdravja populacije. V delovno aktivnem obdobju je tako za posameznika kot za družbo pomembno ohraniti zdravje. Pri tem pa nimamo v mislih samo fizičnega, temveč tudi duševno zdravje, saj se tesno prepleta z delovnim in prostočasnim življenjem.

Telesna (ne)aktivnost, nepravilna prehrana in prehranske navade ter nenazadnje biološke in sociokulturne razlike vplivajo na zdravje. Ko je to oslABLJENO, prinaša številne posledice za skupnosti, saj omenjene težave vplivajo na življenje pacientov, njihovih družin, delovnih organizacij in širše družbe.

Strokovnjaki raziskujejo, kako izboljšati, zagotavljati in ohraniti zdravje delovno aktivne populacije, sodobne države pa podpirajo izsledke raziskav z zakonodajo, ki nalaga delodajalcem, da temu področju namenijo posebno pozornost. Kako je v praksi? Katere so poglobitve težave in izzivi reševanja le-teh? Koliko nam lahko pri odpravljanju težav pomagajo informacijsko-komunikacijske tehnologije in koliko »zdrava pamet«?

Na omenjena vprašanja skuša odgovoriti pričujoča publikacija, ki je nastala v okviru znanstvene in strokovne konference *Zdravje delovno aktivne populacije*. V prispevkih avtorji predstavljajo aktualne študije in sodobne pristope, ki se uporabljajo v praksi na področju zdravstvene preventive in promocije zdravja delovno aktivne populacije.

Publikacija je namenjena strokovnjakom iz prakse, raziskovalcem, visokošolskim učiteljem in študentom, ki se posredno ali neposredno ukvarjajo s področjem javnega zdravja in z njim povezanih strok.

Uredniški odbor

H *health* is increasingly becoming a matter of public interest, an interest of the society. By taking different measures, the modern society is striving to make people aware about a healthy lifestyle, which is a peculiar paradox, as the modern lifestyle is responsible for health declining in the first place. It is crucial, both for an individual and for the society, to preserve health of the working population. Not only physical health, but also mental health, are closely related to the worktime and the free-time of an individual.

Physical (in)activity, poor nutrition and nutritional habits and, all in all, biological, social and cultural differences influence health. Impaired health leads to several social problems, as it affects the patients, their families, working organizations and society as a whole.

Experts are exploring different ways to improve, ensure and maintain health of the working population, with the support of the modern states, who by law obligate the employers to put a special consideration on this matter. What is the reality? Which are the primary issues and the challenges when solving them? How much should we rely on the information and communication technology and how much on “the common sense” when solving these issues?

These questions are addressed in this publication, which was created under the scientific and professional conference *Health of the working population*. The authors of the articles present the current studies and innovative approaches used in practice, regarding preventive and promoting activities related to health of the working population.

This publication is intended for experts of the medical practice, researchers, university lecturers and students, whose work is directly or indirectly associated to public health professionals and related professions.

The Editorial Board

Vabljeni predavatelji Invited Lecturers

Urška Blaznik je študirala na Univerzi v Ljubljani, kjer je končala diplomski študij na Fakulteti za kemijo in kemijsko tehnologijo kot kemik/biokemik, na isti fakulteti končala Specializacijo iz sanitarne kemije in doktorirala leta 2015 na Medicinski fakulteti. Kot analizni kemik je leta 1993 pričela z delom v sanitarno-kemijskem laboratoriju regionalnega Zavoda za zdravstveno varstvo v Kranju. Dvanajst let kasneje se je pridružila področju varnosti živil in ocenjevanju tveganja za zdravje ljudi na Nacionalnem inštitutu za javno zdravje v Ljubljani, kjer dela kot zdravstvena raziskovalka. Njena področja raziskovanja so povezana z javnim zdravjem in prehrano, bolj podrobno z oceno izpostavljenosti kemijskim dejavnikom tveganja v živilih, varnostjo živil in v zadnjem obdobju s preoblikovanjem živil in raziskovanju prehranskih vnosov ter zaužitih količin živil v populaciji. Doktorirala je s področja kumulativnega delovanja nekaterih pesticidov preko sadja in zelenjave na zdravje otrok. Je aktivna članica Delovne skupine Ministrstva za zdravje za pripravo načrta za zmanjševanje vnosa soli pri prebivalcih Slovenije, deluje kot strokovna podpora Ministrstvu za zdravje in Zdravstvenemu inšpektoratu RS na področju varnosti sestavin prehranskih dopolnil in je aktivna pri razvoju sistema nutrivigilance v Sloveniji. Je članica Sveta za varno hrano Ministra za kmetijstvo, gozdarstvo in prehrano ter članica Delovne skupine za trditve na živilih in nova živila pri istem ministrstvu. Tesno sodeluje z Evropsko agencijo za varnost hrane kot namestnica članice v Svetovalnem forumu in Ekspertni delovni skupini za podatke o zaužitih količinah živil. Kot aktivna raziskovalka sodeluje pri evropskih in nacionalnih projektih ARRS in ciljnih raziskovalnih projektih s področja prehrane in varnosti živil (Transmaščobe, Industrijska konoplja, EU Menu študija) in sodeluje pri razvoju metodologije ocenjevanja kumulativnih vplivov kemikalij v živilih, v okviru evropskega projekta EuroMix. Pogosto se udeležuje izobraževalnih, svetovalnih, informativnih in pogovornih oddaj v nacionalnih medijih. Je mama dveh gimnazijcev, v prostem času z možem in prijatelji v najboljši meri sledi zdravemu življenjskemu slogu.

Urška Blaznik studied at the University of Ljubljana, where she completed graduate studies at the Faculty of Chemistry and Chemical Technology as a chemist / biochemist, at the same University she completed specialization in the sanitary chemistry program and finished PhD study at the Medicine Faculty. As an analytical chemist, she started to work in chemical laboratory of the regional Institute of Public Health in Kranj. Twelve years later, she joined the Department for food safety and risk assessment at the National Institute for Public Health in Ljubljana, where she works as a senior health researcher. Her areas of research are related to public health and nutrition, more detailed to the exposure assessment of chemical risk factors in food, food safety and in the last period to the food reformulation and food consumption data. Her PhD theme was cumulative risk assessment of some pesticides via fruit and vegetables for children's health. She is an active member of the Working Group at the Ministry of Health to prepare a plan to reduce salt intake in the population of Slovenia and an expert support to the Ministry of Health and the Health Inspectorate in the area of safety of the ingredients of food supplements. She is taking part in developing nutravigilance system in Slovenia. She is a member of the Council for Food Safety of the Minister of Agriculture, Forestry and Food and member of the Working Group on claims and novel food at the same ministry. She works closely with the European Food Safety Authority in the Advisory Forum and in the Expert Working Group for food consumption data. As an active researcher participates in European and national projects and targeted research projects in the field of nutrition and food safety (trans fats, hemp, EU Menu study) and continues to be part of developing methodology of evaluation of the cumulative effects of chemicals in food in the European project EuroMix. Frequently she attends educational, advisory, informational and public programme in the national media.

Metoda Dodič Fikfak je predstojnica Kliničnega inštituta za medicino dela, prometa in športa Univerzitetnega kliničnega centra Ljubljana vse od leta 2000. Po diplomu na ljubljanski Medicinski fakulteti in opravljenem magistraturi je doktorirala iz epidemiologije delovnega okolja na University of Massachusetts, Lowell v Združenih državah. Vodila je Zdravstveni dom v Postojni in Inštitut za socialno medicino v Ljubljani. Ima več kot 20 let izkušenj z delom na področju medicine dela, javnega zdravja, menedžmenta v zdravstvu ter aplikativne znanosti. V letih 1999-2000 je vodila projekta Phare – Razvoj slovenskega sistema zdravja in varnosti pri delu in Nacionalne smernice za azbest. Sodeluje pri številnih evropskih in domačih projektih in raziskovalnih nalogah. Na ALUO uči ergonomijo, na Medicinski fakulteti v Ljubljani pa epidemiologijo delovnega okolja. Poleg tega ima več kot 60 drugih predavanj letno. Že več kot 15 let aktivno sodeluje pri strokovnih aktivnostih za prepoved uporabe in širitev osveščenosti o nevarnosti uporabe azbesta v Sloveniji in svetu. Je avtorica številnih raziskav na tem področju. Zadnje leta s konkretnimi podatki opozarja na zdravstvene posledice prestrukturiranja gospodarstva na zdravje ljudi. Pod njenim vodstvom se inštitut intenzivno strokovno razvija in širi svoje delovanje na nova strokovna področja. Za svoje delo je prejela več nagrad: Harriet Hardy Award, Public Health and Human Rights Association iz ZDA ji je leta 2006 podelil mednarodno nagrado, v Sloveniji pa je prejela nagrado roža mogota. Je predsednica strokovnega sveta humanitarnega društva bolnikov zaradi

azbesta, članica številnih stanovskih in strokovnih skupin, združenj, komisij in strokovnega kolegija ter podpredsednica strokovnega sveta za medicino dela, prometa in športa itd.

Metoda Dodič Fikfak has been the head of the University Medical Centre in Ljubljana OMTS Clinical Institute since 2000. After graduation and gaining a master's at the Faculty of Medicine in Ljubljana she received her Ph.D. in work environment epidemiology at the University of Massachusetts Lowell, USA. She led the Health Centre in Postojna and the Institute for Social Medicine in Ljubljana. She has more than 20 years of work experience in medicine, public health, healthcare management and applied sciences. In 1999-2000 she led the Phare project "Development of the Slovenian Occupational Safety and Health Management System" and the project "Asbestos National Guidelines". She is involved in various national and European projects and research tasks. She teaches Ergonomics at the UL Academy of Fine Arts and Design and Work Environment Epidemiology at the Faculty of Medicine. In addition, she has over 60 other lectures annually. For more than 15 years she has been involved in activities related to asbestos prohibition and raise of awareness about the dangers of its use in Slovenia and abroad. She is the author of numerous studies on the subject. On the basis of evidence gathered during the last years, she addresses how economic restructuring affects the human health. Under her leadership, the Institute is intensively developing and expanding its functioning into new areas of expertise. She has received several awards for her work: the Harriet Hardy Award, she received an international prize from the USA Public Health and Human Rights Association in 2006, while in Slovenia she received the "Roža mogota" award. She is the chair of the humanitarian Association of Patients Exposed to Asbestos Expert Council, member of numerous professional and peer groups, associations, committees, and Vice-president of the OMTS Expert Council, etc.

Charlotte Edwardson je na britanski univerzi Loughborough diplomirala iz športnih ved (2004), magistrirala (2005) in doktorirala (2010) pa iz telesne aktivnosti in zdravja. Kot znanstvena sodelavka je bila v obdobju 2005-2010 zaposlena na Institute of Youth Sport, Loughborough University, kjer se je posvečala vrednotenju telesne aktivnosti in pobudam za zdravje mladih. Strokovno delo je nadaljevala na področju preprečevanja sladkorne bolezni. Kot znanstvena sodelavka je bila zaposlena na University Hospitals of Leicester (2010-2013), kjer je izvedla številne pomembne raziskave o povečevanju telesne dejavnosti in zmanjševanju sedentarnega vedenja pri osebah z visokim tveganjem za sladkorno bolezen tipa 2. Leta 2013 je pričela poučevati na Centru za raziskovanje sladkorne bolezni Univerze v Leicesterju kot predavateljica za področje telesne aktivnosti, sedentarnega vedenja in zdravja. Izredna profesorica je postala leta 2016. Njeno raziskovalno delo se osredotoča na razumevanje vloge telesne dejavnosti in sedentarnega načina obnašanja pri preprečevanju in obvladovanju kroničnih bolezni, še posebej sladkorne bolezni tipa 2. Le-to vključuje eksperimentalne in epidemiološke študije ter intervencijske študije vedenjskih sprememb, o čemer je objavila več kot 50 prispevkov. Trenutno ima na razpolago 5 milijonov € raziskovalnih sredstev, prejetih s strani Nacionalnega inštituta za zdravje, Evropske Komisije in Zdravstvenega Sveta.

Charlotte Edwardson completed a BSc in Applied Sports Science (2004) and MSc (2005) and PhD (part time, 2010) in Physical Activity and Health, all from Loughborough University, UK. Alongside her PhD she worked as a Research Associate (2005-2010) for the Institute of Youth Sport, Loughborough University where she specialised in the evaluation of physical activity and health initiatives in young people. Following this she moved into the area of diabetes prevention and worked as a Research Associate, University Hospitals of Leicester, UK (2010-2013), on several large randomised controlled trials focused on increasing physical activity and reducing sedentary behaviour in people with a high risk of type 2 diabetes. In 2013 she was appointed Lecturer, and subsequently Associate Professor in 2016, in Physical Activity, Sedentary Behaviour and Health in the Diabetes Research Centre, University of Leicester, UK. Her research focuses on understanding the role of physical activity and sedentary behaviour in the prevention and management of chronic diseases, particularly type 2 diabetes. This encompasses experimental, epidemiological and behaviour change intervention studies. She has published more than 50 papers in these research areas and currently holds research grants (totalling >£5 million) from the Medical Research Council, National Institute for Health Research, Department of Health and the European Commission.

Nada Gosić je redna profesorica na Medicinski fakulteti in Fakulteti za zdravstvene študije Univerze na Reki, magistrica političnih in družbenih ved in doktorica filozofije. Je avtorica štirih knjig: Bioetička edukacija (Bioethics Education), Pergamena, Zagreb, 2005, Bioetika in vivo (Bioethics in Vivo), Pergamena, Zagreb 2005, Bioetičke perspective (Bioethical perspectives), Pergamena, Zagreb 2011 in Liječnici-preteče bioetike (Physicians-forerunners of bioethics), Pergamena, Zagreb, 2015. Je tudi avtorica številnih znanstvenih in strokovnih del o medicinski etiki, bioetiki in etiki v zdravstveni negi. Bila je vodja raziskovalnih projektov Bioetika in politika (Bioethics and Policy) ter Bioetika in kultura (Bioethics and Culture), ki jih je podprlo Ministrstvo za znanost, izobraževanje in šport Republike Hrvaške.

Nada Gosić, full professor of Medical faculty and Faculty of health studies University in Rijeka, MA in political and social sciences, PhD in philosophy. She is author of four books: Bioetička edukacija (Bioethics Education), Pergamena, Zagreb, 2005, Bioetika in vivo (Bioethics in Vivo), Pergamena, Zagreb 2005, Bioetičke perspective (Bioethical perspectives), Pergamena, Zagreb 2011., and Liječnici-preteče bioetike (Physicians-forerunners of bioethics), Pergamena, Zagreb, 2015. Also she is author of a numbers of scientific and expert works in Medical Ethics, Bioethics and Healthcare Ethics. She was head of the scientific projects Bioetika i politika (Bioethics and Policy), Bioetika i kultura (Bioethics and Culture), realized with the support of the Ministry of Science, Education and Sports of the Republic of Croatia.

Herbert Löllgen vodi zasebno prakso za interno medicino, kardiologijo in športno kardiologijo, hkrati od leta 2008 predava na Gutenbergški univerzi v Mainzu. Njegova primarna raziskovalna področja so: kardiologija, fiziologija, breztežnostna preventivna medicina, telesna aktivnosti in staranje ter preizkusi vzdržljivosti. V letih 1985 – 2008 je bil predstojnik bolnišničnih oddelkov interne medicine, intervencijske kardiologije, intenzivna

nege, pnevmološke športne medicine v Remschaidu in Limburgu ter namestnik predstojnika oddelka za kardiologijo na Univerzi v Freiburgu. Herbert Löllgen je častni predsednik (od leta 2012) in bivši predsednik (2006-2012) nemškega Združenja za športno medicino in preventivo (2006-2012), svetovalec nemškega Olimpijskega komiteja in nemškega zdravniškega društva (preventiva, športna medicina, zloraba drog). Med drugim je član nemškega združenja kardiologov, strokovnega sveta astronautov, ESA, medicinske izbirne komisije za nemški misiji D1 in D2, American College of Cardiology (ACC, FACC) in častni član (gold member) American Heart Association (AHA, FAHA).

Herbert Löllgen owns a private practice for Internal Medicine, Cardiology and Sports Cardiology since 2008 and gives lectures at Gutenberg-University in Mainz. His main research focuses on cardiology, exercise physiology, weightlessness preventive medicine, physical activity and ageing, pre-participation examination. From 1985-2008 he was Head of Department of Internal Medicine, Remscheid Interventional Cardiology, Intensive Care Medicine, Pneumology Sports Medicine, from 1982-85 Head of Department of Medicine and Cardiology at St. Vincenz-Hospital Limburg and from 1978-1982 Vice Head of Department of Cardiology at University of Freiburg. Herbert Löllgen is Honorary President (since 2012) and Past-President (2006-2012) of the German Federation of Sports Medicine and Prevention (2006-2012), Sports Medicine consultant for the German Olympic Sports Society and Consultant to German of Physicians, Berlin (Prevention, Sports Medicine, Drug abuse). Among others Löllgen is member of the German Society of Cardiology, Medical Board of Astronauts, ESA, Medical Selection Board German D1 and D2 Mission, of the American College of Cardiology (ACC, FACC) and American Heart Association (AHA, FAHA) (Gold Member).

A *anne Marie Rafferty* je predavateljica zdravstvene politike in nekdanja dekanja fakultete Florence Nightingale Faculty of Nursing and Midwifery, King's College London ter gostujoča predavateljica na Imperial College's Patient Safety Translational Research Centre. Na Edinburški univerzi je diplomirala iz zdravstvenih ved, na Nottinghamski univerzi je magistrirala iz kirurgije, iz sodobne zgodovine pa je doktorirala na Univerzi v Oxfordu. Prejela je štipendijo Harkness Fellowship za študij zdravstvene politike na Pennsylvanski univerzi, preko Ministrstva za zdravje pa je z lordom Aro Darzijem sodelovala pri nadaljnji fazi revizije britanskega zdravstvenega sistema. Leta 2008 je prejela britanski viteški red poveljnika in bila imenovana v komisijo predsednika vlade o prihodnosti zdravstvene nege in babištva 2009-10 (Future of Nursing and Midwifery 2009-10). Je prejemnica več nagrad, npr. *Nursing Times Leadership Award* (2014) in Health Services Journal Top 100 Clinical Leaders Award (2015), članica združenj Royal College of Nursing, American Academy of Nursing ter uredniškega odbora Parliamentary Review of the Welsh Health and Social Care Service.

Anne Marie Rafferty is Professor of Nursing Policy and former Dean of the Florence Nightingale Faculty of Nursing and Midwifery, King's College London and Visiting Professor at Imperial College's Patient Safety Translational Research Centre. She graduated (BSc) SocSci Nursing Studies (Edinburgh University), MPhil (Surgery) (Nottingham University) and DPhil Modern History from Ox-

ford University. She won a Harkness Fellowship in Health Policy to the University of Pennsylvania and was seconded to the Department of Health to work with Lord Ara Darzi on the Next Stage Review of the NHS. She was awarded a CBE in 2008 and appointed to the Prime Minister's Commission on the Future of Nursing and Midwifery 2009-10 and been recipient of various awards; Nursing Times Leadership Award in 2014 and Health Services Journal Top 100 Clinical Leaders Award in 2015. She holds fellowships from the Royal College of Nursing, American Academy of Nursing and is a member of the Parliamentary Review of the Welsh Health and Social Care Service.

Uroš Rajkovič je izredni profesor za področje informacijskih sistemov na Univerzi v Mariboru, Fakulteti za organizacijske vede. Poučuje predmete Baze podatkov, Sistemi za podporo odločanju, Informatiko v zdravstveni negi in druge. Svoje raziskovanje usmerja predvsem v izgradnjo informacijskih sistemov na področju zdravstvene nege in modeliranju odločitvenega znanja./

Uroš Rajkovič is associate professor in Information Systems at the University of Maribor, Faculty of Organizational Sciences. His courses include Databases, Decision Support Systems, Nursing Informatics and others. His research interests focus mainly on the construction of nursing information systems and decision knowledge modelling.

Saška Roškar je zaposlena na Nacionalnem inštitutu za javno zdravje, kjer se ukvarja s preventivo duševnih motenj in promocijo duševnega zdravja. Že več kot desetletje se intenzivno posveča raziskovanju in preprečevanju samomorilnega vedenja. Sodelovala je v številnih domačih in mednarodnih raziskovalnih projektih, pri razvoju in implementaciji različnih preventivnih programov za preprečevanje samomorilnega vedenja za različne ciljne skupine, sodelovala je v skupini za pripravo Resolucije za Nacionalni program za duševno zdravje. Izkušnje ima s svetovalnim, pedagoškim in raziskovalnim delom. Na Nacionalnem inštitutu za javno zdravje je vključena v različne preventivne in promocijske projekte, sodeluje pa tudi z drugimi inštitucijami, ki so dejavne na tem področju. V sodelovanju z Visoko šolo za zdravstveno nego Jesenice sodeluje pri izvajanju predavanj pri predmetu »Promocija zdravja«, na Oddelku za psihologijo Filozofske fakultete Univerze v Ljubljani pa izvaja predavanja pri predmetu »Psihološka preventiva«. Je svetovalka na mladinskem spletnem portalu TO SEM JAZ. Kot svetovalka je opravljala svetovalno delo v Svetovalnici Fužine, Center za Socialno delo Fužine. Zaključeno ima drugo stopnjo (od treh) izobraževanja za vedenjsko-kognitivnega terapevta. Pridobljen ima evropski certifikat iz psihologije – EuroPsy.

Saška Roškar, PhD in Psychology, is employed at National Institute of Public Health Slovenia. Her field of work includes prevention of mental disorders and promotion of mental health. For more than a decade she has focused intensely on research and prevention of suicidal behaviour. She has participated in numerous national and international research projects, in the development and implementation of various programs for suicidal behaviour prevention for different target groups; she has participated in the expert group for the preparation of the Resolution on the National Programme for Mental Health. She has long-term experience with psychological consulting, university lecturing and research work.

Program konference Conference Programme

7.30–8.45	Registracija udeležencev / Registration <i>Avla dvorane Galea / Galea's Foyer</i>	
8.45–11.00	Otvoritev in plenarna predavanja / Opening and plenary lectures <i>Dvorana Galea, pritličje / Galea Hall, Groundfloor</i>	
11.00–11.20	Odmor s kavo / Coffee break <i>Avla dvorane Galea / Galea's Foyer</i>	
11.20–13.50	Sekcije 1. del / Sections 1 st part	
11.20–12.20	Sekcija 2 – ANG / Section 2 – ENG UPORABA INFORMACIJSKO-KOMUNIKACIJSKE TEHNOLOGIJE NA PODROČJU JAVNEGA ZDRAVJA/ USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN PUBLIC HEALTH <i>Dvorana Galea / Galea Hall</i>	Sekcija 4 – ANG / Section 4 – ENG PROBLEMI IN IZZIVI V PREHRANI DELOVNO AKTIVNE POPULACIJE/ PROBLEMS AND CHALLENGES IN THE NUTRITION OF THE WORKING-AGE POPULATION <i>Dvorana Batana / Batana Hall</i>
12.20–13.50	Sekcija 1 – SLO / Section 1 – SLO DUŠEVNO ZDRAVJE DELOVNO AKTIVNE POPULACIJE/ MENTAL HEALTH OF THE WORKING-AGE POPULATION <i>Dvorana Galea / Galea Hall</i>	Sekcija 3 – ANG / Section 3 – ENG DRUŽBENI IZZIVI OHRANJANJA ZDRAVJA ŽENSK/ SOCIETAL CHALLENGES OF MAINTAINING WOMEN'S HEALTH <i>Dvorana Batana / Batana Hall</i>
13.50–15.00	Odmor s kosilom / Lunch <i>Restavracija GH Portorož / Restaurant of GH Portorož</i>	
15.00–16.00	Sekcije 2. del / Sections 2 nd part	
	Sekcija 1 – ANG / Section 1 – ENG DUŠEVNO ZDRAVJE DELOVNO AKTIVNE POPULACIJE/ MENTAL HEALTH OF THE WORKING-AGE POPULATION <i>Dvorana Galea / Galea Hall</i>	Sekcija 5 – SLO / Section 5 – SLO TELESNA (NE)AKTIVNOST IN NJEN POMEN ZA MIŠIČNO-SKELETNO IN KARDIO-METABOLNO ZDRAVJE DELOVNO AKTIVNE POPULACIJE/ PHYSICAL (IN)ACTIVITY AND ITS ROLE IN MUSCULOSKELETAL AND CARDIO-METABOLIC HEALTH OF THE WORKING-AGE POPULATION <i>Dvorana Batana / Batana Hall</i>

16.00–16.15	Odmor s kavo / Coffee break <i>Avla dvorane Galea / Galea's Foyer</i>	
16.15–17.15	Sekcije 3. del / Sections 3 rd part	
	Sekcija 3 – SLO / Section 3 – SLO DRUŽBENI IZZIVI OHRANJAN- JA ZDRAVJA ŽENSK/ SOCIETAL CHALLENGES OF MAINTAINING WOMEN'S HEALTH <i>Dvorana Galea / Galea Hall</i>	Sekcija 5 – ANG / Section 5 – ENG TELESNA (NE)AKTIVNOST IN NJEN POMEN ZA MIŠIČNO-SKELETNO IN KARDIO-METABOLNO ZDRAVJE DELOVNO AKTIVNE POPULACIJE/ PHYSICAL (IN)ACTIVITY AND ITS ROLE IN MUSCULOSKELETAL AND CARDIO-METABOLIC HEALTH OF THE WORKING-AGE POPULATION <i>Dvorana Batana / Batana Hall</i>
17.15	Zaključek konference / End of the Conference <i>Dvorana Galea, pritličje / Galea Hall, Groundfloor</i>	

SLO – sekcija v slovenskem jeziku

ANG – sekcija v angleškem jeziku

**Konferenčni
prispevki
Conference
Abstracts**

**Plenarna
predavanja
Invited
lectures**

Zdravje slovenskih delavcev Health of Slovenian workers

Metoda Dodič Fikfak

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Izhodišča: Zdravje delavcev opisujemo z odstotkom bolniške odsotnosti (BO) in indeksi: frekvenca, onesposabljanja in resnosti ter poškodbami pri delu, poklicnimi boleznimi, delovno invalidnostjo, oceno tveganja, rezultati preventivnih pregledov in prezentizmom. *Metode:* Uporabili smo podatke iz zbirke podatkov o bolniškem staležu in rezultate študij o prezentizmu, prestrukturiranju in zdravju delavcev ter trpinčenju na delovnem mestu. *Rezultati:* Odstotek BO je najvišji v javni upravi, vojski in rudarstvu. Najvišji je zaradi bolezni mišičnoskeletnega sistema, sledijo poškodbe zunaj dela, bolezni dihal in duševne motnje. Odstotek BO v javnem sektorju je višji od % BO v zasebnem sektorju. Pri kroničnih boleznih je % BO višji pri delavcih, ki delajo v zasebnem sektorju. Po resnosti vseskozi izstopa depresija. Resnost te se je med in po krizi povečala za dvakrat. Raste število primerov BO zaradi reakcije na hud stres in izgorelosti. Zaostrene razmere na delovnem mestu povzročajo večji prezentizem. Med prestrukturiranjem višji odstotek delavcev poroča o slabem zdravju, povišanem krvnem tlaku in depresiji. *Diskusija:* Edini učinkoviti način ohranjanja delovne sile, ki jo bo z leti primanjkovalo, je prilagajanje delovnih mest, sistematično vzgajanje delavcev k razvoju in ohranjanju gibalno športnih aktivnosti in sprememba percepcije dela.

Ključne besede: zdravje delavcev, bolniška odsotnost, prestrukturiranje

Introduction: Workers' health is described by the percentage of sick leave (SL), frequency index, index of temporary disability, severity of the disease, injuries at work, occupational diseases, work disability, risk assessment, results of preventive check-ups and presenteeism. *Methods:* Data from the national sick-leave data collection and results from the studies of presenteeism, the influence of restructuring on workers' health and mobbing in the workplace were used. *Results:* The percentage of SL was the highest in public administration, defence and mining. The highest is due to the musculoskeletal disorders, injuries outside work, respiratory diseases and mental disorders. The percentage of SL is significantly higher in the public sector than in the private sector. In chronic diseases the percentage of SL is higher in workers in the private sector. As for the severity, depression during and after crisis increased twofold. The number of cases due to the reaction to severe stress and burn-out has increased. Harsh working conditions result in greater presenteeism. The percentage of those who report ill-health, have high blood pressure and are depressed is significantly higher during restructuring. *Discussion:* The only effective way of keeping the workforce, which will be lacking in the years to come, is the adaptation of workplaces, systematic education of workers in terms of developing and maintaining sports activities and the need to change the perception of work.

Key words: workers' health, sick leave, restructuring

Učinki intervencij za zmanjševanje količine sedenja na delovnem mestu: Stojmo več na delu (SMaRT Work) The effectiveness of an intervention to reduce sitting time in the workplace: Stand More AT Work (SMaRT Work)

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Izhodišča: Sedeč življenjski slog je povezan s povečanim tveganjem za obolenost in umrljivost. Podatki kažejo, da so pisarniški delavci kar 70 do 85 % delovnega časa v sedečem položaju. Dokazi o učinkovitosti ukrepov za zmanjšanje količine sedenja na delu so omejeni z majhnimi vzorci, kratkim časom spremljanja in pomanjkanjem randomiziranih kontroliranih študij. Kot odziv je bila izvedena klasterska randomizirana kontrolirana študija znotraj projekta SMaRT Work. *Metode:* V raziskavo so bili vključeni pisarniški delavci Ministrstva za zdravje, ki so bili po pisarnah (klastrih) razvrščeni v intervencijsko ali kontrolno skupino. Intervencijska skupina je prejela po višini nastavljivo mizo in tehnike za spremembe navad. Podatki so bili zajeti na začetku študije ter po 3, 6 in 12 mesecih. Primarni cilj je bilo zmanjšanje objektivno izmerjene količine sedenja na delu. Sekundarni cilje je bil ovrednotiti objektivno količino gibalne aktivnosti, biomarkerje, z delom povezano zdravje ter psiho-socialne kazalce. *Rezultati:* Vključenih je bilo 37 pisarn (146 pisarniških delavcev) od tega je bilo 19 pisarn (77 delavcev) razvrščenih v intervencijsko skupino in 18 pisarn (69 delavcev) v kontrolno skupino. Predstavljeni bodo rezultati po 3, 6 in 12 mesecih spremljanja vseh parametrov. *Zaključki:* To bo prva polno podprta, dolgotrajna randomizirana kontrolirana študija učinkov intervencij za zmanjševanje količine sedenja na delu v Angliji in v Evropi nasploh. Študijo je financiralo ministerstvo za zdravje.

Gljučne besede: sedenje, stanje, delovno mesto, randomizirana kontrolirana študija

Introduction: Sedentary behaviour is associated with an increased risk of morbidity and mortality. Office workers spend 70-85 % of work hours sedentary. Evidence on workplace interventions for reducing sitting is limited by small samples, short follow up and a lack of randomised controlled trials (RCTs). In response, the SMaRT Work intervention was developed and tested in a clus-

ter RTC. *Methods:* Office workers within the National Health Service were recruited and their office group randomised to either intervention or control. The intervention group received a height-adjustable workstation and supporting behaviour change techniques. Data were collected at baseline, 3, 6 and 12 months. Primary outcome: reduction in objectively measured sitting at work. Secondary outcomes: objectively measured physical activity, biomarkers, work-related health and psycho-social measures. *Results:* 37 office clusters (146 office workers) were recruited. 19 office clusters (77 office workers) were randomised to receive the intervention and 18 (69 office workers) to control. The 3, 6 and 12 month follow up results for all outcome measures will be presented. *Conclusions:* This is the first fully powered, longer term randomised controlled trial of a workplace intervention to reduce sitting time to be conducted in the UK and Europe. The Department of Health funded this research.

Key words: Sitting, standing, workplace, randomised controlled trial

Gibalna/športna aktivnost, telesni fitness in preventiva: pomen za delovno aktivno populacijo

Physical Activity, Physical Fitness and Prevention: Role for the Working Population

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Izhodišča: Gibalna neaktivnost in podaljševanje dnevne količine časa pred zasloni predstavlja naraščajoči zdravstveni problem delovno aktivne populacije kakor tudi splošen problem prebivalstva širom sveta. To imenujemo sindrom pomanjkanja gibalne/športne aktivnosti. Na drugi strani številne študije in tudi meta analize potrjujejo pozitivne učinke redne gibalne/športne aktivnosti (GŠA). *Diskusija:* Redna GŠA je danes široko sprejeta kot eden najpomembnejših dejavnikov za ohranjanje ali izboljšanje zdravja ter preprečevanje številnih nenalezljivih bolezni. GŠA zmanjšuje tveganje za obolevnost in umrljivost zaradi srčno-žilnih bolezni kakor tudi vseh vzrokov. Posledično je GŠA temelj preventivnega delovanja in zdravljenja številnih bolezni ter tako izboljšuje kakovost življenja in življenjsko dobo. GŠA zmanjšuje posledice dolgotrajnega sedenja in sedentarnega življenjskega sloga ter deluje kot zdravilo: ima številne indikacije, nelinearno krivuljo povezanosti med količino in učinki, številne telesne in psihosomatske učinke, ter malo stranskih učinkov in kontraindikacij. Podobne učinke lahko pripišemo telesnemu fitnessu, ki ga lahko opredelimo s pomočjo merjenja največje moči, največje porabe kisika ali drugimi gibalnimi testi. GŠA je torej večnamensko zdravilo za preprečevanje in zdravljenje različnih bolezni. *Zaključek:* obstaja široko sprejeto stališče in prepričljivi dokazi o pozitivnih učinkih GŠA, vključujoč vsakodnevne aktivnosti, pri ohranjanju zdravja delovno aktivne populacije. Za ohranjanje in izboljševanje zdravja je ključno: ne kajenje, redna GŠA, zdrava prehrana in normalna telesna teža.

Ključne besede: kakovost življenja, prevention, telesna aktivnost, fitness.

Introduction: Physical inactivity and increasing daily screen time is an emerging health problem within the working population as well in the general population world wide. This is called the exercise deficiency syndrom (EDS). On the other hand a large number of single studies as well of metaanalyses strongly support the positive health effects of regular physical activity. *Discussion:* Regular physical activity (PA) is now widely accepted as one of the most important factors to maintain or improve health and to prevent numerous non-communicable diseases. PA reduces risks of all-cause- and cardiovascular morbidity, mortality. Therefore, PA is a cornerstone in prevention and therapy of many diseases thus improving quality of life and longevity. PA also counteracts the effects of sitting time and sedentary lifestyle (EDS). PA acts like a drug: there are many indications, a non-linear dose-response curve, many somatic and psychosomatic effects, few side effects and contraindications. Similar results can be observed for physical fitness assessed by maximal watt or Vo2 max in exercise testing. PA therefore is the real polypill for prevention and therapy of many diseases. *Conclusion:* There is now a general agreement and convincing evidence that regular PA including daily life activities are essentials for maintaining health in the working age population. For staying health and preserving health, everybody should reduce or avoid the four main risk factors: no smoking, regular PA, healthy diet and normal body weight.

Key words: quality of life, risk, prevention, physical activity, fitness

Skrb za delovno okolje, skrb za zdravje in dobro počutje zaposlenih v zdravstvu

Caring for the work environment, caring for the health and wellbeing of the health workforce

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Delo prinaša koristi, a obenem tudi tveganja. Ta prispevek izpostavlja dokaze o pomembnosti vpliva delovnega okolja na dobro počutje zaposlenih kot tudi njegovo vlogo v zagotavljanju pozitivnih izidov za paciente in medicinske sestre. Predstavlja dokaze skozi ključne elemente okolja, kot je na primer vprašanje kadrovske zasedbe in vpliva le-te na izide povezane z medicinsko sestro, pacientom in organizacijo. Raziskuje možne intervencije, ki jih je mogoče implementirati z namenom izboljšanja dobrega počutja zaposlenih in kakovosti dela ter delovnega okolja. Nenazadnje, identificira mehanizme in vzvode politike, ki se lahko uporabijo za izboljšanje kakovosti delovnega okolja ter s tem povezane politične, praktične in sistemske prednosti.

Ključne besede: delovno okolje; kadrovska zasedba; kakovost dela; politika

Work brings benefits as well as hazards. This paper considers the evidence on the importance of the work environment for staff well-being as well as its role in mediating better outcomes for patients and nurses. It reviews the evidence on key elements of the environment, -such as staffing and the impact of variations in staffing on nurse, patient and organisational outcomes. It explores the interventions that can be implemented to improve staff well-being and the

quality of the work and practice environment. Finally, it identifies the mechanisms and policy levers that can be used to drive up the quality of the practice environment and the policy, practice and system benefits associated with doing so.

Key words: work environment; staffing; quality of work; policy

**Sekcija/Section
Duševno zdravje
delovno aktivne
populacije**

**Mental Health
of the Working
Population**

Vabljeno predavanje Invited lecture

Duševno zdravje delovno aktivne populacije v Slovenije: glavni izzivi danes in jutri Mental health of work-active population in Slovenia: main challenges today and tomorrow

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Duševno zdravje sodi med najpomembnejše javnozdravstvene vsebine saj lahko le duševno zdrav posameznik razvija svoje sposobnosti, se spoprijema s stresom v vsakdanjem življenju ter učinkovito in plodno prispeva v svojo skupnost. V Sloveniji nimamo strateškega dokumenta na področju duševnega zdravja saj Predlog Resolucije Nacionalnega plana za duševno zdravje 2014–2018 žal še ni sprejet. Se pa nekatere prednostne vsebine kljub temu izvajajo v obliki projektne dela na nacionalni ali regionalni ravni. Najbolj prevalentne težave na področju duševnega zdravja odrasle populacije so depresija, anksiozne in stresne motnje ter duševne in vedenjske motnje zaradi uživanja alkohola. V letih 2008–2015 je za tretjino upadlo število prvih obiskov (primarna zdravstvena raven) zaradi depresivne epizode, poraslo pa je število prvih obiskov zaradi reakcije na hud stres in prilagoditvene motnje. Podoben trend je pri končnih diagnozah zaznati na sekundarni zdravstveni ravni. Velik javnozdravstveni problem v Sloveniji ostaja tudi umrljivost zaradi samomora, ki pa v zadnjih dveh desetletjih kaže trend upadanja pri obeh spolih in vseh starostnih skupinah. Poseben izziv dodatno predstavlja stigmatiziranost duševnih težav in negativna stališča do iskanja pomoči. Slednje je še posebej izraženo pri moških, mlajših osebah in osebah iz vzhodne kohezijske regije, kjer so kazalniki duševnega zdravja slabši.

Ključne besede: duševno zdravje, depresija, samomor, stigma, dostopnost pomoči,

Mental Health represents is an important public health topic. It inevitably contributes to the well being of the society as a whole and is related to great economic costs. Slovenia lacks a strategic document in the filed of mental health since the Resolution of National Plan for Mental Health 2014 - 2018 is not yet confirmed. Nevertheless some priority topics are addressed via different projects either on national or regional level. The most prevalent mental health complaints of work active population are depression, anxiety, stress related disorders and mental or behavioural diorders due to alchocol. Between 2008 – 2015 a decrease was observed in the number of first visits on the primary health care level due to depression, whereas an increase was observed in the number of first visits due to adverse reactions on stress. Similar trend was observed in the number of final diagnoses on the secondary health care level. A major public health problem remains suicide mortality, which fortunately has shown a decreasing trend in the last two decades in both genders and most age groups. Another chellange represents the stigmatization of mental health

problems and negative attitudes towards help seeking. The latter is particularly present in men, younger persons and residents from eastern Slovenian regions where mental health indicators are lower than in the west.

Key words: Mental Health, Depression, Suicide, Stigma, Accessibility of help

Stres, povezan z delom, in delovna zmožnost zaposlenih na oddelku nujne medicinske pomoči

Professional stress and work ability of employees at Emergency Medicine Department

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Izhodišča: Stres, povezan z delom, velja za eno od desetih najpogostejših zdravstvenih težav. Zdravstveni delavci najpogosteje navajajo naslednje težave, s katerimi se soočajo zaradi dela: fizično in čustveno izčrpanost, bolečine v ledvenem delu hrbtenice, težave v duševnem zdravju. Cilj te raziskave je bil ugotoviti zaznavanje poklicnega stresa in delovne zmožnosti zaposlenih na oddelku nujne medicinske pomoči. Metode: V raziskavi je sodelovalo 109 zaposlenih, ki delajo kot zdravniki, medicinske sestre in vozniki. Uporabili smo vprašalnik o stresu zaposlenih v zdravstvu in vprašalnik o ocenjevanju zmožnosti za delo. Opazne so pomembne razlike v zaznavanju stresa glede na spol, zlasti na področju tveganj in nevarnosti pri delu. Rezultati: Glede na starost in delovno dobo nismo ugotovili razlik. Glede na delovno mesto pa so pomembne razlike med zdravniki in vozniki ($p < 0,01$), kakor tudi med zdravniki in medicinskimi sestrami ($p < 0,01$). Najpogosteje navajane zdravstvene težave in bolezni, povezane z delom so: bolečine v ledvenem delu hrbtenice (49,5 %) in napetosti (47,7 %). Najmanj pogosto navajane pa so astma (2,8 %), nevrološke bolezni (2,8 %) in maligna obolenja (0,9 %). Diskusija: Med zaposlenimi na oddelku nujne medicinske pomoči je prisoten negativni stres, povezan z delom, pojavljajo pa se tudi zdravstvene težave in bolezni, povezane z delom. Rezultati potrjujejo potrebo po razvoju intervencijskih in preventivnih programov.

Ključne besede: oddelek nujne medicinske pomoči, zaposleni, stres, povezan z delom, delovna zmožnost

Introduction: Professional stress is considered one of the top ten health problems, whereby ailments listed by health workers are physical and emotional exhaustion, back pain and the occurrence of mental health problems. The aim of this study is to determine the perception of occupational stressors and work ability of employees in the emergency medical department. *Methods:* The study included 109 employees working as doctors, nurses and drivers. The questionnaire on stress of health care professionals and the questionnaire on working capacity assessment were used. Significant differences in the assessment of stress are observed in relation to gender, especially in the area of risk and hazard at work. *Results:* In relation to age and years of service there are no significant differences. In relation to the workplace, in the overall stress there is a difference between doctors and drivers ($p < 0.01$) as well as doctors and

nurses ($p < 0.01$). The results for the most common job associated ailments are lower back pain (49.5 %) and tensions (47.7 %). Least represented were asthma (2.8 %), neurological diseases (2.8 %) and malignity (0.9 %). *Discussion:* There is a perception of stressors as well as the incidence of diseases related to work among employees of the emergency medical department. In view of this, there is a necessity of developing both prevention and intervention programs.

Key words: emergency medicine department, employees, professional stress, work ability

Zdrav partnerski odnos: izhodišče za psihično in fizično zdravje človeka

Healthy intimate relationship: basis for mentally and psysicaly health for human being

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Ljudje so vsakodnevno vpeti v vrsto odnosov, daleč najpomembnejši odnosi za vesplošno zdravje in dobro počutje, pa so najbolj intimni odnosi. Ti odnosi so lahko izhodišče za varnost, dobro počutje in osebni razvoj, ali pa vir nesreče, trpljenja in posledično slabega zdravstvenega stanja. Zakonsko zadovoljstvo je močno povezano s fizičnim zdravjem, učinkovitim soočanjem s stresom, čustveno počutjem, življenjskim zadovoljstvom in samozavestjo. Navezanost je temeljni regulacijski sistem, iz katerega izhajajo vzorci navezovanja in ravnanja v odnosih, še posebej najbolj intimnih. Preko razvoja mehanizma navezanosti se oblikuje organska struktura možganov, predvsem tistih delov, ki so odgovorni za integracijo izkustva. Interakcije z okoljem, posebej odnosi z drugimi ljudmi, direktno oblikujejo razvoj strukture in funkcije možganov. Limbični sistem, še posebej amigdala in orbitofrontalni korteks imajo ključno vlogo pri socialnih interakcijah. Vzpostavlanje in ohranjanje medčloveških odnosov je temeljni motivacijski faktor in ne samoumevni razvojni proces, v katerega so ljudje neizogibno vpeti, temveč zahteva tudi temeljno zaupanje v človeško izkustvo. Čustvena odzivnost, ranljivost, prepoznavanje lastnih čustvenih procesov in čustvena povezanost na novo pripomore k vzpostavljanju varne navezanosti, ki se lahko vzpostavi ponovno le v varnih odraslih, intimnih odnosih.

Ključne besede: partnerski odnos, teorija navezanosti, nevropsihologija, odnosi, zdravje.

People participate in many different types of relationships every day, and by far the most important ones for overall health and well-being are intimate relationships. These are a source of safety, well-being and personal development, or can cause sadness, suffering and consequently poor health. Marital satisfaction is strongly connected to physically health, ability to effectively cope with stress, emotional well-being, life satisfaction and self-esteem. Attachment is a basic regulatory system which forms patterns of affiliation and behaviour in relations, especially the most intimate ones. Through the development of attachment mechanisms we form organic brain structure, especially the parts responsible for integration of experience. Interactions with our environment,

especially relationships with other people, directly shape the development of the brain structure and function. The limbic system, especially the amygdala and orbitofrontal cortex play a key role in social interactions. Establishing and maintaining human relations is a basic motivating factor and is not an obvious development process, inevitable to every person. It requires a basic trust in human experience. Emotional responsiveness, vulnerability, ability to identify own emotional processes and emotional connection help to establish a secure attachment, which can only be re-established in secure adult, intimate relationships.

Key words: intimate relationship, attachment, neuropsychology, relationships, health.

Psihofizične obremenitve delovno aktivne populacije v Sloveniji **Psychophysical workloads of employees in Slovenia**

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Izhodišča: Psihofizične obremenitve, ki jih posameznik dnevno doživlja na delovnem mestu, so pomembne tako za zaposlenega kot tudi za delodajalca. Potrebno je, da se jih zavedamo in na njih opozarjamo ter težimo k zmanjševanju njihovih izvorov. Z vidika organizacije je pomemben vidik krepitev programov ter postopkov, s katerimi zmanjšujemo njihov negativen učinek na zaposlene ter s tem ohranjamo oz. zvišujemo psihično in fizično zdravje. *Metoda:* V prispevku so uporabili kratko samoocenjevalno Lestvico psihofizičnega zdravja (SPFZ-2; Majstorović, 2011), s pomočjo katere lahko ocenimo pojavnost petih najpogostejših psihosomatskih težav pri zaposlenih. *Rezultati:* V raziskavi so analizirali prisotnost utrujenosti, motenj socialnega vedenja, motenj fizičnega zdravja, depresivnih reakcij ter strahu in anksioznosti pri različnih demografskih skupinah, ob koncu pa so simptome povezali tudi s področjem dejavnosti, kjer so posamezniki zaposleni. *Diskusija in zaključki:* Izkazalo se je, da so demografske spremenljivke pomembno povezane z izpostavljenostjo psihofizičnim tveganjem. Jasna je povezava z izobrazbo (višja izobrazba je povezana z nižjim tveganjem), medtem, ko povezave s starostjo in spolom niso enoznačne. O težavah s psihofizičnim zdravjem najpogosteje poročajo zaposleni v gradbeništvu, predelovalnih in informacijskih dejavnostih ter javni upravi.

Ključne besede: psihofizično obremenitve, zdravje, zaposleni, Slovenija

Introduction: Psychophysical workloads that an individual copes with daily on their workplace are important for the employee as well as the employer. It is important to be aware of them, warn about them and strive for reducing their sources. The build-up of programs and procedures is an important aspect, with which we reduce their negative effect on employee as well as maintain and increase their mental and physical health. *Methods:* This article will present a short self-evaluating scale of psychophysical health with the help of which we can evaluate the appearance of five most frequent psychosomatic problems with employees. *Results:* In the research, we will analyze the presence

of exhaustion, social behavior disorders, physical disorders, depressive reactions, fear and anxiety at different demographic groups and at the end we will connect the symptoms with the field of activity. *Discussion and Conclusions:* Research showed linkage between demographic variables and exposure to psychophysical risks. Connection to education is more straightforward (high education is connected to lower risk), meanwhile connection between to age and gender is not so clear. Psychophysical workloads are more frequent in construction, processing industry, information industry and civil service.

Key words: psychophysical workloads, health, employees, Slovenia

Terapevtski pristop kot pomembna intervencija pri izvajanju programa Projektno učenje mlajših odraslih (PUM-O) The therapeutic approach as an important intervention in the implementation of the program Project learning for young adults (PUM-O)

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V prispevku je predstavljen program »Projektno učenje mlajših odraslih« (PUM-O), katerega temeljni namen je razvijati potenciale ranljivih mlajših odraslih za uspešno vključevanje v izobraževanje, razvijanje poklicne identitete in uspešno vključevanje na trg dela ter uspešno socialno integracijo. Ti mlajši odrasli so iz različnih razlogov opustili izobraževanje in so brez delovnih izkušenj, zato spadajo med težje zaposljive. Zaradi oslabiljenega duševnega zdravja posameznikov je lahko program tako za njih edina pot iz trenutne stiske in edina možnost ponovnega obvladovanja svojega življenja, kot tudi uspešnega soočanja z različnimi problemi. Ker program sicer ni terapevtski in mentorji praviloma nimajo terapevtskega znanja, je še kako pomembno, da poleg mentorjev, v kolikor niso hkrati tudi terapevti, v programu redno sodelujejo tudi relacijski terapevti. Pri večini udeležencev programa relacijske potrebe niso zadovoljene, ta primanjkljaj pa se kaže v osamljenosti, nezadovoljstvu, strahu, obupu, samo-poškodovanju, brezcilnem životarjenju, nasilju, depresijah in različnih zasvojenostih. Veliko udeležencev s strani mentorjev-terapevtov prvič doživi varne, sočutne in spoštljive odnose, kot tudi občutek sprejetosti in vrednosti, kar vpliva na spremembo globoko ukoreninjenih simptomatičnih vzorcev medosebnih interakcij udeležencev. Udeleženci programa tako doživljajo terapevtski pristop mentorjev-terapevtov kot pomembno intervencijo za pridobivanje novih pozitivnejših izkušenj, na podlagi katerih si pridobijo funkcionalno delovanje in boljši stik s seboj.

Ključne besede: duševno zdravje, mlajši odrasli, terapevtski pristop, intervencija, medosebni odnosi

This article presents the program "Project Learning for Young Adult" (PUM-O), the main purpose of which is to develop the potential of vulnerable young adults for successful integration into education, the development of professional identity and successful integration into the labour market and successful so-

cial integration. These young adults have different reasons for abandoning education and lack of work experience therefore they are more difficult to be employed. Due to the impaired mental health of individuals the program is the only way out of the current plight and the only possibility of re-control of their lives, as well as successful confrontation with various problems. Because the program is not a therapeutic one and the mentors generally are not therapists, it is extremely important that the mentors in the program, unless they are also therapists, include other relational therapists. With the majority of the participants their relational needs are not satisfied, so this deficit is reflected in loneliness, dissatisfaction, fear, despair, self-injuring, aimless vegetating, violence, depression and various additives. Many participants from mentors-therapists for the first time experience safe, compassionate and respectful relations, as well as a sense of acceptance and value, which results in a change of symptomatic deep-rooted patterns of interpersonal interaction. Program participants also experienced a therapeutic approach of mentors-therapists as an important intervention for getting new positive experience on which they acquire functional activity and better contact with themselves.

Key words: mental health, young adults, therapeutic approach, intervention, interpersonal relations

Vpliv skupinske terapije na zaznano kakovost življenja pri osebah, zasvojenih z alkoholom

The impact of group therapy on quality of life of people from alcohol dependence

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Izhodišča: Namen raziskave je bil ugotoviti vplive zasvojenosti z alkoholom na posameznikovo življenje in njegovo kakovost življenja, njegovo uspešnost spopadanja z odvisnostjo in socialno reintegracijo pri osebah, ki so bile vključene v skupinsko terapijo. *Metode:* Uporabljena je bila metoda sekundarne analize podatkov. Podatki so bili zbrani aprila leta 2015 s pomočjo delno strukturiranega anketnega vprašalnika na priložnostnem vzorcu 44 udeležencev skupinske terapije v enem izmed Društev zdravljenih alkoholikov v štajerski regiji. V vzorcu je bilo največ moških (n=33; 75 %); največ anketiranih je bilo uvrščenih v starostni razred 50-59 let (n=15; 34,1 %); največ jih je zaključilo srednješolsko izobraževanje (n=17; 38,6 %). Rezultati so bili obdelani z osnovno deskriptivno in analitično statistiko (hi-kvadrat test, Fisher test) s programom SPSS verzija 20. *Rezultati:* Ugotovitve kažejo, da sodelovanje na skupinski terapiji pozitivno vpliva na zdravljenje zasvojenosti z alkoholom in izboljšuje kakovost življenja, vendar je to neodvisno od demografskih spremenljivk. Rezultati so pokazali, da je skupinska terapije nenadomestljiv del v zdravljenju in rehabilitaciji zasvojenosti. *Diskusija in zaključki:* Zdravljenje sindroma zasvojenosti od alkohola je uspešno zgolj s popolno abstinenco in zdravim načinom življenja, kar je možno trajno vzdrževati v skupinah ali klubih zdravljenih alkoholikov.

Potrebno je ozaveščanje laične in strokovne javnosti in preventiva pred zasvojenostjo z alkoholom. Podpora javnega zdravstva pri razvoju tovrstnih skupin je dobra in pametna strokovna naložba.

Ključne besede: duševno zdravje, življenjski stil, podpora, zdravstvena nega, klubi zdravljenih alkoholikov

Introduction: The purpose of the research was to determine the impact of alcohol dependence on individual's life and its quality of life, its performance to cope with dependence and social reintegration of the persons who were involved in group therapy. *Methods:* The secondary data analysis was used. Data were collected by using a semi-structured questionnaire in April 2015. The convenience sample of 44 participants attending group therapy in one of the Alcohol recovery centres in Styria region was applied. The sample included mostly men (n=33; 75 %); the large proportion of the participants was between 50-59 years (n=15; 34.1 %); most of the participants have completed upper secondary education (n=17; 38.6 %). The results were analysed with SPSS ver. 20 by using descriptive and analytical statistics (chi-square test, Fisher test). *Results:* The findings suggest that participation in group therapy has a positive effect on the treatment of alcohol dependence and improves the quality of life, regardless of demographic variables. The results suggest that group therapy is irreplaceable part in the treatment and rehabilitation of addiction. *Discussion and Conclusions:* Treatment of the syndrome of alcohol dependence is successful only with complete abstinence and healthy lifestyle, which can be permanently maintained in groups or clubs for recovering alcoholics. It is necessary to raise awareness of the lay and expert public and prevention of alcohol dependence. Support of public health sector in the development of such groups is good professional investment that on a long term is worthwhile.

Key words: mental health, lifestyle, support, nursing, alcohol recovery centres

Čuječnost kot pristop za izboljšanje duševnega zdravja delovno aktivne populacije

Mindfulness as an approach for enhancing the mental health of working population

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Čuječnost je definirana kot nepresojajoče, osredotočeno opazovanje posameznikovih zaznav, misli in emocij v sedanjem trenutku s prijaznostjo, radovednostjo in sprejemanjem. Vsak posameznik ima do določene mere v sebi vgrajeno sposobnost biti čuječen, tako imenovano dispozicijsko čuječnost, ki pa se od posameznika do posameznika razlikuje. Visoka dispozicijska čuječnost je povezana z višjo psihološko odpornostjo, boljšimi mehanizmi soočanja s stresom, in psihološkim dobrim počutjem. Čuječnost se podobno kot večšina lahko tudi razvija kot večšina. Glede na navedene pozitivne učinke čuječnosti na mentalno zdravje, so bili razviti in implementirani številni na čuječnosti temelječi programi s ciljem zmanjšanja simptomov stresa, izgorevanja, anksioznosti in depresije. V zadnjem desetletju so številne organizacije prepoznale učinkovitost

čuječnosti in ponudile svojim zaposlenim različne tečaje čuječnosti s ciljem povečati produktivnost in zmanjšati negativne posledice delovnega stresa. Namen pričujočega prispevka je promovirati čuječnost kot pristop za izboljšanje duševnega zdravja delovno aktivne populacije, predstaviti izsledke relevantnih študij, kako čuječnost lahko pomaga zaposlenim, da izboljšajo svoje dobro počutje. Prispevek razpravlja tudi o problematiki implementacije čuječnosti v realno delovno okolje. Management organizacij mora obravnavati čuječnost kot strateško, dolgoročno naložbo v zdravje zaposlenih in njihovo zadovoljstvo pri delu in nenazadnje povečanje delovne učinkovitosti.

Ključne besede: čuječnost, programi, delovno aktivna populacija, učinkovitost, duševno zdravje

Mindfulness is defined as non-judgmental, concentrated observation of one's perceptions, thoughts, and emotions in the present moment, with an attitude of kindness, curiosity, and acceptance. Each person, to some extent, has an inherited ability to be mindful, called dispositional mindfulness, which varies from individual to individual. Higher dispositional mindfulness is associated with higher levels of psychological resilience, better stress coping mechanisms, and psychological well-being. Mindfulness can be trained as well. Due to aforementioned positive aspects of mindfulness on mental health, several mindfulness-based training programs were developed and implemented in order to diminish the symptoms of stress, burnout, anxiety and depression. In last decade, several organisations recognised the effectiveness of mindfulness and offer to their employee's different mindfulness trainings to enhance productivity and diminish the negative consequences of work stress. The aim of this contribution is to promote mindfulness as an approach to enhancing the mental health of working population, explain how mindfulness can help the employees to improve their well-being according to recent researches. Furthermore, the implementation of mindfulness in the real-life work settings are discussed. Mindfulness should be treated by the management as a strategical, long-term investment in the employees' health, job satisfaction, and finally, work productivity.

Key words: Mindfulness, training, working population, productivity, mental health

Odnosi v relaciji življenjska prožnost zaposlenih in vodenje sodobne zdravstvene nege

Relations between personal resilience of the employee and contemporary health care management

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Izhodišča: Življenjska prožnost (rezilienca) je dinamičen proces za katerega je značilna splošna življenjska prilagodljivost in prožnost posameznika, da kljub težavam ohranja svoj pričakovani razvoj. Izraža se v lastnostih samozaupanja, občutka (samo)obvladovanja življenjskih situacij, odločnosti, nadzoru in vztrajnosti. Vključuje prilagodljivost in prožnost vedenja na izjemne ali vsakdan-

je zunanje pritiske v delovnih okoljih, ki so jim izpostavljene medicinske sestre. Izhodišče v fizično, predvsem pa čustveno zahtevnem poklicu, so tako zadovoljevanje potreb drugega kot prizadevanja, da bi z izrednimi dosežki zadovoljili pričakovanja drugih (prisilno altruistični perfekcionizem). Ob visokih pričakovanjih delovnih organizacij ter težkih delovnih pogojih se medicinske sestre srečujejo z izgorelostjo in s stresom povezanimi boleznimi. Namen prispevka je predstaviti pojem rezilientnosti oziroma življenjske prožnosti ter poiskati načine za izboljšanje odpornosti in dobrega počutja zaposlenih v zdravstveni negi na individualni in organizacijski ravni. *Metode dela:* Uporabljen je bil sistematičen pregled literature objavljene med leti 2010 in 2017. Dostop do literature je bil omogočen preko podatkovnih baz Medline, Cinahl with full text, PubMed. *Rezultati:* Prepoznani dejavniki za ohranjanje življenjske prožnosti so varno in skrbno okolje, ki postavlja realno visoka pričakovanja, zagotavljanje ustrezne pomoči in podpore ter pozitivnega mišljenja in opolnomočenja. *Diskusija:* Upravljanje zdravstvenih zavodov in/ ali kliničnih okoljih v negotovih, turbulentnih časih, pomeni usmerjanje pozornosti managerjev in/ ali vodij tudi v delovno silo, ki jo predstavljajo medicinske sestre. Izziv predstavlja ustvarjalno delovno okolje, ki za seboj nosi poudarjanje mehkih veščin. Pomeni razumeti življenjsko prožnost in izvajati ukrepe za razvijanje sposobnosti zaposlenih za ohranjanje le-te.

Gljučne besede: rezilientna, življenjska prožnost, zdravstvena nega na področju psihiatrije in duševnega zdravja, vodenje

Introduction: Resilience is a dynamic process with one main characteristic – general life adaptability and flexibility of individuals, who maintain their expected development despite different crisis. It is manifested through self-confidence, feeling of (self)control over life situations, determination, control and perseverance. It includes behaviour adaptability and flexibility towards extreme or everyday external pressures in work environments that nurses are exposed to. The starting point in physical and above all emotionally demanding profession is to fulfil the needs of others and the effort to fulfil the expectations of others with exceptional results. Along high expectations by work organisations and difficult working conditions, nurses are burnout and have to deal with stress related diseases. The purpose of this article is to present the idea of resilience and to find methods to improve the resistance and wellbeing of employees in health care on individual and organisational level. *Methods:* The paper presents the synthesis of articles published between 2010 and 2017. A comprehensive and systematic literature review was performed using the databases Medline, Cinahl with full text, PubMed. *Results:* This study confirmed that safe and attentive environment that sets up realistic expectations and ensure proper assistance, support, positive feelings and empowerment is important determinants of resilience in nurses. *Discussion:* The management of health care institutions and/or clinical environments in uncertain and turbulent times signifies that managers and leaders aim attention to the nurses. Creative work environment is a challenge that accentuates “soft” skills. It indicates the understanding of resilience and implementing the measures to develop and maintain employee’s capacities.

Key words: resilience, flexibility/ life balance, mental health nursing, management.

Absentizem kot posledica duševnih težav med zaposlenimi v zdravstveni negi

Absenteeism due to mental health problems among employees in nursing

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Izhodišča: Absentizem je pojem, s katerim opredeljujemo odsotnost ali izostanek zaposlenega z delovnega mesta, in se meri s frekvenco manjkajočih delovnih dni. Neposredno je povezan s posledicami, kot so primanjkljaj zdravstvenega osebja, zmanjšanje morale pri zaposlenih ter prekinjena kontinuiteta oskrbe pacientov. Vzroke absentizma pogosto pripisujemo težavam v duševnem zdravju. Pojav duševnih težav pri medicinskih sestrah je pogosto posledica narave dela in delovnih razmer v zdravstvu. *Metode:* V prispevku bo uporabljena deskriptivna metoda dela s pregledom slovenske in angleške strokovne in znanstvene literature z obravnavanega področja. Iskanje literature bo potekalo s pomočjo bibliografskega sistema COBISS ter podatkovnih baz: CINAHL, Medline (PubMed), Cochrane in Springerlink. *Rezultati:* Mnogo raziskovalcev se ukvarja z vprašanjem dejavnikov tveganja, ki vodijo k absentizmu pri medicinskih sestrah. Pričakujemo, da je odsotnost z dela povezana s preobremenjenostjo na delovnem mestu, previsokimi delovnimi zahtevami ter nezadovoljstvom z delom. Pričakujemo tudi, da se med duševnimi težavami najpogosteje pojavljajo depresija, anksioznost in stres. *Diskusija:* Na podlagi predhodnih ugotovitev raziskovalcev želimo podati smernice za raziskovanje duševnih težav med medicinskimi sestrami na slovenskem področju.

Ključne besede: medicinska sestra, odsotnost z dela, duševno zdravje, nezadovoljstvo z delom

Introduction: Absenteeism is a phenomenon that describes absence at work and is measured as a frequency of missing days at work. It is directly related to consequences such as nursing staff shortage, low employee morale and disruptions in continuity of patient care. Causes of absenteeism are often attributed to mental health problems. In nursing manifestations of mental health problems are often caused by the nature of work and working conditions. *Methods:* In this paper, a descriptive methodology with literature review in Slovenian and English language has been used. Union bibliographic database COBISS and CINAHL, Medline (PubMed), Cochrane and Springerlink databases have been searched. *Results:* Many researchers have been studying risk factors which cause and/or influence the absenteeism in nursing. The causes for absenteeism are expected to be overload of work, excessive work demands and job dissatisfaction. Also, depression, anxiety and stress are expected to be recognized as

the most frequent mental health problems. *Discussion:* Based on previous findings guidelines for further research on mental health among nurses in Slovenia will be presented.

Key words: nurse, absence from work, mental health, job dissatisfaction

Delovno zadovoljstvo in duševno zdravje medicinskih sester Job satisfaction and mental health of nurses

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Izhodišča: Skrb za zadovoljstvo na delovnem metu in duševno zdravje medicinskih sester je pomembno za doseganje večje kakovosti zdravstvene oskrbe in zadovoljstva pacientov. Namen raziskave je bil ugotoviti delovno zadovoljstvo in duševno zdravje medicinskih sester. *Metode:* V raziskavi je sodelovalo 640 medicinskih sester iz osmih slovenskih bolnišnic, zaposlenih na internih in kirurških oddelkih. Podatki so bili obdelani z računalniškim programom SPSS, 20.0. Uporabljena je bila deskriptivna statistika in One –Way ANOVA za ugotavljanje statistično značilnih razlik. Cronbach Alpha je znašal 0,877. *Rezultati:* Ugotovljeno je bilo, da je delovno zadovoljstvo medicinskih sester na srednji ravni, 85 % medicinskih sester ocenjuje svoje duševno zdravje kot dobro. Glede na oceno duševnega zdravja so bile ugotovljene statistično značilne razlike glede na stopnjo izobrazbe ($F=1,994$, $p=0,002$), delovno dobo ($F=1,576$; $p=0,031$), izpostavljenost stresu ($F=8,727$; $p<0,001$) ter obvladovanje stresa ($F=1,610$; $p=0,025$). *Diskusija in zaključki:* Pomembno je zavedanje medicinskih sester, da ima zadovoljstvo in dobro počutje na delovnem mestu velik pomen za posameznika in za organizacijo. Pripomore k zdravju, boljšim odnosom, lažjemu premagovanju ovir na delovnem mestu, večji storilnosti in manjši odsotnosti z dela. Vodja mora skrbeti za zadovoljstvo, dobro počutje in zdravje zaposlenih, saj bo le tako lahko dosegel zastavljene cilje ter pripomogel k večji motiviranosti in učinkovitosti.

Ključne besede: zdravstvena nega, delovno zadovoljstvo, duševno zdravje, kakovost

Introduction: To achieve a higher quality of care and patients' satisfaction, it is important to take care for mental health and job satisfaction of employees in nursing. The aim of the study was to find out the level of nurses' mental health, and job satisfaction. *Methods:* The study included 640 nurses from eight Slovenian hospitals, employed on department of internal medicine and surgery. The data were analyzed with the computer program SPSS 20.0. It was used descriptive statistics and One-Way ANOVA to determine statistical significant differences. Cronbach Alpha was 0.877. *Results:* It was found that the job satisfaction of nurses is at medium level. 85 % of nurses assessed their mental health as well. According to the assessment of mental health were found statistically significant differences by the level of education ($F=1.994$, $p=0.002$), working years ($F=1.576$; $p=0.031$), exposure to stress ($F=8.727$; $p < 0.001$) and stress management ($F=1.610$; $p=0.025$). *Discussion and conclusions:* It is important that the high level of job satisfaction and well-being are important for every individual and al-

so for the organization. It can contribute to better health, better relationships, overcoming obstacles in the workplace, higher productivity and lower absenteeism. Leaders must take care of job satisfaction, well-being and health for all employees, because only in that way they can achieve goals and contribute to the greater motivation and efficiency.

Key words: nursing, job satisfaction, mental health, quality

Dejavniki tveganja za razvoj poporodne depresije The risk factors for development of Postpartum depression

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Izhodišča: Cilj raziskave je bil preučiti dejavnike tveganja za razvoj poporodne depresije. *Metoda:* Študija je bila izvedena s pomočjo anonimne ankete pri nosečnicah v obdobju od 28. do 40. tedna nosečnosti. Za prepoznavo nosečnic, ki imajo povečano tveganje za razvoj poporodne depresije je bila uporabljena Edinburška lestvica poporodne depresije (EPDS). *Rezultati:* Anketiranke, ki so po Edinburškem lestvici poporodne depresije dosegle rezultat >12 , so bile uvrščene med kandidatke s povečanim tveganjem za razvoj poporodne depresije. Največje tveganje za razvoj poporodne depresije predstavljajo način poroda, starost nosečnice in obporodne depresije, ki so zaradi tega tudi pomembni napovedniki razvoja poporodne depresije. *Zaključek:* Tveganje za razvoj poporodne depresije ni dovolj raziskano v naši državi, zato bi bilo dobro, če bi se v okviru ginekološko-porodniške obravnave izvajalo presejanje za poporodno depresijo, kot to priporoča Ameriško združenje porodničarjev in ginekologov (ACOG).

Cljučne besede: nosečnost, poporodna depresija, dejavniki tveganja

Introduction: The aim of the study was to examine the risk factors for development of postpartum depression. *Methods:* The study was conducted as an anonymous survey in pregnant women from the 28th to 40th week of pregnancy. Edinburgh postpartum depression scale (EPDS) was used in the study to identify pregnant women who have an enhanced risk of developing the postpartum depression. *Results:* The respondents who scored >12 on Edinburgh scale had an increased risk of developing the postpartum depression. The biggest risk for developing postpartum depression has a way of birth, maternal age and perinatal depression which is a significant predictor for the development of postpartum depression. *Conclusion:* The risk of developing postpartum depression has not been studied sufficiently in our country and it would be good to make a screening for postpartum depression in gynecological surgeries as recommended by the American College of Obstetricians and Gynecologists (ACOG).

Key words: pregnancy, postpartum depression, risk factors

Vpliv deloholizma na zaznavanje negativnega stresa med zdravstvenimi delavci: primer Turčije

Effects on stress levels of workaholism in health workers, the case of Turkey

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Izhodišča: Pomanjkanje jasnosti opisov delovnih mest zdravstvenih delavcev vodi k prekomerni delovni obremenjenost in nejasnosti delovnih nalog in vlog, kar je eden od ključnih dejavnikov negativnega stresa, povezanega z delom. V delovnih okoljih pa je negativni stres, ki izhaja iz teh dejavnikov pogosto prezrt; ukrepov v delovnih okoljih pa ni. Deloholizem je eden od vidikov posledic neustrezno organiziranega delovnega procesa. Učinki deloholizma na splošno so lahko pozitivni ali negativni. Med negativne uvrščamo neustrezne odnose s sodelavci, zamujanje, povečevanje pritožb in poslabšanje izvedbe dela. Cilj te raziskave je bil preučiti razmerje med deloholizmom zdravstvenih delavcev in stresom, povezanim z delom. Zanimalo nas je, kako so demografske spremenljivke povezane z deloholizmom in ravno stresa. **Metoda:** Ta študija je bila izvedena na 150 zdravstvenih delavcev na Şişli Hamidiye Etfal Research and Training Public Hospital at University of Health Sciences, Istanbul, Turčija. Podatki raziskave so bili zbrali med 1. marcem in 28. aprilom 2016. Za pridobljene podatke smo analizirali deskriptivne statistike in izvedli t-test razlik za proučevane skupine. **Rezultati:** Z raziskavo smo ugotovili, da med stopnjo deloholizma in stresa obstaja pomembna pozitivna povezava. Statistično bile ugotovljene pomembne razlike med moškimi in ženskimi skupinami glede ravni stresa ($p < 0,05$). Rezultati kažejo, da se stopnja stresa razlikuje glede na spol in trajanje delovne dobe ter po področju (oddelkih) dela. **Diskusija:** Zagotavljanje ustreznih delovnih pogojev zdravstvenih delavcev in podpora pri soočanju z deloholizmom in negativnim stresom, povezanim z delom, mora biti eden od ključnih ciljev delovnih okolij.

Key words: deloholizem, stres, zdravstveni delavci, bolnišnična okolja

Introduction: Due to the lack of clarity of job descriptions of health workers; the resulting excess workload and uncertainty of the tasks can be seen as the most important factors in strengthening working life. The stress of living in this situation is ignored, neglected and if significantly measures are not taken in time; It can cause a lot of negative situations, especially workaholism. Workaholism is a positive or negative phenomenon. Some have argued that workaholism is associated with a high level of stress. Behaviors or changes in the nature, broken relationships with colleagues, tardiness, prolonging complaints, and decreasing of performance are indications that the work-related stress is not in a reasonable issues. The aim of this study was to examine the relationship between workaholism of health workers and work-related stress, concurrently, whether

the levels of work-life and the associated stress significantly differed from the demographic variables. *Method:* This study was carried out to 150 health workers at Şisli Hamidiye Etfal Research and Training Public Hospital at University of Health Sciences, İstanbul-Turkey. The research data were collected between 01 March and 28 April 2016 with a survey prepared by the researchers. Number, percentage calculation, and t test in dependent groups were used in the data analysis. *Results:* In the analysis that was concluded that the participants had a meaningful relationship between the levels of workaholism and stress. There is a positive relationship between the level of stress and workaholism. Statistically significant differences were found between male and female groups in terms of stress levels ($p < 0.05$). On the other hand, results indicate that the level of stress differs by sex, and the degree of work-life, differs by departments in the hospital. *Discussion:* Considering the working conditions of health care workers, providing the most suitable working conditions and supporting them to cope with their workaholism and stresses should be the goal.

Key words: workaholism, stress, health workers, hospital

Stres, povezan z delom, in kakovost življenja medicinskih sester Work related stressors and quality of life of nurses

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Izhodišča: Sindrom izgorelosti je stanje duševne in fizične izčrpanosti, ki ga povzroča prekomerno in dolgotrajno doživljanje negativnega stresa. Namen raziskave je bil ugotoviti vpliv stresnih dejavnikov na kakovost življenja zdravstvenih delavcev na kirurškem in internističnem oddelku. *Metoda:* Študija je bila zasnovana kot presečna raziskava na vzorcu 150 udeležencev. Raziskava je bila izvedena v Univerzitetni bolnišnici Foča, in sicer na kirurškem in internističnem oddelku. Uporabljeni vprašalnik je meril demografske spremenljivke, vprašanja za oceno zdravstvenega stanja in stopnje stresa, povezanega z delom zdravstvenih delavcev. Statistična analiza je bila opravljena s pomočjo SPSS statističnega programskega paketa. *Rezultati:* Pogostost pojava izgorelosti kot posledica doživljanja kroničnega stresa je visoka (20 %). Nižja stopnja kakovosti življenja udeležencev raziskave se je pokazala na področju duševnega zdravja (49,36 %) in vitalnosti (62,93 %). Med udeleženci raziskave iz kirurškega oddelka je najbolj prisotna preobremenjenost z delom (82,60 %) in slabša kakovost življenja. *Zaključek:* Na kirurškem oddelku so najpogostejši dejavniki stresa in zmanjšane kakovosti življenja: preobremenjenost z delom, finančne ovire, pomanjkanje kadra.

Ključne besede: stresorji, povezani z delom, medicinske sestre, kakovost življenja

Introduction. Burnout syndrome is a state of mental and physical exhaustion caused by excessive and prolonged stress. The aim of the research was to determine the influence of stress factors on the quality of life between patients in the surgical and internal department. *Methodology.* The study was designed as a cross-sectional study with 150 subjects. The research was conducted at the

University Hospital Foca, surgical and internist at the wards. We used a socio-demographic questionnaire, a questionnaire to assess the health situation and the scale of stress in the workplace of hospital health workers. Statistical analysis was performed using SPSS statistical software package. *Results.* The frequency of the burnout syndrome professional as a response to chronic stress is high (20 %). The lower level of the quality of health of the respondents was found in the mean mental health (49.36 %) and vitality (62.93 %). In patients on the surgical ward is most obvious overload (82.60 %) and have a lower quality of life. *Conclusion.* The most common stress-related factors in patients on the surgical ward with a worse quality of life are overloaded with work, financial constraints, call time, a small number of health care workers.

Key words. Professional stressful factors, nurses, quality of life.

Delovna obremenitev za delo sposobnih neformalnih oskrbovalcev obolelih svojcev **The workload of work-capable caregivers**

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Izhodišča: Dolgotrajna skrb za bolnega družinskega člana je naporna in lahko ogrozi zdravje neformalnega oskrbovalca. Zagotavljanje nege in oskrbe bližnjemu lahko privede do pojava simptomov, povezanih s kroničnim stresom: dolgotrajne fizične in psihične obremenitve, zaznavanje nepredvidljivosti poteka dogodkov in zaznavanje pomanjkanja nadzora nad situacijo oz. zaznavanje nemoči. To ima lahko negativne posledice tudi na druga življenjska področja oskrbovalca: na delo, družinsko življenje in socialno življenje, ter negativno vpliva na kakovost življenja oskrbovalca in obolelega svojca. Namen tega prispevka je proučiti zaznavanja obremenjenosti med delovno sposobnimi neformalnimi oskrbovalci bolnega družinskega člana. Metode: Raziskava je bila izvedena v zdravstveni instituciji leta 2017. V raziskavi so sodelovali delovno sposobni neformalni oskrbovalci bolnega družinskega člana, ki za družinskega člana skrbijo več kot šest mesecev. Kot merski instrument je bil uporabljen »indeks obremenitve neformalnega oskrbovalca«. Rezultati: V raziskavi je sodelovalo 92 udeležencev, od tega 78 žensk in 14 moških. Starost udeležencev je bila med 30 in 65 let, različne stopnje izobrazbe in različnega zaposlitvenega statusa. Dobljeni rezultati kažejo na visoko stopnjo obremenitve negovalcev in visoko stopnjo zaznavanja stresa za 64 od 92 udeležencev raziskave. Diskusija: Z analizo podatkov, pridobljenih z vprašalnikom, posamično ali kot celota, smo potrdili prisotnost problemov na vseh proučevanih področjih. Potrdili smo predpostavko o doživljanju visoke stopnje obremenjenosti in negativnega stresa med neformalnimi oskrbovalci bolnih družinskih članov.

Gljučne besede: neformalni oskrbovalci, stres, zaposlitev

Introduction: Long-term healthcare for an ill family member can be extremely exhausting and considerably jeopardize the health of the caregiver. Providing healthcare has all the symptoms of chronic stress disorder: physical and psychi-

cal strain for a long time period, unpredictability and impossibility of controlling events can result in occurrence of secondary stress on different levels of one's life aspects, i.e. work, family life and social life, and can also decrease quality of life for caregiver as for the patient as well. The aim of this paper is to examine the sense of pressure in work-capable caregivers that care for an ill family member. *Methods:* Research has been conducted in Institution for Healthcare in march 2017. Examinees were work-capable informal caretakers that care for ill family member for more than six months. As a measuring instrument an „index of caregiver's load“ was used. *Results:* Research covered 92 examinees, of which 78 were female and 14 were male. Age of examinees varied between 30 and 65. They were of different degree of education and different employment status. Obtained results show exceptional load in being a caregiver and high level of stress for 64 of 92 examinees. *Discussion:* By analyzing the questionnaire individually or as a whole, a presence of problem in all examined areas is evident, and assumption of significant load of caregiver's role is confirmed, as well as high level of stress in persons that provide care for ill family member.

Key words: informal caregivers, stress, employment

Vnašanje narave v delovna mesta: percepcije zaposlenih o svojih pisarnah **Bringing nature into workspaces: Employees' perceptions of their offices.**

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Izhodišča: Vnašanje narave v notranje grajeno okolje preko dizajna ponuja prednosti, ki presegajo klasične vidike oblikovanja notranjih prostorov. Restorativni okoljski in ergonomski dizajn predstavlja novo paradigmo oblikovanja grajenega okolja, saj nizke okoljske vplive trajnostne gradnje dopolnjuje s poudarjanjem uporabnikovega blagostanja, ki ga spodbuja prek stika z naravo. *Metode:* Na podlagi ključnih ugotovitev s področja restorativnega okoljskega in ergonomskega dizajna so avtorji oblikovali vprašalnik, ki je bil uporabljen v spletni anketi, katere namen je bil določiti, kako je dizajn pisarn povezan z blagostanjem zaposlenih, in oceniti stanje pisarniških prostorov v Sloveniji. Z uporabo metode strukturnega modeliranja so avtorji analizirali podatke, pridobljene od 401 udeleženca. Vzorec je zajemal pisarniške delavce, zaposlene v različnih slovenskih podjetjih. *Rezultati:* Končni model je pokazal povezavo med različnimi vidiki naravnosti dizajna pisarn in blagostanjem zaposlenih. Z blagostanjem zaposlenih se povezujejo: prisotnost naravnih elementov v dizajnu (vse od prisotnosti lesa in rastlin do kvalitete zraka ter osvetljenosti prostorov), zaznana »naravnost« pisarniškega prostora in njegova restorativnost. *Diskusija in zaključki:* Dobljeni rezultati kažejo priložnost za izboljšanje stanja pisarniških pros-

torov v Sloveniji, da bi njihov dizajn približali načelom restorativnega okoljskega in ergonomskega dizajna. Rezultati te raziskave lahko obenem služijo kot spodbuda oblikovalcem in vodjem, da stremijo k oblikovanju zdravih delovnih okolij.

Ključne besede: grajeno okolje, pisarne, restorativni okoljski in ergonomski dizajn, strukturno modeliranje

Methods: A questionnaire was developed based on key findings in REED and a web survey was performed to determine how the design of office spaces is linked to employee well-being and assess the state of office spaces in Slovenia. 401 responses from office workers employed in various businesses in Slovenia were analysed using structural equation modelling. *Results:* The model revealed a relationship between various aspects of the presence of nature in office space design and employee well-being. The presence of elements of nature (ranging from the presence of wood and plants to perceived air quality and lighting conditions), perceived naturalness of the office space, and its restorativeness were linked to occupant well-being. *Discussion and conclusions:* The results show an opportunity to improve the state of Slovenian office spaces regarding their adherence to the principles of REED. The present results should serve as encouragement for designers and managers to strive towards creating healthful work environments.

Key words: built environment, offices, restorative environmental and ergonomic design, structural equation modelling

Obremenjenost zdravstvenih delavcev v urgentnem centru izbrane regijske bolnišnice Strain on healthcare workers at the emergency center of chosen regional hospital

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Izhodišča: Današnji stres se pomembno razlikuje od stresa, ki se je pojavljal pred mnogimi leti, postal je stalnica v vsakdanjem življenju. Zdravstveni delavci so poklicna skupina, ki so zaradi obremenjenosti pogosto izpostavljeni stresnim situacijam. Z raziskavo smo želeli ugotoviti ali so zaposleni v urgentnem centru v izbrani regijski bolnišnici pri svojem delu v stresu. Prav tako smo želeli ugotoviti prisotnost izgorelosti pri zaposlenih v urgentnem centru. *Metode:* Uporabili smo kvantitativno metodo dela. Za zbiranje podatkov smo kot instrument uporabili nestandardizirani anketni vprašalnik, ki smo ga oblikovali na podlagi pregleda literature. Uporabili smo neslučajnostni, priročni vzorec. V vzorec smo vključili vse izvajalce zdravstvene nege (33) zaposlene v urgentnem centru. Vrnjenih smo dobili 23 anketnih vprašalnikov, kar pomeni 70 odstotno izvedbo vzorca. V raziskavi je sodelovalo tudi deset zdravnikov, ki so bili v času anketiranja zaposleni v urgentnem centru. Podatki so bili analizirani s pomočjo statističnega programa IBM SPSS 23.0. Koeficient Cronbach alfa je za vsak posamezni sklop presegal vrednost 0,7. *Rezultati:* Zaposleni so najbolj v stresu zaradi nočnega dela, ki moti njihov bioritem in zaradi preveliko administra-

tivnega dela, kjer je povprečje na lestvici od 1 do 5 nad 4. Na to trditev je od desetih zdravnikov s 5 odgovorilo osem zdravnikov. Pri zaposlenih ni posebej izražena dejavnika, ki bi vplival na izgorelost zaposlenih v urgentnem centru, najbolj izstopata trditvi, da si na delovnem mestu preveč prizadevajo (PV=3, 2) in občutek, da so na delovnem mestu izgoreli (PV=2,7). Zaposleni, ki navajajo višjo stopnjo stresa doma in izgorevanja v službi se premalo trudijo za preprečevanje izgorevanja. *Razprava:* Stres je pri zaposlenih v urgentnem centru izbrane regijske bolnišnice zmerno prisoten. Zaposleni so v stresu zaradi preveč administrativnega dela in nočne službe, ki moti njihov bioritem. Pri svojem delu niso izgoreli. Zaposleni, ki čutijo izgorelost doma in v službi, premalo skrbijo za preprečevanje slednjega. Večina zaposlenih si želi več pogovorov s sodelavci in izražajo željo po metodah (predvsem team building), s pomočjo katerih bi lahko zmanjševali nastali stres, zato vodstvu izbrane regijske bolnišnice predlagamo ponovitev raziskave v celotni organizaciji in več poudarka na preprečevanju stresa v službi.

Ključne besede: obremenjenost, stres, izgorevanje, zdravstveni delavci.

Intoduction: Today's stress significantly differs from stress that occurred many years ago, it became a constant in everyday life. Healthcare workers are an occupational group that is frequently exposed to stressful situations due to their workload. With this research we tried to establish whether the employees at the chosen emergency center are under stress while they are working. We also wanted to determine the presence of burnout among the employees of the emergency center. *Methods:* We applied a quantitative work method. We used a non-standardized questionnaire as an instrument for data collection, which we designed after reviewing the literature. We used a non-random, convenience sample. The sample included all nursing personnel (33) working at the emergency center. We got 23 answered questionnaires back, which is 70 per cent of the sample. Ten physicians, who were employed at the emergency center at the time, were also involved in the research. The obtained data was analyzed using the statistical program IBM SPSS 23.0. The Cronbach alpha coefficient exceeded the value of 0.7 for each individual set. *Results:* The employees feel stressed mainly because of night work, which disrupts their biorhythm and due to too much paperwork, where average on a scale from 1 to 5 is above 4. Eight out of ten physicians responded with a 5 to this argument. There is no particularly expressed factor which would cause the burnout of employees at the emergency center, most obvious arguments are that they are too invested in their work (AV=3.2) and feeling burned-out in the workplace (AV=2.7). Employees who are indicating a higher level of stress at home and burnout at work are not trying enough to prevent the burnout. *Discussion:* Stress is moderately present among the staff at the emergency center of the chosen regional hospital. Employees are under stress because of too much paperwork and working nights, which disrupts their biorhythm. They do not feel burned-out at the workplace. Employees who feel burned-out at home and at work, are not trying enough to prevent it. Most of the employees wish to talk more with coworkers and express a desire for methods (especially team building) which could help reduce stress, that is why we suggest the management of the region-

al hospital conducts the research again, this time within the entire organization, and that it does more to prevent stress in the workplace.

Key words: strain, stress, burnout, healthcare workers.

Povezanost relacijske supervizije s čustveno regulacijo strokovnjakov v pomagajočih poklicih

The link between relational supervision with the emotional regulation of experts in the helping professions

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Izhodišča: Supervizija je razcvet dosegla v prejšnjem stoletju, ko je bila razumljena zlasti kot metoda učenja in širjenja psihoanalitičnega znanja. Danes predstavlja veliko več kot učenje; pomembna je na področju številnih strok, npr. v socialnem delu, psihologiji, psihoterapiji in vzgoji, kjer je njena vloga med drugim tudi skrb za čustveno oporo oz. regulacijo supervizantov. V procesu pomoči ljudem z izkušnjami izgub ali travm, strokovnjaki namreč tudi sami pogosto doživljajo čustvene stiske, ki v primeru, da ostanejo neprepoznane in nepredelane, vodijo v čustveno izčrpanost in izgorelost. Regulacija čustvenih odzivov in s tem povezana preventiva pred naštetimi težavami poteka v varnih odnosih, kot je npr. relacijska supervizija, ki daje poudarek raziskovanju čustvovanja in ustvarjanja varne navezanosti znotraj triadičnega sistema uporabnik – strokovnjak – supervizor. *Metoda:* Raziskava je kvalitativna in obsega dva dela. V prvem je pet strokovnjakov iz različnih področij odgovorilo na polstrukturiran vprašalnik, sestavljen iz odprtih vprašanj, ki so se nanašala na tiste vidike dela, ki ga doživljajo kot zahtevnega in težkega. Podatki so bili nato obdelani z analizo vsebine. Drugi del raziskave je študija primera: opisuje terapevta, ki redno tedensko dela z uporabnikom z izkušnjo travme, hkrati pa je vključen v relacijsko supervizijo. Podatki so bili zbrani prek vprašalnika, ki ga je terapevt izpolnil pred in po treh supervizijskih srečanjih, avdio posnetkov supevizijskih srečanj ter zaključnega intervjuja. Sledila je fenomenološka analiza podatkov. *Rezultati:* Rezultati podajo vpogled v obseg zahtevnosti pomagajočih poklicev, čustveno doživljanje te zahtevnosti ter povezanost tovrstnega doživljanja z držo strokovnjakov do sebe, do službenih in ostalih odnosov. Doživljanje izkušnje dobre supervizije pokaže na pomembnost prepoznavanja in ubesedenja zlasti težkih občutij ter nudenje čustvene opore strokovnjakom. Študija primera pokaže notranjepsihično doživljanje terapevta pri delu s travmo in spremenjen pogled nase ter terapevtski proces po izkušnji supervizije. *Diskusija:* Ugotovitve raziskave kažejo, da regulacija čustvenih odzivov v superviziji omogoča spremembe v strokovnjakovem doživljanju sebe ter svoje profesionalne vloge, kar je pomemben dejavnik preprečevanja čustvene izčrpanosti. Na podlagi ugotovitev menimo, da bi morala biti supervizija ena izmed pravic, ki bi zaposlenim v pomagajočih poklicih pripadala v luči skrbi za njihovo zdravje.

Ključne besede: relacijska supervizija, pomagajoči poklici, čustvena izčrpanost, izgorelost, čustvena regulacija

Introduction: Supervision came to flourish in the last century when it was understood chiefly as a method of learning and spreading psychoanalytical expertise. Today, it involves much more than learning and is important in many fields, e.g. social work, psychology, psychotherapy and education, where its role includes ensuring emotional support or regulation to the supervisees. In the process of helping people who have experienced loss or trauma, the experts themselves often experience emotional distress, which, if left unrecognized and not worked through, can lead to emotional exhaustion and burn-out. Regulation of emotional responses and related prevention in anticipation of the above problems takes place in safe relationships such as relational supervision, which focuses on examining emotional processes and creating safe attachment within the triadic user-expert-supervisor system. *Method:* This is a qualitative study consisting of two parts. The first part included five experts in various fields who replied to a semi-structured questionnaire comprising open questions which related to aspects of their work experienced as challenging and difficult. The information provided was processed by content analysis. The second part is a case study describing a therapist included in relational supervision and working on a regular weekly basis with a user who has suffered trauma. Information was collected from a questionnaire completed by the therapist before and after three supervision sessions, audio recordings of the supervision sessions and a closing interview. This was followed by a phenomenological data analysis. *Results:* The results give insight into the scope of challenges faced by the helping professions, how these challenges are experienced emotionally and how this experience relates to the experts' attitude to themselves and their professional and other relationships. A good supervision experience indicates the importance of recognizing and verbally expressing feelings, particularly uncomfortable ones, and providing emotional support to experts. The case study reveals intrapsychic experience of a therapist working with trauma and a changed perspective of themselves and the therapeutic process following supervision. *Discussion:* The study findings show that regulation of emotional responses through supervision enables changes in how experts experience themselves and their professional role, which is an important factor of preventing emotional exhaustion. On the basis of the findings it is proposed that supervision should be a right granted to employees in the helping professions in light of ensuring their health.

Key words: relational supervision, helping professions, emotional exhaustion, burn-out, emotional regulation

Povezanost doživljanja stresa s samooceno zdravja, delovno učinkovitostjo in ukrepi za obvladovanje stresa pri delu – raziskava pri zaposlenih v slovenski predelovalni industriji
Association between perceived stress, self-rated health, work productivity and stress management interventions – a study of employees in the Slovenian processing industry

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Izhodišča: Številne raziskave kažejo na povezanost doživljanja prekomernega stresa na delovnem mestu s slabšim zdravjem in zmanjšano produktivnostjo zaposlenih zaradi zdravstvenega absentizma ali prezentizma. Posledično je v zadnjem času v delovnih organizacijah vedno več pozornosti usmerjeno k programom in ukrepom za zmanjševanje stresa pri zaposlenih. **Metode.** Raziskavo smo izvedli v okviru projekta Zdravi na kvadrat II – promocija zdravja na delovnem mestu v kemijski in drugih predelovalnih industrijah, v marcu 2016 na vzorcu N=796 zaposlenih iz 17 slovenskih organizacij predelovalne industrije. Zanimala nas je povezanost med pogostostjo doživljanja stresa pri zaposlenih, njihovo samooceno zdravja, zdravstvenim absentizmom, zdravstvenim prezentizmom in ukrepi za obvladovanje stresa pri delu v delovni organizaciji. **Rezultati.** Rezultati kažejo, da se pogostejše doživljanje stresa pri zaposlenih povezuje s slabšo samooceno zdravja, večjim številom zdravstvenih težav v zadnjem mesecu in več dnevi zdravstvenega absentizma in prezentizma v zadnjem letu. Najpogosteje implementirani ukrepi za obvladovanje stresa v vključenih delovnih organizacijah so bili vezani na informiranje zaposlenih o poklicnem stresu in njegovih posledicah ter zagotavljanje usposabljanja na področju spoprijemanja s stresom, medtem ko so bili ukrepi na organizacijski ravni redki. **Diskusija.** Raziskava kaže na potrebo po sistematični implementaciji ukrepov za obvladovanje stresa v delovnih organizacijah in raziskovanju njihovih učinkov na dobro počutje in delovno učinkovitost zaposlenih.

Ključne besede: stres na delovnem mestu, samoocena zdravja, zdravstveni absentizem, zdravstveni prezentizem, ukrepi za obvladovanje stresa pri delu

Introduction. Employees' high levels of perceived workplace stress has been associated with impaired health and lost productivity due to sickness absenteeism and sickness presenteeism. As a result, there's been a growing interest in programs and interventions to reduce stress at work among organizations. **Methods.** The study was conducted as a part of the project Healthy on a square II – workplace health promotion for employees in the chemical and other processing industries, in March 2016 in the sample of N=796 employees of 17 Slovenian companies in processing industry. The aim of the study was to examine

the relationship between employees' frequency of perceived stress, self-rated health, sickness presenteeism, sickness absenteeism and implemented stress management interventions. *Results.* The results indicated that higher frequency of perceived stress is associated with poorer self-rated health, higher number of health problems in the past month and more days of sickness absenteeism and sickness presenteeism in the past year. Regarding the implemented activities for managing work-related stress in included organisations, most commonly reported activities were informing employees about work-related stress and its consequences and stress management training provision, while organisational-level interventions were rare. *Discussion.* The study highlights the need for systematic implementation of stress management interventions and research on their effect on employees' well-being and work productivity.

Key words: stress at work, self-rated health, sickness absenteeism, sickness presenteeism, stress management interventions

Elementi motivacije kot prediktorji zadovoljstva z delom **Elements of motivation as predictors of job satisfaction**

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Izhodišča: Zadovoljstvo z delom, delovno aktivnega prebivalstva je ključnega pomena za njihovo duševno zdravje. Odraža se v motivaciji za delo. Za zdravstvene delavce, predvsem za medicinske sestre je značilno delo v težkih delovnih pogojih, kjer je motivacija še posebej pomembna z namenom preprečevanja zdravstvenih težav, odhodov zaposlenih in drugih resnih zapletov. Cilj te raziskave je bil ugotoviti kateri motivacijski elementi vplivajo na splošno zadovoljstvo z delom. *Metode:* Pilotno študijo smo izvedli med decembrom 2016 in februarjem, leta 2017. Udeleženci raziskave študentje izrednega študija Univerze v Reki, Fakultete za zdravstvene vede, Univerze za uporabne znanosti Karlovca in Medicinske fakultete, Univerze v Osijeku. Uporabili smo večdimenzijsko lestvico delovne motivacije. *Rezultati:* Med udeleženci je bilo 24 (19,8 %) moških in 102 (81,0 %) žensk. Njihova povprečna starost je bila 31,9 (SD=6,8) let. Udeleženci so ocenili svoje zadovoljstvo z delom z uporabo deset stopenjske ordinalne lestvice, pri čemer ocena 1 pomeni popolnoma nezadovoljen, ocena 10 pa popolnoma zadovoljen. Rezultati linearne regresije so pokazali, da 8,8 % variance zadovoljstva z delom razložijo naslednji motivacijski elementi ($p=0,006$): ekstrinzična regulacija-socialno, ekstrinzična regulacija-materialno, regulacija preko identifikacije in intrinzična motivacija. Našteti elementi motivacije najmočnejše vplivajo na zadovoljstvo z delom. *Diskusija:* Rezultati raziskave so pokazali, da bi bilo potrebno tako s strani medicinskih sester, kot njihovega managementa izvesti ukrepe za izboljšanje motivacije medicinskih sester. Ukrepe pa utemeljiti na identificiranih ključnih elementih motivacije za delo. Zaradi nizkega deleža pojasnjene variance bi bile potreben nadaljnje raziskave prediktorjev zadovoljstva z delom.

Ključne besede: motivacija za delo, klinično okolje zdravstvene nege, teorija samodeterminacije

Introduction: Job satisfaction of the working-age population is crucial for their mental health and is determined by the employee motivation. Health care workers, especially nurses, work in difficult conditions where motivation is crucial for avoiding health problems, turnovers, and other severe problems. The objective of this study was to identify which motivation elements significantly affect the overall job satisfaction. *Methods:* This pilot study was performed between December, 2016 and February, 2017, the participants were employed part-time nursing students of the University of Rijeka Faculty of Health Studies, University of applied sciences Karlovac and University of Osijek, Faculty of Medicine. The translated Multidimensional Work Motivation Scale was used. *Results:* 24 (19.8 %) were males, 102 (81.0 %) females. Their average age was 31.9 (SD=6,8) years. Participants evaluated their job satisfaction by using an ordinal scale ranging from totally unsatisfied (1) to totally satisfied (10). Results of a final linear regression model indicate that, 8.8 % of job satisfaction variance is explained by the following motivation elements ($p=0.006$): Extrinsic regulation–social, Extrinsic regulation–material, Identified regulation, and Intrinsic motivation, which resulted as the construct with the strongest impact on job satisfaction. *Discussion:* Our results indicate, that both nurses and their managers should perform actions, which will improve the nurses' motivation by considering the aforementioned motivation elements. Furthermore, due to relatively low explained variance, further predictors should be identified.

Key words: Work motivation, Nursing practice environment, Self-determination theory

Iz finančnih razlogov ali zaradi aktivnega staranja? Telesno in duševno zdravje starejših prekarnih delavcev in raziskava SHARE

For financial or active ageing reasons? Mental and physical health of the older precarious workers in SHARE survey

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Izhodišča: Namen prispevka je predstaviti analizo starejših prekarnih delavcev in njihovega zdravstvenega stanja z uporabo podatkov petega vala raziskave SHARE, pri čemer odgovarjamo na vprašanje: "Ali so starejši prekarni delavci resnično depriviligirani v smislu slabšega duševnega in telesnega zdravja v primerjavi s starejšimi zaposlenimi in splošno starejšo populacijo?" *Metode:* V prispevku uporabljamo deskriptivne statistike in bivariatne teste za osnovni vpogled v vprašanje ter ekonometrične modele končnega mešanja za ustrezno modeliranje heterogenosti v vzorcu. *Rezultati:* V nasprotju s pričakovanji, zdravje starejših samozaposlenih ni slabše od starejših zaposlenih. Razlike v zdravju med obema skupinama se pojavijo šele, ko v primerjavo vključimo t.i. "prave" prekarne delavce, t.j. tiste, ki niso niti zaposleni niti samozaposleni,

opravljajo pa neko obliko plačanega dela. Naša analiza tudi pokaže na močno heterogenost znotraj tako obravnavanih prekarne delavcev (samozaposlenih in "pravih" prekarne delavcev), ki jih lahko ločimo v dve veliki skupini: tiste, ki prekarne delo opravljajo zaradi finančnih razlogov in tiste, ki ga opravljajo zaradi aktivnejšega preživljanja staranja. Med obema skupinama so velike razlike predvsem v dohodku in zdravstvenih pokazateljih. *Diskusija in zaključki:* Ukrepi za izboljšanje stanja starejših prekarne delavcev morajo upoštevati obstoj dveh omenjenih številčno velikih skupin v populaciji s povsem drugačnimi značilnostmi in zdravstvenimi potrebami.

Ključne besede: prekarne delavci, starejši, samozaposleni, zdravstveni pokazatelji, modeli končnega mešanja, aktivno staranje

Introduction: To present the analysis on older precarious workers and their health situation using Wave 5 of the SHARE survey and studying the main question: "Are older precarious workers really discriminated in terms of worse mental and physical health as compared to the older employed people and general older population?" *Methods:* Descriptive statistics and bivariate tests are used to get basic insight while finite mixture econometric models are used to model the heterogeneity in the sample. *Results:* Contrary to the expectations, the health of older self-employed workers is generally in no way inferior to older employees. Problems in health of the precarious workers emerge only with the focus changing to those neither employed nor self-employed, while engaged in paid work («true» precarious people). The analysis also points to a strong heterogeneity among precarious workers which fall into two large groups: »precarious workers for money reasons« and »precarious workers because of active ageing reasons«, with clearly visible differences among the two groups in income and health. *Discussion and Conclusions:* Measures to improve the condition of older precarious workers have to take into account two clearly different and large groups in the data with completely opposite characteristics and health care needs.

Key words: precarious workers, older people, self-employed, health indicators, finite mixture models, active ageing

Spopadanje s stresnimi situacijami z vidika prisotnosti čustvenih kompetenc

Fighting stressful situations from the viewpoint of emotional competence

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Izhodišča: Stres je pomemben dejavnik v vsakodnevem življenju, ki vpliva na zdravje posameznika. Je odziv organizma na različne notranje in zunanje dejavnike. V kolikšni meri se je posameznik sposoben spoprijeti s stresnimi situacijami je med drugim povezano tudi z njegovimi sposobnostmi čustvenega procesiranja. Čustvene kompetence pokažejo kako posameznik v določenem razvojnem obdobju dojema čustva, kako jih izraža in komunicira ter kako jih in-

tegrira v občutje sebe. Z raziskavo smo želeli ugotoviti kako prisotnost čustvenih kompetenc vpliva na posameznikovo strategijo spopadanja s stresnimi situacijami. *Metode:* Izvedli smo kvantitativno raziskavo. Pri izračunu povezanosti med merami čustvenih kompetenc (merjeno z Vprašalnikom čustvenih kompetenc) in strategijami spopadanja s stresnimi situacijami (merjeno z vprašalnikom Brief COPE) smo preverili pogoje za izračun korelacijskih koeficientov in za bivariantno korelacijsko analizo uporabili Spearman's rho. V analizo so bili vključeni podatki 289 udeležencev. *Rezultati:* Rezultati raziskave so pokazali, da se vsaka poddimenzija čustvenih kompetenc v statistično pomembni meri povezuje z najmanj štirimi strategijami spopadanja s stresnimi situacijami. Korelacijska povezanost med variablami je šibka ($r=0.154$), na nivoju 1 % tveganja, do močna ($r=0.589$), na nivoju 5 % tveganja. *Diskusija:* Osvajanje čustvenih kompetenc je dejavnik, ki lahko vpliva na izbiro funkcionalnih strategij spoprijemanja s stresom. Vseživljenjski razvoj vodi k večji čustveni kondiciji, ki delovno aktivni populaciji na poslovnem področju daje priložnost kreativnega in ustvarjalnega delovanja ter na osebem področju občutek polnosti življenja.

Ključne besede: stres, spoprijemanje s stresom, čustvene kompetence, čustvena kondicija

Starting points: Stress is an important factor in daily life, affecting individual's health. It is organism's response to different inner and external factors. The degree to which an individual is capable of dealing with stressful situations is also related to his ability of emotional processing. Emotional competence shows the way a person understands emotions in a certain developmental period, the way he expresses, communicates and integrates them into his self-perception. The aim of our research project was to ascertain the impact of emotional competence upon individual's strategy of dealing with stressful situations. *Methods:* We performed a quantitative research. Regarding the calculation of the mutual dependence of degrees of emotional competence (based on the Emotional competence questionnaire) and stress handling strategies (Brief COPE questionnaire) we checked the conditions for the calculation of correlation coefficients and applied Spearman's rho for the bivariant correlation analysis. The analysis included data on 289 participants. *Results:* According to the research results every subdimension of emotional competence is related to at least four strategies of stress handling in a statistically significant measure. Correlation between variables is weak ($r=0.154$), at the level of 1 % risk, to strong ($r=0.589$), at the level of 5 % risk. *Discussion:* Acquisition of emotional competence is a factor affecting the choice of functional strategies of stress handling. Lifelong progress leads to a better emotional condition, which, in turn, sustains active population with the ability of creative performance in the business field, as well as with the feeling of living a full life in private sphere.

Key words: stress, stress handling, emotional competence, emotional condition

Breme vesti kot dejavnik tveganja za izgorelost medicinskih sester v enotah intenzivne nege in terapije v Univerzitetnih kliničnih centrih Ljubljana in Maribor
Stress of conscience as a risk factor for burnout among ICU nurses in University Medical Centres Ljubljana and Maribor

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Izhodišča: Vest medicinske sestre je pomemben dejavnik sprejemanja odločitev na delovnem mestu. Vest je dobra ali slaba, lahko svari ali zahteva, spodbuja ali obsoja. Slaba vest se pojavi ob neupoštevanju svoje vesti. V povezavi s kakovostjo opravljenega dela je lahko slaba vest povzročitelj stresa. Stres na delovnem mestu je fenomen, ki ga definira več endogenih in eksogenih dejavnikov, npr. prisotnost različnih stresorjev v okolju in posameznikova sposobnost spopadanja z njimi. Daljša izpostavljenost stresnim situacijam lahko privede do delovne izgorelosti, kar je stanje fizične in čustvene izčrpanosti, ki izhaja iz notranjega dogajanja v posamezniku. Pri osebah, ki izgorevajo, so prisotni depresivni in anksiozni simptomi ter depersonalizacija. *Metoda:* Izvedena bo presečna študija na medicinskih sestrah, zaposlenih v enotah intenzivne nege in terapije. Izbran merski instrument bo slovenska različica švedskega vprašalnika Stress of Conscience Questionnaire. *Rezultati:* Pričakujemo, da bodo rezultati pokazali, da breme vesti vpliva na prisotnost simptomov izgorelosti pri medicinskih sestrah v enotah intenzivne nege. *Diskusija:* Zaradi narave dela v kliničnem okolju lahko slaba vest povzroči tvorbo simptomov izgorelosti, zlasti v enotah intenzivne nege in terapije, kjer so pacienti pod konstantnim nadzorom visoko usposobljenega zdravstvenega tima. Medicinske sestre v teh enotah nudijo neprekinjeno zdravstveno nego, v idealnih delovnih okoljih le enemu pacientu.

Gljučne besede: intenzivna zdravstvena nega, stres na delovnem mestu, duševno zdravje, medicinska sestra.

Introduction: A nurse's conscience is an important factor in clinical decision making. Conscience can be clean or troubled, it can warn or demand, encourage or judge. A troubled conscience appears when a person neglects the voice of their own conscience. When related to the quality of the service provided, a troubled conscience can become a cause of stress. Work related stress is a phenomenon defined by endogenous and exogenous factors: the presence of various environmental stressors and the individual's coping ability. A prolonged period of exposure to stressful situations may lead to occupational burnout. Burnout is a state of physical and emotional exhaustion originating in an individual's internal processes, but triggered by external burden. Individuals that burn out exhibit symptoms of depression, anxiety and depersonalisation. *Method:* A cross-sectional study design will be used. We will be using a Slovene version of the Swedish Stress of Conscience Questionnaire on nurses working in intensive care units. *Results:* We expect the results to show that

a troubled conscience has an impact on the presence of burnout symptoms in nurses. *Discussion:* Due to the nature of work in clinical environments a troubled conscience can cause burnout symptoms, especially in intensive care units where patients are monitored constantly by highly trained professional teams. In an ideal workplace, nurses in the intensive care units offer continuous nursing to only one patient.

Key words: intensive care nursing, workplace stress, mental health, nurse

Povezanost stresa, povezanega z delom, in kakovosti pedagoškega procesa med učitelji zdravstvene nege **Correlation between the professional stress of nursing teachers and the quality of the teaching process**

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Izhodišča: Učitelji na področju zdravstvene nege se dnevno srečujejo s številnimi stresorji. Brez učinkovitega soočanja s stresom, lahko le- ta povzroči številne psihofizične odzive in tako vpliva na kakovost učnega procesa. Zastavili smo si naslednje raziskovalno vprašanje: Ali obstaja povezava med stresom, povezanim z delom, in kakovostjo pedagoškega procesa pri učiteljih zdravstvene nege. *Metode:* Sistematični pregled literature smo izvedli s pomočjo relevantnih baz podatkov (npr. EBSCO, Science direct) in relevantnih spletnih strani različnih organizacij s področja zdravstvene nege. V pregled literature smo vključili dela, objavljena med letom 2005 in 2017. *Rezultati:* Pregled literature je pokazal, da sta krepitev metod s pomočjo katerih se učitelji zdravstvene nege uspešneje soočajo s stresom in stopnja zadovoljstva z delom pomembno povezani s kakovostjo pedagoškega procesa. Stopnja negativnega stresa, povezanega z delom, in kakovost pedagoškega procesa, pa sta med seboj negativno povezani. *Diskusija:* Stres, povezan z delom, zmanjšuje zadovoljstvo z delom in prispeva k nastanku izgorelosti pri delu. Negativne posledice stresa je mogoče preprečiti s prepoznavanje sindroma izgorelosti in z uporabo strategij soočanja s stresom. Slednje lahko prispeva k zdravstvenemu delovnemu okolju in izboljšanju kakovosti pedagoškega procesa.

Ključne besede: zadovoljstvo z delom, učitelji zdravstvene nege, stres, povezan z delom, učni proces.

Introduction: Nursing teachers face various stressors in their work environment on a daily basis. Without effective confrontation, stressors can cause serious psychophysical reactions and consequences, and ultimately reduce the quality of the education process. We are posing the following research question: Is there a correlation between the professional stress of nursing teachers and the quality of the teaching process? *Methods:* A systematic search of literature was performed by using relevant databases (e.g. EBSCO, Science direct) and

relevant web pages of nurses' organisations. The literature published between 2005 and 2017 was taken into consideration. *Results:* The search of literature review indicates that strengthening methods of facing nursing teachers with stress and generally the level of job satisfaction are strongly correlated with the quality of the teaching process, while the level of professional stress and the quality of the teaching process are clearly negatively correlated. *Discussion:* The professional stress of nursing teachers reduces job satisfaction and contributes to professional burnout. Harmful consequences of stress can be prevented by recognizing burnout phenomenon and applying renewable coping strategies, which ultimately can contribute to the creation of a healthy working environment and improve the quality of the teaching process.

Key words: job satisfaction, nursing teachers, professional stress, teaching process.

Prisotnost stresa, povezanega z delom, med učnim osebjem medicinske fakultete v Foči

Presence of professional stress in teaching staff at the medical faculty in Foca

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Izhodišča: V zadnjih letih narašča število raziskav, ki se ukvarjajo s proučevanjem psihosocialnih vidikov delovno aktivnega prebivalstva. Cilj raziskave je bil preučiti raven stresa, povezanega z delom, med učnim osebjem Medicinske fakultete v Foči. *Metoda:* Študija je bila zasnovana kot presečna raziskava, v kateri je sodelovalo 47 udeležencev. Uporabili smo vprašalnik, ki je vključeval sociodemografske spremenljivke, vprašanja za oceno zdravstvenega stanja vprašalnik za oceno zdravstvenega stanja in instrument za merjenje izgorelosti. Statistična analiza je bila opravljena s pomočjo SPSS statističnega programskega paketa. *Rezultati:* Večina vprašanih (83 %) doživlja stres na delovnem mestu. Pri 42,6 % udeležencev smo identificirali izgorelost povezano z delom. S pomočjo vprašalnika SF-36 smo ugotovili, da 2,1 % udeležencev ocenjuje telesno in duševno komponento kakovosti življenja kot slabo; 23,4 % udeležencev je ocenilo svoje duševno in telesno zdravje kot "dobro"; 74,5 % vprašanih po kot odlično. *Zaključek:* Udeleženci, pri katerih so prisotni zanki izgorelosti imajo nižjo kakovost duševnega zdravja.

Ključne besede: kakovost življenja, stres, povezan z delom, zdravje.

Introduction. In recent years, an increasing number of studies dealing with the study of the psychosocial aspects of the working-age population. The aim of the research was to examine the level of professional stress in the teaching staff at the Medical Faculty in Foca. *Methodology.* The study was designed as a cross-sectional study with 47 patients. The survey included faculty from the Medical Faculty in Foca. We used a sociodemographic questionnaire, a questionnaire to assess health status and inventory Masleč burnout. Statistical analysis was

performed using SPSS statistical software package. *Results.* Most respondents (83 %) is under stress in the workplace, and in 42.6 % of the respondents identified syndrome professional burnout. SF-36 questionnaire, it was found that the physical and mental component of quality of life is assessed as bad in 2.1 % of patients, their physical and mental health is well rated by 23.4 % , and excellent 74.5 % of respondents. *Conclusion.* A larger number of patients in whom the presence of burnout syndrome have a significantly lower quality of mental health.

Key words: quality of life, professional stress, health.

**Sekcija/Section
Uporaba informacijsko-
komunikacijske tehnologije
na področju javnega
zdravja**

**Use of Information
and Communication
Technologies in Public
Health**

Vabljeno predavanje Invited lecture

Pomen izobraževanja za e-zdravje The role of education for e-health

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Z digitalizacijo zdravstva se spreminjajo procesi v zdravstvu. Teh procesov ne morejo spremeniti zunanji izvajalci, pač pa jih lahko spreminjajo le zdravstveni delavci sami. Nerazumevanje teh pravil pogosto vodi v povečanje stroškov za razvoj in vpeljavo informacijsko komunikacijske tehnologije in predvsem k ne-uporabi razvitih rešitev. V prispevku bodo predstavljeni primeri zdravja na daljavo, ki zahtevajo spremembe v načinu dela in predvsem spremembo doktrine k bolj celostni obravnavi. Da bi lahko dosegli zastavljene cilje, je torej potrebno spremeniti način razmišljanja v glavih zdravstvenih delavcev. Potrebno jih je podpreti v smeri inovativnosti in kritičnega razmišljanja ter poznavanja sodobnih trendov razvoja. Za svoje delo v prihodnje potrebujejo spremenjene, nove kompetence. Takšno izobraževanje je smiselno pričeti tekom izobraževanja in ga razširiti na vseživljenjsko učenje tako za zdravstvene delavce, kot tudi za paciente.

Ključne besede: e-zdravje, zdravje na daljavo, digitalizacija, izobraževanje, kompetence.

Together with the digitalization of health services we alter processes in health care. These processes cannot be changed by external providers. They can only be changed inside the health system by health workers themselves. Misunderstanding of this rule often leads to increased costs of developing and implementing information and communication technologies and above all towards inapplicability of information solutions. Examples from the field of telemedicine will be presented along with the necessary changes in the work processes and the changes of doctrine towards a more holistic approach. In order to achieve the set objectives, it is required to change the ways of thinking in the heads of health workers. Their reasoning must be supported in the direction of innovativeness, critical thinking and being familiar with the current trends in health care and digitalization. For their future work they require a new set of competences. Such education should begin during formal education in schools and needs to be widened towards life-long learning of health workers and patients.

Key words: e-health, telemedicine, digitalization, education, competences.

Uporaba IKT za oddaljeno spremljanje pacientov: primer rešitve myDataHub Using ICT for Remote Patient Monitoring: solution myDataHub

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Z razmahom interneta stvari, ki informacijsko komunikacijske tehnologije prinaša praktično v vse pore našega življenja, se pojavljajo tudi rešitve za oddaljeno zdravstveno oskrbo pacientov. Na voljo so različne merilne naprave, ki omogočajo zajem vitalnih podatkov, kot so srčni utrip, stopnja glukoze v krvi, pljučna kapaciteta, stopnja dnevne aktivnosti, telesna masa, telesna temperatura itd. Podatek, ki ga s tako napravo izmerimo, se mora prenesti v zaledni sistem, kjer bo na voljo zdravniškemu osebju. Poleg jezikovnih ovir ter problemov z vzpostavitvijo povezave med napravo in mobilnim telefonom je težava tovrstnih sistemov tudi v dostopnosti izmerjenih meritev, saj se podatki zapišejo le v zaledni sistem ponudnika merilne naprave in niso na voljo zdravniškemu osebju. V prispevku opisujemo rešitev myDataHub, ki rešuje omenjene težave. Rešitev samodejno zazna merilno napravo, pacientu prikaže meritve ter po njegovi odobritvi le-to posreduje v zaledni zdravstveni sistem. Za pregled meritev je na voljo specializiran portal za zdravniško osebje, ki se povezuje tudi z drugimi viri zdravstvenih podatkov. Naprava myDataHub je bila razvita v okviru projekta EkoSMART in bo pilotsko uporabljena v povezavi s pacienti s srčnim popuščanjem. Naprava je na voljo v štirih različicah: za tablice, za pametne telefone, za pametne televizije in kot "črna škatla".

Ključne besede: telemedicina, oddaljeno spremljanje pacientov, internet stvari

With the advent of the "internet of things", ICT is coming virtually in all aspects of our lives. Healthcare is no exception - remote patient monitoring is just an example of the ICT-enabled solutions that bring disruptive innovations in healthcare delivery. There are plenty of devices that we can use today, to measure different vital signs. The measurements are then sent to a backend system where they are available to authorised users. But here we encounter a problem: each such device comes with its own mobile application and own, typically cloud-based backend system. Apart from the language barriers and frequent connectivity problems, the main issue is that the measurements are locked to the cloud and are not directly visible to medical staff over their information systems. In this paper, we introduce a software solution, called "myDataHub" that successfully solves these problems. When a patient starts new measurement, myDataHub automatically detects the measuring device, acquires the measurement, displays it to the patient, and transmits it to a dedicated server. The data in the repository is available to the medical staff over specialized portals which support various functions, including anomaly detection in clinical data, modelling of tele-medical treatment plans, etc.

Key words: telemedicine, remote patient monitoring, internet of things

Promocija zdravja na delovnem mestu: izboljšanje prehranskih navad zaposlenih v družbi Soške elektrarne Nova Gorica s pomočjo mobilne aplikacije »Prehranski navigator«
Workplace health promotion: improving dietary habits among employees in the company Soške elektrarne Nova Gorica using mobile application »Food Navigator«

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Izhodišča: Kronične nenalezljive bolezni se uvrščajo med dolgoročne napovedovalce odsotnosti z dela. Rezultati številnih raziskav dokazujejo neposredno povezavo nezdravih prehranjevalnih navad s pojavom kroničnih nenalezljivih obolenj. Zdravstveni absentizem ima občutne ekonomske posledice za delavce, delodajalce ter narodno gospodarstvo. Namen prispevka je prikazati primer dobre prakse promocije zdravja na delovnem mestu v okviru projekta „Malica ni kava in cigaret“, ki ga je sofinanciral Zavod za zdravstveno zavarovanje Slovenije. *Metode:* Za aktivno sodelovanje v programu promocije zdravja na delovnem mestu, se je odločilo 51 zaposlenih družbe Soške elektrarne Nova Gorica. Raziskava je bila omejena na obdobje šestih mesecev in sicer od novembra 2015 do aprila 2016. Uporabljena je bila kvantitativna metoda raziskovanja z uporabo anketnega vprašalnika ter izvedbo zdravstvenih meritev ob začetku in koncu projekta. V okviru zdravstvenih meritev so bile izvedene laboratorijske meritve koncentracije glukoze, holesterola in maščob v krvi ter analiza telesne sestave, kjer so bili merjeni parametri telesna masa, bazalni metabolizem, deleži maščob, mišične mase in vode v telesu ter stopnja visceralne maščobe. V vmesnem obdobju so sodelujoči kot pripomoček za osveščanje o uravnoteženem in zdravem prehranjevanju uporabljali mobilno aplikacijo „Prehranski navigator“. *Rezultati:* Po šestmesečnem sledenju prehranskim priporočilom s pomočjo aplikacije „Prehranski navigator“, so se pri 30 % zaposlenih izboljšali tisti merjeni zdravstveni parametri, ki omogočajo oceno verjetnosti pojava nekaterih kroničnih nenalezljivih obolenj. *Diskusija in zaključki:* Na področju zdravstvenega absentizma je Slovenija v vrhu EU. Primeri dobrih, a žal maloštevilnih praks promocije zdravja na delovnem mestu kažejo tako socialno kot tudi ekonomsko upravičenost izvajanja, saj pomembno prispevajo k izboljšanju zdravstvenega stanja zaposlenih in posledično zmanjšujejo stopnjo zdravstvenega absentizma.

Ključne besede: promocija zdravja na delovnem mestu, zdravstveni absentizem, kronična nenalezljiva obolenja, mobilna aplikacija.

Introduction: Healthy and balanced diet has been proven to have significant impact on the reduction of risk of chronic non-communicable diseases and on the health and quality of life in general. A substantial economic burden from non-communicable diseases is borne by workplaces, in particular, lost productivity resulting from absenteeism. Absenteeism due to illness has significant economic consequences not only for employers but also for workers and the national economy. The purpose of this paper is to show an example of good practice of workplace health promotion under the project „Brunch is coffee

and cigarettes“. The project was co-financed by the Health Insurance Institute of Slovenia. *Methods:* 51 employees working for the company Soške elektrarne Nova Gorica decided to participate in the workplace health promotion program included in the project „Brunch isn't coffee and cigarettes“. The research was limited to a period of six months from November 2015 to April 2016. A quantitative research method was used. As an instrument for data collection, a survey questionnaire was carried out. Medical measurements of blood glucose, cholesterol and triglycerides were collected and body composition analysis monitoring percentages of body fat, muscles and water at the beginning and end of the project were carried out. In the meantime, participants were asked to use mobile application „Food Navigator“ as a tool for raising awareness and improving unhealthy eating habits. *Results:* After six months follow-up, significant improvements were observed. The results showed an improvement of measured health parameters commonly used to estimate risk factors for developing chronic non-communicable diseases among 30 % of employees who followed the dietary recommendations using mobile application „Food Navigator“. *Discussion and conclusions:* In the area of health-related absenteeism Slovenia is among leading countries in EU. Examples of good practice of workplace health promotion show that workers actively participating in wellness programs are absent less often and perform better at work as compared with their non-participant counterparts.

Key words: workplace health promotion, health-related absenteeism, chronic non-communicable diseases, mobile application.

Kritičen pregled obiskanosti in vsebin spletnih strani zdravstvenih organizacij

Critical review of viewership and contents on official healthcare organizations websites

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Izhodišča: Na svetovnem spletu dostopamo do informacij o bolezni in načinih ohranjanja zdravja. Zaradi razširjenosti in cenovne ugodnosti je to smiselno uporabiti v preventivni zdravstveni dejavnosti. Z raziskavo želimo ugotoviti, ali so spletne strani slovenskih zdravstvenih organizacij primerne za posredovanje vsebin o zdravju. *Metode:* S stratificiranim vzorčenjem po zdravstvenih regijah smo zbirali ocene povprečnega števila dnevniških obiskovalcev spletnih strani javnih zdravstvenih zavodov in beležili prisotnost vsebin za promocijo zdravja. Izmed 200 v Sloveniji najbolj obiskanih spletnih strani pa vzorčili tiste, ki omogočajo vključevanje zdravstvenih tematik. Zbiranje podatkov je potekalo od 13. do 15. 4. 2017. *Rezultati:* Primerjali smo povprečna števila dnevniških obiskovalcev 46-ih spletnih strani zdravstvenih organizacij ($M=62,5$; $QR=100$) in 34-ih tematsko ustreznih, v Sloveniji najbolj obiskanih spletnih strani ($M=10081,5$; $QR=6720,9$). Spletne strani zdravstvenih organizacij že vključujejo vsebine za promocijo zdravja, v obliki zdravstveno-vzgojnih vsebin ali informiranja o preventivnih dogodkih. *Diskusija in zaključki:* Po pričakovanjih so spletne strani zdra-

vstvenih organizacij na nacionalni ravni slabo obiskane in zato manj primerne za promocijo zdravja. Spletne strani lekarn so oblikovno najbolj dovršene in najpogosteje vključujejo vsebine za promocijo zdravja (oglaševanje produktov). Za promocijo zdravja je bolje uporabiti obstoječe portale z zdravstvenimi tematikami, saj tako dosežemo bistveno večje število ljudi.

Ključne besede: promocija zdravja, preventivna zdravstvena dejavnost, svetovni splet

Introduction: We use world wide web to access health-related information regarding disease or healthy behavior. Its wide use, and economic efficiency should be considered in preventive healthcare. In this research, we want to determine if official Slovenian healthcare organizations websites are suitable for content sharing in health promotion. *Methods:* Using stratified sampling we gathered estimations of average number of daily visitors for websites of Slovenian public healthcare organizations and a list of 200 websites with most visitors in Slovenia, to identify websites suitable for health-related topics. Any detected health promotion content was noted. Data was collected in 13. – 15. 4. 2017 period. *Results:* Estimations of average daily visitors from 46 official healthcare organizations websites ($M=62,5$; $IQR=100$) were compared to 34 suitable websites with high viewership nationally ($M=10081,5$; $IQR= 6720,9$). Official healthcare organizations websites included health promotion contents in health-education and event informing forms. *Discussion:* As expected official healthcare organizations websites have low viewership nationally and are therefore less suitable for health promotion. Websites owned by pharmacies were visually most sophisticated and included health promotion contents most frequently (product marketing). Health promotion should take place on established websites with health-related topics, to reach a larger number of people.

Key words: health promotion, preventive care, world wide web

Časovna obremenjenost medicinske sestre pri različnih metodah naročanja pacienta

Time burden nurses face through various methods of patient appointment scheduling

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Izhodišče: Na nacionalni ravni poteka vzpostavitev storitve eNaročanje, ki želi nadomestiti klasično naročanje pacienta. V tej študiji smo raziskali časovno obremenjenost medicinske sestre pri posameznih metodah naročanja pacienta. *Metode:* Uporabili smo kvantitativno metodo dela. Zajeli smo vzorec vseh naročenih pacientov v 12 dneh v mesecu maju 2017 v specialistični ambulanti na območju severovzhodne Slovenije. Zbirali smo podatke o času, ki je potreben za izvedbo različnih metod naročanja pacienta in jih interpretirali s pomočjo opisne statistike. *Rezultati:* Preliminarni rezultati študije, zbrani v 12 dneh, so prikazali, da medicinska sestra pri naročanju pacientov po telefonu ($n=65$) v povprečju porabi 129 sekund (95% interval zaupanja: 117-162) in 134 sekund (95% IZ: 120-149) za naročanje pacientov osebno ($n=16$). Elektronsko naročan-

je pacientov ($n=23$) medicinski sestri neposredno ne povzroča dodatnih časovnih obremenjenosti vendar slednje kljub vsemu nastajajo, predvsem zaradi vzpostavitve storitve eNaročanja in s tem povezanih težav pacientov. *Diskusija in zaključki:* Z raziskavo smo prikazali, da je eNaročanje pacienta za medicinsko sestro najmanj obremenjujoče, učinkovitejše in časovno manj potratno.

Ključne besede: eZdravje, eNaročanje, medicinska sestra, zdravstvena nega, časovna obremenitev

Background: There is a present tendency on the national level to replace classic scheduling of patients through eNaročanje service. In this study, we observed the time burden that patient appointment scheduling represents to nurses in Slovenia. *Methods:* We used quantitative research method and captured the appointment scheduling data in specialist clinic for all patients in 12 days of May 2017. We collected data of the time that is needed to perform various methods of patient appointment scheduling and analysed the data using descriptive statistics. *Results:* Our study results show that the average time for telephone based scheduling ($n=65$) was of 129 seconds (95% CI: 117-162) and 134 seconds (95% CI: 120-149) for patient appointment scheduling at the clinic in person ($n=16$). Electronic patient appointment scheduling ($n=23$) does not present additional time burden for a nurse directly, but problems still do occur mainly due to eNaročanje service and the problems patients face using it. *Discussion and conclusion:* With this study, we showed that patients appointment scheduling with eNaročanje service presents the smallest increase of the workload for a nurse, is more efficient and less time consuming.

Key words: eZdravje, eNaročanje, nurse, nursing, time burden

Cirkadni ritem in umetna svetloba **Circadian rhythm and artificial light**

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Termin »svetlobno onesnaženje« je običajno povezan z zunanjo razsvetljavo in vplivom njene svetlobe na živali, redkeje pa z vplivom svetlobnih virov (luč, računalnik, pametni telefon, tablica ...) na budnost posameznika in njegovo zdravje. Tuja literatura navaja povezavo med cirkadnim ritmom človeka in svetlobo. Z uporabo umetne svetlobe je dosežen 24-urni vpliv na cirkadni ritem. Do pred kratkim je bila izbira barve svetlobe omejena na žarnice in fluorescentne sijalke. S pojavom LED (svetleča dioda, angl. Light Emitting Diode) razsvetljave se je pojavila možnost izbire temperature barve svetlobe in posledično možnost izbire le-te glede na potrebo. Zjutraj je za večjo budnost priporočena hladna bela svetloba (4000K), popoldne običajna bela (3500K) in zvečer, topla bela svetloba (2700K). Poleg tehnologije LED razsvetljave se razvija tudi tehnologija IoT (Internet stvari, angl. Internet Of Things/ Internet stvari) - z njeno uporabo se doseže izbira barve svetlobe glede na potrebe in bioritem posameznika. Poglavitno vprašanje je, kakšen protokol uporabe različnih temperatur barve je najprimernejši za izmenske delavce, da se doseže večjo koncentracijo in se zmanjša neugoden vpliv na zdravje in počutje. Takš-

na raziskava v Sloveniji še ni bila opravljena. Predstavljena bo tehnična stran izvedbe raziskave.

Ključne besede: Internet stvari, svetloba, cirkadni ritem, LED

The term »light pollution« is usually connected to external lighting and its impact on animals. It is rarely talked about how light sources (lights, computers, smart phones, tablets etc.) impact individual sleeping patterns and health. Connections between circadian rhythm and light are found in publications. With artificial light the 24-hour impact on circadian rhythm is achieved. Not long ago the colour of the light was restricted to regular light bulbs or fluorescent light. With the advent of LED (Light Emitting Diodes) lighting the users are able to select the light colour temperature according to their needs. In the morning cold white colour (4000K) is recommended, in the afternoon regular white one (3500K) and at night warm white colour (2700K). Another arriving technology is IoT (Internet of Things) which enables the users to automate selection of colour temperature. The main question is what kind of protocol should be set to select colour temperature to help shift workers improve their concentration and to lessen the negative effect on health and well-being. Such a research has never been done in Slovenia. The technical side of the research will be presented.

Key words: internet of things, lightness, circadian rhythm, LED

Ekonomska upravičenost razvoja elektronske dokumentacije zdravstvene nege: teoretični primer internističnega oddelka **Economic feasibility study of developing electronic nursing documentation: theoretical case of a hospital's department of internal medicine**

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Izhodišča: Še preden je računalnik prišel v naše domove, so ljudje, ki so videli prednosti napredka, želeli implementirati idejo o informatizaciji v zdravstvo. V Sloveniji informatike ne uporabljamo toliko, kot bi jo lahko. Različni viri navajajo različne vzroke. V našem delu bomo preučili razloge za takšno stanje v Sloveniji, zlasti s finančnega vidika. *Metode:* Uporabili smo pregled literature. Pregled literature je bil opravljen marca 2017 v podatkovnih bazah eBook Business Collection. V pregled smo vključili članke objavljene v celotnem besedilu od leta 2007 do 2017. Finančne podatke smo pridobili preko letnih poročil kliničnega centra Ljubljana in Maribor. Preučili smo podatke o teoretičnih učinkih in stroških, ki bi jih imel internistični bolnišnični oddelek, v primeru poslovanja samo z elektronsko dokumentacijo in v primeru poslovanja samo papirnate dokumentacije. Upoštevali smo razlike pri dokumentiranju na elektronski ali papirnati način. Podatki, kateri niso znani, so sklepani iz praktičnega znanja. *Rezultati:* Oblikovan je teoretični model, ki lahko služi kot pripomoček

za ugotavljanje ekonomske upravičenosti elektronske dokumentacije v praksi zdravstvene nege. *Diskusija in zaključek:* Razvoj elektronske dokumentacije zdravstvene nege je na podlagi teoretičnega primera ekonomsko upravičen zato je torej potrebno identificirati druge dejavnike njenega počasnega uvajanja. Model bo v bodoče tudi empirično testiran.

Ključne besede: investicija, finance, elektronska dokumentacija, elektronski zdravstveni zapis, bolnišnica

Introduction: Even before personal computers came into our homes, people who saw the beneficial and improvement, they wish was to implement in medical care. Adoptions of this media in Slovenia remain low. Different sources cite different reasons. Our work will examine the reasons. Primarily the focus will be the financial aspects. *Methods:* We used a literature review. The review was made in March 2017 from the databases eBook Business Collection. Only full texts between 2007 and 2017 were included. Financial data was obtained from annual financial reports of University Medical Center Ljubljana and University Medical Center Maribor. We reviewed theoretical effect of financial costs, between normal paper documentation vs. electronic documentation on internal medicine department. We analyzed effects and costs. Between electronic and paper documentation and its data imputes, different factors were included. Unknown data were included, based on practical knowledge. *Results:* We construct a theoretical model, which could be used as a tool for economic viability of electronic nursing documentation. *Discussion and conclusion:* Based on theoretical implication the development of electronic documentation in nursing, is economically justified and therefore is necessary to identify factors, of its slow placement. The model will be empirically tested.

Key words: Investment, finance, electronic documentation, electronic health record (EHR), electronic medical record (EMR), hospital

**Sekcija/Section
Družbeni izzivi ohranjanja
zdravja žensk**

**Societal Challenges
of Maintaining Women's
Health**

Vabljeno predavanje Invited lecture

Reproduktivne pravice žensk v hrvaškem javnem prostoru: študija primera treh najbolj branih internetnih portalov Reproductive rights of women in the public space in Croatia: the case study of three most widely read internet portals

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Izhodišča: Namen raziskave je bil predstaviti in analizirati medijsko pokritost reproduktivnih pravic žensk in proučiti ali deležniki iz znanstvene in profesionalne ter neznanstvene sfere, s svojimi sporočili, prispevajo k razumevanju reproduktivnih pravic žensk ter oblikovanju vrednostne naravnosti tega aktualnega družbenega vprašanja na Hrvaškem. *Metode:* Vzorčenje je vključevalo mednarodna besedila, ki vsebujejo opredelitev reproduktivnih pravic in ključne regionalne akte o človekovih pravicah, ki so bili objavljeni med 1. 1. 2016 in 31. 12. 2016 na treh najbolj branih internetnih portalih v Republiki Hrvaški. *Razprava in zaključki:* Objavljena besedila in sporočila kažejo na stopnjo kulture dialoga o reproduktivnih pravicah žensk, ki se odvija v hrvaškem javnem prostoru, in priložnost za ženske, da se izražajo, individualno in neodvisno do tistih dejavnikov, ki se jim zdijo pomembni pri iskanju odgovorov in odločanju o moralnih dilemah in izzivih, ki jih pred njih postavlja uveljavljanje reproduktivnih pravic.

Ključne besede: reproduktivne pravice žensk, znanstvene perspektive, mednarodni dokumenti, moralne dileme, kultura dialoga

Introduction: The purpose of research was to display and analyse media coverage of women's reproductive rights and to investigate whether holders of scientific and expert perspectives and unscientific approaches contribute, through their messages, to the understanding of women's reproductive rights and shaping the value orientation on this current issue in Croatia. *Methods:* Sampling methods have included texts that contain reproductive rights defined in international documents and key regional human rights treaties published on three of the most widely read Internet portals in the Republic of Croatia in the period from 1.1.2016 to 31.12. 2016. *Discussion and Conclusions:* The published texts and the messages contained therein point to the level of the culture of dialogue on women's reproductive rights, which is being led in the public space of the Republic of Croatia, and the permission for women to reflect themselves, individually and independently on those factors that they deem important in the search for answers and making decisions in the moral dilemmas and challenges placed before them by the exercise of reproductive rights.

Key words: women's reproductive rights, scientific perspectives, international documents, moral dilemmas, culture of dialogue

Retrospektivna in izkustvena percepcija vplivov telesne aktivnosti v času nosečnosti na potek poroda in poporodno obdobje Retrospective and experiential perception of physical activity during pregnancy on childbirth and postpartum period

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Izhodišča: Namen raziskave je bil preučiti prepričanja in izkušnje žensk v času po porodu o tem, kako skrb za telesno aktivnost v obdobju nosečnosti vpliva na psihično in fizično počutje, izid poroda ter okrevanje v poporodnem obdobju. **Metode:** V raziskavi je bila uporabljena kvalitativna metodologija. Uporabljen je bil namenski vzorec enajstih žensk, ki so rodile v zadnjem letu. Njihova povprečna starost je bila 27,6 let ($s = 4,37$); največ ($n = 5$) jih je zaključilo srednješolsko izobraževanje; največ ($n = 7$) jih živi na podeželju; več kot polovica vseh anketirank so bile prvorodnice ($n = 8$). Podatki so bili zbrani s delno strukturiranim intervjujem v januarju 2017. Besedilo je bilo obdelano s pomočjo metode analize vsebine. **Rezultati:** Identificirane so bile tri teme, in sicer (1) dejavniki, ki vplivajo na izvajanje, možnosti, motivacijo in ozaveščenost o pomenu telesne aktivnosti v času nosečnosti, (2) značilnosti izvajanja telesne aktivnosti v poporodnem obdobju, (3) izvajanje treninga mišic medeničnega dna med nosečnostjo in po porodu. **Diskusija in zaključki:** Rezultati nakazujejo, da se ženske močno zavedajo pomena telesne aktivnosti v času nosečnosti in njenih pozitivnih vplivov na porod, poporodno obdobje ter psihično in fizično počutje. Vključene v raziskavo so mnenja, da je telesna aktivnost pripomogla k lažjemu porodu in hitrejšemu okrevanju po samem porodu. Čas, ki so ga posameznice posvetile telesni vadbi se je med intervjuvankami razlikoval. Večina žensk se je v času nosečnosti s telesno aktivnostjo ukvarjala individualno, predvsem s hojo in plavanjem.

Ključne besede: telesna vadba, izidi poroda, trening mišic medeničnega dna, kvalitativna metodologija

Introduction: The purpose of the research was to examine the beliefs and experiences of women in the postpartum period on how the physical activity during pregnancy affects the psychological and physical well-being, the outcome of childbirth and the recovery in postpartum period. **Methods:** The qualitative methodology was used. The purposive sample of 11 women who have given birth in the last year was applied. Their mean age was 27.6 years ($s = 4.37$); most of them ($n = 5$) finished upper secondary education; most of them ($n = 7$) were living in rural areas; more than half of the interviewees were primiparous women ($n = 8$). Data were collected using a semi-structured interview in January 2017. The data gathered were analyzed with the method of content analysis. **Results:** The analysis yield three themes, namely (1) the factors that affect the implementation, opportunities, motivation and awareness about the importance of physical activity during pregnancy, (2) the characteristics of performing physical activity in the postpartum period, (3) the implementation of pelvic floor muscle exercise during pregnancy and after childbirth. **Discussion**

and Conclusions: The results indicate that women are very aware about the importance of physical activity during pregnancy and its positive impact on childbirth, postpartum period, and psychological and physical well-being. The interviewees were the opinion that physical activity helped to facilitate childbirth and recovery after childbirth. The time taken by the individuals dedicated to physical activity differed between the interviewees. Most women during pregnancy were engaged in physical activity individually. They usually choose walking and swimming.

Key words: physical exercise, childbirth outcomes, pelvic floor muscle exercises, qualitative methodology

Učinkovitost mamografije za odkrivanje rakavih sprememb pri ženskah pod 50. letom starosti **The mammography efficiency in breast cancer detection in women under 50 years of age**

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Rak dojk je tako v Sloveniji kot tudi drugod po svetu najpogostejši rak pri ženskah. Število novih pacientk z rakom dojk se povečuje zaradi znanih dejavnikov tveganja. Leta 2005 je bilo v Sloveniji na novo rak dojk odkrit pri 1111 ženskah, leta 2016 pa je število naraslo na 1307 (17,6 %). V Sloveniji in Evropi uspešno deluje državni presejalni program za raka dojk – DORA. V okviru istoimenskega programa so vse ženske med 50. in 69. letom vabljene na mamografijo. Različne tuje študije so pokazale, da mamografija ni tako zanesljiva za zgodnje odkrivanje raka na dojkah pri ženskah mlajših od 50 let, zaradi gostote tkiva dojk. Senzitivnost znaša 73,4 % (< 50 let). Obstaja nevarnost lažno pozitivnih rezultatov in dokazano je, da kar 22 % vseh diagnosticiranih rakov predstavlja prediagnosticiranje. To pa pomeni, da se žensko napoti na invazivno diagnosticiranje, ki ga v resnici ne potrebuje, kar predstavlja zanjo čustven napor in stisko. Pri mlajših ženskah je tveganje za lažno pozitiven rezultat 61,3 %, medtem ko je pri starejših ženskah 49,7 %. Dodatni metodi odkrivanja raka posebno pri mlajših ženskah (< 50 let) sta ultrazvok in magnetna resonanca. Uporabljena je bila deskriptivna metoda dela s kritičnim pregledom domače in tuje znanstvene in strokovne literature.

Ključne besede: rak dojk, mamografija, presajanje, DORA

Breast cancer is the most common type of cancer at women in Slovenia and around the world. The number of patients increases because of risk factors. In 2015, there was 1111 breast cancer cases in Slovenia, in 2016 the number increased to 1307 (17.6%). In Slovenia and Europe exists a successful screening test program for breast cancer, named DORA. All women between 50 and 69 years are invited in the program to perform a mammography. Several foreign studies have shown that mammography is not the most reliable method for early breast cancer detection for women less than 50 years of age. The sensitivity is 73.4% (< 50 years). In relation to mammography exists a possibility for false positive results. It has been proven that 22% of all diagnoses were

pre-diagnosed. This means that women have been exposed to invasive diagnostic procedure, but actually they do not need. The risk of a false positive result in younger women is 61.3% and 49.7% in older women. For women under 50 years the additional methods are also the ultrasound and MRI. Descriptive method will be used to critically assess domestic and foreign scientific literature.

Key words: breast cancer, mammography, screening, DORA

Reproduktivno zdravstveno varstvo žensk z intelektualno oviro Reproductive health care of women with intellectual disabilities

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Izhodišča: Ženske z intelektualno oviro so vedno imele otroke, s sodobnimi procesi vključevanja v večinsko družbo jih ima otroke čedalje več. Ženske z intelektualno oviro potrebujejo specializirane zdravstvene storitve za ohranjanje reproduktivnega zdravja. Osrednje raziskovalno vprašanje je bilo: ali se na ženske z intelektualno oviro gleda kot na osebe, ki niso sposobne imeti otroka. *Metode:* Uporabljena je bila kvalitativna metodologija. Opravljeni so bili poglobljeni intervjuji z 12 materami, ki imajo intelektualno oviro, in ki so vključene v slovenske varstveno delovne centre. *Rezultati:* Izsledki kvalitativne raziskave kažejo na to, da tradicionalna prepričanja, da ženske z intelektualno oviro ne morejo biti matere, vplivajo na kakovost in obseg njihove priprave na materinstvo, med drugim tudi na preventivne in kurativne zdravstvene storitve. *Diskusija in zaključki:* Matere z intelektualno oviro lahko dovolj dobro skrbijo za svoje otroke in živijo skupaj z njimi, če imajo na voljo ustrezno podporo. Ugotovitve prispevajo novo znanje in razmislek o potrebi po strokovni podpori, na podlagi česar se lahko oblikujejo priporočila in oblikovanje novih praks podpor mamam z intelektualno oviro v njihovih okoljih.

Ključne besede: materinstvo, intelektualna ovira, zdravstvene storitve

Introduction: Women with intellectual disabilities have always had children, and with the modern processes of integration into mainstream society, more and more people with intellectual disabilities have children. Women with intellectual disabilities need specialized medical services to preserve their reproductive health. *Methods:* Qualitative methodology was used. 12 research interviews with mothers with intellectual disabilities, who are users of Slovenian institutions for people with intellectual disabilities, were conducted. One of the main research questions was: are women with intellectual disabilities perceived as people who are unable to have children. *Results:* Results suggest that the traditional beliefs that women with intellectual disabilities cannot be mothers affect the quality and scope of their preparation for motherhood, including preventive and curative reproductive health services. *Dicussions and Conclusions:* Mothers with intellectual disabilities, who have a proper support, are able to adequately care for their children and live with them. The findings contribute new knowledge and reflection on the need for professional support, on the basis of which recommendations can be made as well as the creation of new

practices that offer support to mothers with intellectual disabilities in their environments.

Key words: motherhood, intellectual disability, specialized medical services

Možnosti uporabe Ritgenovega manevra za ohranitev perineja in dejavniki, ki vplivajo na pogostost epiziotomij in perinealnih poškodb med porodom

The possibilities of Ritgen maneuver for perserving perineum and the influence of some parameters on the frequency of episiotomy and perineal damage

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Izhodišča: V Sloveniji je v zadnjih letih opaziti precejšnje spremembe v pristopih pri varovanju perineja, ki se kaže v pomembnem zmanjšanju deleža epiziotomij, predvsem v nekaterih porodnišnicah. Z namenom ugotavljanja možnih dejavnikov, ki vplivajo na pogostost epiziotomij, je bila opravljena raziskava, v kateri so bili proučevani naslednji dejavniki: pariteta, plodova porodna teža in obseg plodove glavice. Namen prispevka je tudi opisati Ritgenov manever kot pomoč pri porodu plodove glavice in možnosti za implementacijo le-tega v prakso. *Metode:* V raziskavi je uporabljena tako osnovna deskriptivna statistika, kot multivariatna logistična regresija in testiranje hipotez s Hi-kvadratom, t-testom, ter Mann–Whitneyjevim U-testom. Podatki so bili zbrani preko Nacionalnega perinatalnega informacijskega sistema Slovenije, med leti 2008–2012. *Rezultati:* Rezultati raziskave so pokazali statistično značilne ($p < 0,05$) vplive paritete, kar pomeni, da so obsežnejšim poškodbam perineja najbolj podvržene prvesnice, ki so imele opravljeno epiziotomijo (0,6 %), najmanj pa mnogorodnice, brez opravljene epiziotomije (0,2 %). Prav tako je bil dokazan statistično značilen vpliv porodne teže novorojenca in obsega glavice na pogostost epiziotomij, kar pomeni, da so bili novorojenci pri porodnicah z opravljeno epiziotomijo v povprečju za 60g težji ($p < 0,05$) in so imeli za 0,4 cm večji obseg glave ($p < 0,05$). Porodi, pri katerih ni bila opravljena epiziotomija, so bili za skoraj 30 minut krajši. *Diskusija in zaključki:* Ritgenov manever, ki je bil prvotno opisan kot postopek za preprečitev poškodb perineja, se v Sloveniji, po zbranih podatkih avtorja, ne uporablja, so pa v uporabi različne tehnike varovanja perineja, ki vsebujejo elemente omenjenega manevra in po izkušnjah posameznih babic lahko pripomorejo k manjši verjetnosti za poškodbo perineja. Babice se vedno bolj zavedajo pomembnosti ohranjanja intaktnosti perineja med porodom, kar dokazujejo statistični podatki incidence epiziotomij.

Ključne besede: Porod, Ritgenov manever, epiziotomija, perinej

Introduction: In the recent years, we have observed significant changes in the approach to maintaining an intact perineum, which is reflected in a decreasing trend in the frequency of the performed episiotomies in Slovenia, especially in some maternity hospitals. In order to determine the possible factors, affecting the frequency of episiotomy, a survey has been conducted in which the

following factors were examined: The parity, newborn's birth weight and circumference of fetal head. The purpose of this article is to describe the Ritgen's maneuver as an aid in childbirth and the possibilities of implementing it in practice. *Methods:* In the survey were used the basic descriptive statistics as well as the multivariate logistic regression and the hypothesis testing with Chi-square, t-test and the Mann-Whitney U-test. The data were collected through the National Perinatal Information System of Slovenia during the years 2008-2012. *Results:* The results showed statistically significant ($p < 0.05$) effects of parity, which means that the more extensive injuries of the perineum have been observed with primiparas with an episiotomy (0.6%), and the least injuries with multiparas without an episiotomy (0.2%). Also statistically significant is the influence of newborn's birth weight and head circumference on the frequency of episiotomy, which means that women with performed episiotomy have newborns, who are in average 60g heavier ($p < 0.05$) and had 0.4 cm more head circumference ($p < 0.05$). Deliveries, where no episiotomy was carried out, were almost 30 minutes shorter. *Discussion and conclusions:* According to the data, collected by the author, the Ritgen's maneuver, which was originally described as a method to prevent a perineum trauma, is not being used in Slovenia, however, Slovenian midwives use various techniques to protect the perineum, which contain elements of Ritgen's maneuver and can reduce perineal trauma. Midwives are increasingly aware of the importance of maintaining the intact perineum during childbirth, as evidenced by the statistics of the episiotomy incidence.

Key words: Childbirth, Ritgen's maneuver, episiotomy, perineum

Socialno kulturne razlike kot izziv pri zagotavljanju zdravja žensk in njihovih otrok v obporodnem obdobju

Socio cultural differences as a challenge in ensuring the health of women and their children in the perinatal period

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Izhodišča: Vsaka oseba je del neke kulture. V določenih kulturah obstaja težnja po prirejanju svečanih ritualov ob pomembnih življenjskih dogodkih, med katere spadajo nosečnost in rojstvo otroka. Ti rituali in navade so odsev vrednot posamezne družbe. Za zdravstvene strokovnjake je pomembno razumevanje kulturnih vlog vseh članov posamezne družine, religioznih vrednot ali pomena rojstva, z namenom zagotavljanja optimalnega zdravja žensk in njihovih otrok. *Metode:* Raziskovalno vprašanje (Kakšne so izkušnje in občutenja babic, ki v času poroda skrbijo za ženske, katerih kulturna prepričanja se razlikujejo od njihovih lastnih?) je študijo vodilo do kvalitativne metode raziskovanja, natančneje fenomenologije. Podatki so bili zbrani s pomočjo pol strukturiranih intervjujev z 11 babicami zaposlenimi v Bolnišnici za ginekologijo in porodništ-

vo Kranj in analizirani s pomočjo metode analize vsebine značilno za fenomenologijo. *Rezultati:* Postopek analize podatkov je imel dve smeri oziroma fazi; najprej določitve kategorij, relevantnih doživljajskih spoznanj in odnosov, nato pa vnovično sintezo oziroma formiranje nekakšne teorije o preučevanem fenomenu. Zavedanje ranljivosti žensk v babicah prebudi empatijo in sočutje, kar jih vodi in spodbuja pri iznajdljivosti, ter zagotavljanju podpore v premagovanju razlik med teorijo in prakso. *Diskusija in zaključki:* Ugotovitev študije ni moč posplošiti, kljub temu pa mora biti delo zdravstvenih strokovnjakov, ki skrbijo za žensko in njenega otroka v obporodnem obdobju usmerjeno v prepoznavanje in spoštovanje socialno kulturnih razlik.

Ključne besede: kulturne razlike, porod, zdravje žensk, fenomenologija

Introduction: Each person is part of a culture. In some cultures, there is a tendency for organizing rituals at important life events, which include pregnancy and childbirth. These rituals and habits are a reflection of the values of a society. For healthcare professionals it is important to understand the cultural roles of all members of each family. Also their religious values or the meaning of birth in order to ensure optimal health for women and their children. *Methods:* The research question (What are the experiences and feelings of midwives who during birth care for women whose cultural beliefs differ from their own?) In this study a qualitative research methodology – phenomenology was used. Data were collected using semi-structured interviews with 11 midwives employed at the Hospital for Gynecology and Obstetrics Kranj and analysed using coding. *Results:* The method of data analysis had two phases; first determining the categories relevant experiential knowledge and relationships, and then re-synthesis and the formation of a theory about the studied phenomenon; Awareness of the vulnerability of women awakens empathy and compassion among midwives, which leads in promoting the ingenuity, as well as providing support in bridging the gap between theory and practice. *Discussion and Conclusions:* The conclusion of the study cannot be generalized; however, the work of health professionals who care for the woman and her child in the perinatal period must be focused on the recognition and respect for cultural and social differences.

Key words: cultural differences, labor, women's health, phenomenology

Kakovost življenja medicinskih sester **Quality of life of nurses**

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Izhodišča: V sodobni medicinski praksi je pojem kakovosti življenja v zadnjem času pridobil velik pomen in pomembno vlogo pri analizi problemov v raznolikih kliničnih situacijah. Cilj raziskave je bil oceniti stopnjo zaznane kakovosti življenja medicinskih sester. *Metoda:* Študija je bila zasnovana kot presečna raziskava. Vzorec raziskave je bil sestavljen iz medicinskih sester v primarnem in sekundarnem zdravstvenem varstvu. Sociodemografski vprašalnik in vprašalnik

za oceno zdravja (SF-36) sta bila uporabljena v oceni kakovosti življenja. Statistična analiza je bila opravljena s pomočjo statističnega programskega paketa SPSS. *Rezultati*: Največji delež vprašanih (67%) se je uvrstil v kategorijo odličnega fizičnega delovanja, 30% se jih je uvrstilo v skupino dobrega fizičnega delovanja, med tem ko se je le 3% preiskovancev uvrstilo v skupino s slabo fizično zmogljivostjo. Na socialnem področju jih 52% funkcionira odlično, 47% jih ima dobro raven socialne zmogljivosti, med tem ko je pri zgolj dveh vprašanih raven družbenega delovanja nizka. Pomembne omejitve zaradi čustvenih težav ima 30% vprašanih. *Zaključek*: Sociodemografske značilnosti pomembno vplivajo na kakovost življenja medicinskih sester (fizično, socialno in čustveno delovanje).

Ključne besede: kakovost življenja, zdravje, medicinske sestre.

Introduction: In modern medical practice, the concept of quality of life has recently gained a great significance and important role in problem analysis in a variety of clinical situations. The aim of this study has been to assess the level of perceived quality of life of nurses. *Methodology*: The study was designed as a cross-sectional study. The sample of the study consisted of nurses in primary and secondary healthcare. A sociodemographic questionnaire and questionnaire of health assessment (SF-36) were used for assessment of quality of life. Statistical analysis was done using the SPSS statistical package software. *Results*: The highest percentage of respondents (67%) belong to the category of excellent physical functioning, 30% belong to the group that has good physical functioning, whereas only 3% of the subjects have poor physical performance. Fifty-two percent of respondents have excellent social functioning, 47% have a good level of performance, while only two patients have a poor level of social functioning. Thirty percent of respondents have significant limitations due to emotional problems. *Discussion and Conclusions*: Sociodemographic characteristics significantly affect the quality of life of nurses (physical, social and emotional functioning).

Key words: quality of life, health, nurses.

Doživljanje spolnosti v prvem letu po porodu: pogledi in stališča žensk Women's experience of sexual intercourse in the first year after childbirth: views and attitudes of women

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Izhodišča: Spolnost po porodu je odvisna od več dejavnikov, ki delujejo in učinkujejo na žensko lahko tudi hkratno. Namen raziskave je bil proučiti doživljanje spolnosti slovenskih žensk v prvem letu po porodu. *Metode*: V raziskavi je bila uporabljena deskriptivna in kavzalno-eksperimentalna metoda empiričnega raziskovanja, ki temeljila tudi na pregledu znanstvene in strokovne literature. Uporabljen je bil priložnostni vzorec. V raziskavi, ki je bila zasnovana kot spletna anketa, je sodelovalo 3106 žensk. Rezultati so bili analizirani s pomočjo statističnega programa SPSS verzija 20.0. *Rezultati*: Izmed vseh vključenih

je 62 % parov pričelo s spolnimi odnosi po porodu v obdobju od 6 tednov do 2 mesecev. Izmed vseh anketirank je 62 % s spolnimi odnosi po porodu enako zadovoljnih kot pred porodom. Tistih, ki so manj zadovoljne je 36 %. Več kot polovica (57 %) žensk ima redkejše spolne odnose kot pred rojstvom otroka. Večji delež žensk (65 %) bi si želelo imeti več spolnih odnosov. Ženske so kot težavo najpogosteje navajale dispareunijo. *Razprava in zaključek:* Rezultati raziskave predstavljajo izhodišče za iskanje rešitev na področju izboljšanja spolnosti v 1. letu po rojstvu otroka, tudi z vidika prejemanja ustreznih strokovnih nasvetov, informacij in pomoči s strani zdravstvenih delavcev.

Ključne besede: nosečnost, spolnost, spolni odnosi, spremembe, partnerstvo

Introduction: Sexuality after childbirth depends of several factors that may affect women at the same time. The aim of the study was to research slovenian women's experience of sexual intercourse in the first year after childbirth. *Methods:* Descriptive and causal – nonexperimental method of empirical research has been used with the scientific literature review. Convenience sample of 3106 women has been used and the data was gathered through the online questionnaire tool. The results were analysed with the use of SPSS ver. 20.0 statistical program. *Results:* 62 % of couples started with their sexual intercourse 6 to 8 weeks after childbirth. 62 % of participants reported their satisfaction with sexual intercourse was the same as in the period before childbirth. 36 % of women reported lower satisfaction with the sexual intercourse after birth. More than half of the women (57 %) had the sexual intercourse less frequently after birth. 65 % of women reported they would like to have the sexual intercourse more frequently. The most commonly reported problem after birth was dyspareunia. *Discussion and Conclusions:* The results of the survey suggest some clear recommendations in terms of optimising the couples' sexual life in the period after childbirth and in the first year of his life. Health care professionals have to be knowledgeable to share professional advice in the period after childbirth.

Key words: pregnancy, sexuality, sexual intercourse, changes, partnership

Psihološki in fiziološki kazalniki počutja pri ženskah ob hospitalizaciji otroka **Psychological and physiological indicators in women with hospitalized child**

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Izhodišča: Hospitalizacija otroka lahko povzroči resno anksioznost in stres predvsem pri ženskah. Materin stres lahko vpliva tudi na otroka. Namen raziskave je bil proučiti, kako močan stres doživljajo matere pred in po operativnem posegu pri otroku, kateri dejavniki so s tem povezani, in ali socialna podpora deluje kot blažilec stresa. *Metode:* V raziskavi je sodelovalo 74 mater, 37 očetov in 80 otrok. Opravljene so bile meritve doživljanja stresa pred in po operativnem posegu. Na podlagi vzorcev sline in urina je bila določena vrednost

stresnega hormona kortizola. Raziskava je potekala na Kliničnem oddelku za otroško kirurgijo in intenzivno terapijo (KOOKIT). *Rezultati:* Rezultati meritev so pokazali, da je bil operativni poseg za matere stresen dogodek. Bolj povišane vrednosti so imele matere, ki so prišle same (povprečne vrednosti koncentracije kortizola $28,13 \text{ nmol/l} \pm 43,88 \text{ nmol/l}$), v primerjavi z materami, ki so prišle skupaj s partnerjem ($13,19 \text{ nmol/l} \pm 10,31 \text{ nmol/l}$). Pri obeh skupinah je porazdelitev kortizola statistično značilno ($p < 0,01$) odstopala od normale.

Diskusija in zaključki: Raziskava je pokazala, da so matere pod velikim stresom zaradi operativnega posega pri otroku. Matere, ki so prišle skupaj s partnerjem, so imele nižjo koncentracijo kortizola, kar bi kazalo na doživljanje manjšega stresa. Predlagane so spremembe v obravnavi staršev otrok, s poudarkom na zmanjševanju stresa in anksioznosti.

Ključne besede: stres, operativni poseg, zdravje mater, kortizol

Background: Hospitalization of a child can cause a serious state of anxiety and stress, especially in women. Maternal stress can also affect the child. The purpose of the study was to examine how strong the stress was experienced by mothers before and after surgery of the child which factors are related, and if the social support acts as a buffer against stress. *Methods:* The study involved 74 mothers, 37 fathers and 80 children. Measurements were done before and after surgery, as well as value of the stress hormone cortisol was determined on samples of saliva and urine. The study was conducted at the Clinical Department of Pediatric Surgery and Intensive Care (KOOKIT). *Results:* The results showed that the surgery is a stressful event for mothers. The more elevated values had mothers who came alone (average value of the concentration of cortisol was $28.13 \text{ nmol} / \text{l} \pm 43.88 \text{ nmol} / \text{l}$), compared with mothers who had come together with a partner ($13.19 \text{ nmol} / \text{l} \pm 10.31 \text{ nmol} / \text{l}$). In both groups, the distribution of cortisol significantly ($p < 0.01$) deviated from the normal range. *Discussion and conclusions:* The study showed that mothers are under a lot of stress due to child's surgery. Mothers who have come together with a partner had lower levels of cortisol, which would point to the experience less stress. An important focus is on changes in treatment of parents with an emphasis on reducing the stress and anxiety.

Key words: stress, surgery, mother health, cortisol

Zagotavljanje enakopravnosti skozi pridobivanje kulturnih kompetenc v izobraževanju za zdravstveno nego: pregled literature

Ensuring equality through the acquisition of cultural competencies in nursing education: A literature review

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Število migrantk in migrantov se iz leta v leto povečuje. Če je bilo leta 2000 v svetu okoli 175 milijonov mednarodnih migrantov, jih je bilo leta 2013 po podatkih Mednarodne organizacije za migracije že približno 230 milijonov. V

preteklosti so raziskovalci v okviru zdravstvene nege in oskrbe pozornost namenjali predvsem moškim migrantom. Danes je opaziti večjo pozornost in raziskovalno zanimanje za migrantke, vendar pa je ta usmerjena predvsem v migracije kot na spolno zaznamovan proces in manj iz vidika zdravstvene nege in oskrbe. Raziskave kažejo, da ženske iz kulturno drugačnih okolij izkazujejo slabše zdravstvene izide, predvsem zaradi nedostopnosti zdravstvenih storitev, jezikovnih in kulturnih barrier ter nenazadnje tudi institucionalnega rasizma, ki je velikokrat posledica neznanja zdravstvenih delavcev. Primerno izobraževanje v smeri pridobivanja kulturnih kompetenc medicinskih sester je eden izmed načinov spodbujanja etično učinkovitih zdravstvenih sistemov in storitev. Čeprav so kulturne kompetence v zdravstveni negi že dolgo spoznane kot nujno potrebne v klinični praksi, pa jasnih opredelitev glede strategij poučevanja za pridobivanje kulturnih kompetenc ni, kot tudi ne ustrezne teoretične podpore. Raziskava temelji na namenskem pregledu literature, ki skozi diskurz medkulturnosti vrednoti razpoložljive dokaze, ki opisujejo poučevanje, učenje in s tem pridobivanje kulturnih kompetenc med študenti zdravstvene nege.

Ključne besede: medkulturne kompetence, transkulturna zdravstvena nega, zdravje žensk, izobraževanje

The number of migrants continues to increase. If in 2000 all over the world the number of international migrants reached about 175 million, there were in 2013, according to the International Organization for Migration, about 230 million migrants. It is noticeable that in the past researchers, from the perspective of nursing and healthcare, devoted their attention mainly to the male migrants. Nowadays more attention and research interest is focused on female migrants; however, most of the research highlights the migration process as gender oriented process and not as much from the nursing or healthcare oriented perspective. Other research findings suggest that women from culturally diverse background are faced with poor health outcomes, mainly due to inaccessible health services, language and cultural barriers, and last but not least, institutional racism, which is often the result of ignorance of healthcare professionals. Appropriate education methods towards the acquisition of cultural competencies of nurses are one of the ways of promoting ethical efficient healthcare systems and services. Although cultural competencies in nursing have long been recognized as essential part of clinical practice, there is no clear definition about suitable teaching strategy for the acquisition of cultural competence and relevant theoretical support. The research is based on a purposeful literature review where through the discourse of interculturalism available evidence, describing the teaching/learning strategies regarding cross-cultural care and the acquisition of cultural competencies among nursing students, is evaluated.

Key words: cross-cultural competencies, transcultural nursing, women's health, education

Dimenzije kakovosti življenja žensk z rakom dojke **Dimensions of quality of life in women with breast cancer**

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Rak dojke je pomemben javnozdravstveni problem zaradi visoke incidence in mortalitete. Bolezen ima dobre izide zdravljenja in preživetja v kolikor je zgodaj odkrita. V zadnjih letih so tudi številni napredki v diagnostiki in zdravljenju bolezni pomembno prispevali k podaljšanju življenja, zaradi česar je postala kakovost življenja osrednje vprašanje žensk z rakom dojke. Rak dojke je bržkone strah in trepet večine žensk, še posebej zato, ker je povezan z negativno stigmo, ki izvira iz same diagnoze ter izhajajočih psihičnih vplivov. Slednji vplivajo na številne dimenzije kakovosti življenja, še posebej na samopodobo in seksualnost. Koncept kakovosti življenja je pogosto opisan kot subjektivno vrednotenje življenja kot celote ali pacientova ocena zadovoljstva s trenutnim nivojem funkcioniranja v primerjavi s pričakovanim ali njihovim idealom. Kakovost življenja sestavljajo številne domene, ki vključujejo fizično funkcijo, psihično počutje in socialno podporo. Doživljanje izkušnje bolezni in s tem povezana kakovost življenja med ženskami variira, saj gre pri tem za delovanje številnih dejavnikov – povezanih z boleznijo ali pa tudi ne. Zlasti je pomembno povezano delovanje psihosocialnih problemov in težav, ki jih povzročajo fizični simptomi. Tuje in slovenske raziskave ugotavljajo, da je kakovost življenja žensk z rakom dojke pomembno povezana s finančnim položajem, ki nastane zaradi izgube dohodka ter posledično nižjim socialnim statusom. Namen prispevka je predstaviti dimenzije kakovosti življenja žensk z rakom dojke, njihovo delovanje ter ukrepe za izboljšanje zaznane kakovosti življenja.

Ključne besede: psihosocialni problemi, socialna podpora, samopodoba, mastektomija, zdravstvena nega

Breast cancer is an important public health issue because of its high incidence and mortality. If the disease is diagnosed early in its course, good treatment outcomes and survival rate can be expected. In the last years the improvements in diagnostic tests and treatment enabled increased survival rates, and therefore the quality of life of women with breast cancer has become the main concern of management. Breast cancer represents fear for most women, mostly because of negative stigma of the diagnosis itself as well as alleged psychosocial influences, which have impact on many dimensions of the quality of life, especially on the self image and sexuality. The concept of the quality of life is often described as subjective evaluation of life or evaluation of satisfaction with the current level of functioning regarding with best or ideal functioning. The quality of life has many domains which include physical functions, psychological issues and social support. The experience of the disease and related quality of life varies between patients, because many different factors interrelate, some of them not directly associated with the disease itself. Psychosocial factors caused by physical problems are of utmost importance. Slovenian and foreign researches establish, that the quality of life is importantly related to a

financial status and that the decrease of financial income influences the social status of the diseased. The purpose of this article is to present the dimensions of the quality of life of the women with breast cancer, their functioning and the measures to improve the quality of life.

Key words: psychosocial problems, social support, self-esteem, mastectomy, nursing care

Vpliv aktivnega vodenja poroda na izid poroda The impact of active labour management on the outcome of childbirth

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Izhodišča: Namen retrospektivne raziskave je bil primerjati rezultate izidov fiziološkega poroda z rezultati aktivno vodenih porodov; primerjati trajanje povprečnega poroda; ugotoviti kateri porodi se končajo spontano in kateri s epiziotomijo ali rupturo; ugotoviti v kakšnem deležu so porodi zaključeni operativno in v koliko primerih pride do t. i. mekonijske plodovnice; ugotoviti ali se več fizioloških porodov zgodi ponoči ali čez dan; ugotoviti v kakšni meri vpliva aktivno vodenje poroda na oceno po Apgarjevi. *Metode:* Raziskava je bila izvedena v Bolnišnici za ženske bolezni in porodništvo Postojna. Uporabljeni so bili zdravstveni podatki 200 porodov v obdobju od januarja 2011 do aprila 2012 leta. Porodi so razdeljeni v 2 skupine: 100 fizioloških porodov in 100 aktivno vodenih porodov. V obeh skupinah so bile prvorodnice stare od 20-35 leta, v terminu poroda (37-41 teden gestacije) z enim plodom v glavični vstavi. Nobena porodnica ni imela epiduralne analgezije kot oblike lajšanja porodne bolečine in nobena ni imela prisotne patologije. *Rezultati:* Raziskava je pokazala, da so fiziološki porodi krajši v povprečju eno uro, presredek je ostal ohranjen pri dvakrat večjem številu porodnic (n= 63) kot v primeru aktivno vodenega poroda. Večji delež (48%) epiziotomij je bil ugotovljen pri aktivno vodenih porodih. Odstotek rupture I in ruptur II ni bil statistično pomemben. Operativno dokončanje poroda se je zgodilo samo pri aktivno vodenih porodov. Večina fizioloških porodov se je zgodila med 22h in 8h. *Diskusija in zaključki:* Rezultati kažejo v prid fiziološkega poroda. Slednji traja krajše, bolj pogosto se konča z obvarovanim presredkom, manj je epiziotomij, manj mekonijske (zelene) plodovnice, manj je bilo novorojenčkov ocenjenih z nižjo oceno po Apgarjevi in nobeden fiziološki porod ni bil končan operativno.

Ključne besede: fiziološki porod, aktivno voden porod, epiziotomija, carski rez, ruptura presredka

Introduction: The aim of this retrospective research was to compare the outcomes of so called physiological childbirth to those which were actively managed. The objective was to determine the approximate duration of both; to establish which of these two are leading to a natural vaginal childbirth and which will end with an episiotomy or with a rupture of the perineum; in which case the childbirth has ended with a Caesarean section and meconium amniotic fluid

has appeared; whether occurrence of physiological childbirth is present more during the day or night shift and how does actively managed labour reflect in Apgar's score. *Methods:* The research was carried out in the Hospital for women's diseases and obstetrics Postojna. Medical records were collected from 200 childbirths from the period of January 2011 until April 2012. The childbirths included were divided into two groups: a 100 physiological and a 100 which were actively managed. In both groups nulliparous women prevailed and the majority of them were aged 20 to 35 years; they were between the 37th and 41st week of gestation; with one foetus, positioned head first as their prominent feature; all women were without epidural anaesthesia and their pregnancy was not considered a pathological one. *Results:* The research results suggest that the physiological childbirth is in general shorter for an hour and that the perineum is left intact in twice as many cases (n=63) when comparing to an actively managed labour. A higher percentage (48%) of episiotomies was established in the case of actively managed labour; however the percentage of first and second degree perineum rupture wasn't statistically significant. Caesarean section was only present in actively managed labour. Most of physiological childbirths took place during 10 p.m. and 8 a.m. *Discussion and Conclusions:* The findings of the research are in favour of physiological childbirth, since it has been established that they last less time, end with an intact perineum, there is less chance for an episiotomy and the development of meconium amniotic fluid, less newborns with a lower Apgar score and less chance for a childbirth to be ended with a Caesarean section.

Key words: physiological childbirth, active labour management, episiotomy, Caesarean section, rupture of the perineum

Kakovost spolnega življenja žensk po porodu z epiziotomijo **The quality of sexual life after experiencing the episiotomy birth**

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Izhodišča: Epiziotomija je prerez presredka med porodom za povečanje porodnega izhoda. Dokazano je, da je interes žensk za spolni akt po porodu že tako manjši kot v času izpred nosečnosti ali med nosečnostjo. K temu doprinesejo spremembe vezane na poporodno obdobje, v veliki meri pa na to vpliva tudi morebitna poškodba mehke porodne poti. Namen je pregledati literaturo o tem kako poškodbe presredka vplivajo na pojav bolečega spolnega odnosa v puerperiju. *Metode:* Uporabljena je bila deskriptivna raziskovalna metoda pregleda domače in tuje literature, na znanstveni in strokovni ravni. Pregled literature je potekal v mesecu januarju 2017, s pomočjo mednarodnih podatkovnih baz. Ob tem so bile uporabljene iskalne fraze »episiotomy«, »sexuality« »postpartum« in »dispareunia«. Iskanje je bilo omejeno na slovenski in angleški jezik, ter na obdobje od vključno 2007 do 2017. *Rezultati:* Incidenca epiziotomije v Sloveniji je nižja od 30 %, vendar pa variira glede na posamezne porodnišnice. Prav epiziotomija je pogost razlog, da se ženske bojijo prvega spolnega odnosa,

predvsem bolečine. *Diskusija in zaključki:* Dispareunija je dokazano pogostejša pri ženskah, ki rodijo z vaginalnim porodom, še posebej pa, če je pri njih med porodom prišlo do ruptуре presredka ali epiziotomije. Pri večini žensk se spolno življenje v 6-12 mesecih po porodu vrne v stanje izpred nosečnosti. Kakovost spolnega življenja je torej lahko okrnjena celo poporodno leto.

Ključne besede: spolnost, puerperij, poškodbe presredka, genitalno pelvična bolečina

Introduction: Episiotomy is a surgical cut of the perineum during childbirth to widen the pelvic outlet. The evidence shows women are less interested in sexual intercourse in the period after birth than they were before or during the pregnancy. This is the consequence of the changes in the postpartum period and often affected also by the perineal trauma. The purpose of literature review is to study the connection of perineal trauma on pain during sexual course in the postnatal period. *Methods:* Descriptive research method has been used, based on the review of relevant national and international literature on the scientific and professional level. The review of the literature took place in the January 2017, with the help of international databases. Searching terms included the following key words: »episiotomy«, »sexuality«, »postpartum« and »dyspareunia«. The literature searching was limited on the Slovenian and English language and included the relevant papers published between 2007 and 2017. *Results:* The incidence of episiotomy in Slovenia is lower than 30% and varies between individual birth hospitals. The first episiotomy is a frequent reason resulting in women's fear of their first sexual intercourse, mostly the accompanied pain. *Discussion and Conclusions:* The research shows that dyspareunia is more common in women having a vaginal birth, especially if the woman sustained a perineal rupture or episiotomy. Women usually return to their sexual life before the pregnancy after 6-12 months after birth. The quality of sexual life may be affected the whole year after childbirth.

Key words: sexuality, postpartum period, perineal trauma, genital pelvic pain

Izkušnje žensk ob perinatalni izgubi otroka **Women's experiences with perinatal loss of a child**

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Izhodišča: Perinatalna smrt otroka je izjemno občutljivo področje v življenju staršev in ena od najbolj bolečih izgub, ki jo starši lahko doživijo. Od zdravstvenih delavcev zahteva strokovno in sočutno obravnavo, ki bo na prizadete starše delovala blažilno in jim bo pomagala v procesu soočanja z izgubo otroka. Pomembno je, da znajo zdravstveni delavci prisluhniti prizadetim staršem, da so dovezetni za njihove potrebe in da ne postanejo neobčutljivi za njihovo žalost. Namen raziskave je bil dobiti vpogled v izkušnje žensk, ki so v slovenskih porodnišnicah doživele izgubo otroka v perinatalnem obdobju. *Metode:* Kvantitativni raziskovalni pristop je temeljil na spletnem anketiranju priročnega vzorca žensk (n = 114), ki so doživele izgubo otroka v perinatalnem obdobju. Žen-

ske so bile za sodelovanje predhodno zaprosene preko spletnih forumov in skupin, kjer so tudi dobile povezavo na spletno anketo. Anketiranje je potekalo od januarja do junija 2015. Podatki so bili obdelani s pomočjo osnovne deskriptivne statistike. *Rezultati:* Rezultati raziskave so pokazali, da si večina žensk, ki so v perinatalnem obdobju izgubile otroka, o svoji izkušnji želi govoriti. S strani zdravstvenih delavcev so bile povečini deležne empatične, spoštljive in spodbudne obravnave. Kljub temu, da so zdravstveni delavci dovzetni za potrebe in želje žensk ter spoštujejo njihova čustva, pa je njihovo profesionalno vedenje v čustveno zahtevnejših situacijah bolj zadržano, kar pa je v nasprotju z željami in potrebami žensk. K temu včasih prispeva tudi način dela, ki dopušča oz. spodbuja bolj togo profesionalno vedenje. *Diskusija in zaključki:* Na področju perinatalne paliativne zdravstvene nege je pri zdravstvenih delavcih potrebno še izboljšati poznavanje potreb žalujočih staršev ter jih dodatno usposabljanje za delo z žalujočimi starši. Potrebno pa je tudi odpraviti pomanjkljivosti v sistemu obravnave, da bi le-ta bil do žalujočih staršev bolj podporen.

Ključne besede: perinatalna smrt, potrebe žalujočih mater, zdravstveni delavci, podpora

Introduction: Perinatal death is an extremely sensitive area in a parents' life since it is considered to be the most painful of losses. From health care professionals it requires expert and compassionate treatment that will help parents in the process of coping with the loss of a child. Health care professionals should be able to listen and to be receptive to parents' needs and not become insensitive to their grief. The purpose of the research was to gain insight into the experiences of women in Slovenian maternity hospitals who have experienced the loss of a child in the perinatal period. *Methods:* A quantitative research approach was based on an online survey convenience sample of women (n = 114) who have experienced the loss of a child in the perinatal period. Women were previously requested to participate via online forums and groups where they also get a link to the online survey. The survey was conducted from January to June 2015. The data were analyzed using basic descriptive statistics. *Results:* The results showed that the majority of women which have experienced perinatal loss of a child, wants to talk about their experience. Health care professionals have been mostly empathic, respectful and supportive to them in the treatment. Despite the fact that health care professionals are sensitive to the needs and aspirations of women and respect their feelings, their professional behavior in emotionally demanding situations was more reserved, which is against the wishes and women's needs. This is sometimes due to the way of working, which allows and encourages more rigid professional behavior. *Discussion and Conclusions:* In the area of perinatal palliative care there is the need to further improve understanding of the needs of grieving parents among health care professionals and additionally trainings to work with bereaved parents. It is also necessary to overcome the shortcomings in the system of treatment to be more supportive to grieving parents.

Key words: perinatal death, needs of grieving mothers, health care professionals, support

Značilnosti izvajanja telesne aktivnosti med nosečnicami Characteristics of physical activity among pregnant women

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Izhodišča: Zmerna telesna aktivnost naj bi bilav nosečnosti del vsakdanjika bodoče matere, če seveda le-ta nima zdravstvenih problemov oziroma kakršnih koli zapletov v zvezi z nosečnostjo. Cilj raziskave je bil ugotoviti koliko in na kakšen način so nosečnice telesno aktivne in kakšna je povezanost izvajanja telesne aktivnosti v nosečnosti glede na njihove sociodemografske značilnosti. **Metode:** Uporabljena je bila neeksperimentalna empirična metoda. Uporabljen je bil delno strukturirani anketni vprašalnik na priložnostnem vzorcu nosečnic (n = 46), ki so se udeležile Tečaja predporodne priprave v decembru 2015 in januarju 2016. Povprečna starost anketiranih je bila 29 let (s = 4,0). Izmed vseh jih je največ (39,9 %) imelo zaključeno srednješolsko izobraževanje; živelo na podeželju (63 %); v povprečju so bile v 29. tednu gestacije (s = 6) in bile prvorodnice (84,8 %). Poleg osnovne deskriptivne statistike je bil uporabljen tudi Pearsonov koeficient korelacije. **Rezultati:** Rezultati raziskave kažejo, da se nosečnice odločajo za izvajanje telesne aktivnosti med nosečnostjo, saj so seznanjene z njenimi pozitivnimi učinki na nosečnost, porod in vedo kdaj je telesna aktivnost med nosečnostjo odsvetovana. V povprečju se namensko ukvarjajo s telesno aktivnostjo 4-krat tedensko; hoja je najpogostejša vrsta (54,5 %); le 19,6 % nosečnic se udeležuje organizirane telesne vadbe za nosečnice. Drugorodnice so v primerjavi s prvorodnicami bolj telesno dejavne (p = 0,543). Starost, izobrazba in kraj bivanja niso statistično pomembno povezani z izvajanjem fizične aktivnosti (p > 0,05). **Diskusija in zaključki:** Eden izmed pomembnih dejavnikov, ki vplivajo na dober potek nosečnosti, poroda in na poporodno obdobje, je vsekakor telesna aktivnost nosečnice med nosečnostjo. Rezultati kažejo, da se nosečnice dobro zavedajo teh vplivov, vendar pa izvajanje telesne aktivnosti nivedno sorazmerno temu. Organizirana telesna vadba, kjer je, je nezadostna za ustrezno pripravo na porod.

Ključne besede: fizična aktivnost, nosečnost, zdravje, življenjski stil, fetus

Introduction: Moderate physical activity should be a part of every day life during pregnancy of course if the woman does not have any health problems or any complications relating to pregnancy. The aim of the research was to determine how and in which way pregnant women are physical active and if there is any correlation between physical activities during pregnancy regardless of their socio-demographic characteristics. **Methods:** The nonexperimental empirical method was used. Semi-structured questionnaire was applied on convenience sample of pregnant women (n = 46) who had been attending prenatal education courses in December 2015 and January 2016. The average age of the respondents was 29 years (s = 4.0). The majority of them (39.9%) had completed an upper secondary education; lived in rural areas (63%); were in 29th week of gestation (s = 6) and were primiparous (84.8%). In addition to the basic descriptive statistics Pearson correlation coefficient was used. **Results:** The results

suggest that pregnant women are trying to be physical active during pregnancy, because they are aware of its positive effects on pregnancy, childbirth and know the reasons when physical activity is contraindicated. The majority of them are engaged in physical activity four times per week; walking is the most common type (54.5%); only 19.6% of pregnant women attend organized physical exercises for pregnant women. Multiparous women compared with primiparous women are more physically active ($p = 0.543$). Age, level of education and place of residence are not statistically significantly associated with the implementation of physical activity in everyday life ($p > 0.05$). *Discussion and Conclusions:* One of the most important factors that contribute to a healthy pregnancy, childbirth and postpartum period is physical activity during pregnancy. The results suggest that pregnant women are well aware of these effects, but the implementation of physical activity is not always proportional to this. Organized physical exercises, where established, are insufficient for adequate preparation for childbirth.

Key words: physical activity, pregnancy, health, lifestyle, foetus

Vpliv izmenskega dela na srčno žilna obolenja pri medicinskih sestrah **The impact of shift work on cardiovascular diseases among nurses**

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Izmensko delo je delo, ki je časovno stalno ali pogosto razporejeno zunaj standardnega delovnega časa. Vpliva na večino telesnih funkcij, ki so sinhronizirane s 24-urnim cirkadianim ritmom. Najbolj izrazit je vpliv na spanje, na avtonomne vegetativne procese in na sposobnost za delo. Medicinske sestre za zagotavljanje kakovostne in neprekinjene zdravstvene nege delajo v okviru tega fleksibilnega delovnega časa, ki še vedno ostajajo nujna oblika njihovega dela. Številne raziskave kažejo, da se pri medicinskih sestrah s starostjo in z leti dela v izmenah poveča nagnjenost k notranji neusklajenosti in zmanjšani toleranci do izmenskega dela. To se kaže v pojavljanju zdravstvenih težav zaradi izmenskega dela. Nevrovegetativne reakcije kot odgovor na porušenje cirkadianih ritmov vodijo do povečanih hormonskih reakcij, ki skupaj še z drugimi dejavniki tveganja vodijo do večjega tveganja za razvoj bolezni srca in ožilja. S pregledom slovenske in tuje znanstvene ter strokovne literature so bili identificirani dokazi, ki podpirajo teorijo o vplivu izmenskega dela na pojavnost srčno-žilnih bolezni pri medicinskih sestrah. Kaže se potreba po nujnih rešitvah, saj se soočamo s potrebami po opredelitvi dodatnih strategij, ki bodo zmanjšale pojavnost srčno-žilnih bolezni pri medicinskih sestrah in s tem negativne posledice v zdravstvenih ustanovah in v okviru splošne javne politike.

Ključne besede: medicinska sestra, izmensko delo, cirkadiani ritem, srčno žilne bolezni.

Shift work is defined as the work, which is time-permanently or frequently disposed outside the standard operating time. It affects the majority of bodily functions which are synchronized with the 24-hour circadian rhythm. The most pronounced impact on sleep, on an autonomous vegetative processes and the ability to work. Nurses in order to ensure quality and continuous care work within these flexible working time, which still remains a necessary form of their work. Numerous studies have shown that age and the years of doing shift work among nurses increases susceptibility to internal desinchronisation and thus to a reduced tolerance for shift work, which is manifested by the appearance of health problems associated with shift work. Neurovegetative reactions in response to the collapse of the circadian rhythm, leading to increased hormonal reactions, which together with other risk factors lead to an increased risk for developing cardiovascular diseases. A review of Slovenian and foreign scientific and professional literature identified the existence of evidence supporting the theory of the impact of shift work on the incidence of cardiovascular disease in nurses. There is a need for urgent solutions, because we are facing with need to define additional strategies that will reduce the incidence of cardiovascular disease in nurses and the negative consequences in health care facilities and in the context of the general public policy..

Key words: nurse, shift work, circadian rhythm, cardiovascular disease.

Kakovost življenja žensk v času žalovanja po perinatalni smrti otroka Womans' quality of life during the grief process after perinatal death

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Izhodišča: Okoli petina nosečnosti po vsem svetu se konča s spontanim splavom, izvenmaternično nosečnostjo ali mrtvorojenostjo. Ženske pogosto svojih čustev ob teh dogodkih ne kažejo, jih potlačijo, ne govorijo o izgubi, niti prosijo za pomoč. Namen raziskave je bil proučiti fizične in duševne vidike zdravlja žensk po izgubi otroka in posledice nerazrešenega žalovanja. *Metode:* V raziskavi je sodelovalo 108 žensk, ki so doživele perinatalno izgubo. Uporabljen je bil Münchenski vprašalnik žalovanja ter vprašalnik o drugih demografskih podatkih vključenih žensk. *Rezultati:* Statistično pomembne razlike v doživljanju žalosti so se pokazale glede na gestacijsko starost otroka ($p < 0,01$), starost matere ($p < 0,05$) ter časom, ki je minil od otrokove smrti ($p < 0,01$). V kliničnem okolju so ženske presojale obravnavo zdravstvenih delavcev, v domačem okolju pa so prejele več razumevanja in sočutne obravnave. Raziskava je bila podlaga za izdelavo protokola z navodili za ravnanje ob mrtvorojenosti, s poudarkom na duševnem počutju matere. *Diskusija in zaključki:* Zelo pomembna je strokovna usposobljenost zdravstvenih delavcev, ki imajo prvi stik s pretreseno materjo in hkrati velik vpliv, da preprečijo patološke procese žalovanja. Na podlagi skrbnega načrtovanja zdravstvene nege in s pomočjo protokola, medicinska

sestra dobi vpogled v problematiko žalovanja, obenem pa ima orodje, ki jo usmerja pri postopkih in aktivnostih.

Ključne besede: žalovanje, mrtvorojenost, perinatalna smrt, kakovost življenja

Introduction: Around a fifth of pregnancies worldwide ends in miscarriage, ectopic pregnancy or stillbirth. Women often do not show their feelings after these events, they suppress them or do not talk about this loss. Unresolved grief can affect many aspects of women physical and mental health in all stages of life. *Methods:* The study included 108 women who had experienced perinatal loss. All of them completed the Munich Grief Scale questionnaire and a questionnaire on demographic data. *Results:* Statistically significant differences in the experience of grief were associated with gestational age of the child ($p < 0.01$), the age of the mother ($p < 0.05$) and the time that has elapsed since the child's death ($p < 0.01$). In the clinical setting women judged dealing of health workers, and reported more understanding and compassionate treatment at home. The research was the basis for developing protocols with instructions for handling a situation of stillbirth, focusing on mental well-being of the mother. *Discussion and Conclusions:* The qualification of health professionals is very important. They have first contact with the mother and at the same time influence to prevent the pathological processes of bereavement. Based on careful planning of health care and by using the protocol, nurse can gain an insight into the process of bereavement, and also has a tool that focuses on procedures and activities.

Key words: grief, stillbirth, perinatal death, quality of life

Sekcija/Section
Problemi in izzivi v prehrani
delovno aktivne populacije

Problems and Challenges
in the Nutrition of the
Working-Age Population

Vabljeno predavanje Invited lecture

Zdrava izbira = Lahka izbira Healthy choice = an easy choice

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Prehrana aktivne populacije v Sloveniji v povprečju še vedno vsebuje preveč soli, preveč nasičenih in premalo kakovostnih maščob, preveč dodanih enostavnih sladkorjev. Ta hranila v največji meri zaužijemo s predelanimi živili, ki imajo praviloma visoko energijsko vrednost. Raziskave kažejo, da uživamo premalo zelenjave, sadja, polnovrednih žit, stročnic ter rib. Z določenimi vzorci prehranjevanja smo lahko nepotrebno izpostavljeni škodljivim trans maščobam. Da bi usmerili prehrano vseh prebivalcev Slovenije k bolj zdravim izbiram, se mora povečati ponudba zdravju bolj koristnih živil, ki bodo hkrati lahko dostopna. V preglednem prispevku obravnavamo celostni pristop za doseg ciljev na področju preoblikovanja živil v Sloveniji, ki vključuje: (1) dvig razpoložljivosti in dostopnosti hrane s sestavo, ki je koristna za zdravje in, kjer je to primerno, z zmanjšanimi porcijami, (2) večjo ozaveščenost prebivalcev Slovenije o hranilni sestavi preoblikovanih živil ter o pomenu spremembe sestave živil za njihovo zdravje, (3) oblikovanje okolij, ki podpirajo in spodbujajo zdrave vzorce prehranjevanja, še posebej za delovno aktivno populacijo ter (4) spremljanje in vrednotenje dosežkov oblikovanega programa. Ugotovitve bodo pomembne za odločne ukrepe za izboljšanje prehrane aktivne populacije in s tem za zmanjšanje bremena kroničnih nenalezljivih bolezni v prihodnosti.

Ključne besede: reformulacija, preoblikovanje živil, sestava živil, zdrava prehrana, aktivna populacija

A diet of the active population in Slovenia still contains too much salt, saturated fats and added sugars, mostly consumed with the products of a high-energy value. Research shows that at the same time we do not eat enough vegetables, fruits, whole grain cereals, legumes and fish. With certain eating patterns, we may be unnecessarily exposed to harmful trans-fats. To guide the diet of all population groups in Slovenia toward healthier choices, the availability of healthier foods should increase altogether with their accessibility. It is important to make the healthy choice an easy choice. In this review, we discuss an integrated approach to achieve the objectives of food reformulation in Slovenia, which includes: (1) increase of the availability and accessibility of reformulated healthier food products, and, where appropriate, with reduced portions (2) public awareness of the nutritional changes in reformulated foods and the importance of those changes for health, (3) the creation of environments that support and promote healthy eating patterns, especially of the active population, and (4) monitoring and evaluating the achievements of the program. The findings will be important for decisive actions to improve the nutrition of the active population and thereby to reduce the burden of chronic non-communicable diseases in the future.

Key words: reformulation, food improvement, food composition, healthy diet, active population

Vpliv mediteranske prehrane na mikrobiom in zdravje človeka **The influence of Mediterranean diet on human microbiome** **in health and disease**

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Prehranski vzorec mediteranskega območja vključuje velike količine zelenjave in sadja, stročnic in polnozrnatih izdelkov v kombinaciji z zmerno količino rdečega vina ter oljčnega olja kot glavnega vira prehranskih maščob. Mediteranska prehrana ima dokazano zaščitno vlogo pri razvoju bolezni srca in ožilja, sladkorni bolezni, debelosti, kroničnih degenerativnih bolezni, osteoporozni in rakavih obolenjih. Do nedavnega so ta učinek pripisovali predvsem visoki vsebnosti antioksidantov in polifenolov, vendar je vse večja pozornost usmerjena k vplivu prehranskih vzorcev na sestavo in aktivnost mikrobioma prebavil. Gre za dinamično in raznovrstno združbo mikroorganizmov, ki pa se tekom človekovega življenja stalno spreminja in odziva na dejavnike, kot so prehrana, stres, okužbe ali farmakološka sredstva. Sestavo mikrobioma v prebavilih oblikujejo gostiteljevi dejavniki kot so genetika in prehrana, kar posledično vpliva na gostitelja ter njegovo zdravstveno stanje in počutje. Slednje je ključnega pomena pri ljudeh vseh starostnih skupin, posebno pa pri delovno aktivni populaciji, saj je ta še dodatno izpostavljena stresnim dejavnikom delovnega okolja. Na osnovi obstoječih kliničnih raziskav lahko zaključimo, da lahko mikrobiom prebavil izboljša psihofizično zdravje delovne populacije, na kar lahko ugodno vplivamo predvsem s prehrano. Aktivno osveščanje posameznikov o vplivu mediteranske prehrane na razvoj koristne mikrobne združbe in uvedba prehranjevalnih smernic na delovnem mestu bi lahko izboljšalo delovno učinkovitost in zmanjšalo stopnjo tveganja za razvoj z delom povezanih bolezenskih stanj.

Ključne besede: mikrobiom, mediteranska prehrana, zdravje delovno aktivne populacije

The Mediterranean dietary pattern consists of a high variety of vegetables and fruits, legumes and whole grains combined with a moderate amount of red wine and olive oil as a source of dietary lipids. The protective role of Mediterranean diet has been shown in the case of cardiovascular diseases, diabetes, obesity, chronic degenerative diseases, osteoporosis and cancer. Until recently, the effect was mainly attributed to the high content of antioxidants and polyphenols, but there is a growing interest in the impact of dietary patterns on the structure and activity of the gut microbiome. This dynamic and diverse community of microorganisms is constantly changing throughout the host's lifetime in response of factors such as diet, stress, infection, or pharmacological agents. The collective genomes of these co-existing microorganisms have been shaped by host factors such as genetics and nutrients and are in turn able to influence host biology in health and disease. On the basis of existing clinical trials, dietary intake is a key determinant of microbiome composition and can therefore signif-

icantly influence the psychological and physical condition of working-age population. An active awareness of individuals about the impact of the Mediterranean diet on the beneficial microbial communities and the implementation of dietary guidelines in the workplace, could favorable influence the work productivity and lower the risk of work-related diseases.

Key words: Mediterranean diet, intestinal microbiome, health of working-age population

Obiskovanje prehranskih svetovanj delovno aktivnih oseb Attending nutrition counselling of the working-age subjects

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Izhodišča: Zdravstveno stanje in prisotnost težav so lahko eden izmed razlogov odločitve obiska prehranskega svetovanja. Na podlagi podatkov, ki smo jih pridobili v posvetovalnici dietetika, za obdobje od leta 2009 do 2015, smo analizirali značilnosti oseb, ki se odločijo za prehransko svetovanje. V analizo so bili zajeti podatki o zdravstvenem stanju, antropometričnih značilnostih in drugih fizičnih in psiholoških težavah. *Metode:* Analizirali smo podatke o 863 delovno aktivnih oseb (198 moških, 665 žensk, povprečna starost 42 let), ki so v obdobju od leta 2009 do 2015 obiskovali posvetovalnico prehranskega svetovalca. Meritve telesne sestave so bile zbrane longitudinalno, za vsako osebo in za vsako nadaljnje prehransko svetovanje posebej. *Rezultati:* Udeleženci prehranskih svetovanj so bili v povprečju zdravi, stari 45 let. Le tretjina jih je imela ITM, ki spada v skupino debelosti. Prehranskih svetovanj se številčno manj poslužujejo moški. Ženske so tiste, ki najbolj vztrajajo pri obiskih in so prisotne na večih svetovanjih. *Diskusija in zaključki:* Začetno zdravstveno stanje ne nudi napovedi o izpeljavi prehranske intervencije, kot tudi ne napoved števila svetovanj. Z analizo podatkov smo pridobili pomembne informacije o značilnostih delovno aktivnih oseb, ki obiskujejo prehranska svetovanja in boljše razumevanje tistih dejavnikov, ki bi lahko imeli večji vpliv na uspeh ali verjetnost uspešnega izida prehranskih svetovanj v bodoče.

Gljučne besede: prehranska svetovanja, uspešnost prehranskega svetovanja, indeks telesne mase, starost, zdravje

Introduction: Health status and presence of health problems can be the primary reasons for the nutritional-counselling visits. Based on the information we have gained from the counselling dietitian, between 2009 and 2015, we have analysed the characteristics of subjects who attended the nutritional counselling. The analysis covered data on health status, anthropometric characteristics and other physical and psychological problems. *Methods:* We have analysed data on 863 working-age population (198 men, 665 women, average age 42 years), who visited a nutritional dietitian between 2009 and 2015. Measurements of body composition were collected longitudinally, for each person and for each subsequent nutritional counselling separately. *Results:* Most of the participants were healthy, and average age was 45 years. Only a third of them had a BMI belonging to the group of obesity and even 70 % of the participants be-

long within normal weight body mass index classifications. Dietary counselling is numerically less attended by men's. Women are those who have most visits and are present in several advices. *Discussion and conclusions:* Initial state of health does not provide information on the nutritional interventions, as well as not forecast the number of consultations. By analysing the data, we have obtained important information on the characteristics of persons attending nutrition counselling and a better understanding of those factors which could have a major impact on the success or likelihood of a successful outcome of nutritional counselling in the future.

Key words: nutritional counselling, successful outcome, body mass index, age, health

Ketogena dieta in vpliv na mentalne procese delovne populacije **Ketogenic diet and its impact on mental processes of working population**

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Raziskovanje prehrane z malo ogljikovimi hidrati in veliko maščobami v zadnjih dveh desetletjih prinaša paradigmatški premik v nutricionistiki pa tudi medicini. Z opazovalnimi študijami in kliničnimi eksperimenti je dokazano, da t. i. ketogena dieta lahko učinkovito uporabimo pri različnih boleznih in sindromih (epilepsija, Alzheimerjeva bolezen, nekatere oblike možganskih tumorjev – predvsem multiformnega glioblastoma; sladkorna bolezen, predvsem tipa 2; presnovni sindrom, vključno s čezmerno telesno maso). Manj je raziskav ketogene diete v smislu vpliva na zdrave ljudi, torej odgovorov na vprašanje, kakšne so prednosti visokomaščobne prehrane za sicer zdrave ljudi, če odmislimo morebitne preventivne učinke. S pregledom znanstvene literature in sintezo dosedanjih spoznanj o mehanizmih in vplivih ketogene diete na možgane kot sedeža mentalnih procesov bomo skušali podati smiselne iztočnice za razmislek o uporabi visokomaščobne diete kot metode zagotavljanja boljšega spomina, izboljšane kognitivne funkcije in delovne učinkovitosti pri delovno aktivni populaciji.

Ključne besede: ketogena dieta, nizek vnos ogljikovih hidratov, kognitivna funkcija, oblikovanje spominov, nevroprotektičen učinek

Low carbohydrate and high fat nutrition research has brought a sense of paradigmatic shift in nutritional science and in medicine over the past two decades. Observational studies and clinical experiments have shown the efficiency of the ketogenic diet in series of diseases and syndromes (epilepsy, Alzheimer's disease, some brain tumors, especially glioblastoma multiforme; diabetes, especially type 2; metabolic syndrome, including obesity). There is however less of research effort put into recognition of the benefits a ketogenic diet for healthy people, other than preventive character of the diet. In this review we synthesize current data and knowledge about mechanisms of the ketogenic diet and its influence on the brain as the centre of the mental processes and in turn try to outline the starting points of thinking and researching the ketogenic diet as

a metabolic approach to improving memory creation, cognitive function and mental work efficiency with the working-age population.

Key words: ketogenic diet, low carbohydrate, cognitive function, memory creation, neuroprotective effect

Razširjenost tihe miokardne ishemije pri delovno aktivnih bolnikih s sladkorno boleznijo tipa 2.

Prevalence of silent myocardial ischemia in working-age patients with type 2 diabetes mellitus.

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Izhodišča: Nekateri podatki potrjujejo relativno visoko razširjenost tihe miokardne ishemije (TMI) pri starejših bolnikih (starih več kot 60 let) s sladkorno boleznijo tipa 2 (T2DM), medtem ko je podatkov za delovno aktivno populacijo (starih ≤ 60) zelo malo. *Metoda:* Retrospektivno smo analizirali zdravstvene kartone 192 pacientov s T2DM, starih ≤ 60 let (od tega 110 moških, torej 57,3%), ki so prestali perfuzijsko scintigrafijo miokarda (PSM) pri maksimalni obremenitvi med letom 2010 in letom 2014. PSM je bila izvedena v skladu s smernicami EANM z enodnevnim protokolom obremenitve in mirovanja z EKG vodeno preiskavo SPECT in uporabo ^{99m}Tc -tetrofosmina. Perfuzijske slike sta neodvisno ocenila dva strokovnjaka. Pacienti z nenormalno PSM so opravili še koronarno angiografijo in pomembnejša zožitev je bila definirana kot $\geq 50\%$ za LAD in 75% za druge koronarne arterije. *Diskusija in zaključki:* PSM je bila pozitivna pri 35 pacientih (18,2%); od teh je imelo 31 (16,1%) angiografsko potrjeno koronarno zožitev. Pozitivna napovedna vrednost PSM pri napovedi angiografske koronarne zožitve v tej starostni podskupini je bila 88,9%. Univariatna analiza je pokazala, da sta post-stresni padec iztisnega deleža levega prekata (LVEF) $\geq 5\%$ ($p = 0,003$) in koncentracija NT-proBNP detektirana pri obremenitvi ($p = 0,005$), povezani z večjim tveganjem za ishemijo pri delovno aktivnih populaciji s T2DM. V multivariantni analizi je padec LVEF $\geq 5\%$ ($p = 0,003$) ostal neodvisen napovednik TMI. Razširjenost TMI je bila pri delovno aktivni populaciji s T2DM podobna kot pri starejših od 65 let, kot navajajo študije. Informacije o post-stresnem padcu LVEF in zaznani koncentraciji NT-proBNP pri stresu, lahko poleg že znanih dejavnikov tveganja, prispevajo k bolj natančni opredelitvi TMI pri določeni starostni podskupini. Naši podatki kažejo, da bi morali napredne intervencijske postopke, tudi intenzivno upravljanje z zdravili, vključevati pri zmanjšanju tveganja za razvoj srčnih dogodkov pri delovno aktivnih pacientih s T2DM, ki so bili pozitivni za TMI.

Ključne besede: scintigrafija, tiha ishemija, sladkorna bolezen

Introduction: Some data confirm a relatively high prevalence of silent myocardial ischemia (SMI) in elderly (aged over 60 years) patients (pts) with type 2 diabetes mellitus (T2DM), while no data are available in working-age subjects of

middle-aged (≤ 60 years) subgroup of the diabetic population. *Methods:* Medical records of 192 pts with T2DM aged ≤ 60 years (110 male pts; 57.3%) who had undergone MPI with a maximal exercise stress testing between 2010 and 2014 were retrospectively analysed. MPI was performed according to the EANM procedural guidelines for stress-rest ECG gated SPECT one-day protocol using ^{99m}Tc -tetrofosmin. Perfusion images were judged by two specialists independently, and SMI was diagnosed as myocardial perfusion abnormalities without associated symptoms. Pts with abnormal MPI underwent coronary angiography, and significant stenosis was defined as $\geq 50\%$ for LAD, and $\geq 75\%$ for other coronary arteries. *Discussion and conclusions:* MPI was positive in 35 pts (18.2%); of those 31 (16.1%) had angiographically confirmed coronary stenosis. The positive predictive value of the MPI for predicting angiographic coronary stenosis in this age subgroup was 88.9%. Univariate analysis revealed post-stress LVEF drop $\geq 5\%$ ($p = .003$) and NT-proBNP levels detected in stress ($p = .005$) to be associated with greater risk of ischemia in working-age T2DM pts. In multivariate analysis LVEF drop $\geq 5\%$ ($p = .003$) remained an independent predictor of SMI. Prevalence of SMI in diabetic working-age pts was almost similar to that observed in studies of subjects over 65 years-old. Information about post-stress LVEF drop and NT-proBNP level detected in stress, in addition to the conventional risk factors, can contribute to more precise identification of SMI in this specific age subgroup of the pts. Our data suggest that advanced intervention procedures including intensive drug management should be implemented to reduce the risk of cardiac events for SMI-positive T2DM pts of working-age.

Key words: scintigraphy, silent ischemia, diabetes mellitus

Prehranske beljakovine in vnetje pri suhih in pretežkih odraslih Dietary protein and inflammation in lean and overweight adults

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Izhodišča: Debelost in z njo povezani zapleti lahko pomembno vplivajo na delavno sposobnost delavne aktivne populacije. Kronično vnetje, ki se stopnjuje s stopnjevanjem debelosti in neaktivnosti ter kopičenjem komponent presnovnega sindroma, je dejavnik tveganja za kronične neprenosljive bolezni, pa tudi za slabšo kognitivno funkcijo. O vplivu vnosa beljakovin na vnetje in inzulinsko rezistenco prihaja v literaturi do razhajanj, zato je avtorje zanimala povezava med vnosom beljakovin in vnetjem pri delovno aktivnih odraslih. *Metode:* 96 odraslih so avtorji razdelili v tri skupine glede na prisotne komponente presnovnega sindroma (PS): PSo, brez komponent PS, PS₁, z eno komponento PS, in PS₂, z dvema komponentoma PS ali več. S Spearmanovo korelacijo so iskali povezave med vnosom virov beljakovin in vnetnim markerjem reaktivnim proteinom C (CRP) znotraj skupin. *Rezultati:* Vnos mleka in mlečnih izdelkov je negativno koreliral s koncentracijo CRP pri PSo, medtem ko korelacije med mlekom in mlečnimi izdelki in CRP pri PS₂ niso bile statistično značilne. Po drugi strani je vnos mesa in zamenjav pozitivno koreliral s koncentracijo CRP PS₂,

medtem ko pri PS o ni bilo statistično značilnih korelacij med vnosom mesa in zamenjav in CRP. *Diskusija in zaključki:* Povezava med viri beljakovin in vnetjem se med suhimi in pretežkimi odraslimi s prisotnima vsaj dvema komponentama PS razlikuje, kar je potrebno upoštevati pri prehranskem svetovanju.

Ključne besede: kronično vnetje, beljakovine, presnovni sindrom

Introduction: Obesity and its complications can importantly affect the working ability of working-age population. Low-grade chronic inflammation, that increases with the escalation of obesity and inactivity, and the accumulation of Metabolic Syndrome (MetS) components, is a risk factor for chronic non-communicable diseases, as well as for reduced cognitive function. There are conflicting reports on impact of protein intake on inflammation and insulin resistance in the literature, so the authors were interested in the relationship between the intake of proteins and inflammation in the working-age adults. *Methods:* 96 adults were divided in three groups according to number of MetS components present: PSo, no MetS component, PS₁, one MetS component and PS₂, two or more MetS components present. Spearman correlation was used to assess the associations between protein source intake and the inflammation marker C-reactive protein within the groups. *Results:* Milk and dairy intake negatively correlated with CRP in PSo, while there were no correlations between milk and dairy intake and CRP in PS₂. On the other hand, meat and substitutes positively correlated with CRP in PS₂, while there were no correlations between meat and substitutes and CRP in PSo. *Discussion and Conclusions:* The associations between protein sources and inflammation differ in lean and overweight with at least two MetS components present, which should be considered in dietary counseling.

Key words: chronic inflammation, protein, metabolic syndrome

Ocena prehranskih navad rekreativnih športnikov Severne Primorske

Assessment of eating habits of recreational athletes from the slovenian northern coastal region

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Izhodišča: Prehrana in telesna dejavnost, ki ugodno vplivata na zdravje in zmanjšujeta breme debelosti, sta že vrsto let visoko na lestvici prednostnih tem Svetovne zdravstvene organizacije (SZO) in EU. Uravnotežena in varovalna prehrana pomenita pravilno pripravljene in sestavljene obroke hrane ter pravičen režim prehranjevanja, kar predstavlja tisti del zdravega načina življenja, ki človeka krepi, vpliva na visoko delovno storilnost in preprečuje obolenja. Želeli smo preučiti prehranske navade rekreativnih športnikov severne Primorske ter pridobiti vpogled v morebitne pomanjkljivosti v prehrani navedene populacije in podati predloge za izboljšanje stanja. Namen raziskave je ocena prehranskih navad rekreativnih športnikov severne Primorske. *Metode:* Raziskava je bila opravljena na vzorcu 38 posameznikov, katerih prehranske navade smo ocenjevali s pomočjo vprašalnika o pogostosti uživanja živil ter tedenski telesni dejavnosti in analizirali s pomočjo spletnega orodja OPKP. Vsi anketiranci so za-

dostno gibalno športno aktivni, v povprečju 1,07 ur dnevno, večina pa je gibalno športno aktivnih 6 – 10 ur tedensko. Ocenjevali smo energijski vnos, vnos prehranskih vlaknin, antioksidantov in razmerje omega-6 in omega-3-maščobnih kislin. *Rezultati* Ugotavljamo, da je povprečni dnevni energijski vnos med anketiranci previsok, povprečni vnos prehranskih vlaknin, antioksidantov in omega-3-MK pa nezadosten. Anketiranci v splošnem zaužijejo premalo z vlakninami bogatih škrobnih živil ter zelenjave, premalo rib in z omega-3-MK obogatjenih živil. Uživajo zadosti sadja, pustih beljakovinskih živil, kakovostnih maščobnih živil ter zmerne količine sladic. *Diskusija in zaključki* Prehrana rekreativnih športnikov severne Primorske se v preučevanih parametrih ne sklada s priporočili. Glede na rezultate raziskave je kritičen predvsem pomanjkljiv vnos zelenjave ter posledično prehranskih vlaknin in nezadostna količina rib ter s tem neustrezno razmerje med maščobnimi kislinami. Ugotovili smo, da se precejšen delež rekreativnih športnikov poslužuje prehranskih dopolnil, zato lahko sklepamo, da se zavedajo pomena zdrave in uravnotežene prehrane, potrebujejo pa natančnejše usmeritve glede potrebnih količin posameznih hranil.

Ključne besede: prehranske navade, rekreativni športniki, prehrana odraslih, prehranska priporočila.

Background Nutrition and physical activity, which both affect our health and reduce the burden of obesity are already one of the highest priority themes of the World Health Organization (WHO) and the EU. A balanced and healthy diet means properly prepared and assembled meals, a balanced intake of all necessary nutrients and adequate energy value of food. The objective was to examine the eating habits of recreational athletes of northern Primorska region and gain insight into potential weaknesses of the diet of the population and also to suggest improvements of the situation. The purpose of the work is the evaluation of dietary habits of recreational athletes from northern Primorska region. *Methods* The survey was conducted on a sample of 38 individuals whose dietary habits were evaluated using a questionnaire on the frequency of food consumption and weekly physical activity and analyzed using online tool OPKP. All respondents are physically active, on average 1,07 hours daily, most of them are active 6 – 10 hours in a week. We evaluated energy intake, intake of dietary fiber, antioxidants, and the ratio of omega-6 and omega-3 fatty acids. *Results* We find that the average daily energy intake among our population is too high and the average intake of fiber, antioxidants and omega-3 fatty acids is insufficient. Respondents generally consume too few fiber-rich starchy foods and vegetables, too few fish and omega-3 fortified foods such as fortified milk, cheese and eggs. Respondents enjoy enough fruit, lean protein foods, high quality, fatty foods, and moderate amounts of sweets. *Discussion and conclusion* Diet of the amateur athletes of northern Primorska region in the studied parameters does not comply with the recommendations. According to the survey results the intake of vegetable is inadequate, and therefore there is also insufficient intake of dietary fiber. Because of the lack of fish in the diet of the population the amount of omega 3 fatty acid and ratio between fatty acids is inadequate. We have found that a significant proportion of amateur athletes are using dietary supplements, so we can assume that they are aware of the impor-

tance of healthy and balanced diet, but need more detailed guidelines on the required quantities of individual nutrients.

Key words: eating habits, recreational athletes, adult nutrition, nutrient recommendations.

Telesni sestav zaposlenih v bolnišnici Body composition among hospital employees

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Izhodišča: Zaposleni v zdravstvu so zgled prebivalcem v skrbi za lastno zdravje. Namen raziskave je predstaviti stopnjo telesne dejavnosti in pojavnost debelosti med zaposlenimi v Splošni bolnišnici Novo mesto. Meritve sestave telesa smo z bioelektrično impedanco izvedli v okviru internega izobraževanja Ohranimo zdravje II. *Metode:* V raziskavi je sodelovalo 84 zaposlenih, starih od 24 do 57 let. Rezultate smo primerjali s priporočili Svetovne zdravstvene organizacije, z literarnimi podatki in nacionalnimi podatki o zdravju prebivalcev Slovenije.

Rezultati: Izsledki meritev kažejo, da ima 88 % zaposlenih presežek mase maščobnega tkiva, v povprečju $11,8 \pm 8,3$ kg nad zgornjo priporočeno vrednostjo. Glede na indeks telesne mase (ITM) ima 37 % prekomerno telesno težo, 30 % je debelih. Pusta telesna masa je v referenčnih mejah pri 93 % merjenih. 72 % zaposlenih samoocenuje svojo telesno dejavnost kot nizko ali srednjo. *Diskusija in zaključki:* Obseg čezmerne hranjenosti in debelosti glede na ITM med zaposlenimi je višji od slovenskega povprečja in primerljiv z zaposlenimi v zdravstvu v tujini. Rezultati meritev podpirajo pomen internih izobraževanj za ohranitev zdravja med zaposlenimi in potrebo po aktivnejšem ukrepanju. Pomembno je vzpostaviti ugodnejše delavno okolje, ki spodbuja in podpira zdrave izbire življenjskega sloga na področju prehrane, telesne dejavnosti in pogojev dela.

Ključne besede: telesni sestav, telesna dejavnost, debelost, zaposleni, bolnišnica

Introduction: The role of health professionals as behaviour models for healthy lifestyle is important to patients, families and the community. The purpose of this study was to present physical activity profile and obesity prevalence among General hospital Novo mesto employees. Body composition was measured with bioimpedance analysis as part of a worksite educational program Ohranimo zdravje II. *Methods:* 84 employees of diverse occupations participated. The age range was from 24 to 57 years. Collected results were compared with data from World health organization, other related studies and national public health statistics. *Results:* The results indicate that 88 % of participants have excess of adipose tissue in an average of $11,8 \pm 8,3$ kg above the maximum recommended value. With respect to body mass index, 37 % were classified as overweight and 30 % as obese. Lean body mass is in the reference limits among 93 % of participants. 72 % of participants report their physical activity is low to moderate. *Discussion and conclusions:* Participants in this study had a rate of over-

weight and obesity that is higher than that of the general Slovenian population and similar to the health professionals abroad. This highlights the importance of worksite educational programs to promote healthy behaviours that prevent weight gain. There is a need to provide a supportive working environment that encourages and supports healthy habits.

Key words: body composition, physical activity, obesity, employees, general hospital

Sekcija/Section

**Telesna (ne)aktivnost in njen pomen
za mišično-skeletno in kardio-metabolno
zdravje delovno aktivne populacije**

**Physical (In)activity and its Role
in Musculoskeletal and Cardio-metabolic
Health of the Working-Age Population**

Vabljeno predavanje Invited lecture

Delazmožnost delavcev s kardiovaskularnimi boleznimi Work ability of workers with cardiovascular diseases

Metoda Dodič Fikfak

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Izhodišča: Plavi ovratniki imajo dvakrat večjo verjetnost, da se zgodaj upokojijo zaradi kardiovaskularnih bolezni (KVB) v primerjavi z belimi ovratniki. KVB so vodilni vzrok smrti na delu. Cilj prispevka je prikazati stanje zdravja delavcev zaradi KVB v SI in opozoriti na potrebne ukrepe. *Metode dela:* V presečni analizi so bili uporabljeni podatki nacionalnih zbirk podatkov in študije o Murinih delavcih v času prestrukturiranja. *Rezultati:* Odstotek bolniške odsotnosti (BO) zaradi KVB niha od 0,13 do 0,23. Resnost (R) bolezni pada. Odstotek BO zaradi KVB je v javnem sektorju višji kot v zasebnem, R pa v zasebnem sektorju višja kot v javnem. Tudi BO zaradi akutnega miokardnega infarkta, angine pektoris, kronične ishemične bolezni srca in možganskega infarkta je višja v zasebnem sektorju. Na pojav KVB vplivajo tudi zunanji dejavniki kot npr. gospodarska kriza. *Diskusija:* Resnosti KVB je v zasebnem sektorju višja tudi zato, ker se ti delavci odločajo za BO, ko so KVB že zelo razvite in zahtevajo daljše zdravljenje. Ocenjevanje delazmožnosti bolnika s KVB zahteva predvsem odlično poznavanje obremenitev in obremenjenosti na delovnem mestu. Ostaja izziv, kako v športno-gibalne aktivnosti vključiti modre ovratnike.

Ključne besede: kardiovaskularne bolezni, bolniška odsotnost, delovna invalidnost, prestrukturiranje gospodarstva.

Introduction: Researchers establish that blue-collar workers are twice as likely to retire early due to cardiovascular diseases (CVDs) if compared with white-collar workers. CVDs are the main cause of death in the workplace. The aim of this contribution is to present the health status of workers with CVDs in Slovenia and to suggest necessary measures. *Methods:* In a cross-sectional study, the data from national databases and from research of Mura' workers during restructuring were used. *Results:* The percentage of sick leave (SL) varies from 0.13 to 0.23. The severity of CVD decreases. The percentage of SL due to CVS in the public sector is higher than in private, but the severity (S) of the CVD is higher in the private sector. Also acute myocardial infarction, angina pectoris, chronic ischemic heart disease and cerebral infarction is higher in private sector. Sick leave is influenced also by restructuring. *Discussion and conclusions:* Severity of CVDs is higher in private sector also because workers decide to go to their doctors when a CVD is already developed and requires a longer treatment. Assessment of workability of a patient with a CVD demands mostly a very good knowledge of strain and straining in the workplace.

Key words: cardiovascular diseases, sick leave, work disability, restructuring

Bolečine kot vodilni zdravstveni problem in vzrok za bolniško odsotnost pri delavcih v kemijski in predelovalni industriji **Pain as the leading health problem and cause of sick leave in workers in the chemical and processing industry**

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Izhodišča: Prisotnost bolečin je običajno eden vodilnih vzrokov za bolniško odsotnost. *Metode:* V raziskavi projekta Zdravi na kvadrat II – promocija zdravja na delovnem mestu v kemijski in drugih predelovalnih industrijah, izvedeni spomladi 2016 na vzorcu N=860 delavcih iz 19 slovenskih podjetjih, smo med drugim želeli raziskati povezavo med vplivom spola in starosti na prisotnost bolečin, ki so jih navedli kot vodilni zdravstveni problem. Zanimalo nas je tudi ali je vrsta dela povezana s prisotnostjo bolečin. *Rezultati:* Ugotovili smo, da imajo delavci, ki opravljajo težja fizična dela, težave z bolečinami v križu, vratu ali ramenih, in sicer med 80 in 91%. Med njimi ima z nespečnostjo težave okoli 41% oseb ter med 25 in 37% z depresijo. Med ženskami je ta delež še nekoliko višji. Starejši od 40 let navajajo več prisotnih bolečin. Okoli 90% delavcev, ki opravljajo delo v prisilni drži se spopada z bolečinami in to predstavlja 4,5 krat povečano tveganje v primerjavi z ostalimi delavci. Daljšo bolniško odsotnost je koristilo večji delež (35%) tistih delavcev, ki pretežno opravljajo težja dela. Večji obet za bolniško odsotnost imajo tako starejši od 40 let v primerjavi z mlajšimi, ženske v primerjavi z moškimi, in tisti, ki opravljajo težja fizična dela. *Diskusija in zaključki.* Raziskava kaže na potrebo po sistematični implementaciji ukrepov za preprečevanje bolečin pri delu.

Ključne besede: bolečine, zdravstveni problem, delavci, bolniška odsotnost, vrsta dela

Introduction: The presence of pain is usually one of the leading causes of sick leave. *Methods:* In a survey of the project Healthy on a square II – workplace health promotion in the chemical and other process industries, implemented in the spring of 2016 on a sample of N=860 workers from 19 Slovenian companies, we wanted to explore among other things the link between the influence of gender and age on the presence of pain, which were mentioned as the leading health problem. We also tried to establish whether the type of work is associated with the presence of pain. *Results:* We have found that workers engaged in hard physical work, reported problems with pain in the low back, neck or shoulders, between 80 and 91%. Among those around 41% of people has problems with insomnia, furthermore between 25 and 37% with depression. Among women this share is even slightly higher. Workers older than 40 years of age indicated the more presence of pain. Around 90% of workers who carry out work in a forced- compulsory- posture is struggling with the pain and this represents a 4.5-fold increased risk compared to other workers. Longer sickness absence is of benefit to the largest share (35%) of those workers who predominantly perform such work. Greater outlook for sick leave have both workers older than 40 years compared to younger, women compared to men, and those performing hard physical work. *Discussion and conclusions:* The study

demonstrates the need for systematic implementation of measures to prevent pain at work.

Key words: pain, health problem, workers, sick leave, the type of work

Stopnja nadzorovanosti vadbe na delovnem mestu je pomembna za izboljšanje srčnožilnega zdravja: 16-tedenska kontrolirana študija z naključno izbranim vzorcem

Exercise supervision is important for cardiometabolic health improvements in the workplace: a 16-week randomised controlled trial

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Izhodišča: Nizka srčno-žilna zmogljivost (SZZ) in mišična šibkost sta dejavnika tveganja za razvoj srčno-žilnih bolezni. Ta kontrolirana študija je preverjala učinke neposredno in posredno nadzorovane ter nenadzorovane vadbe na SZZ. **Metode:** Petinosemdeset uslužbencev Avstralske univerze (62 žensk; starost 43.2 ± 9.8 let) je bilo naključno razdeljenih v skupine z neposredno (individualno) nadzorovano vadbo (NEP; N=28), posredno nadzorovano vadbo (POS; N=28) in nenadzorovano vadbo (CON; N=29), ki so zajemale posameznikom prilagojeno, zmerno do visoko aerobno aktivnost ter vadbo proti upor. Z analizo varianc za ponovljene meritve smo primerjali razlike v SZZ (najvišja poraba kisika) in mišični jakosti (največje breme pri potisku s prsi in počepu). **Rezultati:** Večje spremembe SZZ ($p < 0.01$) so bile zabeležene v NEP ($+10.4 \pm 11.1$ %) v primerjavi s CON ($+3.8 \pm 8.9$ %), medtem ko razlik glede na POS ($+8.6 \pm 8.2$ %) ni bilo. V primerjavi s CON ($+1.7 \pm 7.7$ %), je tako v NEP ($+12.8 \pm 8.4$ %; $p < 0.001$) kot tudi IND ($+8.4 \pm 7.3$ %; $p < 0.05$) prišlo do večjega izboljšana jakosti mišic zgornjega dela telesa. Napredek v jakosti spodnjih okončin je bil večji v NEP ($+26.3 \pm 12.7$ %) kot v POS ($+15.0 \pm 14.6$ %; $p < 0.05$) in kot v CON ($+4.1 \pm 12.4$ %; $p < 0.001$), ter večji v POS kot v CON ($p < 0.01$). **Diskusija:** Neposredno nadzorovanje vadbe vodi v večje napredke v mišični jakosti v primerjavi z posredno nadzorovano in nenadzorovano vadbo. Nadzor vadbe je nujen za ohranjanje pozitivnih učinkov na SZZ pri uslužbencih univerze tekom 16-tedenske intervencije.

Gljučne besede: delovno mesto, nadzor vadbe, aerobni trening, vadba proti upor, metabolno zdravje.

Introduction: Low cardiorespiratory fitness (CRF) and poor muscular strength are risk factors for cardiometabolic disease. This randomised controlled trial compared direct, indirect and no exercise supervision on cardiometabolic fitness. **Methods:** Eighty-five Australian university employees (62 female; mean \pm SD 43.2 ± 9.8 years) were randomised to either direct 1:1 supervision (DIR; N=28), indirect supervision (IND; N=28) or unsupervised control (CON; N=29) exercise groups for a 16-week individually-tailored, mod-

erate-to-high intensity aerobic and resistance exercise program. Changes to CRF ($\dot{V} O_2$ peak) and muscular strength (1RM bench and leg press) were analysed using repeated measures ANOVA. *Results:* Mean changes to CRF were greater ($p < 0.01$) with DIR ($+10.4 \pm 11.1\%$) compared to CON ($+3.8 \pm 8.9\%$), but not different compared to IND ($+8.68.2\% \pm$) supervision. When compared to CON ($+1.7 \pm 7.7$), mean upper body strength changes were significantly greater with DIR ($+12.88.4\% \pm$; $p < 0.001$) and IND ($+8.4 \pm 7.3$; $p < 0.05$). Mean lower body strength changes were greater with DIR ($+26.3 \pm 12.7\%$) compared to IND ($+15.0 \pm 14.6\%$; $p < 0.05$) and CON ($+4.1 \pm 12.4\%$; $p < 0.001$), and IND compared to CON ($p < 0.01$). *Discussion:* Direct exercise supervision achieved greater increases to muscular strength compared to indirect and no exercise supervision. Exercise supervision is necessary to obtain CRF benefits in university employees over a 16-week intervention.

Key words: workplace, exercise supervision, aerobic training, resistance training, metabolic health

Vidiki uporabe ergonomskih pripomočkov v zdravstveni negi **Aspects for the use of ergonomic tools in nursing care**

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Izhodišča: Neupoštevanje ergonomskih načel pri poklicnem delu medicinskih sester je pomemben dejavnik tveganja za zdravje na delovnem mestu. Medicinske sestre pri svojem poklicnem delu lahko uporabljajo enostavne in tehnične ergonomske pripomočke ter opremo. *Metode:* Uporabili smo kvantitativni raziskovalni pristop, kjer je sodelovalo 1744 zaposlenih v zdravstveni negi v 16 bolnišnicah, v novembru 2016. Odzivnost je bila 62,23%. Merski instrument je bil pripravljen na osnovi treh raziskav, na osnovi katerih smo pripravili lasten vprašalnik o ergonomskih pripomočkih. Statistična analiza pridobljenih podatkov je bila opravljena s programom SPSS 22.0. Uporabili smo opisno statistiko ter hi-kvadrat test. Vrednost $p < 0,05$ je določala mejo statistične značilnosti. *Rezultati:* Medicinske sestre v splošnih bolnišnicah uporabljajo posteljni mehанизem v 73,8%, v psihiatričnih bolnišnicah v 74%. Menjava službe ali delovnega mesta zaradi bolečin v križu je statistično povezana z dvigovanjem bremena težjega od 45 kg ($p < 0,001$). *Diskusija in zaključki:* Raziskava daje usmeritve in priložnosti za promocijo ergonomije in ergonomskih načel v zdravstveni negi in zdravstvu in s tem promocijo tehnik in varnega dvigovanja pacientov, ki prispeva k varnosti pacientov in zdravju zaposlenih v zdravstveni negi.

Ključne besede: enostavni ergonomski pripomočki, tehnični ergonomski pripomočki, zdravstvena nega, medicinske sestre

Background: Failure to observe ergonomic principles in the professional work of nurses is an important risk factor for health in the workplace. Nurses in professional work can use simple and ergonomic technical devices and equipment. *Methods:* A quantitative research approach was used on a sample of 1744 nursing personnel employed in 16 Slovenian hospitals. The research was conducted in November 2015 and the response rate was 62.23%. In drafting a question-

naire on the role of ergonomics in the occurrence of low back pain, we drew on three studies. Our questionnaire included items on 12 low-tech devices and technical aids. For statistical analysis of obtained data, the software SPSS V.22.0 was used. *Results:* 73.8% of nurses in general hospitals and 74% in psychiatric hospitals use the bed mechanism. Changing job or work place because of back pain is statistically associated with lifting loads heavier than 45 kg ($p < 0.001$). *Discussion and Conclusions:* The study provides guidance and opportunities for promoting ergonomic principles in nursing and health care, thereby advocating safe patient handling techniques, contributing to greater patient safety and protecting the health of nursing personnel.

Key words: simple ergonomic devices, technical ergonomic aids, nursing, nurses

Vpliv delovne izmene na gibalno aktivnost in količino spanca med upravljavci dvigal

The effect of work shift on free living physical activity and sleep quantity in crane operators

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Izhodišča: Mnogi delavci občutijo večizmensko delo kot stresno. Obstajajo močni dokazi, da je slednje dejavnik tveganja za zdravje, zaradi cirkadianih motenj v organizmu. V naši raziskavi smo ugotavljali ali ima posamezna delovna izmena vpliv na z zdravjem povezane vedenjske navade. *Metode:* Triinštirideset upravljavcev dvigal je nosilo ActivPAL in Garmin Forerunner (3 izmene) do pet zaporednih delovnih dni z namenom objektivnega vrednotenja dnevne količine sedenja/ležanja, stoje, hoje in srčnega utripa. Dodatno se je beležila tudi količina spanca. *Rezultati:* Ugotovili smo statistično značilne razlike ($p < 0,05$) v povprečni dnevni količini sedenja/ležanja med budnostjo ($11,3 \pm 1,2$ ur/dan; $10,1 \pm 1,1$ ur/dan; $12,5 \pm 1,3$ ur/dan: med delom v prvi, drugi in tretji izmeni) in v povprečni količini spanca ($6,5 \pm 0,8$ ur/dan; $7,5 \pm 1,1$ ur/dan; $5,1 \pm 0,8$ ur/dan). Pri povprečni količini stoje in hoje, povprečnem številu korakov na dan in pri povprečni količini ukvarjanja z zmerno do visoko intenzivno gibalno aktivnostjo, nismo zasledili pomembnih razlik ($p > 0,05$). *Diskusija in zaključki:* Delovna izmena ima pomemben vpliv na količino dnevnega časa sedentarnosti in količino spanca. Kaže da zaposleni v tretji delovni zmeni kompenzirajo pomanjkanje spanca z izdatnim sedentarnim obnašanjem. Najugodnejše vedenje z najmanj sedentarno preživetega časa in doseganjem priporočene količine spanca, smo opazili med zaposlenimi med delom v drugi delovni izmeni.

Ključne besede: sedentarno obnašanje, z zdravjem povezan vedenjski slog, modri ovratniki

Introduction: Shift work is known to be stressful for many workers. There is also strong evidence of increased health risk which is often attributed to circadian disturbances. We tested whether specific work shift has also effect on

health-related habits. *Methods:* Forty-three male crane operators wore ActivPAL and Garmin Forerunner (3 shifts) for up to five consecutive working days to obtain objective measures of sitting/lying, standing, stepping and heart rate. Sleep time were also documented. *Results:* Statistically significant differences ($p < 0.05$) in average daily sitting/lying time while awake (11.3 ± 1.2 h/day; 10.1 ± 1.1 h/day; 12.5 ± 1.3 h/day: when working in first, second and third shift, respectively) and in average sleep time (6.5 ± 0.8 h/day; 7.5 ± 1.1 h/day; 5.1 ± 0.8 h/day) were observed. The average time spend standing and walking, the average number of steps per day and the average time spent in moderate to vigorous physical activity did not differ significantly ($p > 0.05$). *Discussion and conclusions:* Work shift have significant effect on sedentary time and sleep quantity. It seems that workers in the third work shift compensate a lack of sleeping hours with excessive sedentary time. We observed the most favorable behavior with the lowest sedentary time and achieving recommended sleeping time in workers in second work shift.

Key words: sedentary behavior, health-related lifestyle, blue-collar workers

Uporaba ergonomskih tehnik in pripomočkov za premeščanje in premikanje pacientov oz. stanovalcev v zdravstveni negi in oskrbi

The use of the ergonomic techniques and devices for the transfer and movement of the patient or residents of nursing and care

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Izhodišča: Mišično-skeletna obolenja, posledično absentizem, so pri zaposlenih v zdravstveni negi in oskrbi posledica dviganja in premeščanja pacientov oz. stanovalcev. Cilj je bil raziskati, kaj zaposlenim pri delu predstavlja največje fizične obremenitve in katere ergonomske tehnike in pripomočke uporabljajo za varno delo. *Metoda:* Podatki so bili prostovoljno in anonimno pridobljeni s pomočjo anketnega vprašalnika. Zbrani so bili od maja 2012 do aprila 2016 in obdelani s pomočjo programa SPSS. *Rezultati:* Anketo je izpolnilo 218 zaposlenih iz 32 socialno-varstvenih zavodov, ki opravljajo zdravstveno nego in oskrbo v zavodih in na domu. 60 % anketiranih skrbi za štiri do šest stanovalcev na domu, 18 % zaposlenih v zavodu pa za več kot 12 oseb v eni izmeni. Za 55 % anketiranih je največja fizična obremenitev prestavljanje iz postelje na invalidski voziček, za 43 % pa premikanje po postelji navzgor. 43 % jih uporablja enostavni pripomoček (podlogo) pri delu, 40 % jih ne uporablja pripomočka. Le 37 % anketirancev dvigne posteljo na delovno višino pred delom. 56 % anketiranih je v času izobraževanja le deloma pridobilo znanje iz ergonomskih tehnik. *Diskusija in zaključki:* Anketirani so zaradi fizično zahtevnih nalog, nizkih kadrovskih standardov, nepoznavanja ergonomskih tehnik nedvigovanja in pripomočkov pokazali velik interes (61 %) za delavnico iz ergonomije. Le tako lahko povečajo varnost in zadovoljstvo pri svojem delu in uporabnikih storitev.

Ključne besede: mišično-skeletna obolenja, fizične obremenitve, uporaba ergonomskih tehnik in pripomočkov, delavnice za varno delo

Introduction: Musculoskeletal disorders and consequently absenteeism are for employees in nursing and care the result from the implementation of lifting and moving patients or residents. The aim was to investigate what represents the employees work the largest physical demand and whose ergonomic techniques and devices are used for safe work. *Method:* Data were obtained voluntarily and anonymously by using a questionnaire. Data were collected from May 2012 to April 2016 and processed by using SPSS. *Results:* The survey was filled in by 218 employees from 32 social care institutions, providing nursing and care in institutions and at home. 60% of the respondents take care for four to six residents in the home, 18% of employees in the institution take care for more than 12 people in one shift. For 55% respondents is the maximum physical demand shifting from bed to a wheelchair and for 43% the movement of the bed up. 43% use a simple device - a mat to make work easier, 40% do not use any device. Only 37% respondents raise bed to a working height before they start working. 56% of respondents only partially acquired knowledge regarding safe methods and techniques for handling and lifting patients during their training. *Discussion and conclusions:* Respondents showed due to physically demanding tasks, low staffing standards, the ignorance of ergonomic techniques of non-lifting devices great interest for the workshop of ergonomics. Only in this way can increase the safety and satisfaction in their work and service users.

Key words: musculoskeletal disorders, physical demands the use of ergonomic techniques and devices, workshops for safe work

Vadba na recept® pri bolnikih z arterijsko hipertenzijo: pilotni projekt

Exercise prescription for health® in patients with arterial hypertension: a pilot project

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Izhodišča: Cilj raziskave je bil dokazati pozitiven vpliv redne vadbe na vrednosti krvnega tlaka v mirovanju, na subjektivno počutje in na nekatere kazalnike motoričnih sposobnosti in zdravja pri bolnikih z arterijsko hipertenzijo (AH). *Metode:* V pilotni del raziskave smo zajeli deset bolnikov z AH. Vadba je potekala v skladu s strokovnimi priporočili Evropskega združenja za medicino športa (EFSMA) dvakrat tedensko po eno uro in je vključevala vadbo moči, gibljivosti in senzomotorično vadbo. Učinek vadbe smo vrednotili s primerjavo rezultatov uvodnih meritev (TMO) in meritev po šestih tednih (TM6T). *Rezultati:* Ugotovili smo pozitiven učinek vadbe na vrednosti diastolnega krvnega tlaka (TMO = 86mmHg, TM6T = 79mmHg; $p = 0,006$), na oceno subjektivnega počutja (TMO = 5,7; TM6T = 7,3; $p = 0,002$) in na nekatere motorične teste:

Sorensov test (TMO = 71,14; TM6T = 145,71; $p = 0,013$), test vstajanja s stola 5x (TMO = 9,54; TM6T = 8,17; $p = 0,009$), test vstajanja s stola 15x (TMO = 28,97; TM6T = 25,03; $p = 0,019$) in test »vstani in pojdi 3 m« (TMO = 5,91; TM6T = 5,19; $p = 0,015$). Razlik v srčni frekvenci, sistolnem krvnem tlaku v mirovanju, telesni sestavi in bazalni presnovi po šestih tednih vadbe nismo uspeli dokazati. *Razprava:* Sprememba življenjskega sloga z vključevanjem telesne aktivnosti v skladu z EFSMA priporočili je pomembno orodje za preprečevanje in zdravljenje AH.

Ključne besede: krvni tlak, arterijska hipertenzija, redna vadba, vadba na recept, učinek vadbe

Background: The aim of the research was to prove the role of regular physical activity on blood pressure, subjective well-being and some indicators of motor skills and health in patients with arterial hypertension (AH). *Methods:* The research was conducted of ten patients with AH. Exercise was performed in accordance with recommendations of the European Federation of Sports Medicine Associations (EFMSA) twice a week for one hour and included strength, flexibility and sensomotoric exercises. The effect of physical activity was evaluated by a comparison of results between initial (TMO) and control measurements (TM6T) after six weeks.

Results: We have found positive effects of regular physical activity on diastolic blood pressure (TMO = 86 mmHg, TM6T = 79 mmHg; $p = 0,006$), subjective well-being estimate (TMO = 5,7; TM6T = 7,3; $p = 0,002$) and some motoric tests: The Sorensen test (TMO = 71.14; TM6T = 145.71; $p = 0.013$), the 5x chair rise test (TMO = 9.54; TM6T = 8.17; $p = 0.009$), the 15x chair rise test (TMO = 28.97; TM6T = 25.03; $p = 0.019$) and the »get up and walk 3 m« test (TMO = 5.91; TM6T = 5.19; $p = 0.015$). Differences in heart rate, resting systolic blood pressure, body composition, water percentage and basal metabolic rate were not found. *Discussion:* One of the key guidelines for preventing and treating AH is changing one's lifestyle by including regular physical activity in accordance with guidelines (EFSMA).

Key words: blood pressure, arterial hypertension, regular activity, prescription for exercise, exercise effect

Pojem gibalne aktivnosti, moči in zmogljivosti – predpogoj za opravljanje poklica medicinske sestre The concept of physical activity, strength and fitness - a precondition for performing professional duties as a nurse

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Izhodišča: Glavne naloge medicinskih sester zajemajo spodbujanje zdravja, preprečevanje bolezni in skrb za obolele. Z neposrednim vplivanjem na zdravstvene navade ljudi spadajo medicinske sestre v kategorijo najpomembnejših

promotorjev zdravja. V članku se sprašujemo, ali lahko medicinska sestra, ki ne skrbi za lastno telo in zdravje učinkovito spodbuja zdrav življenjski slog. *Metode:* Opravljen je bil sistematičen pregled literature z iskanjem po primernih podatkovnih bazah (npr. EBSCO, Science direct) in spletnih straneh organizacij medicinskih sester. Upoštevali smo vire, objavljene med letoma 2005 in 2017. *Rezultati:* Zbrani podatki kažejo, da so medicinske sestre veliko prepričljivejše in uspešnejše pri promociji zdravja, v kolikor se tudi same redno gibalno udeležujejo. Študije izpostavljajo očiten paradoks, ko je zaradi neaktivnosti medicinskih sester njihovo spodbujanje drugih k zdravemu življenjskemu slogu nemogoče. *Diskusija in zaključek:* Gibalna aktivnost je izredno pomemben pojem, saj morajo medicinske sestre biti "dobregra zdravja in značaja" za opravljanje varnega in učinkovitega dela. Za ohranjanje lastnega zdravja, delovne uspešnosti ter učinkovite promocije zdravja morajo poskrbeti za svoje telesno vitalnost in zmogljivost.

Ključne besede: medicinska sestra, gibalna aktivnost, moč, zmogljivost

Introduction: Health promotion, disease prevention and care for the sick are the nurses' key tasks. The privilege of a direct impact on the health behaviour of people puts the nurse into the category of main "health promoters". We pose the following research question: Can a nurse who does not care about their own body and health effectively promote a healthy lifestyle? *Methods:* A systematic search of literature was performed by using relevant databases (e.g. EBSCO, Science direct) and relevant web pages of nurses' organisations. The literature published between 2005 and 2017 was taken into consideration. *Results:* The search of literature review indicates that nurses who personally apply physical activity and a healthy lifestyle will be significantly more convincing and successful in promoting health. Studies suggest an obvious paradox when a large number of nurses expose themselves to unhealthy behaviour and, thus, making their health care promotion activities implausible. *Discussions and conclusions:* Physical activity a very important concept as nurses must have "good health and good character" to perform safe and efficient practise. Nurses as health care promoters should take care of their own physical strength and fitness in order to preserve their own health and successful performance of professional duties.

Key words: nurse, physical activity, strength, fitness.

Slovenski delavci – ali je za delo prevroče? Slovenian workers – is it too hot to work?

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Izhodišča: Vročinski valovi v Sloveniji (in Evropi) postajajo pogostejši, daljši in bolj intenzivni. Evropski projekt Heat-Shield (Obzorja 2020) zato naslavlja odpornost evropskih delavcev na vročinski stres. *Metode:* Za opis toplotne obremenitve delavcev je bil izbran kazalnik WBGT (wet bulb globe temperature). Za izračun so bili uporabljeni podatki o temperaturi zraka in relativni vlagi znotraj tovarne, za primerjavo pa podatki meteorološke postaje Celje. Med de-

lavci (v tovarni, na kmetiji, turistični vodiči, v založniški hiši, na fakulteti) je bila izvedena raziskava o toplotnem udobju in vplivih vročinskega stresa. Rezultati: Avgusta 2016 se je v tovarni temperatura zraka dvignila do 33 °C, vrednosti kazalnika WBGT so bile večinoma med 20 in 25 °C. Poleti je temperatura na delovnem mestu ustrezna za manj kot 5 % delavcev v tovarni in kmetijstvu ter za 20 % delavcev v pisarnah. Vročinski stres negativno vpliva na zbranost, storilnost in počutje. Zelo pogosti (večinoma več kot 55 %) so žeja, povečano potenje, utrujenost, glavobol in izčrpanost, nekateri so že doživeli hujše zdravstvene težave (slabost, izpuščaji, mišični in vročinski krči, omedlevica, vročinski udar). Diskusija in zaključki: Vročinski stres že predstavlja težave za delavce, naslednji korak pri projektu Heat-Shield je zato razvoj in preizkus rešitev za izboljšanje pogojev.

Ključne besede: vročinski stres, vročinski val, delavci, storilnost, zdravje, počutje

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Introduction: Frequency, duration, and intensity of heat waves have increased in Slovenia (and Europe), so the thermal resilience of workers is being addressed in the European Heat-Shield project (Horizon 2020). *Methods:* Wet bulb globe temperature (WBGT) index has been chosen to assess the thermal load of workers. Air temperature and relative humidity inside the factory are being measured to calculate WBGT, meteorological data were gained from the Celje station. A survey about heat stress impacts was conducted among workers (in the factory, farmers, tourist guides, in publishing house, at faculty). *Results:* In the factory reached air temperatures in August 2016 to 33°C, WBGT values were mainly between 20 and 25°C. Workplace temperature is during summer suitable for less than 5% workers in the factory and agriculture, and for 20% office workers. Heat stress has a negative impact on productivity, concentration, and well-being. Thirst, excessive sweating, tiredness, headache, and exhaustion are common (mainly more than 55%), some have already experienced worse health problems (nausea, prickly heat, muscle and heat cramps, fainting, heat stroke). *Discussion and Conclusions:* As heat stress is already causing problems, various solutions for its mitigation will be developed and tested in the next step of the Heat-Shield project.

Key words: heat stress, heat wave, workers, productivity, health, well-being

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Vpliv oblike in vrste sedala na pokončno sedenje pri delovno aktivni populaciji – študija primera

Influence of the shape and type of a seat on upright sitting position – a case study

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Izhodišča: Opravljanje dela pretežno v sedečem položaju in telesna neaktivnost sta pomembna dejavnika za okvaro medvretenčnih ledvenih ploščic. Pokončno sedenje manj obremenjuje dorzalni del ploščice, kjer so okvare najpogostejše. Zanimalo nas je ali oblika in vrsta stola vzpodbujata pokončno sedenje. **Metode:** Med 8-urnim delom za računalnikom je merjenec sedel na različnih stolih brez naslona, in sicer prvi dan na običajnem stolu s stabilnim sedalom, drugi dan na stolu s stabilnim sedalom v obliki sedla in tretji dan na stolu z nestabilnim sedalom, gibljivim v vse smeri. V realnem delovnem okolju smo s pomočjo 2D kinematične analize preverili odstopanje položaja markerjev od pokončne sedeče drže, pri čemer je bilo območje pokončnega sedenja definirana kot območje med maksimalno lordozo in točko, kjer se začne ledveni del in Th 12 premikati v kifotični položaj. **Rezultati:** Deleži pokončnega časa sedenja od skupnega so bili naslednji: običajni stol 19% (73 min), stol z nestabilnim sedalom 24% (93 min) in stol s sedlastim sedalom 34% (130 min). Maksimalna kifoza in lordoza sta se razlikovali glede na obliko stola. Največja kifoza se je pojavljala na stolu z gibljivim sedalom, medtem ko je bila največja lordoza prisotna na sedlastem stolu. Stol z gibljivim sedalom je najbolj vzpodbujal sedenje v maksimalni kifozi. **Diskusija in zaključki:** Izkazalo se je, da sedlasto sedalo bolj vzpodbujata pokončno sedenje kot običajen stol ali stol z gibljivim sedalom. Deleži pokončnega sedenja pri stolu z nestabilnim sedalom so bili v primerjavi z običajnim stolom sicer večji, vendar smo opazili, da se je (le) med sedenjem na nestabilnem sedalu merjenec ves čas izrazito opiral na roke. Rezultati v tem primeru kažejo, da sedenje na stolu s sedlastim sedalom najbolj vzpodbujata pokončno sedenje, medtem ko lahko ostala dva stola silita telo v nepravilne položaje, kar lahko vodi do preobremenitve in bolečine.

Ključne besede: pokončno sedenje, sedlast stol, nestabilno sedalo, kinematika.

Introduction: Sedentary life style and working in a sitting position are important factors effecting protrusion of lumbar discs. When sitting is upright, we face lesser mechanical forces on dorsal part of disc where protrusions are frequent. The study aimed to compare how different shapes and types of chairs influence upright sitting position. **Methods:** During eight-hour computer work, an adult male sat on different chairs without the backrest. The first day he sat on an ordinary, stable chair, the second day on a saddle chair and the third day on a chair with unstable seat. We analyzed the deviation of the lumbar spine from the upright position using 2D kinematics. Upright position was define as area between maximal lordosis and the area when lumbar part and Th12 start to move to kyphotic position. **Results:** The percentages of the time of the upright

sitting position out of total worktime for the stable, saddle and unstable seat were 19% (73 min), 34% (130 min) and 24% (93 min), respectively. Maximal kyphosis and lordosis were different on different chairs. The biggest kyphosis was on the chair with unstable seat. The biggest lordosis was on the saddle chair. The chair with unstable seat also encourage sitting in position with maximal kyphosis. *Discussion and Conclusions:* It was shown that the saddle chair is the one that enables the longest time of the upright sitting position during worktime. The time of the upright position on the unstable chair was longer compared to the stable one, but we noticed a marked supporting action of the arms on the unstable seat. These preliminary findings suggest that the saddle chair promote upright sitting the most, while the stable and the unstable chairs can force the subjects into incorrect body positions, which could lead to overuse and pain.

Key words: upright sitting, saddle chair, unstable seat, kinematic

SPEXOR: Spinalni eksoskelet za preventivo, rehabilitacijo in delovno reintegracijo

SPEXOR: Spine Exoskeleton for Prevention, Rehabilitation and Work Reintegration

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Bolečina v spodnjem delu hrbta (BSH) je velik problem v sodobni družbi. Stroški povezani z BSH v Evropi znašajo med 113 in 209 € na prebivalca in so posledica zmanjšane delovne kapacitete, bolniških odsotnosti, tožb in zgodnjih upokojitev. Pojavnost BSH je povezana z fizično zahtevnimi delovnimi mesti, ki vključujejo rokovanja s težkimi bremenami, ponavljajoča se gibanja in preživljanje daljših časovnih period v prisilnih držah. Namen projekta SPEXOR je oblikovati zunanji skelet, ki bo pomagal delavcem pri tovrstnih gibanjih. Vključeval bo več programov: program za asistenco (preprečitev skrajnih gibov in znižanje bremena), kontrolni program (za podajanje povratnih informacij uporabniku), vadbeni program (za vadbo mišic trupa) in diagnostični program (za oceno funkcije trupa). Zunanji skeleti so bili v preteklosti že razviti, a se večinoma osredotočajo na okončine, trupu pa nudijo manj opore. Po nam znanih podatkih še ni bila razvita naprava, ki bi nudila aktivno oporo trupa med funkcionalnimi gibi. Tekom oblikovanja zunanjega skeleta bomo posebno pozornost namenili določanju potreb uporabnikov (z predhodnimi meritvami, s katerimi bomo preučili obremenjenost hrbtenice med različnimi nalogami) in uporabnost ter zadovoljstvo uporabnika (s testiranjem udobja in zmogljivosti med izvedbo funkcionalnih nalog med nošenjem naprave). Zahvala: EU H2020 projekt SPEXOR, 687662.

Ključne besede: bolečina v spodnjem delu hrbta, ergonomija, robotik.

Low-back pain (LBP) is a major issue of the modern society. In Europe, the costs related to LBP are ranging from 113 to 209 € per capita and are result-

ing from reduced work capacity, sick-leaves, legal claims and early retirements. The prevalence of LBP is strongly correlated with physically demanding jobs that include handling of the heavy loads, repetitive movements and spending prolonged time in a flexed position. The aim of the SPEXOR project is to design a spinal exoskeleton to support the workers during such movements. The exoskeleton will include various modes: the assistive mode (to prevent undesired postures and limit the mechanical load), the monitoring mode (to provide feedback to the user), training mode (to provide active trunk conditioning) and the diagnostic mode (to assess the function of the trunk). While several exoskeleton have already been developed, most of them focus on the limbs or offer only limited support to the trunk. To our knowledge, no device has yet been designed that would provide active assistance for functional movements of the trunk. Throughout the design process, a special attention will be paid on determining the user's needs (by preliminary measurements to determine common spinal loads during various tasks) and end-user usability and satisfaction evaluation (by having the users to evaluate comfort and performance during various functional tasks while wearing the exoskeleton). Acknowledgement: EU H2020 project SPEXOR, 687662.

Key words: low back pain, ergonomics, robotics.

Problem sklanjanju na delu in preventivni potencial pasivne podpore trupa

The problem of occupational trunk flexion and the preventive potential of passive trunk support

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Izhodišča: Sklanjanje na delovnem mestu je povezano s povečanim tveganjem za pojav bolečine v spodnjem delu hrbta vendar mehanizmi nastanka niso povsem pojasnjeni. Cilj študije je bil ovrednotiti spremembe stabilnosti trupa po dalj časa trajajočem sklanjanju in dodatno preveriti potencialno preventivno učinkovitost uporabe pasivne podpore za zgornji del trupa. *Metode:* V študiji je sodelovalo 21 oseb (od tega 10 ženskega spola). V dveh ločenih obiskih so bili vsi preiskovanci izpostavljeni podprtemu in nepodprtemu sklanjanju (80% največjega predklona) v trajanju 1 ure. Spremembe bazične mišične aktivnosti, sedečega ravnoteža, podajnosti trupa in refleksne mišične aktivacije smo izmerili pred in po izpostavljenosti sklanjanju. Rezultate merjenj smo primerjali s statističnim testom dvosmerne-ANOVA za ponovljene meritve. *Rezultati:* Podajnost trupa se je zmanjšala le po nepodprtem sklanjanju ($p = 0,024$). Nasprotno je bilo opaziti povečanje obsega gibanja in refleksnega doprinosa po obeh pogojih ($p < 0,001$). Značilni interakcijski učinek je potrdil večje spremembe po nepodprtem sklanjanju ($p = 0,025$). *Diskusija in zaključki:* V nasprotju z nekaterimi predhodnimi študijami smo pokazali zmanjšanje podajnosti trupa po dalj časa trajajočem sklanjanju, kar nakazuje povečanje togosti najverjetneje kot posledica povečanja bazične mišične aktivnosti in povečanja refleksnega

doprinosa. Izsledki študije nakazujejo učinkovitost pasivne podpore za zgornji del trupa med dalj časa trajajočim sklanjanjem.

Ključne besede: Stabilnost trupa, posturalni refleksi, mišična aktivacija, bolečina v spodnjem delu hrbta.

Introduction: The goal of the present study was to determine the effects of prolonged, intermittent flexion on trunk neuromuscular control. Furthermore, the potential beneficial effects of passive upper body support during flexion were investigated. *Methods:* 21 healthy young volunteers (10 females) participated during two separate visits in which they performed 1 hour of intermittent 60 seconds flexion and 30 seconds rest cycles. Flexion was set at 80% lumbar flexion and was performed with or without upper body support. Before and after intermittent flexion exposure, lumbar range of motion was measured using inertial measurement units and trunk stability was assessed during perturbations applied in the forward direction with a force controlled actuator. Two-way repeated measures ANOVA was used to compare the results. *Results:* Trunk admittance gain decreased after unsupported flexion ($p = 0.024$), while reflex gain and lumbar range of motion increased after both conditions ($p < 0.001$). Significant interaction effects confirmed a larger increase in lumbar range of motion and reflex gains following unsupported flexion in comparison to supported flexion ($p = 0.025$). *Discussion and Conclusions:* In contrast with some previous studies we found that prolonged intermittent flexion decreased trunk admittance, which implies an increase of the lumped intrinsic and reflexive stiffness.

Key words: Trunk stability, postural reflexes, muscle activity, low back pain.

Bolniška odsotnost v Skupini Slovenske železnice – primerjava različnih poklicnih skupin Absenteeism in Slovenian Railways Group – comparison between different work groups

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Izhodišča: V delovnem okolju na zaposlene vplivajo različni, tudi škodljivi dejavniki, ki so lahko vzrok za bolniško odsotnost. Najpogostejši razlogi bolniške odsotnosti v Skupini Slovenske železnice so bolezni mišično-skeletnega sistema, poškodbe in zastrupitve izven dela ter duševne in vedenjske motnje. *Metode:* V prispevku je predstavljena bolniška odsotnost (brez odsotnosti zaradi nege) zaposlenih v Skupini Slovenske železnice v obdobju med leti 2007 in 2015. V pregled smo vzeli štiri profile delovnih mest, in sicer dva profila enoizmenskih delavcev (pisarniški delavci in vzdrževalci železniške infrastrukture) ter dva profila večizmenskih delavcev (strojevodje vlaka in vozovni pregledniki). *Rezultati:* Z enosmerno analizo variance smo ugotovili, da je bil najvišji odstotek bolniške odsotnosti pričakovano ugotovljen pri vzdrževalcih železniške infrastrukture ($6,38 \pm 0,95$ %), ki so jim sledili strojevodje ($4,49$ % \pm $1,39$ %), pisarniški delavci ($4,23 \pm 0,58$ %) in vozovni pregledniki ($3,28$ % \pm $0,62$ %). *Diskusija in zaključki:*

Ker za opazovane profile nismo imeli podatkov o vzrokih za bolniško odsotnost, lahko o njih le predvidevamo zaradi poznavanja lastnosti delovnih mest oziroma delokrogov. V naslednji raziskavi bomo zaposlene vprašali o vzrokih za bolniško odsotnost in na podlagi rezultatov izdelali smernice in priporočila za preventivno delovanje.

Ključne besede: odstotek bolniške odsotnosti, vzdrževalci železniške infrastrukture, strojevodje, pisarniški delavci, vozovni pregledniki.

Introduction: In the working environment there are several (even negative) factors which can affect employees and the consequence is absenteeism. The most often causes of absenteeism in Slovenian Railways Group are musculoskeletal problems, nonworking infections and injuries, and mental and behavioral disturbances. *Methods:* We observed the percent of absenteeism between four work groups, of which two groups were regular work schedule and two groups were shift-work schedule. The absenteeism was observed between years 2007 and 2015. Regular work schedule employees were office workers and railway infrastructure maintenance workers. Shift-work schedule employees were train drivers and railway wagon inspectors. *Results:* Using 1-way ANOVA we found the greatest percent of absenteeism in railway infrastructure maintenance workers (6,38 % \pm 0,95 %), followed by train drivers (4,49 % \pm 1,39 %) office workers (4,23 % \pm 0,58 %) and railway wagon inspectors (3,28 % \pm 0,62 %). *Discussion and Conclusion:* Because we didn't have available data on the causes of absenteeism, we can about them only assume on the basis of knowledge of the working environment. In the next survey we will ask employees about the causes of absenteeism and on the basis of the results we will produce guidelines and recommendations for preventive action.

Key words: percent of absenteeism, railway infrastructure maintenance workers, train drivers, office workers, railway wagon inspectors.

Starejši v delovnem okolju **Older workers in the workplace**

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Število starejših delavcev (+65 let) se v Evropski uniji povečuje. Pričakujemo, da se bo delež starejših delavcev do leta 2020 povečal za %20. Razloga za ta porast sta predvsem daljša delovna in življenjska doba. Staranje pomembno označujta zmanjšana telesna zmogljivost in pojav kroničnih nenalezljivih bolezni. Starejšim delavcem tako v delovnem okolju predstavljajo pogosto oviro ravno obolenja gibal. Dela, ki zahtevajo visoko telesno zmogljivost, upravljanje s težkimi bremenmi, številne ponavljajoče gibe telesa ter manj primerne drže telesa, so za starejše delavce še posebej zahtevna. Delovno okolje je zato potrebno prilagoditi zmogljivostim in omejitvam starejšega delavca, tako telesnim, razumskim kot socialnim. Pomembno je, da v okolju dela izpostavimo prednosti, ki jih imajo starejši delavci, kot so predajanje izkušenj, ki so jih pridobili z delom. Uporabno orodje za prilagajanje delovnega okolja starejšim delavcem, je tudi upoštevanje

njihovih predlogov. Aktivna vključitev starejših delavcev v delovna okolja je pomemben vidik zdravega staranja.

Ključne besede: starejši delavci; zmožnost za delo; delovno okolje

The proportion of older workers (65 and over) in European Union (EU) is predicted to increase by 20% until 2020. Due to longer life expectancy and later retirement ages, the EU working population will be older than ever before. In general, aging is characterized with the decline in physical work capacity and with the presence of numerous chronic diseases. In terms of work, mainly musculoskeletal disorders should be considered. Jobs with a high physical workload, those that involve inappropriate working postures, repetitive tasks or handling heavy loads becomes especially challenging for older workers. The working environment (physical, mental, social) should be redesigned to functional capabilities and health status of individual older worker. Particularly the strengths of older workers, such as experiences, should be utilized in the working process. A useful option on how to redesign working environment for older workers is to ask them how they would like to change and improve their work. Active participation in working life plays an important role to ensure healthy and active aging.

Key words: older workers; work capacity; working environment

Vadba na recept® pri bolnikih z astmo: predstavitev primera Exercise Prescription for Health® in Patients with Bronchial Asthma: a case report study

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Izhodišča: Cilj raziskave je bil preveriti učinke vadbe, izvajane po priporočilih Evropskega združenja za medicino športa (EFSMA), na izbrane kazalnike motoričnih sposobnosti in zdravja pri pacientu z bronhialno astmo. *Metode:* V pilotni del projekta je bil vključen eden bolnik z astmo (starost 66 let, ženski spol, ITM 24,2). Pred pričetkom vadbe je opravil pregled pri specialistu medicine športa in uvodne meritve (motorični testi, antropometrija, spirometrija) (UM). Bolnik je bil vključen v individualno prilagojen vadbeni proces (dvakrat tedensko po 60 min) s poudarkom na treningu moči, gibljivosti, koordinacije, stabilnosti in proprioceptije. Učinek vadbe smo vrednotili po treh (3M) in šestih mesecih (6M). *Rezultati:* Sorensonov test: UM 40s, 3M 170s, 6M 240s; test vstajanja s stola s 5 ponovitvami: UM 10s, 3M 9.15s, 6M 7.07s; test vstajanja s stola s 15 ponovitvami: na UM testa ni bil zmožen izvesti, 3M 27s, 6M 23s; pustna telesna masa: UM 46kg, 3M 46.7kg, 6M 48.1kg; mišična masa: UM 43.7kg, 3M 44.3kg, 6M 45.7kg; bazalni metabolizem: UM 1364kcal, 3M 1278kcal, 6M 422kcal. Meritve po treh in šestih mesecih niso pokazale sprememb v parametrih spiro-

metrije. *Razprava:* S študijo primera, ki smo jo izvedli v skladu s EFSMA priporočili za telesno aktivnost pri bolniku z astmo, smo potrdili učinke vadbe na nekatere kazalnike zdravja in motorične sposobnosti.

Ključne besede: astma, zdravljenje, telesna aktivnost, priporočila, vadba na recept

Background: The aim of the research was to check the effects of physical activity, carried out in accordance with EFSMA recommendations (FITT Principle), on some motoric skills and medical health indicators in a patient with bronchial asthma. *Methods:* Single case-study has been a part of European Federation of Sports Medicine Associations (EFSMA) project Exercise prescription for Health (EPH). Before treatment, the patient (age 66, female, BMI 24.2) was appointed to a sports medicine specialist for initial measurements (IM) and individualized exercise prescription. The physical training (two 60-min sessions per week) has been focused on strength, flexibility, coordination, stability and proprioceptive training. The effects of the training have been measured after three (3M) and six months (6M). *Results:* Sorrenson test: IM 40s, 3M 170s, 6M 240; sit and stand up test with 5 repetitions: IM 10s, 3M 9.15s, 6M 7.07s; sit and stand up test with 15 repetitions: at IM patient was not able to perform the test, 3M 27s, 6M 23s; lean body mass: IM 46 kg, 3M 46.7, 6M 48.1 kg and muscle mass: IM 43.7 kg, 3M 44.3, 6M 45.7 kg; basal metabolic rate: IM 1364 kcal, 3M 1378 kcal, 6M 1422 kcal. Spirometry parameters have not changed during the measured period. *Discussion:* Results of this single-case study, carried out in accordance with EFSMA recommendations for physical activity in patients with asthma, indicate improvements of medical health indicators and motoric skills in the patient with bronchial asthma.

Key words: asthma, treatment, physical activity, recommendations, exercise prescription for health.

Zaključne misli Concluding Remarks

Področje znanstveno-raziskovalnega dela Univerze na Primorskem Fakultete za vede o zdravju se večinoma usmerja k reševanju problemov današnje družbe na področju javnega zdravja, ki jih je spodbudil nagel tehnološki razvoj in sodoben način življenja. V ospredju raziskav so dejavniki, ki predstavljajo visoko tveganje za razvoj številnih kroničnih nenalezljivih bolezni in so resen zdravstveni ter družbeni problem razvitega sveta, saj zmanjšujejo kakovost življenja, delazmožnost aktivne populacije ter skrajšujejo življenjsko dobo. Od tod je sledila ideja, da bi z vsakoletno znanstveno in strokovno konferenco s področja zdravja različnih populacij na enem mestu zbrali in izpostavili sodobne pristope za zmanjševanje oz. odpravljanje dejavnikov tveganja in za krepitev zdravja. Tokrat smo se osredotočili na zdravje delovno aktivne populacije.

S predstavitvijo učinkovitosti različnih interdisciplinarnih pristopov za celostno obravnavo posameznikov in populacij ter z izpostavljanjem pomena strateških načrtov za uvedbo učinkovitih intervencij s področja višanja kakovosti življenja, prehrane, zdravega življenjskega sloga, vodenja kroničnih bolezni, ... si organizatorji in udeleženci konference želimo, da smo pripomogli k povečanju ozaveščenosti o zdravih vedenjskih navadah in možnostih preprečevanja kroničnih nenalezljivih bolezni zaposlenih.

*izr. prof. dr. Nejc Šarabon,
dekan UP FVZ*

The scientific and exploratory activities at the University of Primorska, Faculty of Health Sciences primarily focus on solving the public health-related issues of the modern society, which escalated by the sudden technological development and modern lifestyle. A special emphasis is put on the factors that represent high risk for developing several chronic non-communicable diseases. These factors are a serious social problem, because they decrease the quality of life, work capacity and longevity. Whence, an idea arose to organize an annual scientific and professional conference, focusing on the health of different populations, and this way compile and disclose the modern approaches

for diminishing or eliminating the risk factors and promoting health. This time, we focus on the health of the working population.

By presenting the effectiveness of the various interdisciplinary approaches to holistic treatment of the individuals and the populations, and by stressing the importance of the strategical plan for introducing effective interventions for increasing quality of life, improving nutritional habits, promoting healthy lifestyle, managing chronic diseases, etc.; the organizers and the participators of the conference hope to have contributed to the awareness of healthy habits and possibilities to prevent chronic non-communicable diseases.

*Assoc. Prof. Dr. Sc. Nejc Šarabon
Dean of the UP FHS*

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