

56. KONGRES ANTROPOLOŠKOG DRUŠTVA SRBIJE
SA MEĐUNARODNIM UČEŠĆEM

3–4. jun 2021.
ONLAJN KONGRES

56th CONGRESS OF ANTHROPOLOGICAL SOCIETY OF SERBIA
WITH INTERNATIONAL PARTICIPATION

June 3rd–4th 2021
ONLINE CONGRESS

IZVODI SAOPŠTENJA **ABSTRACTS**



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Izdavač / Publisher

ANTROPOLOŠKO DRUŠTVO SRBIJE / ANTHROPOLOGICAL SOCIETY OF SERBIA
Niš

Za izdavača / For the Publisher

Mirjana Janošević

Tehnička priprema / Prepress

Mile Ž. Ranđelović

Lektor za engleski jezik / English Proofreader

Ljiljana Knežević

Štampa / Printed by

"UNIGRAF-X-COPY" Niš

Tiraž / Circulation

20

Niš, 2021.

ISBN 978-86-911461-5-3

CIP - Каталогизacija y publikaciji
Народна библиотека Србије, Београд

572(048.3)

ANTROPOLOŠKO društvo Srbije (Niš). Kongres (56 ; 2021)

Izvodi saopštenja / 56. Kongres Antropološkog društva Srbije, sa međunarodnim učešćem 3-4. jun 2021. onlajn kongres = Abstracts / 56th Congress of Anthropological Society of Serbia, with International Participation June 3rd-4th, 2021, Online congress. - Niš : Antropološko društvo Srbije = Anthropological Society of Serbia, 2021 (Niš : Unigraf-X-Copy). - 104 str. ; 124 cm

Uparedo srp. tekst i engl. prevod. - Tiraž 20. - Registar.

ISBN 978-86-911461-5-3

a) Антропологија -- Апстрактни

COBISS.SR-ID 42340361

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SADRŽAJ / TABLE OF CONTENTS

IZVODI SAOPŠTENJA / ABSTRACTS

PLENARNA PREDAVANJA / PLENARY LECTURES

ANTROPOLOŠKE STUDIJE DREVNE I MODERNE POPULACIJE BELORUSIJE ANTHROPOLOGICAL STUDIES OF ANCIENT AND MODERN POPULATION OF BELARUS Volha Marfina	17
EPOHALNA I TERITORIJALNA VARIJABILNOST VELIČINE I OBLIKA GLAVE KOD OMLADINE U BELORUSIJI EPOCHAL AND TERRITORIAL VARIABILITY OF HEAD SIZES AND SHAPE AMONG YOUNG PEOPLE OF BELARUS Tatyana Hurbo	18
KOEVOUCIJA GEN - KULTURA: RELEVANTNOST I PERSPEKTIVE U ANTROPOLOGIJI GENE-CULTURE CO-EVOLUTION: RELEVANCE AND PERSPECTIVES IN ANTHROPOLOGY Diptendu Chatterjee, Arup Ratan Bandyopadhyay	19
BOLJI SLUH: ISTRAŽIVANJE SE VRŠI PUNOM BRZINOM BETTER HEARING: THE RESEARCH IS IN FULL SWING Vesna Petković	20
O PALEOLITSKOM ČOVEKU U VOJVODINI ON THE PALEOLITHIC MAN IN VOJVODINA Srboljub Živanović	21
ANTROPOLOŠKI PODACI KAO NEZAVISAN IZVOR INFORMACIJA O GENEZI POPULACIJE ANTHROPOLOGICAL DATA AS AN INDEPENDENT SOURCE OF INFORMATION ABOUT THE GENESIS OF POPULATIONS Natalia Goncharova	22
EROZIVNO TROŠENJE ZUBA - ETIOLOGIJA, DIJAGNOSTIKA I TERAPIJSKE MERE EROSIVE TOOTH WEAR - ETIOLOGY, DIAGNOSTICS AND THERAPEUTIC MEASURES Olivera Tričković Janjić	23
KONCEPT HARMONIJE KEFALOMETRIJALNOG KOMPLEKSA THE CONCEPT OF CEPHALOMETRIC COMPLEX Jasna Pavlović	24
PRIBAVLJANJE LEŠEVA ZA OBRAZOVANJE I ISTRAŽIVANJA U ANATOMSKIM NAUKAMA: GLOBALNA PERSPEKTIVA BODY SOURCING FOR ANATOMICAL SCIENCES EDUCATION AND RESERCH: A GLOBAL PERSPECTIVE Goran Štrkalj	25

USMENE PREZENTACIJE / ORAL PRESENTATIONS

ANALIZA PROMJENA TEŽINSKO VISINSKIH OBILJEŽJA KOD MLAĐIH ADOLESCENATA OD 1970. DO 2020. GODINE ANALYSIS OF CHANGES IN HEIGHT AND WEIGHT MARKS IN YOUNGER ADOLESCENTS IN THE PERIOD FROM 1970 TO 2020 Veselin Jovović, Radomir Čanjak, Novica Gardašević	27
PREVALENCIJA CENTRALNE GOJAZNOSTI U KATEGORIJAMA OPŠTE GOJAZNOSTI KOD ADOLESCENATA MUŠKOG POLA PREVALENCE OF CENTRAL OBESITY WITHIN GENERAL OBESITY CATEGORIES IN MALE ADOLESCENTS Rada Rakić, Biljana Jaramaz, Tatjana Pavlica	28
MORFOLOŠKA ANALIZA VEZICE JEZIKA MORPHOLOGICAL ANALYSIS OF LINGUAL FRENULUM Nikola Knezi, Dušica Marić, Ljubica Stojić Džunja, Nikolina Pupovac, Zorka Drvendžija, Dragana Radošević, Ivan Adjić, Ivana Đurđev, Dunja Laketa, Nikola Babić	29
BIOMEHANIČKI ODNOS DINAMIČKIH PARAMETARA STOPALA KOD FIZIČKI AKTIVNIH I FIZIČKI NEAKTIVNIH STUDENATA BIOMECHANICAL RELATION OF PARAMETERS OF FOOT DYNAMICS IN PHYSICALLY ACTIVE AND INACTIVE STUDENTS Aleksa D. Novaković, Siniša S. Babović, Biljana Srdić-Galić, Miljan Savuljić, Stefan M. Babić, Gordana Jovanović Kalezić	30
UTICAJ STEPENA UHRANJENOSTI I MENSTRUALNOG STATUSA NA VREDNOSTI KALCIJUM SKORA KORONARNIH ARTERIJA KOD ŽENA EFFECTS OF BODY MASS INDEX AND MENSTRUAL STATUS ON CORONARY CALCIUM SCORE VALUE IN WOMEN Zorka Drvendžija, Biljana Srdić Galić, Anastazija Stojić Milosavljević Nikola Knezi, Nebojša Mirić, Isidora Vasić	31
MORFOMETRIJSKA ANALIZA SPOLJAŠNJEG OTVORA KAROTIDNOG KANALA U SRPSKOJ POPULACIJI MORPHOMETRIC ANALYSIS OF THE EXTERNAL APERTURE OF THE CAROTID CANAL IN SERBIAN POPULATION Nikolina Pupovac, Mirela Erić, Nikola Knezi, Nikola Vučinić	32
ANTROPOMETRIJSKI PARAMETRI KAO MARKERI RIZIKA U ISPOLJAVANJU KARDIOVASKULARNIH BOLESTI ANTHROPOMETRIC PARAMETERS AS RISK MARKERS IN THE MANIFESTATION OF CARDIOVASCULAR DISEASES Kristina Virijević, Olivera Milošević-Djordjević, Dragoslav Marinković, Ljiljana Mirkov, Darko Grujić	33
KVALITATIVNA ISPITIVANJA ANTROPOMETRIJSKIH PARAMETARA RASTA KOD DECE UZRASTA OD 5 GODINA RAZLIČITIH NACIONALNOSTI QUALITATIVE EXAMINATION OF ANTHROPOMETRIC PARAMETERS OF GROWTH IN CHILDREN AGED 5 OF TWO NATIONALITIES Biljana Trpkovska, Biljana Zafirova, Elizabeta Cadikovska, Biljana Bojadzieva, Ace Dodevski	34

PROCENA NUTRITIVNOG STATUSA NA OSNOVU ANTROPOMETRIJSKIH INDEKSA KOD 6 GODIŠNJE DECE IZ SEVERNE MAKEDONIJE ASSESSMENT OF THE NUTRITIONAL STATUS BASED ON ANTHROPOMETRICAL INDEXES IN CHILDREN AGED 6 FROM NORTH MACEDONIA Biljana Zafirova, Biljana Trpkovska, Elizabeta Cadikovska, Biljana Bojadzieva, Ace Dodevski.....	35
RAZVOJ MUSKULOSKELETNIH POREMEĆAJA KOD STUDENATA STOMATOLOGIJE – UTICAJ FIZIČKE AKTIVNOSTI DEVELOPMENT OF MUSCULOSKELETAL DISORDERS IN DENTISTRY STUDENTS - INFLUENCE OF PHYSICAL ACTIVITY Jelena Popović, Marija Daković Bjelaković, Aleksandar Mitić, Marija Nikolić, Nenad Stošić, Radomir Barac.....	36
FIZIČKA NEAKTIVNOST PRE I POSLE PANDEMIJE PHYSICAL INACTIVITY BEFORE AND DURING COVID 19 PANDEMIC Jasmina Pluncević Gligorosa, Sanja Mančevska, Biljana Zafirova	37
RAZVOJ ANTROPOLOŠKOG STATUSA KOD UČENIKA PETOG RAZREDA PRIMENOM TRENINGA SPORTSKE GIMNASTIKE DEVELOPMENT OF ANTHROPOLOGICAL STATUS IN FIFTH GRADE STUDENTS USING GYMNASTICS TRAINING Raid Mekić, Emilija Petković, Benin Murić, Izet Kahrović, Omer Špirtović, Oliver Radenković, Ilma Čaprić	38
KEFALOMETRIJSKE KARAKTERISTIKE PACIJENATA SA MALOKLUZIJOM II KLASA 1 ODELJENJE CEPHALOMETRIC CHARACTERISTICS OF CLASS II /1 MALOCCLUSION Ana Todorović, Mirjana Janošević, Predrag Janošević	39
PRIMENA PRINCIPA AUTONOMIJE PRAVA PACIJENTA U RADU SA DECOM APPLYING THE PRINCIPLE OF AUTONOMY OF PATIENTS' RIGHTS IN WORKING WITH CHILDREN Katarina Šljivić, Olivera Tričković Janjić, Tatjana Zlatić	40
UTICAJ SAGITALNIH OKLUZALNIH ODNOSA NA INCIDENCIJU KARIJESA KOD RANIH ADOLESCENATA INFLUENCE OF SAGITTAL OCCLUSAL RELATIONSHIPS ON THE CARIES INCIDENCE IN EARLY ADOLESCENTS Branislava Stojković, Marija Igić, Olivera Tričković Janjić, Simona Stojanović, Ana Igić, Marija Jovanović.....	41
ETIOLOGIJA DENTALNE ANKSIOZNOSTI U ZAVISNOSTI OD POLA, GODINA STAROSTI I STEPENA OBRAZOVANJA ETIOLOGY OF DENTAL ANXIETY DEPENDING ON SEX, YEARS OF AGE AND EDUCATION LEVEL Marija Nikolić, Aleksandra Nikolić, Aleksandar Mitić, Jelena Popović, Jelena Petrović, Dragana Dimitrijević, Radomir Barac.....	42
MORFOLOŠKE ANOMALIJE ZUBA – <i>DENS EVAGINATUS</i> MORPHOLOGICAL ANOMALIES OF TEETH - DENS EVAGINATUS Katarina Nedić, Tatjana Kanjevac, Vladimir Ristić, Tamara Ristić, Nikola Vukosavljević.....	43

UČESTALOST HIPODONCIJE KOD DECE ŠKOLSKOG UZRASTA U RURALNOJ SREDINI - PILOT STUDIJA THE PREVALENCE OF HYPODONTIA IN SCHOOL-AGE CHILDREN IN RURAL AREAS: A PILOT STUDY Tatjana Kanjevac, Miona Vuletić, Milica Veličković, Vladimir Ristić, Aleksandar Acović.....	44
ZASTUPLJENOST ZUBA STALNE DENTICIJE U PREDŠKOLSKOM UZRASTU DECE INCIDENCE OF PERMANENT DENTITION TEETH IN PRE-SCHOOL AGED CHILDREN Tatjana Zlatić, Olivera Tričković Janjić, Katarina Šljivić	45
UTICAJ ZBRINJAVANJA BEZUBOSTI NA KVALITET ŽIVOTA GERIJATRIJSKIH PACIJENATA THE INFLUENCE OF CARE OF TOOTHLESSNESS ON THE QUALITY OF LIFE OF GERIATRIC PATIENTS Marko Igić, Milena Kostić, Nikola Gligorijević.....	46
ZNAČAJ ORALNOG ZDRAVLJA ZA KVALITET ŽIVOTA GERIJATRIJSKIH PACIJENATA THE EFFECT OF ORAL HEALTH ON THE QUALITY OF LIFE IN GERIATRIC PATIENTS Milena Kostić, Nikola Gligorijević, Erkin Crnišanin, Maja Anđelković, Marko Igić	47
UTICAJ REMODELACIJE BAZE ZUBNE PROTEZE NAKON RESORPCIJE ALVEOLARNIH GREBENOVA NA KVALITET ŽIVOTA BEZUBIH PACIJENATA THE INFLUENCE OF DENTURE BASE REMODELATION AFTER ALVEOLAR RIDGE RESORPTION ON THE QUALITY OF LIFE OF EDENTULOUS PATIENTS Nikola Gligorijević, Milena Kostić, Marko Igić, Maja Anđelković, Nataša Janković	48
PODUDARNOST VREDNOSTI BUPUPILARNOG I INTERKOMISURALNOG RASTOJANJA KOD PACIJENATA SA PUNIM ZUBNIM NIZOM CONSISTENCY OF BUPUPILLAR AND I INTERCOMMISSURAL DISTANCE VALUE IN PATIENTS WITH FULL DENTAL ARCH Maja Anđelković, Nikola Gligorijević, Andrija Nedeljković, Marko Igić, Milena Kostić.....	49
ISPITIVANJE KORELACIJE NIVOVA GUBITKA ALVEOLARNE KOSTI U INTERDENTALNOM I INTERADIKULARNOM PROSTORU PRIMENOM RADIOGRAFSKE ANALIZE EXAMINATION OF THE CORRELATION OF THE ALVEOLAR BONE LOSS LEVEL I N THE INTERDENTAL AND INTERADICULAR SPACE USIN RADIOGRAPHIC ANALYSIS Ana Pejčić, Milena Kostić, Radmila Obradović, Ivan Minić, Marko Igić, Nikola Gligorijević	50
PROFILNA SIMETRIJA LICA KOD PACIJENATA SA PUNIM ZUBNIM NIZOM FACE PROFILE SYMMETRY IN PATIENTS WITH FULL DENTAL LINES Andrija Nedeljković, Milena Kostić, Marko Igić, Nikola Gligorijević, Maja Anđelković, Katarina Kocić, Aleksandra Radojčić, Milica Vasiljević.....	52
POREDZENJE Odstupanja IStoimenih Linearnih I Angularnih Mera NA LATERALNOM CEFALOGRAFSKOM I ORTOPANTOMOGRAFSKOM RADIOGRAMU COMPARISON OF DEVIATIONS OF THE SAME TYPE OF LINEAR AND ANGULAR MEASURES ON LATERAL CEPHALOGRAM AND ORTHOPANTOMOGRAPHIC RADIOGRAM Nikola Z. Furundžić, Dijana P. Furundžić.....	53
RASNE RAZLIKE U VREDNOSTIMA PROFILNIH UGLOVA KOD MUŠKARACA – KOMPARATIVNA STUDIJA RACIAL DIFFERENCES IN PROFILE ANGLE VALUES IN MALE – A COMPARATIVE STUDY Tatjana Perović, Danijela Milisavljević, Radica Obradović	54

RASNE RAZLIKE U VREDNOSTIMA PROFILNIH UGLOVA KOD ŽENA – KOMPARATIVNA STUDIJA RACIAL DIFFERENCES IN PROFILE ANGLE VALUES IN FEMALE – A COMPARATIVE STUDY Tatjana Perović, Danijela Milisavljević, Radica Obradović	55
MORFOLOŠKE VARIJACIJE GORNJEG TREĆEG MOLARA MORPHOLOGICAL VARIATIONS OF THE MAXILLARY THIRD MOLAR Nenad Stošić, Jelena Popović, Aleksandar Mitić, Marija Nikolić, Radomir Barac, Marko Igić	56
ZNAČAJ ZUBNE PULPE U FORENZIČKOJ ODONTOLOGIJI DENTAL PULP AND ITS ROLE IN FORENSIC ODONTOLOGY Ivan Minić, Ana Pejčić, Marija Bradić-Vasić, Marko Denić	57
VELIČINA INTERDENTALNIH PROSTORA KOD MLADIH OSOBA SA KLINČKI ZDRAVIM PARODONTOM THE INTERDENTAL SPACE SIZE IN YOUNG PEOPLE WITH CLINICALLY HEALTHY PERIODONTIUM Radmila Obradović, Ljiljana Kesić, Ana Pejčić, Marija Bojović, Milica Petrović, Ivana Stanković ...	58
INTERDENTALNE ČETKICE I GINGIVALNO ZDRAVLJE THE INTERDENTAL BRUSHES AND GINGIVAL HEALTH Radmila Obradović, Marija Igić, Ana Pejčić, Mirjana Bošković, Branislava Stojković, Simona Stojanović, Marija Jovanović	59
EFEKAT DEKSAMETAZONA NA PERIOPERATIVNU ANESTEZIJU I ANALGEZIJU U ORALNOHIRURŠKIM OPERACIJAMA DEXAMETHASONE EFFECT ON PERIOPERATIVE ANESTHESIA AND ANALGESIA IN ORAL SURGERY OPERATIONS Simona Stojanović, Miloš Tijanić, Kristina Burić, Kosta Todorović, Nina Burić, Milan Spasić, Branislava Stojković	61
ZDRAVSTVENI STATUS KOD NAJSTARIJEG STANOVNIŠTVA:STUDIJA U OKRUGU PAŠIM MEDINIPUR, ZAPADNI BENGAL, INDIJA HEALTH STATUS AMONG THE OLDEST-OLD POPULATION: A STUDY IN PASCHIM MEDINIPUR DISTRICT OF WEST BENGAL, INDIA Parikshit Chakraborty, Arup Ratan Bandyopadhyay, Sutapa Chaudhury	62
POVEZANOST SOMATOTIPA I NUTRICIONOG STATUSA KOD ODRASLIH SABARSKIH MUŠKARACA PURULIJE, ZAPADNI BENGAL, INDIJA: TRANSVERZALNA STUDIJA THE ASSOCIATION BETWEEN SOMATOTYPE AND NUTRITIONAL STATUS AMONG THE ADULT SABAR MALES OF PURULIA, WEST BENGAL, INDIA: A CROSS-SECTIONAL STUDY Kaustav Das, Subrata Sankar Bagchi	63
ISTRAŽIVANJE HEMOGLOBINA I INDEKSA TELESNE MASE U ODNOSU NA NJIHOV MORBIDITET, HIGIJENU I SOCIO-EKONOMSKE USLOVE KOD ODRASLIH STANOVNIKA NASELJA ASANANGGRE U OKRUGU VEST GARO HILLS, DRŽAVE MEGHALAIA A STUDY ON HAEMOGLOBIN AND BODY MASS INDEX IN RELATION TO THEIR MORBIDITY, HYGIENE AND SOCIO-ECONOMIC PATTERNS AMONG THE ADULT GAROS' OF ASANANGGRE VILLAGE OF WEST GARO HILLS, MEGHALAYA Khriesivonuo Nakhro, Diptendu Chatterjee, Arup Ratan Bandyopadhyay	64

PREVALENCIJA POTHRANJENOSTI, PREKOMERNE UHRANJENOSTI, I GOJAZNOSTI KOD DECE PREDŠKOLSKOG UZRASTA U BUGARSKOJ U REGIONU SMOLYAN PREVALENCE OF UNDERWEIGHT, OVERWEIGHT AND OBESITY AMONG BULGARIAN PRESCHOOL CHILDREN FROM SMOLYAN REGION Silviya Mladenova	65
KRANIOFACIJALNE KARAKTERISTIKE SHIZOFRENIH BOLESNIKA CRANIOFACIAL CHARACTERISTICS OF SCHIZOPHRENIA PATIENTS Biljana Srdić Galić, Siniša S. Babović, Sonja Petričević, Slavko Lovrenčić, Đendi Siladi Mladenović, Zoran Gajić	66
NIZAK RAST U ODRASLOM ŽIVOTNOM DOBU I KARDIOVASKULARNI RIZIK SHORT STATURE IN ADULTS AND CARDIOVASCULAR RISK Mirjana Udicki, Siniša Stanković, Biljana Srdić Galić, Tatjana Pavlica, Bojana Krstonošić	67
TEMPORALNE PROMENE U KEFALOMETRIJSKIM KARAKTERISTIKAMA KOD DEČAKA I DEVOJČICA ŠKOLSKOG UZRASTA U CENTRALNOJ GRČKOJ TEMPORAL CHANGES OF CEPHALOMETRIC TRAITS IN SCHOOL AGE BOYS AND GIRLS FROM CENTRAL GREECE Magdalena Pirinska – Apostolu	68
GOJAZNOST KOD DEČAKA I DEVOJČICA ŠKOLSKOG UZRASTA IZ CENTRALNE GRČKE OBESITY OF SCHOOL AGE BOYS AND GIRLS FROM CENTRAL GREECE Magdalena Pirinska – Apostolu	69
UTICAJ SOCIOEKONOMSKIH I DEMOGRAFSKIH PARAMETARA NA GOJAZNOST DECE OD 7 DO 11 GODINA U SEVERNOBAČKOM REGIONU INFLUENCE OF SOCIOECONOMIC AND DEMOGRAPHIC PARAMETERS ON OBESITY IN CHILDREN AGED 7 TO 11 IN NORTH BAČKA REGION Valerija Puškaš, Tatjana Pavlica, Rada Rakić	70
STAROSNE PROMENE U TELESNOJ KOMPOZICIJI KOD STANOVNIKA U BUGARSKOJ STAROSTI 19 - 89 GODINA AGE-RELATED CHANGES IN BODY COMPOSITION IN 19 - 89-YEARS-OLD BULGARIAN ADULTS Ivaila Pandourska Yankova, Yanitsa Zhecheva, Albena Dimitrova	71
SOMATOTIP KOD ADOLESCENTNIH RITMIČKIH GIMNASTIČARKI IZ BUGARSKE SOMATOTYPE IN ADOLESCENT RHYTHMIC GYMNASTS FROM BULGARIA Albena Dimitrova, Ivaila Pandourska Yankova, Maria Gateva	72
POVEZANOST DISTRIBUCIJE MASTI, HIPERTENZIJE I ACE (I / D) GENSKOG POLIMORFIZMA: ISTRAŽIVANJE DVE TIBETO-BURMANSKE LINGVISTIČKE GRUPE TRIPURE, SEVEROISTOČNA INDIJA ASSOCIATION OF FAT PATTERNING, HYPERTENSION AND ACE (I/D) GENE POLYMORPHISM: A STUDY ON TWO TIBETO-BURMAN LINGUISTIC GROUP OF TRIPURA, NORTH-EAST INDIA Kusum Ghosh, Pranabesh Sarkar, Diptendu Chatterjee, Arup Ratan Bandyopadhyay	73

POVEZANOST GENETSKOG POLIMORFIZMA MTHFR (RS1801133), FTO (RS9939609) I GOJAZNOSTI SA DIJABETESOM TIPA 2 KOD BENGALSKOG HINDU STANOVNIŠTVA ZAPADNOG BENGALA, INDIJA ASSOCIATION OF MTHFR (RS1801133), FTO (RS9939609) GENETIC POLYMORPHISMS AND OBESITY WITH TYPE 2 DIABETES MELLITUS AMONG BENGAL HINDU CASTE POPULATION OF WEST BENGAL, INDIA Pranabesh Sarkar, Diptendu Chatterjee, Arup Ratan Bandyopadhyay	74
PREVALENCIJA POLNOG HROMATINA KOD ŽENA SA KANCEROM DOJKE I ZDRAVIH ŽENA IZ KASTE HINDU PREVALENCE OF SEX CHROMATIN BETWEEN BREAST CANCER AND NORMAL BENGAL HINDU CASTE FEMALES Koel Mukherjee, Arup Ratan Bandyopadhyay	75
ISTRAŽIVANJE ABNORMALNIH KARAKTERISTIKA DLANA KOD AUTISTIČNIH BOLESNIKA IZ HINDU KASTE U ZAPADNOM BENGALU A STUDY ON ABNORMAL PALMAR FLEXION CREASES AMONG THE AUTISTIC PATIENTS OF BENGAL HINDU CASTE POPULATION OF WEST BENGAL, INDIA Biswarup Dey, Piyali Das, Diptendu Chatterjee, Arup Ratan Bandyopadhyay	76
GLAVNI LINIJSKI INDEKS KOD PACIJENATA SA E-BETA TALASEMIJOM: ISTRAŽIVANJE BENGALSKOG HINDU STANOVNIŠTVA IZ ZAPADNOG BENGALA, INDIJA MAIN LINE INDEX IN E-BETA THALASSEMIA PATIENTS: A STUDY ON BENGAL HINDU CASTE POPULATION OF WEST BENGAL, INDIA Piyali Das, Arup Ratan Bandyopadhyay	77
ULTRASTRUKTURA DLAKE: UPOREDNA ANALIZA KOD MAJMUNA STAROG I NOVOG SVETA HAIR ULTRASTRUCTURE: A COMPARATIVE STUDY ON OLD WORLD AND NEW WORLD MONKEY Madhumati Chatterjee, Ratan Arup Bandyopadhyay	78
KARCINOM DOJKE KOD MUŠKARACA I REGULACIJA BRCA GENA: ISTRAŽIVANJE U KALKUTI INDIJA MALE BREAST CANCER AND BRCA GENE REGULATION: A STUDY FROM KOLKATA, INDIA Abhishikta Ghosh Roy, Arup Ratan Bandyopadhyay	79
ABO KRVNE GRUPE I KANCER ABO BLOOD GROUP AND CANCER Priyanka Dutta, Arup Ratan Bandyopadhyay, Jyoti Ratan Ghosh	80
ANTROPOMETRIJSKA STUDIJA FIZIČKOG RAZVOJA KOD STUDENATA UNIVERZITETA U SOFIJI – PRELIMINARNI REZULTATI ANTHROMETRIC STUDY OF PHYSICAL DEVELOPMENT OF SOFIA UNIVERSITY STUDENTS – PRELIMINARY RESULTS Ivo Vladimirov, Racho Stoev	81
NEKI ETIČKI ASPEKTI ZDRAVSTVENE ZAŠTITE TOKOM NOVE PANDEMIJE KORONA VIRUSA SOME ETHICAL ASPECTS OF HEALTH CARE DURING THE NEW CORONA VIRUS PANDEMIC Adina Baciu	82

VISOK I NIZAK NIVO ADAPTACIJE NA KAZNENO POPRAVNU USTANOVU MOŽE SE PREDVIDETI NA OSNOVU STEPENA UZBUĐENJA I ZADOVOLJSTVA ŽIVOTOM? HIGHER AND LOWER ADAPTATION TO PENITENTIARY CAN BE PREDICTED BY EXCITABILITY AND LIFE SATISFACTION?	
Cornelia Rada, Costin-Marian Crînguș	83
STRATEGIJE SUOČAVANJA SA STRESOM KOJE PROMVIŠU ZDRAV PARTNERSKI ODNOS COPING STRATEGIES THAT PROMOTE RELATIONAL HEALTH	
Cornelia Rada, Zenobia Niculiță	84
ISPOLJAVANJE BESA I ZDRAVSTVENE NAVIKE KOD STARIJIH PAROVA ANGER EXPRESSION AND HEALTH-RELATED HABITS IN ELDERLY COUPLES	
Cornelia Rada, Zenobia Niculiță	85
UTICAJ MEHANIZAMA SUOČAVANJA SA OKOLNOSTIMA I AGRESIVNOSTI NA PRILAGOĐAVANJE ZATVORSKOM OKRUŽENJU THE INFLUENCE OF COPING MECHANISMS AND AGGRESSIVITY REGARDING THE ADAPTATION TO CARCERAL ENVIRONMENT	
Costin-Marian Crînguș	86
UMETNOST I IDENTITET: SLUČAJ MUZEJA MAJDAN (KIJEV, UKRAJINA) ART AND IDENTITY: THE CASE OF THE MAIDAN MUSEUM (KYIV, UKRAINE)	
Giovanni Ercolani	87
TRANZICIJA ZAGAĐENJA: EKSTRAKTIVIZAM I EKOLOŠKA KATASTROFA U SEOSKIM SREDINAMA TRANSILVANIJU U SOCIJALISTIČKOJ I POSTSOCIJALISTIČKOJ FAZI POLLUTION TRANSITION: EXTRACTIVISM AND ECOLOGICAL DISASTER IN TRANSYLVANIAN RURAL VILLAGES IN THE SOCIALIST AND POST-SOCIALIST STAGE	
Adrián Ciuciuman Romero	88
PORODIČNA PRAKSA. ISKUSTVO ETNOGRAFSKOG TERENSKOG RADA NA COPSICA MICA A FAMILY PRACTICE. EXPERIENCE OF ETHNOGRAPHIC FIELDWORK AT COPSICA MICA	
Adrián Ciuciuman Romero	89
FENOMEN PROSJAČENJA TOKOM PANDEMIJE COVID-19 THE PHENOMENON OF BEGGING DURING THE COVID-19 PANDEMIC	
Monica Luminita Alexandru	90
POVEĆAVANJE KVALITETA ŽIVOTA STARIJIH LJUDI U DOMOVIMA ZA STARE INCREASING THE QUALITY OF LIFE OF THE ELDERLY IN NURSING HOMES	
Monica Luminita Alexandru	91
DEMOGRAFSKE KARAKTERISTIKE, UČESTALOST PATOLOŠKIH PROMENA I INCIDENCIJA INVALIDITETA U PALEOPOPULACIJI IZ KASNOG ANTIČKOG PERIODA SELA KREPOST, DIMITROVGRADSKI OKRUG, JUGOISTOČNA BUGARSKA DEMOGRAPHIC FEATURES, PATHOLOGICAL CHANGES DISTRIBUTION AND DISABILITY INCIDENCE IN THE PALEOPOPULATION FROM LATE ANTIQUITY BY THE VILLAGE KREPOST, DIMITROVGRAD DISTRICT, SOUTH-EAST BULGARIA	
Victoria Russeva	92
KOMPARATIVNA ANTROPOLOŠKA ANALIZA NEKOLIKO BALKANSKIH POPULACIJA COMPARATIVE ANTHROPOLOGICAL ANALYSIS OF FEW BALKAN POPULATIONS	
Racho Stoev, Lukasz Macuga	93

VREME I REDOSLED NIKANJA STALNIH ZUBA KOD DECE IZ BUGARSKE (PRELIMINARNI PODACI) ERUPTION TIME AND SEQUENCE OF THE PERMANENT TEETH IN BULGARIAN CHILDREN (PRELIMINARY DATA) Boyan Kirilov	94
UTICAJ DEMOGRAFSKE TRANZICIJE NA EKONOMSKI RAZVOJ BOSNE I HERCEGOVINE THE INFLUENCE OF DEMOGRAPHIC TRANSITION ON ECONOMIC DEVELOPMENT OF BOSNIA AND HERZEGOVINA Stevo Pašalić, Momir Lazarević, Darko Pašalić	95
PARAMETRI MENTALNOG ZDRAVLJA KOD STUDENTKINJA MEDICINE U SEVERNOJ MAKEDONIJI MENTAL HEALTH PARAMETERS IN FEMALE MEDICAL STUDENTS IN NORTH MACEDONIA Sanja Mancevska, Jasmina Pluncevic Gligoroska, Biljana Spirkoska	96
PROBLEMSKA NASTAVA KAO PODSTICAJNO OKRUŽENJE ZA UČENJE ANTROPOLOŠIH SADRŽAJA U OSNOVNOJ ŠKOLI PROBLEM-BASED LEARNING AS A STIMULATING ENVIRONMENT FOR LEARNING ANTHROPOLOGICAL TOPICS IN PRIMARY SCHOOL Vera Županec, Tihomir Lazarević, Tijana Pribičević	97
ANTROPOLOŠKI SADRŽAJI U RANIJIM I NOVIM PROGRAMIMA BIOLOGIJE ZA OSNOVNU ŠKOLU U REPUBLICI SRBIJI ANTHROPOLOGICAL CONTENTS IN PREVIOUS AND NEW BIOLOGY PROGRAMS FOR PRIMARY SCHOOL IN THE REPUBLIC OF SERBIA Tihomir Lazarević, Vera Županec, Tijana Pribičević	98
ANTROPOLOGIJA SAMOĆE, USAMLJENOSTI I LIČNE SREĆE U ESEJIMA ISIDORE SEKULIĆ ANTROPOLOGY OF LONELINESS AND PERSONAL HAPPINESS IN ISIDORA SEKULIĆ'S ESSAYS Valentina Zlatanović Marković	99
FERTILNE RAZLIKE U RURALNO-URBANOJ ZONI SEMBERIJE FERTILE DIFFERENCES IN THE RURAL-URBAN ZONE OF SEMBERIA Rada Golub	100
ADNEKSA KOŽE: DLAKE I NOKTI, KAO DIJAGNOSTIČKI POKAZATELJ OPŠTEG ZDRAVSTVENOG STANJA PACIJENATA SKIN ADNEXES: HAIR AND NAILS, AS A DIAGNOSTIC INDICATOR OF GENERAL HEALTH OF PATIENTS Nebojša Božinović, Milena Božinović	101
UTICAJ DEMOGRAFSKOG PROCESA STARENJA NA PRIVREDNI I EKONOMSKI RAZVOJ PIROTSKOG OKRUGA THE INFLUENCE OF THE DEMOGRAPHIC PROCESS OF AGING ON THE ECONOMIC DEVELOPMENT OF THE PIROT DISTRICT Ninoslav Golubović, Milena Gocić	102
INDEKS AUTORA I KOAUTORA INDEX OF AUTHORS AND CO-AUTHORS	103

IZVODI SAOPŠTENJA / ABSTRACTS

Plenarna predavanja / Plenary lectures

ANTROPOLOŠKE STUDIJE DREVNE I MODERNE POPULACIJE BELORUSIJE

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Antropološka istraživanja u Belorusiji počela su sredinom 1960-tih godina. Istraživanja su počele da se razvijaju u nekoliko oblasti i obuhvatile su: paleo-antropološke studije koje su se bavile ispitivanjem prirode i vektora epohalne varijabilnosti strukturnih osobina lobanje, postkranijalnog skeleta i dentofacijalnog sistema populacije na teritoriji Belorusije od 10. do 19. veka, studije savremene populacije, ispitivanje etničkih aspekata dermatoglifije i odontoloških karakteristika populacija iz različitih oblasti. Genogeografska studija ruralne populacije Belorusije takođe je sprovedena, kao i analiza demografskih indikatora koji su direktno uticali na mnoge aspekte biološke varijacije populacije.

Takođe, značajno se povećao obim istraživanja. Studije su obuhvatile socijalnu i kulturnu antropologiju (pol i uzrast, kao i teritorijalnu varijabilnost fizičkog tipa odrasle populacije); auksologiju (oblikovanje građe tela u procesu rasta, sazrevanja dečijeg tela, fizički razvoj beba, šeme varijabilnosti fizičkog razvoja dece uzrasta od 4 do 7 godina, starije dece, adolescenata i mladih uzrasta od 7 do 17 godina); konstitucionalnu antropologiju (konstitucionalna monogeneza); i funkcionalnu antropologiju (varijabilnost pola i starosti kod kardiorespiratornog sistema dece školskog uzrasta). Bilo je i studija životne sredine koje su otkrile uticaj sredine na indikatore društvenog zdravlja.

ANTHROPOLOGICAL STUDIES OF ANCIENT AND MODERN POPULATION OF BELARUS

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Anthropological studies in Belarus were initiated in the mid-1960s. These studies took several directions and encompassed: paleo-anthropological studies, which examined the nature and the vector of the epochal variability of structural features of the skull, post-cranial skeleton and dentofacial system in the population of the territory of Belarus from the 10th–19th century; modern population studies, examining ethnic aspects of dermatoglyphics, and odontologic characteristics of populations from different regions. A genogeographical study of the rural people of Belarus was also conducted, and an analysis of the demographic indicators that directly affected many aspects of the biological variation of the population.

Moreover, the extent of this research expanded considerably. Studies covered social and cultural anthropology (gender and age, and the territorial variability of the physical type of the adult population); auxology (the formation of body build during the process of growth, maturation of children's bodies, the physical development of infants, patterns of variability in the physical development of children from 4 to 7 years of age, children, adolescents, and youth from 7–17 years of age); constitutional anthropology (constitutional morphogenesis); and functional anthropology (gender and age variability in the cardiorespiratory systems of schoolchildren). There were also environmental studies which revealed the impact of the environment on community health indicators.

EPOHALNA I TERITORIJALNA VARIJABILNOST VELIČINE I OBLIKA GLAVE KOD OMLADINE U BELORUSIJI

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Proučavanje sekularnog trenda prosečne veličine (obim glave, longitudinalni i transverzalni prečnik) i oblika glave (indeks glave) kod čoveka od samog početka razvoja antropološke nauke bio je u sferi posebne pažnje naučnika. Analizirali smo tendenciju varijabilnosti prosečne veličine i oblika glave mladih u Minsku, prosečnog uzrasta 16-18 godina u proteklih 90 godina (1925–2018). U toku perioda od 1925. do 1980. zabeležen je značajan porast svih parametara, istovremeno zabeleženo je da je indeks glave smanjen. Značajan rast prosečne veličine glave završen je u periodu od 1980. do 2018. Ukoliko su obim glave i longitudinalni prečnik kod mladih varirali u ovom periodu, onda se transverzalni obim smanjivao. Tako da je proces dolichocefalije (ili debrachicefalije) koja predstavlja redukciju indeksa glave primećen tokom ovog perioda od 90 godina.

Na osnovu studija s početka 21. veka, kod mladih ljudi uzrasta od 16 do 17 godina iz različitih oblasti Belorusije zapažene su varijacije u pogledu oblika glave. U oblasti Polesije i na severu Belorusije najčešće se sreće brahicefalija. U Minsku (centralna oblast Belorusije) najčešća je sub-brahicefalija. Ovakve razlike mogu biti prouzrokovane faktorima iz životne sredine (seobe u metropolu, panmiksija, itd.).

Ključne reči: indeks glave, longitudinalni i transverzalni prečnik, obim glave, brahicefalija, mladi, Belorusija

EPOCHAL AND TERRITORIAL VARIABILITY OF HEAD SIZES AND SHAPE AMONG YOUNG PEOPLE OF BELARUS

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The study of secular trend of the general sizes (head circumference, longitudinal and transverse diameters) and the shape of head (head index) in humans from the very beginning of the development of anthropological science was in the zone of special interest of scientists. We analyzed the trends in variability of general sizes and shape of head in 16–18-year-old youth of Minsk over the latest more than 90 years (1925–2018). During the period 1925–1980s there was a significant increase of all indices, at the same time the head index reduced. A significant growth of general head sizes was complete in the period 1980s–2018. If the head circumference and longitudinal diameter in all youth was variable during these years, then transverse diameter reduced. This means that the process of dolichocephalization (or debrachycephalization), that is reduction of the head index was observed during this more than 90 years. According to studies at the beginning of the 21st century, young people aged 16-17 from different regions of Belarus showed various variations in the head shape. In the regions of Polesie and Poozerie (south and north of Belarus, respectively), brachycephalic form of the head is the most common. In the city of Minsk (the central region of Belarus), the subbrachycephalic morphotype is the leading one. Such differences can be caused by environmental factors (migrations to the metropolis, panmixia, etc.).

Keywords: head index, longitudinal and transverse diameters, head circumference, debrachycephalization, youth, Belarus.

KOEVOLUCIJA GEN - KULTURA: RELEVANTNOST I PERSPEKTIVE U ANTROPOLOGIJI

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Ljudska posebnost je proizvod i istovremeno efekat gensko-kulturne koevolucije, koja je evolucionarna dinamika koja uključuje interakciju gena i kulture tokom dužih vremenskih perioda. Kulturna i genetska evolucija su u međusobnoj vezi i obe utiču na prenos gena i selekciju. Koevolucija gen-kultura kod ljudi je poseban slučaj koevolucije gena i okoline u kojoj se životna sredina kulturno konstituiše i prenosi. Populaciona biologija tradicionalno uzima životnu sredinu kao egzogenu. Međutim, poznato je da oblici života utiču na sopstveno okruženje i okruženja koja proizvode menjaju obrazac genetske evolucije kroz koju prolaze. Koevolucija gen-kultura je primena nišnog konstruisanja na ljudsku vrstu, prepoznajući da su i geni i kultura podložni sličnoj dinamici, a ljudsko društvo je kulturna konstrukcija koja pruža okruženje za genetske promene koje poboljšavaju životne sposobnosti kod pojedinaca. Stoga se osnovni pojmovi u kulturnoj evolucionoj teoriji odnose na širenje biologije kroz kulturu, fokusirajući se na kulturne evolucionarne primene u populacionoj genetici, nezaraznim bolestima, ekologiji, demografiji i donekle zaraznim bolestima. Model gen-kultura ima široku primenu u različitim oblastima antropologije na primer, nasleđivanje osobina ponašanja i ličnosti, učenje i kulturu, evoluciju jezika, oblik kose, boja kože, reproduktivnog zdravlja i raka kod žena, genetskog savetovanja i tako dalje. Ljudska kultura je u složenoj interakciji sa genima i okolinom, a zajedničko proučavanje gena i kulture može da produbi razumevanje ljudske evolucije i savremenih perspektiva kroz antropološke percepcije.

GENE-CULTURE CO-EVOLUTION: RELEVANCE AND PERSPECTIVES IN ANTHROPOLOGY

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Human distinctiveness are the product and concomitant effects of gene-culture co-evolution, which is an evolutionary dynamic involving the interaction of genes and culture over long time periods. The dynamic gene-culture co-evolution model in terms of existing concepts in theoretical population genetics observed cultural evolution has many parallels with, as well as clear differences from, genetic evolution. Furthermore, cultural and genetic evolution can interact with one another and influence both transmission and selection. Gene-culture co-evolution in humans is a special case of gene-environment co-evolution in which the environment is culturally constituted and transmitted. Population biology traditionally takes the environment as exogenous. However, it is known that life-forms affect their own environment and the environments they produce change the pattern of genetic evolution they undergo. Gene-culture co-evolution is the application of niche-construction reasoning to the human species, recognizing that both genes and culture are subject to similar dynamics, and human society is a cultural construction that provides the environment for fitness-enhancing genetic changes in individuals. Therefore, the core concepts in cultural evolutionary theory pertain to the extension of biology through culture, focusing on cultural evolutionary applications in population genetics, non-communicable disease, ecology, demography and to some extent communicable disease. Applications of gene-culture models in Anthropology have wide and various scopes for example, inheritance of behavioural and personality traits, Adaptive modifications of learning and culture, evolution of language, hair form, skin color, anthropology of microbes, reproductive health and cancer among women, genetic counseling and so on. Human culture interacts with genes and the environment in complex ways, and studying genes and culture together can deepen the understanding of human evolution and contemporary perspectives through Anthropological perceptions.

BOLJI SLUH: ISTRAŽIVANJE SE VRŠI PUNOM BRZINOM

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Problem: Danas na tržištu ne postoje odobreni medicinski tretmani za lečenje gubitka sluha.

Oštećenje sluha je globalni zdravstveni problem sa velikim društveno-ekonomskim uticajem i nezadovoljenim medicinskim potrebama. Nedostaju zadovoljavajući i efektni tretmani. Oštećenje čulnih ćelija u unutrašnjem uhu zbog starosti, bolesti, akustične traume, izlaganja ototoksinima nalazi se u osnovi sensorineuralnog gubitka sluha. U našim studijama ispitujemo molekularne procese u unutrašnjem uhu koji nastaju usled oštećenja čulnih ćelija. Identifikovali smo neke činioce koji imaju potencijal da zaštite čulne ćelije od aminoglikozidne povrede, uključujući inhibitore apoptoze i pojačivače mehanizama opstanka. Trenutno ispitujemo mogućnosti prevođenja ovih rezultata na kliničke. Hemato labirintna membrana između sistemske cirkulacije i strije vaskularis održava kohlearnu mikro-sredinu. Od krucijalnog je značaja za održavanje kohlearne ravnoteže, olakšava prenos metabolita i hranljivih materija do kohlee i štiti je od zapaljenja i bolesti. Treba napraviti mikro dizajniran model 3D ćelijske kulture hemato labirintne membrane kako bi se ukazalo na ova ograničenja. 3D modeli hemato labirintne membrane služiće kao veoma korisno sredstvo ispitivanja njenog doprinosa fiziološkim i patološkim mehanizmima i za otkrivanje pristupa koji bi olakšali isporuku leka do membrane. Takođe, pomoću ovog modela želimo ispitati nove mogućnosti primene „organ na čipu“ tehnologije u oblasti pre kliničkog otkrića lekova u budućnosti. Dugoročni cilj ovog projekta je da poboljšamo prevenciju i lečenje gubitka sluha.

BETTER HEARING: THE RESEARCH IS IN FULL SWING

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The problem: No approved medical treatments for hearing loss are on the market today.

Hearing impairment is a global health problem with a high socioeconomic impact and high unmet medical need. Satisfactory and effective treatments are lacking. Damage to auditory hair cells (HCs) in the inner ear due to aging, disease, acoustic trauma, or exposure to ototoxins underlies most cases of sensorineural hearing loss. In our studies, we examine molecular processes in the inner ear that arise when HC are damaged. We identified some agents with the potential to protect HCs from aminoglycoside injury, including apoptosis inhibitors and enhancers of survival mechanisms. Our current interest is exploring the possibility of translating these results to the clinic. The blood-labyrinth barrier (BLB) between the systemic circulation and striavascularis maintains the cochlear microenvironment. It is crucial for maintaining cochlear homeostasis, facilitating nutrient and metabolite transport into the cochlea, and protecting it against inflammation and disease. Microengineered three-dimensional (3D) cell culture model of the BLB can be developed to address these limitations. 3D culture models of the BLB will serve as very strong tools for research into its specific contributions to physiological and pathological mechanisms and for uncovering approaches that can facilitate drug delivery across the BLB. Also whit this model in the future we want examine the new opportunities for the application of organ-on-chip technologies in a range of areas in preclinical drug discovery. The long-term goal of this project is to improve prevention and treatment of hearing loss.

O PALEOLITSKOM ČOVEKU U VOJVODINI

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Najveći deo Vojvodine nalazi se u južnom delu Panonske nizije. Veruje se da ovo područje nije pružalo odgovarajuće uslove za život čoveka u paleolitu jer su skeletni ostaci iz ovog perioda uglavnom nađeni u pećinama i skloništimu u planinskim područjima. Ipak, tragovi ljudskih aktivnosti pronađeni su na nekim mestima u Vojvodini.

Godine 1951. jedan arheolog amater je u Bačkom Petrovcu u Žitištu našao delove dve mineralizovane lobanje fosila *Homo sapiens*-a i poslao ih Arheološkom institutu u Beogradu. Antropološka analiza ovih ostataka izvršena je na Institutu za anatomiju Medicinskog fakulteta u Beogradu. Analize su pokazale da obe lobanje pripadaju fosilnom čoveku kao i da lobanja iz Bačkog Petrovca pokazuje brojne morfološke sličnosti lobanji krapinskog čoveka. Novije analize sprovedene Velikoj Britaniji, u Antropološkoj laboratoriji bolnice St. Bartholomew u Londonu, pokazale su da je lobanja iz Žitišta starija od one iz Bačkog Petrovca i da je više mineralizovana. Merenja radioaktivnog ugljenika u Istraživačkoj laboratoriji Britanskog muzeja pokazala su da je fosilni čovek živeo na obalama reke Dunav pre više od 10.000 godina. Ostaci lobanja iz Bačkog Petrovca i Žitišta su nesumnjivo stariji od onih nađenih u Đerdapskoj klisuri i poseduju iste epigenetske karakteristike.

Upkos jasnim dokazima da je paleolitski čovek živeo u Vojvodini neophodna su sistematičnija istraživanja paleolitskih nalazišta.

Ključne reči: Paleolit, Panonska nizija, Vojvodina, Lobanja, Krapinski čovek

ON THE PALEOLITHIC MAN IN VOJVODINA

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The major part of the Vojvodina province is located in the southern part of the Panonian plain. It was believed this area had not offered suitable conditions for the Paleolithic man to appear and live there because the findings of skeletal remains of Paleolithic men have predominantly been made in caves and shelters located in mountain regions. Nevertheless, traces of human activities have been found at several sites in Vojvodina.

In Bački Petrovac and Žitište, parts of two mineralized skulls, determined to belong to *Homo sapiens* fossils have been discovered by an amateur archaeologist, who sent them to the Archaeological Institute in Belgrade in 1951. The anthropological analysis of these remains was conducted at the Institute of Anatomy of the Medical Faculty in Belgrade. The analyses showed that both skulls had belonged to fossil man, as well as that the skull from Bački Petrovac had a number of morphological characteristics in common with that of the Krapina man. A more recent analyses conducted in the Anthropological Laboratory of the St. Bartholomew's Hospital in London, Great Britain, showed that the skull from Žitište is older than the one from Bački Petrovac and that is more mineralized. Radiocarbon measurement conducted in the Research Laboratory of the British Museum in London showed that the fossil men had lived along the Danube River more than 10 000 years ago. The remains of the skulls from Bački Petrovac and Žitište are undoubtedly older than those found in the Iron Gate of the Danube River (Đerdap). They possess the same epigenetic characteristics as those in the Iron Gate area.

In spite of the sound proof that the Paleolithic men lived in Vojvodina, systematic investigation of the Paleolithic finds have not been yet undertaken.

Keywords: Paleolithic, Panonian plain, Vojvodina, Skull, Krapina man.

ANTROPOLOŠKI PODACI KAO NEZAVISAN IZVOR INFORMACIJA O GENEZI POPULACIJE

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Populacije na zemlji veoma se razlikuju u pogledu strukture tela i crta lica. Kako ove podatke možemo sistematizovati? Da li morfološka raznolikost čovečanstva može poslužiti kao izvor informacija? Ruska škola fizičke antropologije prihvata tipološki koncept rase. Vodi se polemika vezana za to da li je moguće podeliti čitav set morfoloških razlika na ograničen broj morfoloških tipova, od kojih je svaki povezan sa određenim područjem na zemlji na osnovu svog porekla. Međutim, jedna osoba ne može biti nosilac antropološkog tipa. Činjenica je da rasni karakteri predstavljaju nasledni mozaik, međusobno nezavisan, tako da jedino grupa ljudi ili određena populacija mogu biti nosioci nekog antropološkog tipa. Postoje različiti antropološki tipovi, kao što su: mediteranski, dinarski ili alpski koji se mogu naći na teritoriji Balkana. Svaki od njih povezan je sa različitim oblastima u Evropi o svojoj genezi. Ispitivanje morfoloških osobina jedne populacije omogućava rekonstrukciju porekla te grupe podjednako precizno kao i paleogenetika.

ANTHROPOLOGICAL DATA AS AN INDEPENDENT SOURCE OF INFORMATION ABOUT THE GENESIS OF POPULATIONS

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The populations of the earth are very variously in body structure and facial features. How can these data be systematized? Can the morphological diversity of mankind serve as a source of information? The Russian school of physical anthropology adheres to the population-typological concept of race. It is argued that the entire set of morphological variants can be divided into a limited number of morphological types, each of which is associated with a specific region of the earth in its origin. However, one individual cannot be the carrier of an anthropological type. The fact is that racial characters are inherited mosaic, independently of each other, therefore only a group of people, a population, can be an anthropological type carrier. There are various anthropological types, such as the Mediterranean, Dinar or Alpine can be found in the Balkan region. Each of them is associated with different regions of Europe in its genesis. The study of morphological features of a population makes it possible to reconstruct the origin of the group no less accurately than paleogenetics does.

EROZIVNO TROŠENJE ZUBA - ETIOLOGIJA, DIJAGNOSTIKA I TERAPIJSKE MERE

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Preventivna i dečja stomatologija, Klinika za stomatologiju,
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Podizanje svesti o značaju oralnog zdravlja i primena organizovanih preventivnih mera dovela je do pada prevalencije karijesa u razvijenim zemljama Evrope. Međutim, sa promenama životnog stila i navika u ishrani, erozivno trošenje zuba postaje sve značajniji problem u dugoročnom očuvanju zdravlja denticije u savremenoj stomatologiji. Reč je o multifaktorijskom fenomenu gde kombinacija mehaničkih i hemijskih uzroka dovodi do kumulativnog gubitka zubne supstance. Zbog učestalog konzumiranja kisele hrane i pića, erozivne promene, čak i na mlečnim i mladim stalnim zubima nisu retkost. Kako bi se izbegla značajnija oštećenja zubnih površina i potreba za kompleksnim i skupim restauracijama, neophodno je pravovremeno reagovanje. Ovo predavanje ima za cilj upoznavanje sa prevalencijom, etiologijom, značajem rane dijagnostike i primenom terapijskih mera u uznapredovalim slučajevima erozivnog trošenja zuba.

Ključne reči: Erozivno trošenje zuba, prevalencija, etiologija, dijagnostika, terapija

EROSIVE TOOTH WEAR - ETIOLOGY, DIAGNOSTICS AND THERAPEUTIC MEASURES

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Raising awareness of the importance of oral health and organized preventative measures have led to a decline in the prevalence of caries in developed countries of Europe. However, with changes in lifestyle and eating habits, erosive tooth wear is becoming an increasingly important problem in maintaining the long-term health of dentition in modern dentistry. It is a multifactorial phenomenon where a combination of mechanical and chemical causes leads to cumulative loss of dental substance. Due to the frequent consumption of acidic foods and drinks, erosive changes, even on primary and young permanent teeth are not uncommon. To avoid significant damage to dental surfaces and the need for complex and costly restorations, timely response is required. This lecture aims to introduce the prevalence, etiology, importance of the early diagnosis and therapeutic approaches in advanced cases of erosive tooth wear.

Keywords: Erosive tooth wear, prevalence, etiology, diagnostics, therapy

KONCEPT HARMONIJE KEFALOMETRIJALNOG KOMPLEKSA

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Obrazac kranijofacijalnog kompleksa i njegova klasifikacija na ortognate, retrognate i prognate na osnovu kefalometrijskih parametara se ne može utvrditi na jednostavan način kao klasifikacija po ANGLE-u. Odstupanja od izračunate srednje kefalometrijske vrednosti se moraju razmatrati zajedno sa individualnim karakteristikama. Zato se analiza kefalometrijskih standarda mora posmatrati kroz: a) tip lica, b) koncept harmonije, c) skeletnu kefalometrijsku normu, d) dentalnu kefalometrijsku normu i e) normu mekog tkiva.

Morfološki, skelet lica je sastavljen od više komponenti. Većina njih, bilo da su skeletne ili su dentoalveolarne, imaju kompenzatorna svojstva, koja pojedinačno ili u kombinaciji mogu umanjiti nepovoljan uticaj ostalih komponenti morfološkog tipa. Klinički, primenjujući osnovne kefalometrijske vrednosti treba shvatiti da se kod svih tipova lica mogu naći anomalije kao i idealna okluzija. Poželjno je zato imati informacije o tim mehanizmima kompenzacije ili nedostatku istih u svakom pojedinačnom slučaju.

Rekonstruisanje harmonijskih kombinacija skeletnih vrednosti koji se oslanjaju na tip lica, mogu bliže da odrede individualne vrednosti pacijenta. Tipovi lica proizilaze iz kombinacije anteroposteriorne i vertikalne dimenzije. Sklad maksile i mandibule u odnosu na njihove pojedinačne vrednosti može pokazati nesklad jedne prema drugoj s obzirom na međusobnu povezanost maksilarnog i mandibularnog prognatizma i inklinacije. U isto vreme vrednost inklinacije i prognatizma mogu da utiču i na inklinaciju inciziva i da daju informaciju dali su na položaj sjekutića uticali dispastični faktori ili povezanost skeletnih struktura.

THE CONCEPT OF CEPHALOMETRIC COMPLEX

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Craniofacial complex pattern and its classification into orthognatism, rethrognatism and prognathism can not be as easily determined as the classification according to Angle's system. Deviations from the calculated cephalometric mean value have to be considered together with individual characteristics. Therefore, the analysis of cephalometric standards has to include: a) facial type b) concept of harmony c) skeletal cephalometric norm d) dental cephalometric norm and e) soft tissue norm.

Morphological facial skeleton is composed of several components. Most of them, whether skeletal or dentoalveolar, have compensatory properties which individually or combined together can reduce adverse effect of their components of morphological type. Clinically speaking, by applying basic cephalometric values we should realize that anomalies can be found in all facial types as well as ideal occlusion. It is therefore necessary to have information about those compensatory mechanisms or the lack of them in each case individually.

Reconstruction of harmonic combinations of skeletal values which rely on facial type, can determine individual values of patients more closely. Facial types result from the combination of anteroposterior and vertical dimension. Coherence of maxilla and mandible in terms of their individual values can indicate discrepancy between them having in mind the connection between maxillary and mandibular prognathism and inclination. At the same time, values of inclination and prognathism can influence the inclination incisors and provide information whether the position of incisors was influenced by the connection of skeletal structures or other factors.

PRIBAVLJANJE LEŠEVA ZA OBRAZOVANJE I ISTRAŽIVANJA U ANATOMSKIM NAUKAMA: GLOBALNA PERSPEKTIVA

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Kroz istoriju, ljudski leševi su predstavljali ključni resurs u obrazovanju i istraživanjima u anatomskim naukama. Do tela za anatomske studije se dolazilo na različite načine, uključujući i one koji su bili etički dubiozni a, u pojedinim periodima, i ilegalni. Savremene odredbe, uključujući i one izdate od strane Medjunarodne Federacije Udruženja Anatoma, preporučuju da je jedini etički utemeljen način dobavljanja leševa onaj koji se zasniva na zaveštanju. Opšte poštovanje ovih odredbi je, međutim, daleki ideal. Skorašnje globalno istraživanje načina pribavljanja tela je obelodanilo da se u samo 22 (32%) od 71 istražene zemlje, leševi dobavljaju isključivo kroz zaveštanje. Ostale zemlje se oslanjaju na tela osoba koje su umrle u staranju države, uvozu leševa iz drugih zemalja, ili tela ubijenih kriminalaca. Ove razlike medju državama, koje su primećene i u različitim regionama individualnih zemalja, su posledica brojnih ograničavajućih faktora uključujući ekonomske, kulturne, socio-političke i profesionalne. Dalji razvoj globalne zajednice prakse izmedju anatoma, istraživanja u relevantnim oblastima, poboljšanje finansijske situacije i bolja komunikacija sa lokalnim stanovništvom su faktori koju mogu doprineti uvećanju broja programa za zaveštanje tela širom sveta. Nekoliko projekata baziranih na medjunarodnoj saradnji su upravo pokrenuti da bi se istražili načini dobavljanja tela u različitim zemljama i institucijama, te da bi se ispitale mogućnosti etičkog pribavljanja ljudskih leševa na globalnoj ravni.

Ključne reči: ljudski leševi, zaveštanje tela, anatomska laboratorija, obrazovanje u anatomskim naukama, istraživanja u anatomskim naukama

BODY SOURCING FOR ANATOMICAL SCIENCES EDUCATION AND RESEARCH: A GLOBAL PERSPECTIVE

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Throughout history human cadavers were the key resource for teaching and research in anatomical sciences. Bodies for anatomical study were obtained in a variety of ways, including those that were ethically dubious and, at times, illegal. Modern guidelines, including those issued by the International Federation of Associations of Anatomists, advise that the only ethical way of sourcing cadavers is through willed body donation. However, universal adherence to these guidelines is still a distant ideal. A recent global review of body acquisition practices revealed that in only 22 (32%) of 71 surveyed countries, cadavers were obtained exclusively through willed body donations. Other countries use either solely unclaimed bodies or both unclaimed and donated bodies, with some importing bodies from overseas institutions or using bodies of criminals who died in violent confrontations. These differences between countries, which have also been recorded within regions of the same country, are the consequence of a multitude of compounding factors including economic, cultural, socio-political and professional. Further development of the global community of practice among anatomists, research on relevant issues, improved finances and better communication with local communities are factors that could contribute towards increasing the establishment of ethical and successful body donation programs worldwide. Several international collaborative research projects have been recently initiated to survey the body acquisition patterns in different countries and institutions, and to investigate the possibilities of ethical sourcing of human cadavers on a global scale.

Keywords: human cadavers, body donation, anatomy laboratory, anatomical sciences education, anatomical sciences research

Usmene prezentacije / Oral presentations

ANALIZA PROMJENA TEŽINSKO VISINSKIH OBILJEŽJA KOD MLAĐIH ADOLESCENATA OD 1970. DO 2020. GODINE

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Istraživanje je sprovedeno na uzorku od 200 ispitanika, oba pola, sa ciljem da se ukaže na trend promjena visine i mase tijela, kao i nivo uhranjenosti kod ispitanika prosječne starosti 13,6 godina, u odnosu na rezultate ranijih studija. Za potrebe uporedne analize istraživanjem su obuhvaćeni podaci dobijeni u istraživanjima realizovanim u proteklih 50 godina, čiji su predmet bile tjelesna visina i masa tijela, kao glavne morfološke karakteristike ljudskog organizma. Prema dobijenim rezultatima utvrđeno je naglašeno postojanje fenomena akceleracije u analiziranom vremenskom periodu. Zabilježen je izuzetno visok prirast visine tijela, kako kod dječaka (13,8 cm), tako i djevojčica (11,0 cm), kao i tjelesne težine kod dječaka (18,8 kg) i djevojčica (13,7 kg). Dobijeni rezultati indeksa tjelesne mase (ITM) ukazuju na nivo preuhranjenosti kod današnjih dječaka (21,6) i djevojčica (20,7). Osnovni uzroci trenda naglašenih promjena analiziranih morfoloških obilježja su: nepravilna ishrana, nedovoljna fizička aktivnost i prekomjerna upotreba savremenih tehnoloških sredstava, kao ključnih karakteristika sadašnjeg načina života djece i omladine.

Ključne riječi: gojaznost, vremenski period, hipokinezija, razlike

ANALYSIS OF CHANGES IN HEIGHT AND WEIGHT MARKS IN YOUNGER ADOLESCENTS IN THE PERIOD FROM 1970 TO 2020

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The study was conducted on a sample of 200 subjects of both sexes, with the aim to indicate the trend of changes in height and body weight, as well as the level of nutrition in subjects with an average age of 13.6 years compared to the results of previous studies. For the purposes of comparative analysis, the survey included data obtained from studies conducted over the past 50 years, the subject of which was body height and body mass as the main morphological characteristics of the human body. According to the obtained results, it was determined that the acceleration phenomenon was present in the analyzed time period. Extremely body height was observed in both boys of (13.8 cm) and girls (11.0 cm) as well as body weight in boys (18.8 kg) and girls (13.7kg). Body mass index (BMI) results indicate a level of overweight in the sub-sample of boys (21.6) and a tendency toward the same category of nutrition in the sub-sample of girls (20.7). The main causes of the trend of marked changes in the analyzed morphological characteristics are: malnutrition, insufficient physical activity and overuse of modern technological means, as key characteristics of the present way of life of children and young people.

Keywords: obesity, time period, hypokinesia, differences

PREVALENCIJA CENTRALNE GOJAZNOSTI U KATEGORIJAMA OPŠTE GOJAZNOSTI KOD ADOLESCENATA MUŠKOG POLA

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Uvod: Centralna gojaznost je povezana sa rizikom od metaboličkih komplikacija zbog toga je veoma važno njeno rano otkrivanje kod dece i adolescenata. **Cilj:** Ispitati prevalenciju centralne gojaznosti u kategorijama opšte gojaznosti kod adolescenata muškog pola. **Metod rada:** Ispitano je 424 adolescenta muškog pola uzrasta 16-19 godina. Transferzalno antropometrijsko istraživanje, prema Internacionalnom biološkom programu, izvršeno je 2017. godine u Novom Sadu. Izračunat je indeks telesne mase (kg/m^2) pokazatelj opšte gojaznosti. Opšta gojaznost je procenjena korišćenjem graničnih vrednosti indeksa telesne mase koje je predložila Međunarodna radna grupa za gojaznost na osnovu čega su formirane četiri kategorije: pothranjeni, normalno uhranjeni, prekomerno uhranjeni i gojazni. Centralna gojaznost u ispitivanim godištim utvrđena je na osnovu obima struka ≥ 90 percentila i odnosa obima struka i visine tela ≥ 0.5 . **Rezultati:** Pothranjenih adolescenata je bilo 4.0%, normalno uhranjenih 67.5%, prekomerno uhranjenih 23.6%, a gojaznih 5.0%. Centralna gojaznost na osnovu obima struka je uočena kod 8.3%, a na osnovu odnosa obima struka i visine tela kod 18.9%. Na osnovu obima struka i odnosa obima struka i visine tela prevalencija centralne gojaznosti iznosila je kod prekomerno uhranjenih 17.0% i 58.0%, a kod gojaznih 85.7% i 100% respektivno. U značajnoj pozitivnoj korelaciji su obim struka ($r=0.877$) i odnos obima struka i visine tela ($r=0.890$) sa indeksom telesne mase ($P<0.001$) i obim struka ($r=0.173$) sa uzrastom ($P<0.05$). **Zaključak:** Istraživanje je pokazalo visoku prevalenciju centralne gojaznosti kod prekomerno uhranjenih i gojaznih, a kod normalno uhranjenih i pothranjenih nije zapažena. Ključne reči: centralna gojaznost, opšta gojaznost, adolescenti muškog pola

PREVALENCIJA CENTRALNE GOJAZNOSTI UNUTAR OPŠTIH KATEGORIJA GOJAZNOSTI KOD MUŠKIH ADOLESCENATA

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Introduction: Central obesity is related to the metabolic disorder health risks and therefore its detection at an early age is of crucial importance. **The aim:** to assess the prevalence of central obesity within the categories of general obesity among male adolescents. **The method:** 424 male adolescents aged 16-19 were surveyed. The cross-sectional anthropometric survey was conducted in the city of Novi Sad in 2017. The body mass index (BMI kg/m^2), as an indicator of general obesity, was also assessed. General obesity was assessed using the cut-of-values of the body mass index proposed by the International Obesity Task Force (IOTF) and the four categories were established: underweight, normal weight, overweight and obese. Central obesity was assessed on the basis of waist circumference (WC) ≥ 90 th percentile and waist-to-height ratio (WHtR) ≥ 0.5 . **Results:** 4.0% of male adolescents were underweight, 67.5% were with normal weight, 23.6% of them were classified as overweight and 5.0% as obese. The WC and WHtR values pointed to the presence of central obesity in 8.3% and 18.9% of adolescents, respectively. Based on WC and WHtR, the prevalence of central obesity was in 17.0% and 58.0% of the overweight and in 85.7% and 100% of the obese, respectively. A significantly positive correlation was detected between WC ($r=0.877$) and WHtR ($r=0.890$) with BMI ($P<0.001$) and WC ($r=0.173$) with the age ($P<0.05$). **Conclusion:** the survey pointed to a high prevalence of central obesity in the overweight and obese male adolescents, while among the underweight and those with normal weight it was not detected.

Keywords: central obesity, general obesity, male adolescents

MORFOLOŠKA ANALIZA VEZICE JEZIKA

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Uvod: Vezica jezika je sluzokožni nabor koji povezuje donju stranu jezika sa podom usne duplje. Funkcija vezice jezika je da ograničava određene pokrete jezika, a ukoliko je previše kratka i zategnuta, prouzrokuje sraslost jezika za pod usne duplje, što se naziva "kratka vezica jezika" ili ankiloglossija (*ankyloglossia*). **Cilj:** Izvršiti morfološku i morfometrijsku analizu vezice jezika i ispitati razlike u odnosu na pol ispitanika. **Materijal i metode:** Istraživanje je sprovedeno na 55 ispitanika (27 muškaraca, 28 žena) koje su činili studenti Medicinskog fakulteta Univerziteta u Novom Sadu, starosne dobi od 19 do 24 godina. Uslov za učestvovanje u istraživanju bio je da ispitanik nema govornu manu uslovljenu malformacijama unutar usne duplje, kao ni pozitivnu istoriju oboljenja i hiruških intervencija ispitivane regije. Parametri sa fotografija ispitanika (dužina, prednja, gornja i donja ivica, površina vezice jezika) su mereni u programu „ImageJ 1.48v” i statistički obrađeni u „IBM SPSS 23 Statistics” programu. Poređenje prosečnih vrednosti za dve različite grupe je urađeno t-testom, a statistička značajnost određivana je na nivou $p < 0.05$. **Rezultati:** Uočeno je da postoji razlika izmerenih parametara kod muškaraca i žena, međutim ta razlika nije statistički značajna. Rezultati klasifikacije po Kotlow-u ukazuju da 49,1% ispitanika pripada klasi klinički prihvatljivih, klasi I 25,5%, klasi II 21,8%, klasi III 3,6%, dok nije pronađen ispitanik klase IV. **Zaključak:** Vezica jezika ne pokazuje strukturne razlike u odnosu na pol.

Ključne reči: Morfologija; morfometrija; vezica jezika.

MORPHOLOGICAL ANALYSIS OF LINGUAL FRENULUM

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Introduction: Lingual frenulum is mucosal fold that connects tongue to the floor of the oral cavity. Function of lingual frenulum is to limit certain movements of the tongue, and if it is short and tight, causes attachment tongue to the floor of the oral cavity, that is called "tongue-tie" or ankyloglossia. **Aim:** Evaluate morphological analysis of lingual frenulum and assess differences according to gender.

Material and methods: The study was performed on 55 subjects (27 men, 28 women), students of the Medical Faculty of the University of Novi Sad, aged 19 to 24 years. The condition for participation in the study was that the subject does not have a difficulties in speech conditioned by malformations within the oral cavity, as well as a positive history of diseases and surgical interventions studied region. The parameters from photos of the subjects (length, front, top and bottom edge, surface of lingual frenulum) were measured in the "ImageJ 1.48v" program, and statistically analysed in the "IBM SPSS Statistics 23" program. Comparison of average values for the two different groups is done with t-test, and statistical significance was determined at the level $p < 0.05$. **Results:** It has been observed that there is a difference between the measured parameters in men and women, but this difference was not statistically significant. The results of classification by Kotlow indicate that 49.1% of subjects belong to the class clinically acceptable, the class I of 25.5%, 21.8% to class II, class III 3.6%, until it was not found subject in class IV. **Conclusion:** Lingual frenulum does not show any structure differences according to gender.

Keywords: Morphology; morphometry; lingual frenulum.

BIOMEHANIČKI ODNOS DINAMIČKIH PARAMETARA STOPALA KOD FIZIČKI AKTIVNIH I FIZIČKI NEAKTIVNIH STUDENATA

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Uvod: Ovim radom smo ispitivali parametre dinamike stopala, kao jednu od dimenzija biomehanike stopala, novom metodom objektivizacije merenih vrednosti. Izmereni parametri biomehanike imaju direktan uticaj na ispravan hod i pravilnu posturu. **Cilj:** Cilj istraživanja bio je da se utvrdi da li postoji statistički značajna razlika ili korelacija u parametrima dinamike stopala između fizički aktivnih i neaktivnih studenata. **Metod rada:** Uzorak je činio 91 student, od kojih je bilo 44 fizički neaktivnih, a 47 fizički aktivnih. Merenja su vršena na aparatu *freeMed Maxi* proizvođača *Sensor Medica, Italy*, koji je prvi put upotrebljen u našoj populaciji za objektivizaciju morfo-fizioloških parametara. Sve referentne vrednosti je dao proizvođač u okviru svog *freeStep v.1.4.01* programa. Podatake smo statistički obradili u programu *PSPP 1.0.1*, koristeći Studentov *t*-test i Pirsonov χ^2 -test. **Rezultati:** Naši rezultati ukazuju da ne postoje statistički značajne razlike u vrednostima i odstupanju od referentnih vrednosti parametara opterećenja i ugla progresije stopala između fizički neaktivnih i fizički aktivnih studenata. Ne postoji statistički značajna korelacija između ugla progresije stopala i opterećenja spoljašnje, odnosno unutrašnje strane stopala. Procenat studenata sa nefiziološkim vrednostima ugla progresije stopala statistički je značajno veći od procenta studenata sa fiziološkim vrednostima i kod fizički neaktivnih, i kod fizički aktivnih studenata. **Zaključak:** Nema statistički značajnih razlika u opterećenju medijalne i lateralne strane stopala, kao i ugla progresije stopala između fizički aktivnih i neaktivnih studenata.

Ključne reči: Stopalo; Ugao progresije stopala; Opterećenje; Dinamika; Fizička aktivnost

BIOMECHANICAL RELATION OF PARAMETERS OF FOOT DYNAMICS IN PHYSICALLY ACTIVE AND INACTIVE STUDENTS

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Introduction: In this research we were examining foot dynamics, as a dimension of the biomechanics of the foot, using a new method to objectify measured values. Examined biomechanical parameters have direct effect on physiological gait and proper posture. **The aim:** The aim of this research was to determine if there was a significant difference or correlation in parameters of the foot dynamics between physically active and inactive college students. **Method:** The sample consisted of 91 college students, 44 of which were physically inactive and 47 physically active. Measurements were determined by using baropodometric platform *freeMed Maxi*, manufactured by *Sensor Medica, Italy*, which was used for the first time on local population to objectify morfo-physiological parameters. All reference values were given by the manufacturer as a part of their *freeStep v.1.4.01* software. Data was processed in *PSPP 1.0.1*, using Student's *t*-test and Pearson's χ^2 -test. **Results:** Our results indicate that there are no statistically significant differences in values and deviation from the reference values of load parameters and the foot progression angle between physically inactive and physically active students. There is no statistically significant correlation between the foot progression angle and the load of the lateral, or the medial part of the foot. The percentage of students with nonphysiological values of the foot progression angle is statistically significantly higher than the percentage of students with physiological values, in both physically inactive and physically active students. **Conclusion:** There are no statistically significant differences between medial and lateral foot load and foot progression angle in physically active and inactive students.

Keywords: Foot; Foot progression angle; Load; Dynamics; Physical activity.

UTICAJ STEPENA UHRANJENOSTI I MENSTRUALNOG STATUSA NA VREDNOSTI KALCIJUM SKORA KORONARNIH ARTERIJA KOD ŽENA

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Uvod: Gojaznost je poznata kao nezavisni faktor rizika za razvoj kardiovaskularnih i metaboličkih poremećaja. U našoj populaciji je u porastu kako broj gojaznih osoba tako i broj obolelih od bolesti srca i krvnih sudova, pri čemu je nešto veća učestalost među ženama. Među obolelima najviše je onih sa koronarnom bolesti. Procena stanja koronarnih arterija vrši se određivanjem vrednosti kalcijum skora (KS) pomoću kompjuterizovane tomografije koronarnih arterija (CT koronarografija).

Cilj rada: Ispitati uticaj stepena uhranjenosti i menstrualnog statusa na vrednosti kalcijum skora koronarnih arterija kod žena. **Materijal i metode:** U ispitivanju je učestvovalo 70 ispitanica, prosečne starosti 58,50±12,85 godina, koje su na osnovu vrednosti KS podeljene u dve grupe: KS≤400 i KS>400. Sve ispitanice su bile podvrgnute antropometrijskim merenjima, proceni menstrualnog statusa i pregledu CT koronarografije. Antropometrijska merenja obuhvatila su merenja telesne visine, telesne mase, telesnih obima, telesnih dijametara, telesnih indeksa i ukupne masne mase. Stepenu uhranjenosti je određen pomoću indeksa telesne mase. **Rezultati:** U grupi ispitanica sa KS>400 njih 66,67% je bilo sa prekomernom telesnom masom, dok ih je u grupi sa KS≤400 bilo 42,5%. U poređenju sa ispitanicama sa KS≤400 ispitanice sa KS>400 imale su statistički značajno veće vrednosti WHR, WHtR, WTR, SADH i ukupne masne mase (MM%), dok im je TV bila manja. Sve ispitanice sa KS>400 bile su u menopauzi. **Zaključak:** Visoke vrednosti kalcijum skora koreliraju sa prekomernom telesnom masom i prestankom menstrualnog ciklusa.

Ključne reči: gojaznost, menstrualni status, CT koronarografija, koronarna bolest, žene

EFFECTS OF BODY MASS INDEX AND MENSTRUAL STATUS ON CORONARY CALCIUM SCORE VALUE IN WOMEN

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Introduction: Obesity is a well known independent risk factor for a development of cardiovascular and metabolic disorders. In our Serbian population, both the number of obese people and patients with heart and blood vessels disease are increasing, with a slightly higher incidence among women. The majority of patients are those with coronary artery disease. The assessment of the condition of the coronary arteries is performed by determining the calcium score (CS) using coronary computed tomography angiography (CTA). **Aim:** To examine effects of body mass index and menstrual status on coronary artery calcium score value in women. **Material and methods:** 70 women participated in the study, mean age 58.50±12.85 years, who were divided into two groups, based on CS values: CS≤400 and CS>400. All subjects underwent anthropometric measurements, evaluation of menstrual status and examination of CT coronary angiography. Anthropometric measurements included the determination of body height (BH), body mass, body circumference, body diameters, body indices, and body fat mass (BFM). The nutrition status was determined using body mass index. **Results:** In the group with CS>400 were 66.67% of participants overweight, while in the group with CS≤400 it was 42.5% of them. Compared to women with CS≤400, women with CS>400 had statistically significantly higher values of WHR, WHtR, WTR, SADH and BFM, while their BH was lower. All subjects with CS>400 were in menopause. **Conclusion:** High calcium score values correlate with overweight and cessation of the menstrual cycle.

Keywords: Obesity, Menstrual status, CTA, Coronary artery disease, Women

MORFOMETRIJSKA ANALIZA SPOLJAŠNJEG OTVORA KAROTIDNOG KANALA U SRPSKOJ POPULACIJI

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Uvod: Karotidni kanal se nalazi u petroznom delu slepoočne kosti i prenosi unutrašnju karotidnu arteriju zajedno sa venskim i simpatičkim nervnim plexusom. **Cilj:** Cilj ove studije bio je da se utvrdi oblik, položaj i dimenzije spoljašnjeg otvora karotidnog kanala u srpskoj populaciji. **Materijal i metode:** Studija je obuhvatila 84 slepoočne kosti (24 suve lobanje odraslih ljudi i 36 suvih ljudskih slepoočnih kostiju). Izmereni su dijametri i udaljenost spoljašnjeg otvora karotidnog kanala od različitih važnih orijentacionih tačaka baze lobanje. Oblik spoljašnjeg otvora karotidnog kanala je takođe određen. Digitalni podaci su obrađeni u softveru ImageJ. **Rezultati:** Prosečna dužina spoljašnjeg otvora karotidnog kanala kod svih ispitivanih uzoraka (lobanje i slepoočne kosti) na desnoj i levoj strani iznosila je $7,31 \pm 1,01$ mm, odnosno $7,71 \pm 1,06$ mm. Prosečna širina spoljašnjeg otvora karotidnog kanala na desnoj strani bila je $5,82 \pm 0,78$ mm, dok je na levoj strani bila $6,20 \pm 1,04$ mm. Oblik spoljašnjeg otvora karotidnog kanala bio je tipično kružni u 45 (53,57%) slučajeva. **Zaključak:** Nije postojala statistički značajna razlika u svim izmerenim parametrima u odnosu na pol i stranu tela. Jedina statistički značajna razlika utvrđena je kod žena između desne i leve strane u odnosu na dužinu (dijametar AP) spoljašnjeg otvora karotidnog kanala.

Ključne reči: karotidni kanal, morfometrija, lobanja, slepoočna kost

MORPHOMETRIC ANALYSIS OF THE EXTERNAL APERTURE OF THE CAROTID CANAL IN SERBIAN POPULATION

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Introduction: The carotid canal is located in the petrous part of the temporal bone and transmits the internal carotid artery along with the venous and sympathetic nerve plexus. **Aim:** The aim of this study was to investigate the shape, location and dimensions of the external aperture of the carotid canal in Serbian population. **Material and Methods:** The study included 84 temporal bones (24 dry adult human skulls and 36 dry human temporal bones). Diameters and distances of the external aperture of the carotid canal from various important landmarks of the skull base were measured. The shape of the external carotid canal aperture was also noted. Digital data were processed in the ImageJ software. **Results:** The average length of the external aperture of the carotid canal in all investigated specimens (skulls and temporal bones) on the right and left sides was 7.31 ± 1.01 mm and 7.71 ± 1.06 mm, respectively. The average width of the external aperture of the carotid canal on the right side was 5.82 ± 0.78 mm while on the left side was 6.20 ± 1.04 mm. The shape of the external aperture of the carotid canal was typically round in 45 (53.57%) cases. **Conclusion:** There were no statistically significant differences in all measured parameters between genders and body sides. The only statistical significance was found in females between right and left side in relation with length (AP diameter) of the external aperture of the carotid canal.

Keywords: carotid canal, morphometry, skull, temporal bone

ANTROPOMETRIJSKI PARAMETRI KAO MARKERI RIZIKA U ISPOLJAVANJU KARDIOVASKULARNIH BOLESTI

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Kardiovaskularne bolesti (KVB) predstavljaju grupu multifaktorijskih, hroničnih oboljenja koja obuhvataju bolesti srca i krvnih sudova. Antropometrijski parametri kao što su prekomerna telesna masa i gojaznost su faktori rizika za nastanak mnogih hroničnih bolesti. Cilj rada je bio da se utvrdi povezanost između antropometrijskih parametara i pojave KVB. Ispitivani su sledeći antropometrijski parametri: telesna visina (TV), telesna masa (TM), obim struka (OS), obim kukova (OK), indeks telesne mase (ITM), odnos obima struka i telesne visine (WHtR), odnos obima struka i kukova (WHR). Analizirani uzorak je sačinjavalo 90 pacijenata obolelih od KVB (45 muškaraca i 45 žena), prosečne starosti $62,80 \pm 10,20$ i 90 zdravih osoba (45 muškaraca i 45 žena), prosečne starosti $50,57 \pm 9,13$. Rezultati su pokazali da postoje značajno veće prosečne vrednosti OS, OK i WHtR kod bolesnih u odnosu na zdrave muškarce ($t_{OS}=3,19$; $p<0,001$; $t_{OK}=87,92$; $p<0,001$; $t_{WHtR}=3,19$; $p<0,001$), dok je između obolelih i zdravih žena nađena značajna razlika u istim parametrima, uključujući i WHR ($t_{OS}=87,47$; $p<0,001$; $t_{OK}=85,94$; $p<0,05$; $t_{WHtR}=80,10$; $p<0,05$; $t_{WHR}=87,96$; $p<0,001$). Prosečne vrednosti ITM u ispitivanim grupama nisu pokazale značajnu razliku. Naši rezultati su pokazali da su obimske karakteristike (OS, OK) i antropometrijski indeksi WHtR, WHR bolji markeri rizika za KVB u odnosu na ITM. Primena ispitivanih antropometrijskih parametara u primarnoj zdravstvenoj zaštiti, mogla bi da bude značajan marker u proceni rizika za nastanak KVB kod muškaraca i žena.

Cljučne reči: kardiovaskularne bolesti, antropometrijski parametri, markeri rizika

ANTHROPOMETRIC PARAMETERS AS RISK MARKERS IN THE MANIFESTATION OF CARDIOVASCULAR DISEASES

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Cardiovascular diseases (CVD) are a group of multifactorial, chronic diseases that include diseases of heart and blood vessels. Anthropometric parameters such as overweight and obesity are risk factors for many chronic diseases. The aim of this study was to determine the link between anthropometric parameters and the occurrence of CVD. The following anthropometric parameters were examined: body height (BH), body weight (BW), waist circumference (WC), hip circumference (HC), body mass index (BMI), waist to height ratio (WHtR), waist to hip ratio (WHR). The analyzed sample comprised of 90 patients with CVD (45 men and 45 women), average age 62.80 ± 10.20 and 90 healthy individuals (45 men and 45 women), average age 50.57 ± 9.13 . The results showed that there are significantly higher average values of WC, HC and WHtR in patients compared to healthy men ($t_{WC}=3.19$; $p<0.001$; $t_{HC}=87.92$; $p<0.001$; $t_{WHtR}=3.19$; $p<0.001$), while a significant difference was found between healthy and female patients in the same parameters, including WHR ($t_{WC}=87.47$; $p<0.001$; $t_{HC}=5.94$; $p<0.05$; $t_{WHtR}=80.10$; $p<0.05$; $t_{WHR}=87.96$; $p<0.001$). The average BMI values in the examined groups did not show a significant difference. Our results showed that circumference characteristics (WC, WH) and anthropometric indices WHtR, WHR are better risk markers for CVD compared to BMI. The application of the examined anthropometric parameters in primary health care could be a significant marker to estimate risk of CVD in men and women.

Keywords: cardiovascular diseases, anthropometric parameters, risk markers

KVALITATIVNA ISPITIVANJA ANTROPOMETRIJSKIH PARAMETARA RASTA KOD DECE UZRASTA OD 5 GODINA RAZLIČITIH NACIONALNOSTI

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Evaluacija polno-specifičnih razlika antropometrijskih parametara koji se koriste kao indikatori rasta i nutritivnog statusa kod predškolske dece kao i korišćenje samoorganizacionih mapa.

U studiju je bilo uključeno 200 zdrave predškolske dece uzrasta od 5 godina makedonske i albanske nacionalnosti. Mereno je 12 antropometrijskih parametara koji definišu longitudinalne, cirkularne i transversalne dimenzionalnosti skeleta, koristeći standardnu opremu i tehniku merenja. Pomoću standardnih formula izračunati su sledeći indeksi: težina-za uzrast (BW), visina-za-uzrast (BH) i BMI. Kvalitativna ispitivanja su urađena pomoću samoorganizacionih mapa.

Polno-specifične razlike skoro svih antropometrijskih parametara su detektovane, ali nisu bile signifikantne. Devojčice su pokazale malo veće srednje vrednosti (BW i BH), a vrednosti BMI nisu bile signifikantne u odnosu na vrednosti kod dečaka. Vrednosti za 50ti percentil kod devojčice bile su: 20 kg za težinu, 115.4 cm za visinu, i 15.64 kg/m² za BMI. Kod dečaka su dobijene sledeće vrednosti: 20 kg za težinu, 113.2cm za visinu, 15.94 kg/m² za BMI. Vrednosti kožnih nabora bile su veće kod dece muškog pola. Kod dece albanske nacionalnosti vrednosti su kod devojčica 20 kg za BW, 110 cm za BH i za BMI 16.28 for kg/m². Kod dečaka date vrednosti su bile 20 kg za BW, 107.1 cm za BH i za BMI 16.68 kg/m². Preporuka je da se dobijene vrednosti koriste kao kriterijumi za procenu i detekciju devijacije rasta i nutritivnog statusa kod predškolske dece.

Ključne reči: antropometrija, rast, samoorganizacione mape, predškolska deca

QUALITATIVE EXAMINATION OF ANTHROPOMETRIC PARAMETERS OF GROWTH IN CHILDREN AGED 5 OF TWO NATIONALITIES

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Evaluation of sex-specific differences of anthropometric parameters as indicator of growth and nutritional status in preschool children, using self-organizing maps.

The study included a total of 200 healthy 5-year-old preschool children of Macedonian and Albanian nationality. Twelve anthropometric parameters were measured, defining longitudinal, circular and transversal dimensionality of the skeleton using standard technique and instruments for measurement. The qualitative examination was detected with self-organizing maps. The following indices were selected and calculated: weight-for-age; height-for-age and BMI.

Sex-specific differences for almost all anthropometric parameters were detected, but they were not significant. Girls showed higher values than boys regarding height and weight, but BMI values were not significant. The values at the 50th percentile in girls were 20 kg for BW, 115.4 cm for BH and 15.64 kg/m². The values of these parameters in boys were 20 kg for BW, 113.2.cm for BH and 15.94 for kg/m² for BMI. In Albanian nationality these parameters were higher in girls 20kg for BW, 110cm in BH and for BMI 16.28 for kg/m². In boys they were 20 kg, for BH 107.1 cm and for BMI 16.68 kg/m².

The obtained results can be used for criteria in assessment and detecting deviations in growth and nutritional status in preschool children.

Keywords: anthropometry, growth, self-organizing maps, preschool children

PROCENA NUTRITIVNOG STATUSA NA OSNOVU ANTROPOMETRIJSKIH INDEKSA KOD 6 GODIŠNJE DECE IZ SEVERNE MAKEDONIJE

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Uvod i Cilj: Antropometrija je senzitivna, neinvazivna a posebno značajna u proceni nutritivnog statusa na osnovu antropometrijskih indeksa kod 6 god. dece iz R. S Makedonije. **Materijal i metode:** Analizirano je 280 zdrave dece (140 dečaka, 140 devojčica uzrasta od 6 godina, makedonske nacionalnosti. Izmereno je 6 parametara, a pomocu standardnih formula izračunati su sledeći indeksi: težina-za uzrast (BW), visina-za-uzrast (BH), indeks telesne mase-za-uzrast (BMI), obim nadlaktice-za uzrast (MUAC) obim abdomena-za uzrast (WC) i kožni nabori-za-uzrast (SFTr i SFSc).

Rezultati: Rezultati su pokazali polno-specifične razlike za (BW, BH, BMI) u korist dečaka. Kožni nabori (SFTr and SFSc) su bili signifikantno veći kod devojčica. Obimi nisu pokazali polno-specifične razlike. Vrednosti 50th percentila kod dečaka iznosile su: 24 kg za BW, 119.6 cm za BH, 16.52 kg/m² za BMI, 17.2 cm za MUAC, 54 cm za WC, 5.2 mm za SFSc i 8.2 za SFTr, a kod devojčica: 22 kg za BW, 118cm za BH, 15.94 kg/m² za BMI, 17.6cm za MUAC, 53 cm za WC, 5.8mm za SFSc i 9 za SFTr. **Zaključak:** Preporučuje se da vrednosti nađu primenu kao kriterijumi za procenu i detekciju poremećaja nutritivnog status kod 6 godišnje dece.

Ključne reči: deca, antropometrija, nutritivni status

ASSESSMENT OF THE NUTRITIONAL STATUS BASED ON ANTHROPOMETRICAL INDEXES IN CHILDREN AGED 6 FROM NORTH MACEDONIA

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Introduction and Aim: Anthropometry is sensitive, noninvasive and especially important for the assessment of the nutritional status based on anthropometrical indexes in children aged 6 from North Macedonia. **Material and methods:** We analysed 280 healthy children (140 boys, 140 girls) aged 6 of Macedonian nationality. Six parameters were measured and calculated the following indexes according to the standard formulas: weight-for-age (BW), height-for-age (BH), body mass index-for-age (BMI), mid-upper arm circumferences-for-age (MUAC), waist circumference-for-age (WH) and skinfolds thickness-for-age (SFTr and SFSc).

Results: The results showed sex-specific differences in the examined parameters (BW, BH, BMI) in favour of the boys. In contrast, skinfolds thickness (SFTr and SFSc) were significantly higher in girls. The sex-specific difference for the circumferences proved to be insignificant. Values of the 50th percentile in boys were as follows: 24 kg for BW, 119.6 cm for BH, 16.52 kg/m² for BMI, 17.2 cm for MUAC, 54 cm for WC, 5.2 mm for SFSc, and 8.2 for SFTr. The values in girls were: 22 kg for BW, 118cm for BH, 15.94 kg/m² for BMI, 17.6cm for MUAC, 53 cm for WC, 5.8mm for SFSc and 9 for SFTr. **Conclusions:** These results can be useful as criteria for assessment and detection of deviations in the nutritional status in children aged 6.

Keywords: children, anthropometry, nutritional status

RAZVOJ MUSKULOSKELETNIH POREMEĆAJA KOD STUDENATA STOMATOLOGIJE – UTICAJ FIZIČKE AKTIVNOSTI

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Stomatologija se smatra profesijom visokog rizika za razvoj muskuloskeletnih poremećaja (MSP). Prva pojava nelagodnosti i bola u zglobovima, mišićima i tetivama javlja se već na prvim godinama studija a rezultat je forsiranog telesnog držanja i ponavljanja određenih telesnih pokreta pri radu sa pacijentima. Cilj istraživanja je bio da se izvrši korelacija pojave i intenziteta MSP u populaciji studenata stomatologije Medicinskog fakulteta u Nišu u odnosu na stepen fizičke aktivnosti. U cilju ispitivanja MSP, 170 studenata je popunilo modifikovani Nordijski upitnik. Rezultati su pokazali da se fizičkom aktivnošću aktivno bavi 14,5% studenata, rekreativno 41,7%, povremeno 37,5%, dok se 6,25% studenata nikada ne bavi fizičkom aktivnošću. U okviru grupe fizički aktivnih studenata MSP su se javljali u 43% slučajeva, u grupi rekreativno aktivnih 69%, u grupi povremeno aktivnih 94%, dok je u grupi studenata koji nikad ne vežbaju 100% njih imalo MSP. Najčešće mesto bola u svim grupama je bio predeo leđa i vrata. Intenzitet bola je bio najmanji u grupi aktivnih studenata. Bol se kod aktivnih studenata javljao povremeno, dok je trajanje od više sati i ceo dan imao kod manje aktivnih i fizički neaktivnih studenata. Intenzitet fizičke aktivnosti u velikoj meri utiče na pojavu i intenzitet MSP. Zbog činjenice da se MSP javljaju već u ranom periodu studentske prakse neophodno je poznavanje ergonomskih faktora koji doprinose pojavi ovih poremećaja.

Ključne reči: Muskuloskeletni poremećaji, fizička aktivnost, stomatologija, studenti, ergonomija.

DEVELOPMENT OF MUSCULOSKELETAL DISORDERS IN DENTISTRY STUDENTS - INFLUENCE OF PHYSICAL ACTIVITY

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Dentistry is considered a high-risk profession for the development of musculoskeletal disorders (MSD). The first appearance of discomfort and pain in the joints, muscles and tendons occurs in the first years of study and is the result of forced posture and repetition of certain body movements during the work. The aim of the research was to correlate the occurrence and intensity of MSD in the population of dental students at the Faculty of Medicine in Nis in relation to degree of physical activity. In order to examine MSD, 170 students completed the modified Nordic Questionnaire. The results showed that 14.5% of students are actively engaged in physical activity, 41.7% recreationally, 37.5% occasionally, while 6.25% of students never engage in physical activity. Within the group of physically active students, MSD occurred in 43% of cases, in the group of recreationally active 69%, in the group of occasionally active 94%, while in the group of students who never exercise, 100% of them had MSD. The most common site of pain was the back and neck. The intensity of pain was the lowest in the group of active students. Pain occurred occasionally in active students, while it lasted for several hours and all day in less active and physically inactive students. The intensity of physical activity affects the occurrence and intensity of MSD. Due to the fact that MSD appear in the early period of student practice, it is necessary to know the ergonomic factors that contribute to the occurrence of these disorders.

Keywords: Musculoskeletal disorders, physical activity, dentistry, students, ergonomics.

FIZIČKA NEAKTIVNOST PRE I POSLE PANDEMIJE

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Fizička aktivnost ima dokazano dobar uticaj na celokupno zdravlje a fizička neaktivnost ima još izraženiji negativan uticaj na telesno i mentalno zdravlje čoveka. Savremene javno -zdravstvene politike su usmerene ka razvoju preventivnih strategija u borbi protiv epidemije fizičke neaktivnosti. Prema podacima SZO, jedna četvrtina svetske adultne populacije je fizički neaktivna, a adolescentna populacija pokazuje još veći stepen fizičke neaktivnosti, 81%. Nivo fizičke neaktivnosti zavisi od ekonomske razvijenosti zemlje, od rase, nacionalnosti, pola, uzrasta i drugih faktora. Epidemiološke mere koje su nametnute tokom pandemije COVID 19 uglavnom su nametale fizičko distanciranje, zabranu ili ograničenje kretanja. Većina zemalja je tokom pandemije u odredjenim vremenskim periodima uvodila ograničenje kretanja ljudi što je imalo snažan uticaj na nivo fizičke aktivnosti i promovisanje sedentarnog ponašanja. Brojna istraživanja izveštavaju o povećanoj fizičkoj neaktivnosti tokom pandemije i njenom uticaju na zdravlje. Nivo fizičke neaktivnosti koja se ustanovila za vreme pandemije je viši od onog pre pandemije. Visoka prevalencija mentalnih i telesnih zdravstvenih problema se povezuje sa visokom fizičkom neaktivnošću.

Ključne reči: fizička neaktivnost, pandemija, zdravlje

PHYSICAL INACTIVITY BEFORE AND DURING COVID 19 PANDEMIC

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While physical activity is beneficial factor for overall health, physical inactivity is even more harmful for somatic and mental health. The modern public health policies are addressed to preventive strategy and increasing the socioeconomic and environmental conditions for people to be more active. According the WHO statistics, 23% of adult world population are not sufficiently active. Adolescent population is significantly more vulnerable regarding the sedentary life style, 81% of adolescent, between 11 and 17 years, do not reach the criteria of recommended dose of physical activity. The level of physical inactivity is dependent of economic development of the country, ethnicity, race, gender, age and other factors. Epidemiological restrictions recommended during the COVID 19 pandemic were mainly designed towards physical distancing and limited movements of people. The most countries banned unnecessary (or all) outdoor activities which affected people's physical activity i.e promotes sedentary behavior. The great number of studies reported increases of physical inactivity and its influence on various medical conditions. Covid pandemic restrictions have detrimental effect on physical behavior, and its causes are multifactorial. The physical inactivity level adopted during the pandemic period was higher than before the restricted period.

Keywords: physical inactivity, pandemic, health

RAZVOJ ANTROPOLOŠKOG STATUSA KOD UČENIKA PETOG RAZREDA PRIMENOM TRENINGA SPORTSKE GIMNASTIKE-

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Cilj istraživanja je utvrditi da li redovna nastava fizičkog vaspitanja u kombinaciji sa dodatnim sportskim aktivnostima iz sportske gimnastike u školi, u ukupnom trajanju od jedne školske godine, dovodi do statistički značajnih promena u nekim morfološkim, motoričkim i funkcionalnim sposobnostima. Uzorak ispitanika čini 65 učenika (dečaka) petog razreda Osnovne škole „Stefan Nemanja“, Osnovne škole „Rifat Burdžović Tršo“ i Osnovne škole „Desanka Maksimović“, sa teritorije Grada Novog Pazara uzrasta 11 godina. Ispitanici su uz redovnu nastavu fizičkog vaspitanja bili uključeni u sekciju sportske gimnastike kao sportsku aktivnost u školi. Uzorak varijabli čine tri antropometrijske varijable, šest motoričkih i jedna varijabla za procenu funkcionalnih sposobnosti. Do statistički značajnih promena na značajnosti od 0,05 došlo je u varijabli telesna visina, dok povećanje u telesnoj masi učenika i obimu podlaktice nema statističku značajnost. U prostoru motoričkih varijabli dobijene su značajne promene u većini testova, izuzevak su testovi, izdržaj u visu zglobom i pretklon raznožno kod kojih je takođe došlo do poboljšanja prosečnog rezultata ali nema statističku značajnost. Značajno poboljšanje rezultata u tapingu i skoku u dalj ukazuju na pozitivan uticaj kombinovane nastave sa dodatnim aktivnostima na razvoj brzine pokreta i eksplozivne snage.

Ključne reči: fizičko vaspitanje, učenici, sportska gimnastika, motoričke sposobnosti, morfološke karakteristike.

DEVELOPMENT OF ANTHROPOLOGICAL STATUS IN FIFTH GRADE STUDENTS USING GYMNASTICS TRAINING

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The aim of the research is to determine whether regular physical education classes in combination with additional sports activities from sports gymnastics in school, in the total duration of one school year, lead to statistically significant changes in some morphological, motor and functional abilities. The sample consists of 65 students (boys) of the fifth grade of the Elementary School "Stefan Nemanja", Elementary School "Rifat Burdžović Tršo" and Elementary School "Desanka Maksimović", from the territory of the City of Novi Pazar, aged 11 years. In addition to regular physical education classes, the respondents were also included in the sports gymnastics section as a sports activity at school. The sample of variables consists of three anthropometric variables, six motor variables and one variable for assessing functional abilities. There were statistically significant changes in significance of 0.05 in the variable body height, while the increase in body weight of the students and the circumference of the forearm had no statistical significance. In the space of motor variables, significant changes were obtained in most tests, with the exception of tests, endurance in the height of the joint and pre-inclination in various cases, which also improved the average result but has no statistical significance. Significant improvements in tapping and long jump results indicate a positive impact of combined teaching with additional activities on the development of movement speed and explosive power.

Keywords: physical education, students, gymnastics, motor skills, morphological characteristics.

KEFALOMETRIJSKE KARAKTERISTIKE PACIJENATA SA MALOKLUZIJOM II KLASJE 1 ODELJENJE

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Uvod: Malokluzije II klase 1 odeljenja (II/1) se odlikuju specifičnom kraniofacijalnom morfologijom.

Cilj ispitivanja je bio da se analizom profilnih telerendgen snimaka utvrde glavne karakteristike pacijenata sa malokluzijom II/1 klase.

Materijal i metod: ispitivanje je obavljeno na 60 profilnih telerendgen snimaka ortodontskih pacijenata sa malokluzijom II/1 (ANB ugao veći od 4). Analizirani su sledeći parametri: uglovi SNA, SNB i ANB, zbir uglova Bjork-ovog poligona, inklinacija donje vilice prema kranijalnoj bazi (NS- MP), kao i inklinacija donjih inciziva. Određene su skeletne varijacije vilica premakranijalnoj bazi, njihova procentualna distribucija, tip rasta lica i korelacija između inklinacije donje vilice sa inklinacijom donjih inciziva. Dobljeni podaci su statistički obrađeni i prikazani tabelarno i grafički.

Rezultati ispitivanja: Kod pacijenata sa malokluzijom II/1 dominira maksimalni prognatizam (46%), dok je mandibula najčešće retrognata (79%).

Utvrđeno je da je najčešće prisutan bimaksimalni retrognatizam dok je maksimalni prognatizam kombinovan sa mandibularnim retrognatizmom na drugom mestu po zastupljenosti u ispitivanoj grupi pacijenata. Posteriori tip rasta lica je dominantan (54%). Kod ovih, kao i u grupi pacijenata sa anteriornim tipom rasta najčešće je prisutna retroinklinacija donjih sekutića. Prisutna je umerena korelacija između inklinacije donjih sekutića i inklinacije donje vilice.

Zaključak: Poznavanje kraniofacijalne morfologije kod pacijenata sa malokluzijom II/1 je neophodno za pravilno postavljanje dijagnoze i određivanje plana terapije.

Ključne reči: malokluzija II klase 1 odeljenje, analiza telerendgena, skeletne varijacije, tip rasta lica

CEPHALOMETRIC CHARACTERISTICS OF CLASS II / 1 MALOCCLUSION

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Introduction: Class II / 1 malocclusion is characterized by special craniofacial morphology.

The aim of this research was to determine main characteristics and variations in class II/1 patients on the base of profile x ray analysis.

Methods: The sample comprised 60 pretreatment profile radiographs of orthodontic class II / 1 patients (ANB angle greater than 4). The following parameters were analyzed: SNA, SNB and ANB angles, the sum of angles of Bjork's polygon, the inclination of the lower jaw toward cranial basis (NS- MP) and the inclination of lower incisors. In the other part of the study skeletal variations of the jaws towards cranial basis and the correlations of the lower jaw inclination with the inclination of the lower incisors were determined. The obtained data were statistically analyzed and presented in tables and graphs.

Results: in the examined patients maxillary prognathism is dominant (46%), while mandible is mostly retrognathic (79%).

It was determined that bi maxillary retrognathism is dominant, while maxillary prognathism combined with mandibular retrognathism is on the second place in examined patients.

Posterior type of facial growth is mostly present (54%). In these patients there is retrusion of lower incisors in most of the cases. There is a slight correlation between the inclination of the lower incisors and the inclination of the lower jaw.

Conclusion: The knowledge of craniofacial morphology in class II / 1 patients is necessary for the right diagnosis and the plan of treatment.

Keywords: class II division 1 malocclusion, the analysis of radiographs, skeletal variations, facial growth type

PRIMENA PRINCIPA AUTONOMIJE PRAVA PACIJENTA U RADU SA DECOM

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Uvod: Odlučivanje u odabiru najboljeg stomatološkog tretmana danas, podrazumeva, osim isključivo profesionalnog odlučivanja i autonomno odlučivanje pacijenata. **Cilj:** Ispitati stav doktora stomatologije i budućih doktora da li su za bezuslovnu primenu principa autonomije prava pacijenta ili ne, ukoliko se ne krši princip neškodljivosti i dobročinstva. **Metod rada:** Istraživanje je obuhvatilo 88 ispitanika, 42 absolventa stomatologije Medicinskog fakulteta u Nišu i Stomatološkog fakulteta u Beogradu i 46 doktora stomatologije. Njima je putem email-a, prosleđen primer iz svakodnevne stomatološke prakse, postavljena etička dilema i ponuđeni odgovori na nju: da li je dečji stomatolog postupio ispravno jer je prekršio princip autonomije prava, zarad dobrobiti pacijenta, ili je trebalo da uzme u obzir predlog deteta i roditelja? Treći ponuđeni odgovor je bio- neodlučan u stavu. **Rezultati:** Najveći broj ispitanika, 23 (54,8%) studenta i 43 (93,5%) stomatologa, smatrao je da je stomatolog ispravno uradio jer nije ispoštovao princip autonomije prava, kako ne bi naškodio pacijentu. U manjem procentu, 15 (35,7%) studenata odgovorilo je da je stomatolog trebalo da uvaži predlog pacijenta. Istog mišljenja bio je samo jedan stomatolog (2,2%). Neodlučno u svom stavu bilo je 4 (9,5%) studenta i 2 (4,3%) doktora stomatologije. **Zaključak:** U odnosu na studente, verovatno usled većeg iskustva, stomatolozi su bili sigurniji u svoj stav, ako ne krše princip neškodljivosti i dobročinstva. To znači da poštovanje autonomije prava pacijenta, iako je jedan od osnovnih etičkih principa, ne treba konstruisati kao apsolutnu vrednost.

Cljučne reči: princip autonomije prava, stomatolog, deca

APPLYING THE PRINCIPLE OF AUTONOMY OF PATIENTS' RIGHTS IN WORKING WITH CHILDREN

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Introduction: Except for purely professional decision-making, deciding how to choose the best dental treatment nowadays also implies autonomous patient decision-making. **Aim:** Question the attitude of dentists and future doctors to see if they are for or against the unconditional application of the principle of autonomy if the principle of non-maleficence and beneficence is not violated.

Method: The research included 88 respondents, 42 graduate students of dentistry at the Faculty of Medicine in Niš and the Faculty of Dentistry in Belgrade, as well as 46 dentists. They were all sent an email containing an example from daily practice. There was an ethical dilemma with the answers offered: whether the pediatric dentist did the right thing when violating the principle of autonomy for the patient's benefit, or whether they should have considered the patient's proposal. The third answer offered was – indecisive in attitude. **Results:** 23 (54,8%) students and 43 (93,5%) dentists, believed that the dentist did the right thing when violating the principle of autonomy so as not to harm the patient. 15 (35,7%) students responded that the dentist should have accepted the patient's suggestion. Only one dentist (2,2%) had the same opinion. 4 (9,5%) students were indecisive in their attitude, as well as 2 (4,3%) dentists.

Conclusion: Due to greater experience, the dentists weremore confident in their attitude than the students if the principle of non-maleficence and beneficence is not violated. It implies that respecting the principle of autonomy, despite being one of the basic ethical principles, should not be constructed as an absolute value.

Keywords: principle of autonomy, dentist, children

UTICAJ SAGITALNIH OKLUZALNIH ODNOSA NA INCIDENCIJU KARIJESA KOD RANIH ADOLESCENATA

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Uvod: Poznavanje faktora koji mogu uticati na porast incidencije karijesa određene populacije je od velikog preventivnog značaja. **Cilj:** Ispitati uticaj sagitalnih okluzalnih odnosa na incidenciju karijesa kod ranih adolescenata. **Materijal i metode:** Sprovedena je jednogodišnja prospektivna studija koja je obuhvatila 213 ranih adolescenata sa stalnom denticijom. Kliničkim pregledom registrovano je stanje zdravlja zuba ispitanika uz registrovanje sagitalnih okluzalnih odnosa ispitanika. Nakon 12 meseci, ponovljenim pregledom registrovano je zdravlje zuba ispitanika, uz određivanje godišnjeg priraštaja karijesa ispitanika. **Rezultati:** Kod ranih adolescenata za godinu dana registrovan je visok porast učestalosti karijesa, koji je u značajnoj korelaciji sa sagitalnim okluzalnim odnosima ispitanika ($r=0,393$, $p<0,001$). Značajno jednogodišnje povećanje karijesa registrovano je samo kod dece sa II i III klasom okluzalnih odnosa ($p=0.013$ odnosno $p=0.002$). Najznačajniji porast incidencije karijesa registrovan u III klasi okluzalnih odnosa gde je svaki ispitanik tokom godinu dana u proseku dobio po 2,32 KEP zuba. **Zaključak:** Sagitalni okluzalni odnosi su potencijalno značajni faktori koji utiču na incidenciju karijesa ranih adolescenata, što treba imati na umu prilikom planiranja preventivnih mera u ovoj populaciji dece.

Ključne reči: rani adolescenti; karijes incidencija; sagitalni okluzalni odnosi.

INFLUENCE OF SAGITTAL OCCLUSAL RELATIONSHIPS ON THE CARIES INCIDENCE IN EARLY ADOLESCENTS

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Introduction: Knowledge of the factors which can affect the increase in the caries incidence in a certain population is of great preventive importance. **The Aim:** To investigate the influence of sagittal occlusal relationships on the caries incidence in early adolescents. **Material and Methods:** A one-year prospective study which included 213 early adolescents with permanent dentition was conducted. The clinical examination recorded the state of dental health along with the registration of sagittal occlusal relationships of the subjects. After 12 months, a repeated examination recorded the state of the dental health of the subjects, along with the determination of the annual caries increment. **Results:** In early adolescents, a high one-year caries increment was registered, which is significantly correlated with the sagittal occlusal relations of the subjects ($r = 0.393$, $p < 0.001$). A significant one-year caries increment was registered only in children with class II and III occlusal relations ($p = 0.013$ and $p = 0.002$, respectively). The most significant one-year caries increment was registered in class III, where each subject received an average of 2.32 KEP teeth during the year.

Conclusion: Sagittal occlusal relationships are potentially significant factors influencing the caries incidence in early adolescents, which should be kept in mind when planning preventive measures in this population of children.

Keywords: early adolescents; caries incidence; sagittal occlusal relationships.

ETIOLOGIJA DENTALNE ANKSIOZNOSTI U ZAVISNOSTI OD POLA, GODINA STAROSTI I STEPENA OBRAZOVANJA

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Uvod: Bez obzira na životno iskustvo, pol i obrazovanje, teško je naći osobu koja je potpuno ravnodušna prema poseti stomatologu, posebno ako ta poseta podrazumeva i neku intervenciju. U literaturi se nalaze podaci da neki stepen straha od stomatologa ima 30-70% ljudi. Kod oko 10% populacije taj strah poprima dimenziju fobije. Posledica ovog straha je izbegavanje stomatoloških tretmana kao i posleđično loše oralno zdravlje, komplikacije postojećih stanja i psihološki efekti koji proističu iz toga. **Cilj:** Cilj ovog istraživanja je bio da se utvrde razlozi za strah od stomatologa kao i njihova zavisnost od godina starosti, pola i stepena obrazovanja ispitanika. **Metodologija:** 2060 punoletnih lica iz opšte populacije je anketirano putem elektronskog upitnika. **Rezultati i zaključak:** Sprovedeno istraživanje je pokazalo da godine i pol za razliku od nivoa obrazovanja utiču na stepen straha od stomatologa. Bol je vodeći razlog za strah od stomatologa bez obzira na pol, godine starosti i nivo obrazovanja.

Ključne reči: dentalna anksioznost, strah od stomatologa, etiologija

ETIOLOGY OF DENTAL ANXIETY DEPENDING ON SEX, YEARS OF AGE AND EDUCATION LEVEL

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Introduction: Regardless of life experience, gender and education, it is difficult to find a person who is completely indifferent to a visit to the dentist, especially if that visit involves some dental intervention. There are data in the literature, that 30-70% of people have some degree of fear of dentists. In about 10% of the population, this fear takes on the dimension of a phobia. The consequence of this fear is the avoidance of dental treatments as well as the consequent poor oral health, complications of existing conditions and the psychological effects that result from it. **Objective:** The aim of this study was to determine the reasons for fear of dentists as well as their dependence on age, gender and level of education of respondents. **Methodology:** 2060 adults from the general population were surveyed via an electronic questionnaire. **Results and conclusion:** The conducted research showed that age and gender, unlike the level of education, affect the level of dental fear. Pain is the leading reason for fear of dentists regardless of gender, age and level of education.

Keywords: dental anxiety, fear of the dentist, etiology

MORFOLOŠKE ANOMALIJE ZUBA – DENS EVAGINATUS

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Uvod: *Homo sapiens* je razvio najsloženiji stomatognati sistem prilagođen žvakanju hrane životinjskog i biljnog porekla i govoru. Različiti evolucionari, ekološki i kulturni faktori, promene u ishrani, pripremi hrane i tehnologiji doveli su do menjanja veličine vilica i zuba i pojednostavljenja u morfologiji krune zuba, što se ne dešava sinergično, dovodeći do sve učestalijih malokluzija. Evaginacija je neuobičajena razvojna anomalija koja se klinički uočava prisustvom kvržice na okluzalnoj površini bočnih i lingvalnim površinama prednjih zuba. Nema podataka o učestalosti ove anomalije na teritoriji R. Srbije. Najveća zastupljenost je u mongolskoj populaciji 2%, a manje prisutna u kineskoj i populaciji na Novom Zelandu. **Cilj** rada je da se predoči sve veća učestalost anomalija oblika zuba, sa fokusom na evaginacije, njihov klinički značaj i moguće probleme prilikom sanacije. **Materijal i metode:** Pretražena je dostupna literatura iz baza podataka PubMed, Medline, Cochran. **Rezultati:** Evaginacija je nepravilnost oblika zuba nastala usled poremećaja u razvoju zuba, abnormalne proliferacije i evaginacije unutrašnjeg glednog epitela i dela zubne papile u *reticulum stellatum* glednog organa. Prati je prominentan rog pulpe koji može dovesti do problema ako je kvržica abradirana ili brušena što rezultira izlaganju pulpe i daljim mogućim komplikacijama. Problem nastaje i prilikom okluzalnog uravnoteženja. **Zaključak:** evaginacija ima klinički značaj jer predstavlja slabu tačku za ranu pojavu oboljenja pulpe sa neizvesnim endodontskim lečenjem zbog morfološkog odstupanja.

Cljučne reči: evaginacija zuba, morfologija zuba

MORPHOLOGICAL ANOMALIES OF TEETH - DENS EVAGINATUS

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Introduction: *Homo sapiens* has developed the most complex dental mechanism adapted to speaking and chewing food of both animal and plant origin. Various evolutionary, environmental and cultural factors, changes in human nutrition, food preparation and in technology have led to changes in jaw and teeth size and simplifications in crown morphology. These changes do not occur at the same pace, which leads to more frequent malocclusions. Evagination is an unusual developmental anomaly that is clinically observed by the presence of a lump on the occlusal surface of the lateral teeth and lingual surfaces of the front teeth. There are no data on the frequency of this anomaly in the territory of R. of Serbia. The prevalence of evagination among the Mongolian population 2%, and a slightly lower frequency is present in the Chinese and New Zeland population. **Objective:** The objective of this paper is to present the increasing frequency of tooth shape anomalies, with a focus on evagination, their clinical significance and possible problems during restoration. **Material and methods:** All available literature was searched on databases PubMed, Medline, Cochran. **Results:** Evagination is an irregularity in the shape of the tooth caused by tooth developmental disorders, abnormal proliferation and evagination of the inner enamel epithelium and part of the dental papilla in the *reticulum stellatum*. The pulp horn is ejected and can lead to problems if the lump is worn or ground resulting in pulp exposure and possible complications. The problem also arises with occlusal balancing. **Conclusion:** Evagination has great clinical significance because it represents a weak point of the tooth and can lead to the early onset of pulp disease with uncertain endontic treatment due to morphological deviation.

Keywords: tooth evagination, tooth morphology, developmental anomalies

UČESTALOST HIPODONCIJE KOD DECE ŠKOLSKOG UZRASTA U RURALNOJ SREDINI - PILOT STUDIJA

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Uvod: Hipodoncija predstavlja urođeni nedostatak zuba multikauzalne etiologije, koji najčešće nastaje kao posledica razvojnih poremećaja. Smatra se da je povezana sa drugim dentalnim anomalijama: mikrodoncija, zub u zubu i hipoplazija gleđi. Prisutnost ove anomalije je oko 5%. Kod dečaka se javlja u 3,76%, a kod devojčica u 2%. **Cilj:** Uporediti učestalost hipodoncije stalnih zuba kod dece iz ruralnih sredina različitih lokaliteta i okruženja. **Materijal i metode:** Istraživanjem je obuhvaćeno 36 dece starosti 7 do 10 godina koja pohađaju osnovnu školu „Jovan Popović“, a kontrolnu grupu pacijenata čine deca istog uzrasta osnovne škole „Dragiša Luković Španac“. **Rezultati:** Analizom sprovedenih stomatoloških pregleda uočena je povišena incidenca zakasnele denticije ili povećane učestalosti hipodoncije. Od ukupnog broja pregledane dece iz škole „Jovan Popović“, kod 19,4% dece uočeno je odsustvo zuba čije se prisustvo očekuje u tom periodu. U kontrolnoj grupi istraživana anomalija prisutna je u jednom slučaju (3,33%). **Zaključak:** Prisutna visoka incidenca hipodoncije dijagnostikovana kliničkim pregledom, ukazuje da je procenat ove anomalije vezan za područje koje gravitira ka školi. Ovaj podatak ukazuje na važnost ranog otkrivanja i uočavanja pojedinih endemskih etioloških faktora (zračenje, toksični otpad, hemijska postrojenja i veštačka đubriva) koji su u ovom području prisutni i mogu dovesti do nastanka hipodoncije pa zahtevaju dalja istraživanja.

Ključne reči: hipodoncija, deca školskog uzrasta, prevalenca, nedostatak zuba

THE PREVALENCE OF HYPODONTIA IN SCHOOL-AGE CHILDREN IN RURAL AREAS: A PILOT STUDY

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Introduction: Hypodontia presents congenitally missing teeth, with multicausal etiology. It can occur as a result of developmental disorders or the influence of numerous external factors. Genetic association with other dental anomalies, microdontia, dens invaginatus and enamel hypoplasia has been observed. The presence of hypodontia is about 5%, it occurs in 3.76% in boys, and 2% in girls. **Objective:** To compare the frequency of hypodontia of permanent teeth in children from rural areas of different localities and environments. **Material and Methods:** The study included 36 children aged 7 to 10 who attend elementary school "Jovan Popović", a control group of patients were children of the same age in elementary school "Dragiša Luković Španac". **Results:** The analysis of the performed dental examinations showed an increased incidence of delayed dentition or an increased frequency of hypodontia. Out of the total number of examined children from the school "Jovan Popović", 19.4% of children showed the absence of teeth whose presence is expected in that period. In the control group, the anomaly is present in one case (3.33%) **Conclusion:** The high difference in hypodontia or delayed tooth emergence (diagnosed with clinical examination) indicates that a high percentage of these anomalies is related to the area that gravitates children towards this area. This data indicates the importance of early detection and the observed popping up of certain endemic etiological factors (radiation, toxic waste, chemical plants and artificial fertilizers) that can lead to hypodontia, and were present in this area.

Keywords: hypodontia, school-age children, prevalence, delayed tooth emergence

ZASTUPLJENOST ZUBA STALNE DENTICIJE U PREDŠKOLSKOM UZRASTU DECE

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Uvod: Između šeste i sedme godine, u ustima dece se očekuje prisustvo prvih stalnih molara, da bi se potom pojavili i donji sekutići, ali vreme, pa i redosled erupcije pojedinih stalnih zuba je veoma podložan raznim individualnim varijacijama.

Cilj rada je bio da se ispita zastupljenost zuba stalne denticije, stalnih molara i sekutića, kod dece predškolskog uzrasta.

Metod rada: Istraživanje je sprovedeno sa 78-oro dece predškolske grupe, jedne Osnovne škole u Nišu. Prosečna starost ispitanika je bila šest i po godina. Podaci o prisustvu zuba stalne denticije, prvih stalnih molara i sekutića, su dobijeni iz stomatoloških kartona, nakon izvršenog sistematskog pregleda u školskoj stomatološkoj ordinaciji.

Rezultati: Obradom podataka došlo se do sledećih rezultata: od 78-oro pregledane dece, kod 8-oro (10,26%) dece bili su prisutni samo stalni molari. Kod 14-oro (17,95 %) dece bili su prisutni samo centralni sekutići. Kod 27-oro (34,61%) dece bili su prisutni stalni molari i stalni centralni sekutići. Kod 21-oro (26,92%) deteta bili su prisutni stalni molari i stalni centralni i lateralni sekutići. Kod 8-oro (10,26%) dece nije bio prisutan ni jedan stalni zub.

Zaključak: Pregledana deca predškolskog uzrasta su imala veći broj prisutnih stalnih sekutića od prvih stalnih molara, što ukazuje na njihovo ranije nicanje, kao i na individualnost ovog procesa.

INCIDENCE OF PERMANENT DENTITION TEETH IN PRE-SCHOOL AGED CHILDREN

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Introduction: It is expected that children aged between six and seven will have developed the dentition of first permanent molars, followed by lower incisors; however, the timing, as well as the sequence of eruption of certain permanent teeth is prone to individual variations.

The **aim** of the paper was to perform a research on the incidence of permanent dentition teeth, including permanent molars and incisors in preschool children.

Materials and Methods: The research study included 78 preschool children from a primary educational institution in the City of Niš, Serbia. The average age of the subject was six and a half (6.5) years. The data on the incidence of permanent dentition teeth, first permanent molars and incisors, were obtained from the dental medical records, established upon the first systemic examination at the School's dental clinic.

Results: Out of the total of 78 examined subjects, 8 (10.26%) had only developed the permanent molars, whereas in 14 children (17.95 %) only central incisors were present. 27 children (34.61%) had developed the dentition of both permanent molars and permanent central incisors. 21 subjects (26.92%) had developed permanent molars, as well as permanent central and lateral incisors, whereas 8 (10.26%) had no permanent teeth dentition at all.

Conclusion: The incidence of permanent incisors in the examined preschool subjects was greater than the incidence of the first permanent molars, which indicates that permanent incisors frequently precede the molars, but also that this process varies among individual cases.

UTICAJ ZBRINJAVANJA BEZUBOSTI NA KVALITET ŽIVOTA GERIJATRIJSKIH PACIJENATA

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Uvod: Gubitak zuba značajno utiče na kvalitet života usled brojnih funkcionalnih, estetskih i psiholoških smetnji. Primenom standardizovanog upitnika *Oral Health Impact Profile* (OHIP) moguće je izvršiti procenu uticaja oralnog zdravlja na kvalitet života ispitanika. OHIP-EDENT je verzija upitnika prilagođena bezubim pacijentima. **Cilj** istraživanja bio je ispitivanje stepena zadovoljstva bezubih pacijenata starije životne dobi pre i nakon izrade novih totalnih zubnih proteza. **Materijal i metode:** U istraživanju je učestvovalo 22 bezubih pacijenata kojima su izrađene nove totalne proteze. Nakon petnaest dana i dva meseca od predaje proteza pacijentima su postavljena pitanja iz OHIP-EDENT upitnika. Wilkoxsonov test ranga korišćen je za poređenje vrednosti skorova tokom vremena. **Rezultati:** Nakon oba opservaciona perioda u odnosu na početno stanje utvrđeno je statistički značajno smanjenje intenziteta smetnji pri žvakanju hrane ($p < 0.001$). U poređenju sa starim zubnim nadoknadama utvrđeno je značajno ređe zadržavanje hrane i bolja retencija, kao i značajno poboljšanje socijalnog života ($p < 0.001$). **Zaključak:** Statistički značajan porast svih ispitivanih parametara desio se nakon izrade novih proteza, dok je nivo statističke značajnosti, verovatno zbog bolje adaptacije pacijenata, bio veći nakon dve nedelje korišćenja zubnih proteza.

Cljučne reči: proteza, bezubost, gerijatrija

THE INFLUENCE OF CARE OF TOOTHLESSNESS ON THE QUALITY OF LIFE OF GERIATRIC PATIENTS

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Introduction: Tooth loss significantly affects the quality of life due to numerous functional, aesthetic and psychological disorders. Using the standardized questionnaire Oral Health Impact Profile (OHIP), it is possible to assess the impact of oral health on the quality of life of respondents. OHIP-EDENT is a version of the query adapted to toothless patients. **The aim** of the study was to examine the degree of satisfaction of toothless elderly patients before and after the production of new total dentures. **Material and methods:** The study involved 22 toothless patients whom were made new total dentures. Fifteen days and two months after the dentures were delivered, patients were asked questions from the OHIP-EDENT questionnaire. Wilcoxon's rank test was used to compare scores over time. **The results:** After both observation periods, in relation to the initial state, a statistically significant decrease in the intensity of disturbances in food chewing was found ($p < 0.001$). Compared with old dental restorations, significantly less food retention and better retention were found, as well as a significant improvement in social life ($p < 0.001$). **Conclusion:** A statistically significant increase in all examined parameters occurred after the production of new dentures, while the level of statistical significance, probably due to better adaptation of patients, was higher after two weeks of using dentures.

Keywords: denture, tooth loss, geriatry

ZNAČAJ ORALNOG ZDRAVLJA ZA KVALITET ŽIVOTA GERIJATRIJSKIH PACIJENATA

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Uvod: Loša higijena i bolesti zuba i oralnih tkiva smanjuju kvalitet života gerijatrijskih pacijenata. **Cilj** istraživanja bio je utvrđivanje subjektivne ocene oralnog i opšteg zdravlja i njihovog uticaja na kvalitet života gerijatrijskih pacijenata, štićenika doma za stare. **Materijal i metode:** Istraživanje je obuhvatilo 46 pacijenata, kojima su postavljana pitanja iz upitnika. Prvi deo upitnika odnosio se na osnovne sociodemografske podatke. Drugi deo upitnika bio je modifikovani *Oral Impacts of Daily Performance* (OIDP), nakon čega je sledila procena opšteg i oralnog zdravlja od strane pacijenta. Likertovom petostepenom skalom (1–5) utvrđivane su frekvencija i intenzitet nastalih poteškoća, kao i subjektivna procena zdravstvenog stanja. **Rezultati:** Na osnovu modifikovanog OIDP upitnika utvrđeno je da svi pacijenti imaju neku poteškoću izazvanu poremećajem oralnog zdravlja. Čak 86.96% pacijenata imalo je smetnje prilikom jela i uživanja u hrani, smejanja i pokazivanja zuba bez nelagodnosti, kao i smetnje u uživanju u druženju sa drugim ljudima. Pacijenti sa krezubošću su pokazivali veće vrednosti OIDP skorova u odnosu na bezube, ali na osnovu Studentovog t-testa nezavisnih uzoraka nije utvrđena statistički značajna razlika. OIDP skorovi nisu zavisili od pola, bračnog statusa, kao ni od obrazovne strukture pacijenata. Ispitanici sa ozbiljnijim poteškoćama imali su i statistički značajno veću potrebu za stomatološkim intervencijama. **Zaključak:** Poboľšanjem oralnog zdravlja i redovnim stomatološkim kontrolama mogle bi se unaprediti funkcije orofacijalnog sistema, izgled i samopouzdanje, što bi unapredilo kvalitet života gerijatrijskih pacijenata. **Ključne reči:** oralno zdravlje, gerijatrija, kvalitet života, OIDP

THE EFFECT OF ORAL HEALTH ON THE QUALITY OF LIFE IN GERIATRIC PATIENTS

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Introduction: Poor oral hygiene and diseases of the teeth and oral tissues can affect all aspects of patients' lives. **The aim** of the study was to determine the subjective assessment of oral and general health and their impact on the quality of life in elderly patients. **Material and methods:** The research included 46 patients, geriatric center users, over 65 years old, who were asked questions from a three-part questionnaire. The first part of the questionnaire referred to the basic sociodemographic data. The second part of the questionnaire was modified *Oral Impacts of Daily Performance* (OIDP), followed by an assessment of general and oral health by the patient. Likert's five-step scale (1-5) determined the frequency and intensity of the difficulties encountered, as well as the subjective assessment of the state of health. **Results:** Based on the modified OIDP questionnaire, we found that all patients had some difficulties due to oral complaints. The results showed that 86.96% of patients experienced eating disorders, enjoying food, laughing and showing teeth without any discomfort, as well as enjoying socializing with other people. Patients with partial edentulism had a higher OIDP scores than edentulous patients, but no statistically significant difference has been established based on Student's t-test of independent samples. OIDP scores did not depend on sex, marital status, or on the educational structure of patients. Respondents with serious difficulties had a statistically significantly higher need for dental interventions. **Conclusion:** Improvement of oral health and frequent dental examinations could improve the functions of the orofacial system, the appearance and self-confidence of patients, which would have a positive impact on their social life.

Keywords: oral health, quality of life, OIDP

UTICAJ REMODELACIJE BAZE ZUBNE PROTEZE NAKON RESORPCIJE ALVEOLARNIH GREBENOVA NA KVALITET ŽIVOTA BEZUBIH PACIJENATA

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Uvod: Gubitak zuba utiče na oralno zdravlje i na kvalitet života. Više od trećine bezubih pacijenata nije zadovoljno svojim protezama, a većina njih se žali na nedovoljnu retenciju i stabilizaciju proteze, kao i bol prilikom žvakanja. Rešenje njihovog problema moglo bi biti podlaganje proteza materijalima na bazi silikona ili akrilata. **Cilj** ovog istraživanja bio je utvrđivanje stepena zadovoljstva pacijenata pre i nakon podlaganja proteze mekim i tvrdim materijalima. **Materijal i metode:** Pacijenti (N=24) su bili podeljeni u dve studijske grupe. Kod prve grupe pacijenata, za podlaganje totalne proteze korišćen je akrilatni materijal, dok su u drugoj grupi proteze podlagane silikonskim materijalom. Pacijentima su u vidu ankete postavljena pitanja iz specijalno prilagođenog upitnika *The Oral Health Impact Profile*, pre i tri meseca nakon podlaganja proteza. **Rezultati i zaključak:** Pacijenti su pokazali veći stepen zadovoljstva u svim ispitivanim oblastima (mastikatorna funkcija, psihološka i socijalna nelagodnost, retencija i higijena) nakon podlaganja. Pacijenti su bili zadovoljniji nakon podlaganja proteze mekim materijalom.

Ključne reči: totalna proteza, podlaganje, kvalitet života

THE INFLUENCE OF DENTURE BASE REMODELATION AFTER ALVEOLAR RIDGE RESORPTION ON THE QUALITY OF LIFE OF EDENTULOUS PATIENTS

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Introduction: Tooth loss affects quality of life. More than a third of edentulous patients are not fully satisfied with their complete dentures, and most complains are regarding insufficient stability, retention, and pain during mastication. A possible solution to this problem could be the use of silicone or acrylic relining materials. **The aim** of this study was to determine the level of satisfaction of patients before and after complete denture relining using soft and rigid liners. **Material and methods:** Patients (N = 24) were divided into two experimental groups. For the first group, denture relining was performed using hard acrylic based resins while for the second group complete dentures were relined with a silicone-based soft liner. Patients were asked to reply to questions from a specifically adapted *The Oral Health Impact Profile questionnaire* for edentulous patients, before and three months after the relining procedure. **Results and conclusion:** After complete denture relining patients showed a higher degree of satisfaction with their dentures in all tested areas (masticatory function, psychological discomfort, social disability and retention and hygiene). Patients whose dentures were treated with soft denture relines were more satisfied.

Keywords: complete denture, relining, life quality

PODUDARNOST VREDNOSTI BUPUPILARNOG I INTERKOMISURALNOG RASTOJANJA KOD PACIJENATA SA PUNIM ZUBNIM NIZOM

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Uvod: Univerzalni pojam lepog ne postoji ali simetričnost lica doprinosi boljem estetskom učinku. Ta skladnost se pre svega određuje odnosom delova lica i dentalnih parametara. U cilju pravilne okluzalne rehabilitacije pacijenata koji su izgubili pojedine ili sve zube, neophodno je poštovati odnose pojedinih rastojanja na licu, koja mogu doprineti boljem uspostavljanju simetrije. **Cilj** istraživanja bio je utvrđivanje međusobnog odnosa bipupilarnog i komisuralnog rastojanja kod ispitanika sa punim zubnim nizom. **Materijal i metode:** U istraživanje je bilo uključeno 60 studenata stomatologije oba pola kod kojih je kliničkim pregledom utvrđeno prisustvo kompletnog zubnog niza. Mereni su facijalni parametri: bipupilarno rastojanje i udaljenost uglova usana (interkomisuralno rastojanje). **Rezultati:** Vrednosti rastojanja između dve pupile i komisure usana nisu se statistički značajno razlikovale. **Zaključak:** Dobijeni rezultati mogli bi se koristiti u rekonstrukciji međuviličnih odnosa u horizontalnoj ravni, kao i u određivanju širine zuba i položaja očnjaka pri postavi zuba.

Cljučne reči: bipupilarno rastojanje, interkomisuralno rastojanje, okluzalna rehabilitacija

CONSISTENCY OF BUPUPILLAR AND INTERCOMMISSURAL DISTANCE VALUE IN PATIENTS WITH FULL DENTAL ARCH

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Introduction: There is no universal notion of beauty, but the symmetry of the face contributes to a overall better aesthetic effect. This harmony is primarily determined by the relationship between parts of the face and dental parameters. In order to properly rehabilitate the occlusion of patients who have lost some or all of their teeth, it is necessary to respect the relationships of individual distances on the face, which can contribute to a better post therapy symmetry. **The aim** of the study was to determine the relationship between bipupillary and commissural distance in subjects with a full dentition. **Material and methods:** The study included 60 dental students of both sexes in whom the presence of a complete dentition was determined by clinical examination. The following facial parameters were measured: bipupillary distance and distance of the corners of the lips (intercommissural distance). **Results:** The values of the distance between the two pupils and the lip commissure did not differ statistically significantly. **Conclusion:** The obtained results could be used in the reconstruction of intermaxillary relations in the horizontal plane, as well as in determining the width of the tooth and the position of the canines during tooth placement.

Keywords: bipupillary distance, intercommissural distance, occlusal rehabilitation

ISPITIVANJE KORELACIJE NIVOA GUBITKA ALVEOLARNE KOSTI U INTERDENTALNOM I INTERADIKULARNOM PROSTORU PRIMENOM RADIOGRAFSKE ANALIZE

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Uvod: Jedna od posledica prisutva parodontopatije jeste i gubitak alveolarne kosti u interdentalnom i interadikularnom prostoru. Gubitak koštanog tkiva veoma je bitan za procenu težine oboljenja i primenu terapijskih procedura. **Cilj:** Cilj je bio da se odredi i uporedi gubitak interdentalne i interadikularne alveolarne kosti primenom radiografske analize.

Materijal i metode: Ispitivano je 100 pacijenata, od 40-60 godina, sa hroničnom parodontopatijom, gde postoji i zahvaćenost furkacija III i IV stepena kod mandibularnih molara. Nakon ortopantomografskog snimanja, odrađena su morfološka merenja mezijalnog i distalnog interdentalnog gubitka kosti, kao i merenja interadikularnog prostora. Zatim je analizirana njihova međusobna veza.

Rezultati: Srednja vrednost mezijalnog interdentalnog gubitka kosti bila je 5.90 ± 2.4 mm, a srednja vrednost distalnog bila je 6.1 ± 6.1 mm, dok je srednja vrednost interadikularnog gubitka kosti bila 3.55 ± 5.1 mm. Korelacija između interadikularnog i interdentalnog gubitka kosti bila je statistički značajna ($p < 0.001$). Veća korelacija bila je prisutna kod ispitanika starijih od 50 godina u poređenju sa mlađim ispitanicima. Što se tiče pola, nije uočena statistički značajna razlika između ispitivanih nivoa kostiju. Zapažen je interadikularni gubitak kostiju od 0,8 mm i više kod ispitanika kod kojih je gubitak kostiju na interdentalnom području bio najmanje 3,7 mm.

Zaključak: Rezultati istraživanja pokazuju da postoji međusobna veza između gubitka nivoa alveolarne kosti u interdentalnom i interadikularnom prostoru molara kod hronične parodontopatije, pa se interdentalni i interadikularni gubitak kosti može koristiti kao dodatno ispitivanje u okviru postavljanja dijagnoze oboljenja. Potrebna su dodatna istraživanja koja bi uključila i primenu trodimenzionalne radiografije za određivanje težine oboljenja i terapijskih procedura.

Cljučne reči: parodontopatija, furkacije zuba, gubitak alveolarne kosti, dijagnoza, terapija

EXAMINATION OF THE CORRELATION OF THE ALVEOLAR BONE LOSS LEVEL IN THE INTERDENTAL AND INTERADICULAR SPACE USING RADIOGRAPHIC ANALYSIS

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Introduction: One of the consequences of the presence of periodontitis is the loss of alveolar bone in the interdental and interradicular space. Bone loss is very important for assessing the severity of the disease and applying therapeutic procedures.

Aim: The objective was to determine and compare the loss of interdental and interradicular alveolar bone using radiographic analysis.

Material and methods: We examined 100 patients, aged 40-60 years, with chronic periodontitis, where there is also involvement of grade III and IV furcations in mandibular molars. After orthopantomographic imaging, morphological measurements of mesial and distal interdental bone loss were performed, as well as measurements of interradicular space. Then their interrelationship was analyzed.

Results: The mean value of mesial interdental bone loss was 5.90 ± 2.4 mm, and the mean value of distal was 6.1 ± 6.1 mm, while the mean value of interradicular bone loss was 3.55 ± 5.1 mm. The correlation between interradicular and interdental bone loss was statistically significant ($p < 0.001$). A higher correlation was present in respondents older than 50 years compared to younger respondents. Regarding gender, no statistically significant difference was observed between the examined bone levels. Interradicular bone loss of 0.8 mm and more was observed in subjects with bone loss in the interdental area of at least 3.7 mm.

Conclusion: The results of the study show that there is an interrelationship between the loss of alveolar bone levels in the interdental and interradicular space of the molars in chronic periodontitis, so interdental and interradicular bone loss can be used as an additional test in diagnosing the disease. Additional research is needed that would include the use of three-dimensional radiography to determine disease severity and therapeutic procedures.

Keywords: periodontitis, tooth furcations, alveolar bone loss, diagnosis, therapy

PROFILNA SIMETRIJA LICA KOD PACIJENATA SA PUNIM ZUBNIM NIZOM

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Uvod: Univerzalni pojam lepog ne postoji ali simetričnost lica doprinosi boljem estetskom učinku. Ta skladnost se pre svega određuje odnosom delova lica i dentalnih parametara. Gubitak zuba dovodi do smanjenja visine zagrižaja i konsektivnog približavanja vrha nosa i brade i poremećaja vertikalnog i horizontalnog odnosa maksile i mandibule. **Cilj istraživanja** bio je utvrđivanje međusobnog odnosa delova lica kod ispitanika sa punim zubnim nizom. **Materijal i metode:** U istraživanje je bilo uključeno 60 studenata stomatologije oba pola kod kojih je kliničkim pregledom utvrđeno prisustvo kompletnog zubnog niza. Mereni su facijalni parametri (trećine lica-gornja, srednja i donja trećina). **Rezultati:** Dobijeni rezultati su delimično potvrdili teoriju o poklapanju visina profilnih trećina. **Zaključak:** Dobijeni rezultati mogli bi se koristiti u rekonstrukciji međuviličnih odnosa nakon gubitka pojedinih ili svih zuba.

Ključne reči: estetika lica; fascijalni parametri

FACE PROFILE SYMMETRY IN PATIENTS WITH FULL DENTAL LINES

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Introduction: There is no universal notion of beauty, but the symmetry of the face contributes to a better aesthetic effect. This harmony is primarily determined by the relationship between parts of the face and dental parameters. The loss of teeth leads to a decrease in the height of the bite and consecutive approach of the tip of the nose and chin, and a disturbance of the vertical and horizontal relationship between the maxilla and the mandible. **The aim** of the study was to determine the interrelationship of facial parts in subjects with a full dentition. **Material and methods:** The study included 60 dental students of both sexes in whom the presence of a complete dentition was determined by clinical examination. Facial parameters were measured (thirds of the face - upper, middle and lower third). **Results:** The obtained results partially confirmed the theory of matching the heights of the profile thirds. **Conclusion:** The obtained results could be used in the reconstruction of intermaxillary relation after the loss of some or all teeth.

Keywords: facial aesthetics; fascial parameters

POREDJENJE ODSTUPANJA ISTOIMENIH LINEARNIH I ANGULARNIH MERA NA LATERALNOM CEFALOGRAFSKOM I ORTOPANTOMOGRAFSKOM RADIOGRAMU

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Uvod: Ortopantomografski (OPT) i lateralni cefalogramski (TL-Rö) radiogrami su standardni dijagnostički snimci u svakodnevnoj ortodontskoj praksi. **Cilj** istraživanja je utvrđivanje stepena odstupanja vrednosti istoimenih angularnih i linearnih mera koje se mogu odredjivati na lateralnom cefalogramu i na ortopantomografskom radiogramu.

Metod: Izvršene su analize ortopantomografskog i lateralnog cefalogramskog radiograma od 20 pacijenata, oba pola i različitih životnih doba. Linearne mere koje su korišćene za analize ove dve vrste radiograma su rastojanja Cd-Go, Go-Me, Cd-Me. Korišćena je i angularna mera \sphericalangle Go.

Rezultati: Analize sprovedene na ortopantomografskom i lateralnom cefalogramskom radiogramu pokazuju najveće odstupanje na linearnoj meri Go-Me, a najmanje na linearnoj meri Cd-Go. Poređenje angularnog i linearnog merenja ukazuje da su manja odstupanja kod angularnog merenja.

Zaključak: Linearne mere na OPT radiogramu u odnosu na istoimene mere na TL-Rö pokazuju veća odstupanja u horizontalnom pravcu u odnosu na merenja u vertikalnom pravcu. Pri poređenju vrednosti \sphericalangle Go na ova dva tipa radiograma uočene su manje razlike.

Cljučne reči: lateralni cefalogram, kranijometrija, ortopantomograf.

COMPARISON OF DEVIATIONS OF THE SAME TYPE OF LINEAR AND ANGULAR MEASURES ON LATERAL CEPHALOGRAM AND ORTHOPANTOMOGRAPHIC RADIOGRAM

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Introduction: Orthopantomographic (OPG) and lateral cephalogram (TL-Rö) radiograms are standard diagnostic images in everyday orthodontic practice. **The aim** is to determine the degree of deviation of the values of the same type of angular and linear measures that can be identified on the lateral cephalogram and on the orthopantomographic radiogram.

Method: Analyses of OPG and TL-Rö were performed on 20 patients of both sexes and various ages. The linear measures used for the analysis of these two types of radiograms are the distances Cd-Go, Go-Me, Cd-Me. An angular measure \sphericalangle Go was also considered.

Results: Analyses conducted on the OPG and TL-Rö show the largest deviation on the linear measure Go-Me, and the smallest deviation on the linear measure Cd-Go. By comparing angular and linear measurements, it is noticed that there are smaller deviations in angular measurements.

Conclusion: The linear measures on OPG radiogram in relation to the same type of measures on the TL-Rö show larger deviations in the horizontal direction compared to measurements in the vertical direction. When comparing the values of the \sphericalangle Go on these two types of radiograms, minor differences were observed.

Keywords: lateral cephalogram, craniometry, orthopantomograph

RASNE RAZLIKE U VREDNOSTIMA PROFILNIH UGLOVA KOD MUŠKARACA – KOMPARATIVNA STUDIJA

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Cilj studije je utvrđivanje rasnih razlika profilnih uglova kod odraslih muškaraca. Kao izvor prosečnih vrednosti za tri osnovna varijeteta: crni-Negroidi, žuti-Mongoloidi i beli-Kavkazoidi, uzeti su rezultati pregledne studije Wen YF i sar. 2015. *Inter-Ethnic/Racial Facial Variations: A Systematic Review and Bayesian Meta-Analysis of Photogrammetric Studies*, koji su upoređeni sa rezultatima profilnih uglova dobijenih na osnovu rendgen analize mekih tkiva 100 profilnih kefalometrijskih snimaka ispitanika jugoistočne Srbije. Ispitivani su: nazofrontalni ugao, ugao tipa nosa, nazolabijalni ugao, nazofacijalni ugao, ugao mentolabijalnog sulkusa, ugao facijalnog konveksiteta, totalni ugao facijalnog konveksiteta i mentocervikalni ugao. Rezultati ukazuju na trend smanjenih prosečnih vrednosti ispitivanih uglova za gornju polovinu lica, a povećanje vrednosti za donju polovinu lica kod Negroida. Kod Kavkazoida postoji suprotni trend. Najviše vrednosti, ustanovljene su za uglove gornje polovine lica, dok su najniže vrednosti ustanovljene kod uglova donje polovine lica i facijalnog konveksiteta.

Ključne reči: varijeteti čoveka, kefalometrijska studija, profilni uglovi

RACIAL DIFFERENCES IN PROFILE ANGLE VALUES IN MALE – A COMPARATIVE STUDY

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The aim of the study was to identify racial differences in profile angles in adult male. As a source of average values for the three basic variety: black-Negroids, yellow-Mongoloid, and white-Caucasians, the results of a review study Wen YF i sar. 2015. *Inter-Ethnic/Racial Facial Variations: A Systematic Review and Bayesian Meta-Analysis of Photogrammetric Studies*. were taken, which were compared with the results of profile angles obtained from X-ray analysis of 100 profile cephalometric of male subjects of southeast Serbia. The nasofrontal angle, the nasal type angle, the nasolabial angle, the nasofacial angle, the mentolabial sulcus angle, the facial convexity angle, the total facial convexity angle, and the mentocervical angle were examined. The results point to a trend of lower average values of examined angles for the upper half of the face, and an increase in values for the lower half of the face in Negroids. There is an opposite trend among Caucasians. The highest values are established for the angles of upper half face values, while the lowest values are established for the angles of lower half corners and facial convexity.

Keywords: profile angles, races, cephalometric study

RASNE RAZLIKE U VREDNOSTIMA PROFILNIH UGLOVA KOD ŽENA – KOMPARATIVNA STUDIJA

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Cilj studije je utvrđivanje rasnih razlika profilnih mekotkivnih uglova kod odraslih žena različitih rasa i njihovo poređenje sa vrednostima istih uglova kod žena srednjeg Balkana (jugoistočna Srbija). Kao izvor prosečnih vrednosti za tri osnovne rase: crnu-Afrikanci, žutu-Azijati i belu-Kavkasci, uzeti su rezultati pregledne studije Wen YF i sar. *Inter-Ethnic/Racial Facial Variations: A Systematic Review and Bayesian Meta-Analysis of Photogrammetric Studies*. Vrednosti ispitivanih uglova ustanovljene su na osnovu rendgen analize mekih tkiva 100 profilnih kefalometrijskih snimaka ispitanica jugoistočne Srbije. Ispitivani su sledeći uglovi: nazofrontalni ugao, ugao tipa nosa, nazolabijalni ugao, nazofacijalni ugao, ugao mentolabijalnog sulkusa, ugao facijalnog konveksiteta, totalni ugao facijalnog konveksiteta i mentocervikalni ugao. Rezultati su pokazali sledeće: aktuelni subjekti su bliski Kavkaskom proseku samo za uglove facijalnog konveksiteta, nazolabijalni i ugao mentolabijalnog sulkusa. Za ostale ispitivane uglove, prosek naših ženskih ispitanica je bliži azijskom ili afričkom proseku. Može se zaključiti da je rasni stereotip više teoretski koncept zasnovan na proseku. Međutim, ljudska fizionomija je mnogo raznovrsnija i nepredvidljivija nego što na to ukazuju teoretski okviri i stereotipi.

Cljučne reči: profilni uglovi, rase, kefalometrijska studija

RACIAL DIFFERENCES IN PROFILE ANGLE VALUES IN FEMALE – A COMPARATIVE STUDY

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The aim of the study is to determine the racial differences of profile soft tissue angles in adult female subjects of different races and their comparison with the values of the same angles in female subjects of the Central Balkan (southeast Serbia). As a source of average values for the three basic races: black-Africans, yellow-Asians, and white-Caucasians, the results of a review study Wen YF I sar. *Inter-Ethnic/Racial Facial Variations: A Systematic Review and Bayesian Meta-Analysis of Photogrammetric Studies*. The values of the examined angles were established on the basis of soft tissue cephalometric analysis of 100 profile cephalometric images of the examinees from southeastern Serbia. The following angles were examined: the nasofrontal angle, the nasal type angle, the nasolabial angle, the nasofacial angle, the mentolabial sulcus angle, the facial convexity angle, the total facial convexity angle, and the mentocervical angle. The results showed the following: the current female subjects are close to the Caucasian average only for the angles of facial convexity, nasolabial and the mentolabial sulcus angle. For other examined angles, the average value of our female respondents is closer to the Asian or African average value. It can be concluded that racial stereotype is a more theoretical concept based on average values. However, human physiognomy is much more diverse and unpredictable than theoretical model and stereotypes suggest.

Keywords: profile angles, races, cephalometric study

MORFOLOŠKE VARIJACIJE GORNJEG TREĆEG MOLARA

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Poznavanje spoljašnje morfologije gornjeg trećeg molara je od velike važnosti zbog sklonosti ove grupa zuba za pojavu i razvoj karioznih i nekarioznih oboljenja, pravovremenog lečenja i uspešne restauracije u funkcionalnom i estetskom smislu.

Cilj istraživanja je bio da se utvrdi najčešći geometrijski oblik i veličina krunice gornjeg trećeg molara, kao i najčešći broj i raspored kvržica.

U studiji je analizirano 160 umnjaka gornje vilice odraslih pacijenata oba pola, starosti 20-65 godina. Oblik krunice, morfologija okluzalne površine, broj i raspored kvržice je utvrđivan vizuelno uz pomoć veštačke svestlosti i stomatološkog ogledalca. Merenje zuba je vršeno uz pomoć dvokrakog šestara.

U 65% slučajeva gornji treći molar je bio oblika paralelopipeda, u 18.7% slučajeva je bio oblika trouglaste prizme, u 10% slučajeva oblika kocke, dok je sferični oblik bio zastupljen sa 6.3%. Okluzalna površina je u 40% slučajeva bila oblika pravougaonika, u 25.6% slučajeva je bila oblika paralelograma, trouglasti oblik je bio zastupljen sa 19.4%, kvadratni sa 10.6% i okrugao oblik sa 4.4%. U 56,25% slučajeva gornji treći molar je imao četiri kvržice, tri kvržice u 31.25% i dve kvržice u 12.5% slučajeva. Prosečna dužina gornjeg trećeg molara u okluzo-gingivalnom pravcu je bila 6.5mm, u mezo-distalnom 8.6mm i vestibulo-oralnom pravcu 8.7mm.

Najzastupljeniji oblik gornjeg trećeg molara je bio oblik paralelopipeda, najčešći oblik okluzalne površine bio je pravougani, dok su kod najvećeg broja zuba zapažene četiri kvržice.

Ključne reči: gornji treći molar, oblik krunice, veličina, kvržica.

MORPHOLOGICAL VARIATIONS OF THE MAXILLARY THIRD MOLAR

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Familiarizing with the external morphology of the tooth is important, not only because of susceptibility to dental caries and non-caries diseases of certain group of teeth, but also because of the proper treatment of the tooth, in the sense of complete functional and esthetic restoration.

The aim of the study was to determine the most common geometric shape and size of the crown of the upper third molar, as well as the most common number and arrangement of cusps.

The study analyzed 160 upper third molars in adult patients of both sexes, aged 20-65 years. The shape of the crown, the morphology of the occlusal surface, the number and arrangement of the cusps were determined visually with artificial light and a dental mirror. Tooth measurement was performed with the double-legged compass.

In 65% of cases the upper third molar was the shape of a parallelepiped, in 18.7% of cases it was in the shape of a triangular prism, in 10% of cases in the shape of a cube, while the spherical shape was represented by 6.3%. In 40% of cases, the occlusal surface was rectangular shape, in 25.6% of cases it was parallelogram-shaped, the triangular shape was represented by 19.4%, the square with 10.6% and the round shape with 4.4%. In 56.25% of cases the upper third molar had four cusps, three cusps in 31.25% and two cusps in 12.5% of cases. The average length of the upper third molar in the occluso-gingival direction was 6.5 mm, in the mesio-distal direction 8.6 mm and in the vestibulo-oral direction 8.7 mm.

The most common shape of the upper third molar was the shape of a parallelepiped, the most common shape of the occlusal surface was rectangular, while four cusps were observed in the largest number of teeth.

Keywords: third molar, crown shape, size, cusp.

ZNAČAJ ZUBNE PULPE U FORENZIČKOJ ODONTOLOGIJI

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Uvod: Forenzička stomatologija (odontologija) je vitalna grana forenzičke nauke i sastavni deo sudske medicine. Metode koje se koriste za postizanje ljudskih identifikacija mogu se podeliti u dve šire kategorije. Prva obuhvata metode koje se zasnivaju na pretpostavkama, kao što su posredni dokazi, predmeti pronađeni uz telo i vizuelno prepoznavanje. Druga kategorija se oslanja na naučne analize koje su suštinski u telu, kao što su zubne nadoknade i DNK. Pulpno tkivo se može koristiti za molekularnu analizu, za određivanje starosti, pola i antigena krvne grupe. Osim toga, izolovana DNK iz pulpe zuba može se koristiti za ličnu identifikaciju. Odontoblasti prisutni u pulpi zuba mogu se koristiti za procenu starosti kao i dana smrti.

Cilj: Cilj rada je bio da ukaže na veliki značaj zubne pulpe u forenzičkoj odontologiji.

Zaključak: Zahvaljujući napretku tehnologije, izolacija DNK iz zubne pulpe predstavlja rutinsku analizu uz pomoć komercijalnih kompleta za kvantifikaciju DNK. Prednost korišćenja DNK iz zubne pulpe u forenzici su višestruke a među najvažnijima su: relativno laka tehnologija izolacije, očuvanje zubne pulpe čak i u ekstremnim slučajevima kao što su ugljenisana tela gde je izolacija DNK sa drugih tkiva nemoguća pa je zubna pulpa, zahvaljujući cvrstim zubnim tkivima, često jedini izvor DNK.

Ključne reči: forenzika, odontologija, zubna pulpa, DNK

DENTAL PULP AND ITS ROLE IN FORENSIC ODONTOLOGY

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Introduction: Forensic dentistry (odontology) is a vital branch of forensic science and an integral part of forensic medicine. The methods used to achieve human identifications can be divided into two broad categories. The first includes methods based on assumptions, such as circumstantial evidence, objects found next to the body, and visual recognition. The second category relies on scientific analyzes that are essential in the body, such as dental restorations and DNA. Pulp tissue can be used for molecular analysis, to determine age, gender, and blood group antigens. In addition, isolated DNA from tooth pulp can be used for personal identification. Odontoblasts present in the pulp of the tooth can be used to assess age as well as the day of death.

The goal: The aim of this paper was to point out the great importance of dental pulp in forensic odontology.

Conclusion: Thanks to advances in technology, DNA isolation from dental pulp is a routine analysis using commercial DNA quantification kits. The advantages of using DNA from dental pulp in forensics are multiple and among the most important are: relatively easy isolation technology, preservation of dental pulp even in extreme cases such as charred bodies where isolation of DNA from other tissues is impossible. often the only source of DNA.

Keywords: Forensics, Odontology, Dental pulp, DNA

VELIČINA INTERDENTALNIH PROSTORA KOD MLADIH OSOBA SA KLINIČKI ZDRAVIM PARODONTOM

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Uvod: Efikasna dnevna oralna higijena predstavlja pravi izazov. Smatra se da je uklanjanje oralnog biofilma veoma važno za održavanje gingivalnog zdravlja, prevenciju parodontalne bolesti i smanjenje incidence karijesa. U najvećem broju slučajeva veličina interdentalnih prostora kod odraslih osoba nije određena što ugožava efikasnost svakodnevnog interdentalnog čišćenja u toku rutinskog pranja zuba.

Cilj istraživanja je odrediti veličinu interdentalnih prostora kod mladih osoba sa klinički zdravim parodontom.

Metode: Istraživanje je sprovedeno na Klinici za dentalnu medicinu, Medicinskog fakulteta Univerziteta u Nišu. Učestvovalo je 50 pacijenata, interdentalni prostori su ispitivani uz pomoć obojene kalibrisane sonde IAP Curaprox (Curaden International AG, Switzerland). Pristisak prilikom horizontalnog aplikovanja interdentalne sonde je kontinuiran i čvst sa minimalnim diskomfortom pacijenta.

Rezultati: Među 1200 izmerenih interdentalnih prostora, najzastupljeniji dijametar je bio 0.7mm. Veličina interdentalnih prostora je bila manja kod anteriornih u odnosu na posteriorne delove vilica.

Zaključak: Interdentalna higijena je od izuzetnog značaja kako bi se održalo parodontalno zdravlje i određivanje adekvatne veličine interdentalnih četkica trebalo bi biti sastavni deo rutinskog stomatološkog pregleda svakog pacijenta.

THE INTERDENTAL SPACE SIZE IN YOUNG PEOPLE WITH CLINICALLY HEALTHY PERIODONTIUM

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Introduction: Effective daily dental cleaning is a challenge. The removal of interdental plaque is considered to be important for the maintenance of gingivl health, prevention of periodontal disease and the reduction of caries. The interdental space size is undefined in mostly of cases in adults which compromises daily interdental cleaning during daily routine toothbrushing.

The aim of the study is to determine the diameter of interdental spaces in young people with clinically healthy periodontium.

Method: The study was conducted at the Clinic for dental medicine, Medical faculty, University of Nis. 50 patients participated in the study and the interdental spaces were examined using colorimetric calibrated probe IAP Curaprox (Curaden International AG, Switzerland). The pressure applied by a horizontal probe in the interdental area should be continuous and firm with minimal discomfort to the patient.

Results: Of the 1200 measured interdental spaces, the most common diameter was 0.7mm. In the anterior sites the most common diameter of interdental spaces was smaller than the one in the posterior sites.

Conclusion: The interdental hygiene measures are very important in order to maintain periodontal health and the selection of adequate size of interdental brushes should be a component of a routine dental examination in all patients.

INTERDENTALNE ČETKICE I GINGIVALNO ZDRAVLJE

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Uvod: Efikasna oralna higijena predstavlja najbitniji faktor u održavanju dobrog gingivalnog i oralnog zdravlja, koje je povezano sa opštim zdravljem i kvalitetom života pojedinca. Kontrola oralnog biofilma je osnovni stub prevencije i kontrole parodontalne bolesti. Neophodno je bolje poznavanje oralne anatomije kako bi se koristili adekvatni instrumenti i tehnike čišćenja zuba, a sa ciljem postizanja bolje oralne higijene i zdravlja.

Cilj istraživanja je ispitati efikasnost interdentalnih četkica u prevenciji inflamacije gingive kod mladih osoba.

Metode: Istraživanje je sprovedeno na Klinici za dentalnu medicinu, Medicinskog fakulteta Univerziteta u Nišu. Učestvovalo je 120 ispitanika. Anamnestički podaci su dobijeni popunjavanjem upitnika. Vrednost interdentalnih prostora je određena uz pomoć obojene kalibrisane parodontološke sonde IAP Curaprox (Curaden International AG, Switzerland). Pritisak pri horizontalnom sondiranju interdentalnih prostora je konstantan i čvrst uz minimalan diskomfort ispitanika. Krvarenje nakon sondiranja je beleženo kao „prisutno“ ili „odsutno“ kod svakog ispitanika.

Rezultati: Od 120 ispitanika kod 40.0% zabeleženo je krvarenje nakon sondiranja IAP. Veći broj ispitanika (80) nije koristio svakodnevno interdentalne četkice i kod njih je uočeno češće krvarenje po sondiranju, tj izraženija inflamacija gingive u odnosu na osobe koje svakodnevno koriste interdentalne četkice.

Zaključak: Svakodnevno interdentalno čišćenje je veoma važno za održanje gingivalnog i periodontalnog zdravlja. Interdentalne četkice se preporučuju za svakodnevnu upotrebu kako bi se postiglo optimalno oralno zdravlje.

THE INTERDENTAL BRUSHES AND GINGIVAL HEALTH

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Introduction: Effective oral hygiene is a crucial factor in maintaining good gingival and oral health, which is associated with overall health and health-related quality of life. The control of oral biofilm is the common pillar of the prevention and control of periodontal disease. Better understanding of oral anatomy is essential for using adequate instruments and techniques in order to achieve better oral hygiene and health.

The aim of the study is to examine interdental brushesefficiency in the prevention of gingival inflammation in young people.

Method: The study was conducted at the Clinic for dental medicine, Medical faculty, University of Nis. 120 patients participated in the study. The anamnestic data on the interdental brushes usage were obtained by filling out a questionnaire. Interdental spaces were examined using colorimetric calibrated probe IAP Curaprox (Curaden International AG, Switzerland). The pressure applied by a horizontal probe in the interdental area was continuous and firm with minimal discomfort to the patient. Bleeding after probing was scored as either present or absent for each participant.

Results: Of the 120 participants 40.0% showed bleeding upon IAP passage. A larger number of participants (80) did not use interdental brushes everyday for oral hygiene maintenance, and they showed more frequent bleeding after probing, ie more pronounced gingival inflammation than participants who used interdental brushes regularly.

Conclusion: Daily interdental cleaning is important for the maintenance of gingival and periodontal health. Interdental brushes should be recommended for everyday use with the aim of achieving optimal oral health.

EFEKAT DEKSAMETAZONA NA PERIOPERATIVNU ANESTEZIJU I ANALGEZIJU U ORALNOHIRURŠKIM OPERACIJAMA

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Uvod: Oralno hirurške intervencije su praćene bolovima koji se mogu eliminisati produženim delovanjem lokalne anestezije i analgezije. **Cilj rada:** Ispitati mogućnost produženja periperativne anestezije i analgezije, uporebom ropivakaina sa deksametazonom istovremeno, za hiruršku ekstrakciju donjih impaktiranih umnjaka. **Materijal i metode:** Pilot sudija obuhvatila je 20 pacijenata: 10 pacijenata (studijska grupa) je dobilo 4 ml (0,75%) rastvora ropivakaina i 1 ml deksametazona (4mg) u istoj brizgalici i 10 pacijenata (kontrolna grupa) koji su dobili 4 ml rastvora ropivakaina (0,75%). Primenjena je Halsted-ova tehnika mandibularne anestezije. Praćena je dužina trajanja anestezije i analgezije operisane regije. **Rezultati:** Vreme trajanja anestezije u studijskoj grupi je bilo značajno duže ($p=0.006$) u odnosu na kontrolnu grupu (11.6 ± 4.01 vs 6.75 ± 3.31 h). Vreme trajanja analgezije u studijskoj grupi bilo je značajno duže ($p<0.001$) u odnosu na kontrolnu grupu (22.55 ± 6.58 vs 6.75 ± 3.32 h). **Zaključak:** Dodatak jedne doze deksametazona lokalnom anestetiku uspešno produžava perioperativnu anesteziju i analgeziju posle operacije donjih impaktiranih umnjaka.

Ključne reči: Deksometazon, Lokalni anestetik, Donji impaktirani umnjak.

DEXAMETHASONE EFFECT ON PERIOPERATIVE ANESTHESIA AND ANALGESIA IN ORAL SURGERY OPERATIONS

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Introduction: Oral surgical interventions are accompanied with pain which can be eliminated by prolongation of local anesthesia and analgesia. **The aim:** To investigate the possibility of prolongation of perioperative anesthesia and analgesia the by using ropivacaine with dexamethasone at the same time, for surgical extraction of mandibular wisdom tooth. **Material and methods:** The pilot study included 20 patients: 10 patients (study group) received 4 ml (0.75%) ropivacaine and 1 ml (4mg) of dexamethasone, together, in the same syringe, and 10 patients (control group) who received 4 ml (0.75%) ropivacaine. Haltstead mandibular anesthesia technique was performed. The duration of anesthesia and analgesia of operated region were monitored. **Results:** The duration of anesthesia was significantly longer in the study group ($p=0.006$) then in the control group (11.6 ± 4.01 h vs 6.75 ± 3.31 h). The pain-free period in the study group was significantly longer ($p < 0.001$) then in control group (22.55 ± 6.58 vs. 6.75 ± 3.32 h). **Conclusion:** The addition of single dose of dexamethasone to local anesthetic is successful in prolongation of perioperative anesthesia and analgesia after mandibular wisdom tooth surgery.

Keywords: Dexamethasone, Local anesthetic, Mandibular wisdom tooth.

ZDRAVSTVENI STATUS KOD NAJSTARIJEG STANOVNIŠTVA: STUDIJA U OKRUGU PAŠIM MEDINIPUR, ZAPADNI BENGAL, INDIJA

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Uvod: Samoprocena zdravlja (SRH) i aktivnosti u svakodnevnom životu (ADL) su dva najčešća parametra za procenu zdravstvenog stanja među starijom populacijom, posebno za najstariju populaciju, tj. starije od 80 godina, koji su poznati i kao super stare osobe. Procena opšteg zdravstvenog stanja kroz percepciju njihovog zdravstvenog stanja takođe je od velikog interesa. S druge strane, ovaj rad ima za cilj da proceni zdravstveno stanje i obrazovni status „najstarijih starih“ ljudi koji žive u ruralnim oblastima okruga Paschim Medinipur u zapadnom Bengal u Indiji. **Metod:** Samoprocena zdravstvenog stanja odnosi se na jedno pitanje kao što je „da li biste uopšte rekli da je vaše zdravlje izvrsno, vrlo dobro, dobro, ili loše?“ i anketni upitnik u kojem učesnici procenjuju različite dimenzije sopstvenog zdravlja. Podaci o samoproceni zdravstvenog stanja i obrazovnom statusu su još jedan važan pokazatelj koji može povećati svest o zdravlju. Ovi podaci za svakog pojedinačnog ispitanika prikupljeni su tehnikom intervjuja uz pomoć strukturiranog rasporeda upitnika i studije slučaja. **Rezultati:** studija je pokazala da je u proseku najstarije ispitivano seosko stanovništvo muškog pola ocenilo svoje zdravstveno stanje boljim u odnosu na žene iste starosti. Studija je takođe ukazala da su u proseku najstariji muškarci obrazovaniji u odnosu na žene. **Zaključak:** Istraživanje je ukazalo da se obrazovni status značajno povezuje ($p < 0,05$) sa samoprocenom zdravlja.

HEALTH STATUS AMONG THE OLDEST-OLD POPULATION: A STUDY IN PASCHIM MEDINIPUR DISTRICT OF WEST BENGAL, INDIA

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Introduction: Self-rated-health (SRH) assessment and Activates of Daily Living (ADL) are two most frequent measurements for evaluating the health status among the ageing population, especially for the oldest old population, i.e. those aged 80 and above, who are also known as super senior citizens. Evaluating the general health status through the perception of their health condition is also a matter of considerable interest. On the other hand, the study intends to assess the self-rated-health condition and educational status of 'oldest old' people living in the rural areas of Paschim Medinipur District of West Bengal, India. **Method:** The assessment of the self-rated health condition refers to a single question such as "in general, would you say that your health is excellent, very good, good, fair, or poor?" and a survey questionnaire in which participants assess different dimensions of their own health. Data on self-rated health condition and Educational education status is another important indicator which may raise the awareness about health. This status of the individual respondent was collected by interview technique with the help of a structured questionnaire schedules and observation and case study method was also adopted. **Results:** the study demonstrated that, on average, the rural male oldest-old population rated better health condition compared to the female counterparts under the study area. The study also stated that on average, the male oldest-old population are more educated compared to the female counterparts. **Conclusion:** The study pointed out that educational status is significantly associated ($p < 0.05$) with self-rated-health status.

POVEZANOST SOMATOTIPA I NUTRICIONOG STATUSA KOD ODRASLIH SABARSKIH MUŠKARACA PURULIJE, ZAPADNI BENGAL, INDIJA: TRANSVERZALNA STUDIJA

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Uvod: Somatotip je parametar koji se koristi za određivanje telesne kompozicije, na šta utiče nekoliko faktora, a ishrana je jedan od njih. **Cilj:** Ova studija imala je za cilj da odredi somatotip i nutritivni status i istraži varijacije somatotipa u odnosu na starost i nutritivni status kod odraslih muškaraca iz plemena Sabar koji žive u okrugu Purulija u zapadnom Bengal u Indiji. **Metod:** Transverzalno istraživanje obuhvatilo je 334 Sabar muškaraca starosti između 18 i 60 godina. Antropometrijska merenja su izvršena prema standardnom protokolu. Somatotip je određen prema Heath-Carterovoj metodi, a indeks telesne mase (BMI) je korišćen za procenu uhranjenosti. Urađeni su odgovarajući statistički testovi kako bi se utvrdile varijacije, korelacija i povezanost komponentata somatipa sa starosnim i nutritivnim kategorijama. **Rezultat:** Pothranjenost se postepeno povećavala sa godinama i nalazila se najviše među starijim ljudima (50-60 godina). Identifikovano je jedanaest različitih podgrupa somatotipa. Srednji somatotip učesnika bio je 2,3-3,6-3,9, što ukazuje na mezomorfno-ektomorfni telesni tip. Statistički testovi otkrili su značajne razlike među komponentama somatotipa u različitim nutritivnim kategorijama. Podhranjenost je utvrđena najviše među mezomorfno ektomorfim (62,7%) tipom. Primećena je značajna povezanost između kategorija somatotipa i nutritivnog statusa (Hi-kvadrat = 283.160, p <0,01). **Zaključak:** Ovaj rad predstavlja prvo istraživanje somatotipa u zajednici Sabar u zapadnom Bengal u Indiji, gde je pronađen dominantni tip tela mezomorf-ektomorf. Nađena je izuzetno značajna korelacija između somatotipa i BMI. Ova studija predlaže potrebu proučavanja somatotipa zajedno sa BMI radi bolje procene nutritivnog statusa.

Ključne reči: Sabar, Somatotip, Endomorfija, Mezomorfija, Ektomorfija, Podhranjenost

THE ASSOCIATION BETWEEN SOMATOTYPE AND NUTRITIONAL STATUS AMONG THE ADULT SABAR MALES OF PURULIA, WEST BENGAL, INDIA: A CROSS-SECTIONAL STUDY

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Introduction: Somatotype is the parameter used to determine the body composition, which is influenced by several factors, and nutrition is one of them.

Aim: This study aimed to determine somatotype and nutritional status and investigate the somatotype variations in relation to the age and nutritional status among the adult males of Sabar community living in the Purulia district of West Bengal, India.

Method: The present cross-sectional study included 334 Sabar males aged between 18 to 60 years. Anthropometric measurements were taken following standard protocol. Somatotype was determined following the Heath-Carter method, and Body Mass Index (BMI) was used to assess the level of nutrition. Appropriate statistical tests were performed to determine variation, correlation, and association of the somatotype components with age and nutritional categories.

Results: As a result, undernutrition was gradually increasing with age and found highest among aged people (50-60 years). Eleven different somatotype subgroups were identified. The mean somatotype of the participants was 2.3-3.6-3.9, which indicates mesomorph-ectomorph body type. Statistical tests revealed significant differences among somatotype components in different nutritional categories. Undernutrition was found highest among the mesomorphic ectomorph (62.7%) type. A significant association has been seen between somatotype categories and nutritional statuses (Chi-square=283.160, p<0.01).

Conclusion: This is the first reporting on the somatotype study among the Sabar community of West Bengal, India, where the dominant body type was found mesomorph-ectomorph. A highly significant correlation was found between somatotype and BMI. This study proposed the need of considering somatotype along with BMI for better assessment of the nutritional status.

Keywords: Sabar, Somatotype, Endomorphy, Mesomorphy, Ectomorphy, Undernutrition

ISTRAŽIVANJE HEMOGLOBINA I INDEKSA TELESNE MASE U ODNOSU NA NJIHOV MORBITET, HIGIJENU I SOCIO-EKONOMSKE USLOVE KOD ODRASLIH STANOVNIKA NASELJA ASANANGGRE U OKRUGU VEST GARO HILLS, DRŽAVE MEGHALAIA

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Uvod: Anemija se smatra kao „ženska bolest“ koja izaziva uzburu u zemljama u razvoju. Prevalencija anemije je važan zdravstveni pokazatelj. Zbog starenja imunološkog sistema stariji ljudi su, generalno, podložniji infekcijama, a takođe im se dešavaju promene u telesnom sastavu i opadanje mišićne mase. Dobra lična higijena usredsređena je na prevenciju bolesti i drugih zdravstvenih problema. **Cilj:** Studija je sprovedena sa sledećim ciljevima - da se ispita nivo hemoglobina i BMI i da se ispita higijenski obrazac i obrazac morbiditeta. **Metod:** Transverzalna studija je obuhvatila 100 ispitanika (43 žene i 57 muškaraca) Garosa iz sela Asananggre, da bi se procenilo zdravstveno stanje populacije u starosnoj grupi od 18 do 60 godina. Ukupan broj stanovnika proučavanog područja prema popisnom istraživanju (2015) je 827. **Rezultati:** Utvrđena je anemija kod 62,1% žena i 37,1% muškaraca. Pothranjeno je 7% muškaraca, 44,1% ima normalnu uhranjenost a 48,9% prekomernu težinu. S druge strane, 10,5% žena je pothranjeno, 49,1% ima normalnu uhranjenost a 40,4% prekomernu težinu. Ne postoji veza između BMI i Hb i socijalno-ekonomskih faktora. U poređenju sa ostalim populacijama severoistočne Indije, hemoglobin ima niže vrednosti ali razlika nije statistički značajna. Upoređujući indeks telesne mase sa drugim severoistočnim delovima Indije, utvrđeno je da je veći i razlika je statistički značajna. **Zaključak:** Žene su anemičnije od muškaraca. Studija je ukazala da nizak nivo Hb i malarija predstavljaju česte bolesti, zajedno sa drugim uobičajenim tegobama poput gastritisa, groznice i bolova u kičmi.

A STUDY ON HAEMOGLOBIN AND BODY MASS INDEX IN RELATION TO THEIR MORBIDITY, HYGIENE AND SOCIO-ECONOMIC PATTERNS AMONG THE ADULT GAROS' OF ASANANGGRE VILLAGE OF WEST GARO HILLS, MEGHALAYA

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Introduction: Anaemia is viewed as 'Female Disease' causing red alert in developing countries. Its prevalence is an important health indicator. Due to aging in immune system in elders, in general, are more susceptible to infections, it is also accompanied by changes in body composition and muscle loss. Good personal hygiene focuses on preventing diseases and other health conditions.

Aim: The study was carried out with the following aims- to examine the haemoglobin level and BMI and to investigate the hygiene and morbidity pattern.

Method: Cross-sectional study was conducted among the Garos' of Asananggre village, to assess the health status of the population under study between the age group 18-60 years from 100 participants (43 females and 57 males). The total population of the studied area as per the census survey (2015) is 827.

Results: It was found that 62.1% females and 37.1% of males are anaemic. 7% males are underweight, 44.1% normal and 48.9% overweight. On the other hand, 10.5% females are underweight, 49.1% normal and 40.4% overweight. No relationship exists between BMI and Hb and factors of socio-economic patterns. Haemoglobin when compared with other populations of North East India, is lower and the difference is statistically non-significant. Comparing Body Mass Index with other North-East India, it was found higher and the difference is statistically significant.

Conclusion: Females are more anaemic than males. The study revealed maintenance of good hygiene, low level of Hb and malaria being a common disease, with other common ailments like gastritis, fever and backpain.

PREVALENCIJA POTHANJENOSTI, PREKOMERNE UHRANJENOSTI, I GOJAZNOSTI KOD DECE PREDŠKOLSKOG UZRASTA U BUGARSKOJ U REGIONU SMOLYAN

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Cilj istraživanja je bio da se utvrdi prevalencija, pothranjenosti, prekomerne uhranjenosti i gojaznosti kod dece predškolskog uzrasta u regionu Smolyan u Bugarskoj. Transverzalno antropološko istraživanje je rađeno u periodu 2017-2019. godina a obuhvatilo je 330 dece (161 dečaka i 169 devojčica), uzrasta 3-6 godina. Kod svakog deteta je merena visina i masa tela i izračunat je BMI (kg/m²). Za evaluaciju nutritivnog statusa, deca su podeljena u sledeće kategorije BMI: pothranjenost, normalna uhranjenost, prekomerna uhranjenost i gojaznost a kategorizacija je rađena prema graničnim vrednostima za BMI koje daje IOTF. Rezultati ukazuju na smanjenje prevalencije pothranjenosti na račun povećanja prevalencije prekomerne uhranjenosti i gojaznosti sa godinama kod oba pola. Kod dečaka prevalencija prekomerne uhranjenosti raste od 4.3% kod trogodišnjaka do 9.4% kod šestogodišnjaka. Prevalencija gojaznosti varira između 7.6%-10.2% tokom predškolskog perioda. Kod devojčica prevalencija prekomerne uhranjenosti opada sa godinama, ali raste prevalencija gojaznosti. Prekomerna uhranjenost opada od 14.3% kod trogodišnjih do 9% kod šestogodišnjih devojčica. Gojaznost raste od 4.5% u četvrtoj godini do 15.9% kod šestogodišnjih devojčica. Tokom 20 godina uočene su sekularne promene u nutritivnom statusu kod dece od 3 do 6 godina iz regiona Smolyan (1998-2019), koje se razlikuju između polova i uzrasnih kategorija.

Ključne reči: pothranjenost, prekomerna uhranjenost, gojaznost, deca predškolskog uzrasta, sekularne promene.

PREVALENCE OF UNDERWEIGHT, OVERWEIGHT AND OBESITY AMONG BULGARIAN PRESCHOOL CHILDREN FROM SMOLYAN REGION

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The aim of the present study is to investigate the prevalence of underweight, overweight and obesity among Bulgarian preschool children from Smolyan region. A transversal anthropometric study of 330 children (161 boys and 169 girls), aged between 3 to 6 years, from district of Smolyan, Bulgaria was performed in the period 2017-2019. On each child the height (cm) and weight (kg) were measured and the BMI (kg/m²) was calculated. For evaluation of body nutritional status the children were grouped into four categories of BMI: underweight, normal weight, overweight and obesity in accordance with international BMI cut-off points for children (IOTF). The results show a tendency to reduce the frequency of underweight at the expense of increasing of overweight and obesity with age in both sexes.

In boys, there is an increase in the prevalence of overweight from 4.3% in 3-year-olds to 9.4% in 6-year-olds. The prevalence of obesity varied between 7.6% - 10.2% during the preschool period. In girls, the prevalence of overweight decreases with age, but the frequency of obesity increases. Respectively the overweight decreases from 14.3% in 3-year-olds to 9% in 6-year-olds. Obesity increases from 4.5% in 4-year-olds to 15.9% in 6-year-old girls. We found secular changes in the nutritional status among the children of Smolyan region at the age 3-6 years during the last 20 years (1998-2019) also, which are different for the two sexes and age groups.

Keywords: underweight, overweight, obesity, preschool children, secular changes.

KRANIOFACIJALNE KARAKTERISTIKE SHIZOFRENIH BOLESNIKA

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U skladu sa neurorazvojnoum teorijom nastanka shizofrenije, minor fizičke anomalije (MFA) različitih delova tela mogu da budu markeri poremećaja u ranom razvoju mozga. Više studija je potvrdilo da se kod shizofrenih bolesnika MFA najčešće javljaju u kraniofacijalnoj regiji. Ovo istraživanje je sprovedeno sa ciljem analize kraniofacijalnih karakteristika shizofrenih bolesnika.

Ispitivanu grupu činilo je 126 osoba obolelih od shizofrenije, dok su kontrolnu grupu činile 124 zdrave osobe. Prisustvo MFA u kraniofacijalnoj regiji procenjeno je primenom modifikovane Waldrop skale. Protokol ispitivanja uključio je i nekoliko kraniofacijalnih mera: obim glave, širinu lica, rastojanje unutrašnjih i spoljašnjih kantusa, visinu gornjeg dela lica (rastojanje *trichion-glabella*), visinu srednjeg dela lica (rastojanje *glabella-subnasion*) i visinu donjeg dela lica (rastojanje *subnasion-gnathion*) koja je dodatno podeljenja na gornju trećinu (rastojanje *subnasion-stomion*) i donje dve trećine (rastojanje *stomion-gnathion*).

Kod shizofrenih bolesnika je ustanovljena veća učestalost sledećih MFA: tanka dlaka kose, prisustvo dva ili više vrtloga u vlasištu kose, spojene obrve, široka baza nosa, nisko postavljene usne školjke, visoko usko i visoko zaravnjeno nepce, kao i izbrazdanost jezika (najučestalije su bile uzdužne i difuzno raspoređene brazde). Morfometrija lica je pokazala statistički značajno veću vrednost odnosa visine i širine lica, kao i disproporciju visina pojedinih delova lica shizofrenih bolesnika. Pored toga, primećena je i značajna korelacija kraniofacijalnih MFA sa MFA šake i stopala (hiperkonveksni nokti, veliko rastojanje između prvog i drugog i parcijalna sindaktilija drugog i trećeg prsta stopala). Naši rezultati ukazuju na značaj kraniofacijalne dismorfologije u predikciji shizofrenije, što ide u prilog neurorazvojnoj teoriji.

Ključne reči: shizofrenija, "minor" fizičke anomalije, morfometrija lica, kranimetrija

CRANIOFACIAL CHARACTERISTICS OF SCHIZOPHRENIA PATIENTS

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According to the neurodevelopmental theory visual markers of early brain structuring could be seen in different body parts as minor physical anomalies (MPAs). Several studies indicated that among patients with schizophrenia craniofacial region had the MPAs more commonly than the other regions. This study was conducted with an aim to analyze craniofacial characteristics of schizophrenia patients.

Study group consisted of 126 schizophrenic patients and 124 healthy controls. The presence of MPAs was assessed in craniofacial region using a modified Waldrop scale. Examination protocol also included some craniofacial measures: head circumference, facial width, inner- and outer canthus distances, upper facial height (*trichion-glabella* distance), middle facial height (*glabella-subnasion* distance) and lower facial height (*subnasion-gnathion* distance) which was divided into upper one-third (*subnasion-stomion* distance) and lower two-thirds (*stomion-gnathion* distance).

Schizophrenia patients had significantly higher rates of following minor physical anomalies: fine hair, two or more hair whorls, fused eyebrows, wide nose basis, low-seated ears, high steeped and high flat palate, and furrowed tongue (most prevalent were vertical fissures and diffusely distributed fissures). Facial morphometry showed significantly higher facial height/facial width ratio and disproportion between the lengths of the facial parts in schizophrenic patients. Additionally, craniofacial MPAs also showed significant correlation with MPAs of hands and feet (hyperconvex fingernails, big gap between 1st and 2nd toe, partial syndactyly of 2nd and 3rd toe). Our results showed that craniofacial dysmorphology could be worthy as schizophrenia predictor contributing to the neurodevelopmental theory.

Keywords: schizophrenia, minor physical anomalies, facial morphometry, craniometry

NIZAK RAST U ODRASLOM ŽIVOTNOM DOBU I KARDIOVASKULARNI RIZIK**Mirjana Udicki¹, Siniša Stanković¹, Biljana Srdić Galić¹, Tatjana Pavlica², Bojana Krstonošić¹**¹Medicinski fakultet, Zavod za anatomiju, Novi Sad²Departman za biologiju i ekologiju, Prirodno-matematički Fakultet, Novi Sad, Srbija

Uvod: Telesna visina predstavlja značajnu morfološku karakteristiku čoveka na koju pored genetskih faktora utiču i spoljašnji faktori i kao takva dovodi se u vezu sa razvojem kardiovaskularnih bolesti.

Cilj: Cilj našeg istraživanja bio je da ispitamo povezanost telesne visine sa razvojem kardiovaskularnih bolesti.

Metod rada: Ispitivanu grupu činile su 154 osobe ženskog pola prosečne starosti 53,86±11,95 godina kod kojih je ustanovljen povišen krvni pritisak, ili dobijen podatak o preležanom infarktu miokarda i/ili cerebrovaskularnom oboljenju. Kontrolna grupa se sastojala od 246 zdrave žena prosečne starosti 43,82±13,70 godina.

Rezultati: Naši rezultati pokazali su da je telesna visina žena obolelih od kardiovaskularnih bolesti bila statistički značajno manja u odnosu na telesnu visinu zdravih žena (162,99±7,34 vs. 164,69±5,84 cm). U grupi žena obolelih od kardiovaskularnih bolesti bio je statistički značajno veći procenat žena telesne visine ispod 160 cm u odnosu na procenat zdravih žena iste telesne visine (34% vs. 20,7%). Procenat žena telesne visine između 165 i 169,99 cm obolelih od kardiovaskularnih bolesti bio je statistički značajno manji od procenta zdravih žena iste telesne visine (19,6% vs. 32,1%). Takođe, uočena je statistički značajna negativna korelacija telesne visine sa prisustvom kardiovaskularnih oboljenja ($r=-0,127$).

Zaključak: Rezultati našeg istraživanja ukazuju na značaj uticaja spoljašnjih faktora nutritivnih i socio-ekonomskih na determinisanje telesne visine u odraslom životnom dobu i razvoj kardiovaskularnih bolesti.

Ključne reči: Telesna visina; Kardiovaskularne bolesti; Nizak rast

SHORT STATURE IN ADULTS AND CARDIOVASCULAR RISK**Mirjana Udicki¹, Siniša Stanković¹, Biljana Srdić Galić¹, Tatjana Pavlica², Bojana Krstonošić¹**¹Faculty of Medicine, Department of Anatomy, Novi Sad²Department of Biology and Ecology, Faculty of Sciences, University of Novi Sad, Serbia

Introduction: Body height, significant morphologic characteristic that is, in addition to genetic factors, influenced by external factors, is associated with the development of cardiovascular disease.

Aim: The aim of our research was to examine the association of body height with the cardiovascular diseases development.

Methods: The study group included 154 women of average age 53.86±11.95 years who were diagnosed with high blood pressure or provided the data on having myocardial infarction and/or cerebrovascular disease. The control group consisted of 246 healthy women of average age 43.82±13.70 years.

Results: Our results showed that body height in women with cardiovascular diseases was statistically lower when compared with the body height in healthy women (162.99±7.34 vs. 164.69±5.84 cm). In the group of women suffering from cardiovascular diseases, the percentage of those whose body height was below 160 cm was statistically higher when compared to the percentage of healthy women with the same body height (34% vs. 20.7%). The percentage of women whose body height was between 165 and 169.99 cm suffering from cardiovascular disease was statistically significantly lower than the percentage of healthy women of the same body height (19.6% vs. 32.1%). Moreover, statistically significant negative correlation between body height and the presence of cardiovascular diseases was observed ($r=-0.127$).

Conclusion: Our results indicate the importance of the external nutritive and socioeconomic factor influence on adult body height determination and cardiovascular diseases development.

Keywords: Body height; Cardiovascular diseases; Short stature

TEMPORALNE PROMENE U KEFALOMETRIJSKIM KARAKTERISTIKAMA KOD DEČAKA I DEVOJČICA ŠKOLSKOG UZRASTA U CENTRALNOJ GRČKOJ

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Sprovođenje kefaloskopskih istraživanja u cilju otkrivanja karakteristika etničkih grupa koje naseljavaju određene geografske regione ne pomaže samo u otkrivanju distribucije frekvencija humanih morfoloških karakteristika, već takođe omogućava dobijanje podataka koji služe kao baza za poređenja između populacija. Ispitane je 7 kefalometrijskih karakteristika kod 2683 dece školskog uzrasta (12 do 17 godina), koja su podeljena prema polu, uzrastu i poreklu. Uzorak je iz regiona Tesalije i Epirusa-Centralna Grčka koji predstavlja 10.1% populacije Grčke. Korišćen je standardni antropološki instrumentarijum Siber Hegner Maschinen AG – Zurich, a merenja su vršena prema metodi Martin & Saller (1957). Klaster analiza je pokazala dve glavne linije podelivši linije prema hronologiji studije, kao i manje linije prema polu. Ovi rezultati sugerišu značajne promene u frekvencijama tokom vremena, pri čemu je teritorijalni faktor imao većeg uticaja u odnosu na pol. Što se tiče 1980-ih, dostupni podaci pokazuju suprotno. Poređenje procentualne učestalosti nekih ispitivanih karakteristika kod dečaka i devojčica iz Tesalije i Epirusa prema ranijim i sadašnjim istraživanjima ukazuje na opadanje temporalnih devijacija (promena): polne razlike su bile izraženije pre 20 godina u odnosu na sadašnja istraživanja.

TEMPORAL CHANGES OF CEPHALOMETRIC TRAITS IN SCHOOL AGE BOYS AND GIRLS FROM CENTRAL GREECE

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Conducting cephaloscopic studies so as to obtain the characteristics of ethnic groups inhabiting a particular geographical region not only helps to understand the frequency of distribution of human morphological traits, but also to provide a basis for comparison between different populations.

A sample of 2683 individuals of school age (12 to 17 years) of both sexes, divided into smaller groups according to age, sex and origin was studied in terms of 7 cephaloscopic traits. This contingent originates from the districts of Thessaly and Epirus-Central Greece, which represent about 10.1% of the population of Greece. During the study, standard anthropological equipment of Siber Hegner Maschinen AG - Zurich was used, according to the classical methodology of Martin & Saller (1957).

A cluster analysis revealed two main branches, dividing the compared groups by the chronology of the studies, as well as smaller branches, according to their sex. These results suggest a significant change in the frequencies of occurrence over time, with the territorial factor prevailing over gender during the present study. Concerning the 1980s, available data prove the opposite.

A comparison of the percentages of occurrence of some scopic traits in boys and girls from Thessaly and Epirus according to bibliographic and current data demonstrates declining temporal deviation: differences between genders were higher 20 years before the present study.

GOJAZNOST KOD DEČAKA I DEVOJČICA ŠKOLSKOG UZRASTA IZ CENTRALNE GRČKE

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Prema kategorizaciji Svetske zdravstvene organizacije (SZO) gojaznost spada u ozbiljnu hroničnu bolest u kako u razvijenim tako i u zemljama u razvoju, a prisutna je i kod dece i odraslih. Ispitano je 2683 školske dece od 12 do 17 godina, koji su podeljeni u manje grupe po godinama, polu i poreklu. Uzorak je reprezentativan za oblast Tesalije i Epirusa-Centralna Grčka koji predstavlja oko 10.1% populacije Grčke. Prilikom merenja korišćen je standardni antropološki instrumentarijum Siber Hegner Maschinen AG – Zurich, po metodologiji Martin & Saller (1957). Dečaci i devojčice iz Epirusa su većinom prekomerno uhranjeni u poređenju sa svim prethodnim ispitivanjima adekvatnih uzrasnih kategorija. Slično poređenje sa prethodnim studijama u regionu Tesalije je ukazalo da samo dečaci u svim uzrasnim kategorijama su prekomerno uhranjeni. Kod dvanaestogodišnjih devojčica nisu uočene razlike u odnosu na prethodna ispitivanja; kod starijih uzrasnih grupa je uočen pozitivan sekularni trend. Generalno deca iz oblasti Epirusa imaju veće prosečne vrednosti mase tela u odnosu na decu iz Tesalije. Sekularne promene BMI kod adolescenata iz Centralne Grčke uočene su i u ranijim ispitivanjima (Daouli, 2013, Hassapidou, 2015) i prate generalni trend gojaznosti poslednjih godina, koji je najverovatnije uzrokovan stilom života. Pozitivan sekularni trend mase tela je uočen za većinu zemalja u 20. veku.

OBESITY OF SCHOOL AGE BOYS AND GIRLS FROM CENTRAL GREECE

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Obesity is classified by the World Health Organization (WHO) as a chronic and severe disease in developed and developing countries and affects both adults and children. A sample of 2683 school age boys and girls of (from 12 to 17 years), divided into smaller groups by age, sex, and origin was studied. The sample is representative for the districts of Thessaly and Epirus-Central Greece, which represent about 10.1% of the population of Greece. During the study, standard anthropological equipment of Siber Hegner Maschinen AG - Zurich was used, according to the classical methodology of Martin & Saller (1957).

Epirus girls and boys are generally overweight compared to all previous studies, concerning the same age groups. A similar comparison with previous studies concerning Thessaly showed that only boys from all studied groups were overweight. In girls at the age of 12, weight retention is reported compared to previous studies; older age groups showed positive secular trends.

In general, the Epirus contingent has a higher average body weight than that of Thessaly.

The observed secular BMI changes in adolescents from Central Greece have been noted before for the country (Daouli, 2013, Hassapidou, 2015) and follow the general trend of obesity in recent years, most likely related to lifestyle changes.

Positive secular changes in weight have been observed for most of the 20th century in different age groups.

UTICAJ SOCIOEKONOMSKIH I DEMOGRAFSKIH PARAMETARA NA GOJAZNOST DECE OD 7 DO 11 GODINA U SEVERNOBAČKOM REGIONU

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Uvod. U Republici Srbiji, gojaznost prerasta u veliki problem. Cilj rada je bio da se utvrdi nutritivni status dece od 7 do 11 godina i mogući faktori koji utiču na gojaznost. **Materijal i metod rada.** Transferzalno antropološko istraživanje je urađeno u osnovnim školama u ruralnim i urbanim sredinama severnobačkog regiona Vojvodine (severni deo Republike Srbije). Istraživanje je sprovedeno od 2017. do 2020. godine i obuhvatilo je 1057 dečaka i 1085 devojčica, starosti od 6.50 do 11.49 decimalnih godina. Izračunat je Indeks telesne mase (ITM kg/m^2), a nutritivni status je određen pomoću kriterijuma IOTF. Korišćenjem logističke regresione analize utvrđena je interakcija gojaznosti sa socioekonomskim i demografskim faktorima. **Rezultati.** Pothranjenost je prisutna kod 5.53% učenika (3.78% dečaka i 7.28% devojčica). Prevalencija prekomerne uhranjenosti je utvrđena kod 18% ispitanika (19.02% dečaka i 17.69% devojčica), a gojaznosti kod 9.73% ispitanika (11.54% dečaka i 7.93% devojčica). Broj dece u porodici je kod oba pola značajno negativno povezan sa ITM, a obrazovanje majke je negativno povezano sa gojaznošću dečaka. **Zaključak.** Rezultati ukazuju da je prekomerna telesna masa prisutna kod 27.73% ispitanika i da predstavlja javno zdravstveni problem kod dece mlađeg školskog uzrasta u ovom regionu Vojvodine.

Ključne reči: nutritivni status, gojaznost, deca, Vojvodina, Srbija

INFLUENCE OF SOCIOECONOMIC AND DEMOGRAPHIC PARAMETERS ON OBESITY IN CHILDREN AGED 7 TO 11 IN NORTH BAČKA REGION

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Background: In the Republic of Serbia obesity growing into a major problem. The aim of the study is to determine nutritional status in children aged 7-11 and to identify possible factors affecting obesity.

Material and methods: A cross-sectional anthropological survey was carried out in primary schools in rural and urban places of North Bačka region in Vojvodina (North part of the Republic of Serbia). The investigation was performed between 2017-2020 and included 1057 boys and 1085 girls aged 6.50-11.49 years. The body mass index (BMI kg/m^2) was calculated and the assessment of nutritional condition was based on IOTF. Using logistic regression we tested interactions of obesity with socioeconomic and demographic factors.

Results: Underweight is present in 5.53% of children (3.78% in boys and 7.28% in girls). Overweight prevalence was detected in 18% of subjects (19.02% in boys and 17.69% in girls) and obesity prevalence in 9.73% of subjects (11.54% in boys and 7.93% in girls). The number of children in the family is significantly negatively associated with BMI in both sexes, and the mother's education is negatively associated with boys' obesity. **Conclusion:** The results indicate that exceed weight is present in 27.73% of subjects and represent a public health issue in younger school-aged children of this region in Vojvodina.

Keywords: nutritional condition, obesity, children, Vojvodina, Serbia.

STAROSNE PROMENE U TELESNOJ KOMPOZICIJI KOD STANOVNIKA U BUGARSKOJ STAROSTI 19 - 89 GODINA

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Sa starenjem se javljaju progresivne promene u telesnoj kompoziciji. Cilj istraživanja je bio da se analizira telesni sastav kod muškaraca i žena iz Bugarske i da se utvrde promene vezane za starenje. Transferzalno istraživanje je obuhvatilo 256 žena i 119 muškaraca starosti 19-89 godina. Sastav tela je procenjen analizom Bioelektrične impedancije korišćenjem aparata InBody 170. Statistička analiza je urađena pomoću softvera SPSS v.16. Izračunata je prosečna vrednost i standardna devijacija za svaku promenljivu. Statistička značajnost između starosnih i polnih grupa procenjena je pomoću Studentovog t-testa i ANOVA-e pri $p < 0,05$. Masa telesne masti (BFM) ispitanika progresivno raste sa godinama i dostiže svoj vrhunac kod ispitanika starosti 60-69 godina a nakon ovog uzrasta primećuje se blagi pad. Procenat telesne masti (PBF) kod starijih muškaraca nastavlja da se povećava posle 70 godina, dok su kod žena najviše vrednosti utvrđene u starosnoj grupi od 60 do 69 godina, a nakon toga vrednosti ostaju nepromenjene. U mladim starosnim kategorijama (do 40 godina kod muškaraca i 50 godina kod žena) masa bezmasne komponente (FFM) raste na prosečno 64,81 kg kod muškaraca i 43,68 kod žena. U starijim uzrasnim kategorijama primećena je suprotna tendencija, vrednosti se postepeno smanjuju kod muškaraca. Kod žena se takođe smanjuje masa bezmasne komponente, ali ostaje relativno konstantna i nakon 50. godine.

Rezultati sugerišu da se kod muškaraca i žena iz bugarske primećuje porast prosečnih BFM, PBF i smanjenje FFM sa starenjem.

Ključne reči: telesni sastav, bioelektrična impedancija, telesna masnoća, bezmasna masa

AGE-RELATED CHANGES IN BODY COMPOSITION IN 19 - 89-YEARS-OLD BULGARIAN ADULTS

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Progressive changes in body composition occur with aging. The aim of the study was to analyze the body composition in Bulgarian men and women and to assess the age-related changes. A cross-sectional study of 256 women and 119 men aged 19-89 years was conducted. Body composition was evaluated by bioelectrical impedance analysis using InBody 170 analyzer. Statistical analysis was performed using SPSS v.16 software. Mean and standard deviation for each variable were calculated. The statistical significance between age- and gender groups was evaluated using t-test of Student and ANOVA at $p < 0.05$. The body fat mass (BFM) of the participants progressively rise with age and reaches its peak in 60-69-years-old adults and after this age, a slight decrease is observed. The percentage body fat (PBF) in elderly men continues to increase over 70 y, whereas in women the highest values are reached at the age group of 60-69-years and after that the values remain unchanged. In younger age categories (up to 40 years in men and 50 years in women) the fat-free mass (FFM) increase to an average of 64.81 kg in males and 43.68 in females. In elderly age categories a contrary tendency was observed, the values gradually decrease in men. In women the fat-free mass also decreases but remain relatively constant after the age of 50. The results suggest that in Bulgarian men and women an increase of mean BFM, PBF, and reductions of FFM with aging are observed.

Keywords: body composition, bioelectrical impedance analysis, body fat, fat-free mass

SOMATOTIP KOD ADOLESCENTNIH RITMIČKIH GIMNASTIČARKI IZ BUGARSKE

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Specifična telesna konstitucija ritmičkih gimnastičarki (RG) pozitivno utiče na njihov učinak i važna je u odabiru talenata u polju profesionalnog sporta. Cilj ove studije je da se procene antropometrijske karakteristike bugarskih ritmičkih gimnastičarki u uzrastu adolescencije, kako bi se identifikovao njihov somatotip. Ukupno 32 RG podeljene u tri starosne kategorije (16 pred-juniorki, uzrasta 8-10 godina; 11 juniorki, uzrasta 11-12 godina; i 5 starijih uzrasta 13-14 godina;), javilo se da učestvuju u ovoj studiji. Sve sportistkinje učestvuju na nacionalnim šampionatima i imaju trenažno iskustvo najmanje dve godine i ne manje od 20 sati nedeljno. Koristeći antropometrijsku metodu Martina-Sallera (1957), izmerene su sledeće antropometrijske karakteristike telesna visina, masa tela, kožni nabori (triceps, subskapularni, supraspinalni i na potkolenici), epikondilarni prečnici (nadlaktična i butna kost) i obimi (nadlaktica opuštena i zgrčena, potkolenica). Korišćena je Heath-Carther-ova metodologija (1990) za određivanje tri komponente somatotipa. One-way ANOVA i Tukey post hoc test su korišćeni za poređenje međugrupnih razlika ($p < 0,05$). Sve statističke analize su rađene pomoću softvera za statistiku SPSS 16 za Windows. Telesna visina i masa adolescentnih bugarskih RG značajno se povećavala u dobi od 8 do 14 godina. Uporedna analiza ostalih morfoloških karakteristika pokazala je značajne međugrupne razlike prema epikondilarnom diametru nadlaktične kosti i subskapularnom naboru kože između pred-juniorske i juniorske grupe i obima nadlaktice između pred-juniorske i starije grupe. Somatotip ritmičkih gimnastičarki svih kategorija je 2,36-3,79-1,13 i ukazuje na endo-mezomorfni dominantan tip.

Ključne reči: somatotip, ritmičke gimnastičarke, adolescenti

SOMATOTYPE IN ADOLESCENT RHYTHMIC GYMNASTS FROM BULGARIA

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A specific body constitution of RGs has a positive impact on their performance and it is important in the selection of talents in the field of professional sports. The aim of this study is to assess the anthropometric characteristics in Bulgarian adolescent rhythmic gymnasts in order to identify their somatotype. A total of 32 RGs divided into three age categories (16 pre-juniors, aged 8-10 years; 11 juniors, aged 11-12 years; and 5 seniors, aged 13-14 years;), volunteered to participate in this study. All athletes take part in national championships and have training experience for at least two years and not less than 20 hours weekly. Using Martin-Saller's anthropometric method (1957) the following anthropometric measurements are conducted: body height, body weight, skinfolds (triceps, subscapular, supraspinal, calf), epicondylar diameters (humerus and femur), and girths (upper arm-relaxed, upper arm-contracted and calf). Heath-Carther's methodology (1990) is used to determine the three somatotype components. One-Way ANOVA and Tukey's post hoc tests are used to compare intergroup differences ($p < 0.05$). All analyses are conducted using SPSS 16 statistics software for Windows. Body height and weight of adolescent Bulgarian RGs increase significantly from the age of 8 to 14 years. Comparative analysis of the other morphological characteristics has shown significant intergroup differences according to epicondylar diameter of the humerus and subscapular skinfold between the pre-junior and junior group and upper arm circumferences between a pre-junior and senior group. The somatotype of rhythmic gymnasts of all assessed categories is 2.36-3.79-1.13 and indicates the endomesomorphic dominant type.

Keywords: somatotype, rhythmic gymnasts, adolescent

**POVEZANOST DISTRIBUCIJE MASTI, HIPERTENZIJE I ACE (I / D)
GENSKOG POLIMORFIZMA: ISTRAŽIVANJE DVE TIBETO-BURMANSKE
LINGVISTIČKE GRUPE TRIPURE, SEVEROISTOČNA INDIJA**

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Uvod: Hipertenzija se smatra glavnim uzrokom morbiditeta i smrtnosti širom sveta i postaje veliki globalni teret za javno zdravlje u mnogim zemljama u razvoju. Regulacija krvnog pritiska je složen proces, a geni i okolina igraju glavnu ulogu u patogenezi ovog poremećaja. Interakcija gena sa okolinom i distribucija masti u patogenezi hipertenzije nije opsežno proučavana u etničkim grupama severoistočne Indije. **Cilj:** Prema našem saznanju, ovo je prvi pokušaj da se utvrdi povezanost količine masti, krvnog pritiska i ACE (I / D) genskog polimorfizma kod dve tibeto-burmanske etničke grupe (Chakmas i Tripuris) sa severoistoka Indije (Tripura). **Metod:** Studija je obuhvatila ukupno 293 (Chakma 148 i Tripuri 145) zdravih odraslih muškaraca koji nisu u srodstvu, iz Tripure u severoistočnoj Indiji. Antropometrijske i fiziološke karakteristike (krvni pritisak) prikupljene su standardnim tehnikama. Ispiranjem usta izdvojena je genom-ska DNK, obrađena PCR tehnikom i genotipizovana kako bi se utvrdio polimorfizam ACE gena I / D. **Rezultati:** Ispitivanje povezanosti količine masti i hipertenzije utvrdilo je značajno ($p < 0,05$) više osoba sa hipertenzijom i akumulacijom centralne gojaznosti kod Chakmas-a u poređenju sa Tripurisom. Polimorfizam gena ACE (I / D) pokazao je veću učestalost alela 'I' u ovim studijskim grupama. **Zaključak:** Ispitane populacije karakteriše relativno niža prevalencija hipertenzije, što se može objasniti većim prisustvom alela „I“. Ova studija takođe ukazuje da je centralna adipoznost glavni faktor rizika za hipertenziju. **Ključne reči:** masnoća, hipertenzija, Tibeto-burmanska grupa, severoistočna Indija

**ASSOCIATION OF FAT PATTERNING, HYPERTENSION AND ACE (I/D) GENE
POLYMORPHISM: A STUDY ON TWO TIBETO-BURMAN LINGUISTIC GROUP OF
TRIPURA, NORTH-EAST INDIA**

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Hypertension is considered as a major cause of morbidity and mortality throughout the world and become a major global burden on public health in many developing countries. Regulation of blood pressure is a complex process, both gene and environment plays a major role in the pathogenesis of this disorder. The gene-environment and fat patterning interaction in the pathogenesis of hypertension has not been extensively studied in the north-east Indian ethnic groups. **Aim:** In this context, to best of our knowledge this is a maiden attempt to discern the association between fat patterning, blood pressure and ACE (I/D) gene polymorphism among the two Tibeto-Burman speaking ethnic groups (Chakmas and Tripuris) of North East India (Tripura). **Method:** To achieve the purpose, total 293 (Chakma 148 and Tripuri145) apparently healthy unrelated adult males from Tripura, North East India were incorporated in the present study. Anthropometric variables and physiological variables (blood pressure) have been collected using standard techniques. Extracted genomic DNA from mouthwash was PCR amplified and genotyped to understand ACE gene I/D polymorphism. **Results:** Examination on the association of fat patterning and hypertension revealed significantly ($p < 0.05$) higher hypertensive individuals and accumulation of central obesity among the Chakmas compared to the Tripuris. ACE (I/D) gene polymorphism demonstrated higher frequency of 'I' allele in the present study groups. **Conclusion:** The studied populations are characterized by relatively lower prevalence of hypertension, can be explained by the presence of higher "I" allele. The present study also envisaged central adiposity is a major risk factor for hypertension.

Keywords: fat, hypertension, Tibeto-Burman group, North-East India

POVEZANOST GENETSKOG POLIMORFIZMA MTHFR (RS1801133), FTO (RS9939609) I GOJAZNOSTI SA DIJABETESOM TIP 2 KOD BENGALSKOG HINDU STANOVNIŠTVA ZAPADNOG BENGALA, INDIJA

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Uvod: Osetljivost na dijabetes melitus tipa 2 (T2DM) povećala se zbog nezavisnog rizika od genetskog polimorfizma i gojaznosti, kao i kombinacijom ova dva faktora. Uprkos nedavnom napretku u lečenju i dijagnozi T2DM, izazovi i dalje postoje u pogledu osetljivosti i prognozi. **Cilj:** U ovom radu se ispituje povezanost genetičkog polimorfizma MTHFR (rs1801133), FTO (rs9939609) i gojaznosti sa T2DM kod bengalskog hinduističkog stanovništva zapadnog Bengala u Indiji. **Metod:** Ispitano je 104 muškaraca kod kojih je klinički dijagnostikovao T2DM i 176 zdravih muškaraca bez porodične istorije T2DM (kontrolna grupa) iz endogamne lingvističke grupe (Bengalee Hindu Caste). Genotipizacija je izvedena primenom PCR-RFLP metode nakon izolacije genomske DNK. Antropometrijski podaci prikupljeni su standardnom tehnikom. Statistička analiza izvedena je pomoću softvera SPSS-25. Granica je postavljena na $p = 0,05$. **Rezultati:** MTHFR (rs1801133) genetski polimorfizam sa CT genotipom otkrio je značajno veći rizik ($OR = 3,44$; $p = 0,01$) od T2DM u poređenju sa CC genotipom. Umanjenje rizika od MTHFR-T2DM nakon prilagođavanja starosti i obima struka otkrilo je da gojaznost i starost ima efekta u progresiji T2DM. T2DM pacijenti su takođe imali značajno ($p < 0,05$) veću ukupnu gojaznost, centralnu gojaznost i SBP u poređenju sa kontrolom. Međutim, FTO (rs9939609) genetski polimorfizam nije pokazao značajan ($p = 0,854$) efekat na T2DM i gojaznost. **Zaključak:** Ova studija ukazuje da se genetski polimorfizam MTHFR i gojaznost mogu koristiti kao alat za skrining za ranu prognozu T2DM.

ASSOCIATION OF MTHFR (RS1801133), FTO (RS9939609) GENETIC POLYMORPHISMS AND OBESITY WITH TYPE 2 DIABETES MELLITUS AMONG BENGALEE HINDU CASTE POPULATION OF WEST BENGAL, INDIA

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Introduction: Type 2 Diabetes Mellitus (T2DM) susceptibility has increased due to independent risk of genetic polymorphism and obesity as well as combinations of both. Despite recent advancements in T2DM management and diagnosis, the challenges remain still in susceptibility and prognosis. **Aim:** The present work is attempted to understand the association of MTHFR (rs1801133), FTO (rs9939609) genetic polymorphisms and obesity with T2DM among Bengalee Hindu caste population of West Bengal, India. **Method:** 104 clinically diagnosed T2DM male patients and 176 healthy males without family history of T2DM (control group) from the endogamous linguistic group (Bengalee Hindu Caste) participated. Genotyping was performed by using PCR-RFLP method following the isolation of genomic DNA. Anthropometric data has been collected by using standard technique. Statistical Analysis was performed using SPSS-25 software. The cut off was set as $p=0.05$. **Results:** MTHFR (rs1801133) genetic polymorphism with CT genotype revealed significantly higher risk ($OR=3.44$; $p=0.01$) of T2DM compared to CC genotype. The attenuation of MTHFR-T2DM risk after adjustment for age and waist circumference revealed obesity and age effects in progression of T2DM. T2DM patients had also significantly ($p<0.05$) higher overall obesity, central obesity, and SBP compared to the controls. However, FTO (rs9939609) genetic polymorphism demonstrated no significant ($p=0.854$) effect on T2DM and Obesity. **Conclusion:** The present study envisaged identification of MTHFR genetic polymorphism and obesity might be used as screening tool for early prognosis of T2DM.

PREVALENCIJA POLNOG HROMATINA KOD ŽENA SA KANCEROM DOJKE I ZDRAVIH ŽENA IZ KASTE HINDU

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Uvod: Polni hromatin, pojedinačni neaktivni X hromozom, jedinstvena je alociklična heterohromatinska struktura formirana u jedru ženke sisara, namenjena je izjednačavanju doze X vezanih gena između dva pola, stvorenoj kao *kompensacija doziranja*. Inaktivacija X hromozoma kod žena je obeležje epigenetske regulacije gena, što zahteva utišavanje celog hromozoma kroz širok spektar mehanizama koji uključuju nekodirajuće RNK, modifikacije hromatina i metilaciju DNK. Brojne studije su pokazale da se BRCA1 kolokalizuje sa i neophodan je za pravilnu lokalizaciju XIST, gena iz X hromozoma koji posreduje u stvaranju fakultativnog heterohromatina. Dakle, očigledno citološko preklapanje između BRCA1 i XIST RNK preko Xi povećalo je mogućnost direktne uloge BRCA1 u lokalizaciji XIST. **Cilj:** Ova studija je prvi pokušaj da se proceni i uporedi prevalencija polnog hromatina kod zdravih žena i žena sa kancerom dojke iz bengalske hinduističke kaste. **Metod:** Uzorci bukalnog razmaza od 200 zdravih i 140 žena sa karcinomom dojke koji pripadaju stadijumima II, III i IV prikupljeni su standardnom tehnikom. Za svaku ispitanicu je proučeno 100 ćelija (ukupno 34000 ćelija). Izvršeni su odgovarajući statistički testovi kako bi se utvrdila varijacija u distribuciji polnog hromatina među ispitivanim grupama. **Rezultati:** Nalazi su otkrili značajno nižu prevalenciju polnog hromatina kod pacijentkinja sa karcinomom dojke u poređenju sa zdravim ženama. Takođe je pomoću ROC analize određena granična vrednost za rizik razvoja karcinoma dojke. **Zaključak:** Identifikacija prevalencije polnog hromatina kao biomarkera može ukazati na povoljan prognostički značaj kod karcinoma dojke.

Gljučne reči: Polni hromatin, karcinom dojke, XIST, BRCA1, bengalske hindu žene

PREVALENCE OF SEX CHROMATIN BETWEEN BREAST CANCER AND NORMAL BENGALEE HINDU CASTE FEMALES

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Introduction: Sex chromatin, the single inactive X chromosome, is a unique allocyclic heterochromatin structure formed in the nucleus of the mammalian female is meant to equalize the Dosage of X-linked genes between two sexes, coined as *Dosage Compensation*. The event of X chromosome inactivation in females is a hallmark of epigenetic gene regulation, which necessitates an entire chromosome's silencing through a wide range of mechanisms involving non-coding RNAs, chromatin modifications, and DNA-methylation. Numerous studies indicated that BRCA1 colocalizes with and is necessary for the correct localization of XIST, a gene from the X chromosome which mediates the formation of facultative heterochromatin. So that, the apparent cytological overlap between BRCA1 and XIST RNA across the Xi raised the possibility of a direct role of BRCA1 in localizing XIST.

Aim: The present study was the first attempt to evaluate the comparison of prevalence of sex chromatin in normal and breast cancer females of Bengalee Hindu Caste population.

Method: The buccal smear samples from 200 normal and 140 females of carcinoma of breast belonging to stage II, III, and IV have been collected by following standard technique. 100 cells from each individual (total 34000 cells) were studied. Appropriate statistical tests were performed to find out variation in sex chromatin distribution among the studied population.

Results: Findings revealed a significantly lower prevalence of sex chromatin among breast cancer patients compared to normal females. In addition to that optimum cut-off point was determined by ROC analysis to develop the risk of breast cancer.

Conclusion: The identification of sex chromatin prevalence as a biomarker may indicate favourable prognostic significance in breast carcinoma.

Keywords: Sex chromatin, Breast cancer, XIST, BRCA1, Bengalee Hindu females

ISTRAŽIVANJE ABNORMALNIH KARAKTERISTIKA DLANA KOD AUTISTIČNIH BOLESNIKA IZ HINDU KASTE U ZAPADNOM BENGALU

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Dermatoglifske osobine su korišćene kao klinički marker za mnoge poremećaje neurorazvoja i hromozomske aberacije. Morfogeneza dermatoglifskih obeležja i neuralnih tkiva potiče iz ektodermalnog sloja u prvom trimestru trudnoće; od ove faze nadalje, na njih ne utiče životna sredina. Autizam je dobro poznat kao složeni poremećaj neurorazvoja koji karakterišu značajni poremećaji u socijalnoj-komunikaciji i ponašanju. Prema našim saznanjima, ova studija je prvi pokušaj da se utvrdi povezanost abnormalnih brazdi na dlanovima (APFC) sa autizmom kod Hindu stanovništva iz Zapadnog Bengala, Indija. Prema standardnoj metodologiji uzeti su bilateralni otisci dlanova 100 ispitanika (67 muškaraca i 33 žene) kod kojih je klinički dijagnostikovao autizam (prema DSM-IV-TR - Američko psihijatrijsko udruženje, 2000) i 100 (55 muškaraca i 45 žena) zdravih osoba bez porodične istorije autizma. Ispitano je Hindu stanovništvo iz zapadnog Bengala. **Rezultat** je pokazao značajnu ($p < 0,05$) pojavu APFC-a; poprečnih brazdi i sidnejske linije na levoj i desnoj ruci kod autističnih muškaraca i žena, u odnosu na kontrolne grupe muškaraca i žena. Ova studija je otkrila značajno ($p < 0,05$) prisustvo pojedinačnih poprečnih linija i sidnejske linije kod pacijenata sa autizmom u odnosu na kontrolne grupe bez ikakvih polnih i drugih diferencijacija. Stoga je ova studija ukazala da se prisustvo pojedinačnih poprečnih brazdi i sidnejska linija može koristiti kao jedan od dodatnih ranih dijagnostičkih kriterijuma autizma.

A STUDY ON ABNORMAL PALMAR FLEXION CREASES AMONG THE AUTISTIC PATIENTS OF BENGALEE HINDU CASTE POPULATION OF WEST BENGAL, INDIA

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Dermatoglyphics traits have been used as a clinical marker for many neurodevelopment disorders and chromosomal aberrations as well. Morphogenesis of dermatoglyphic patterns and neural tissues originate from the ectodermic layer within the 1st and 2nd trimester of gestation; from this stage onwards, they are unaffected by the environment. Autism is well known as a complex neurodevelopmental disorder characterized by significant disturbances in social-communicative and behavioral functioning. To the best of the knowledge, the present study is the first attempt to understand the relation of Abnormal Palmar Flexion Creases (APFCs) and Autism from the Bengalee Hindu caste population of West Bengal from India. To achieve the purpose bilateral palm prints of 100 (67 males and 33 females) clinically diagnosed (according to DSM-IV-TR - American Psychiatric Association, 2000) Autistic patients and 100 (55 males and 45 females) healthy individuals without any family history of Autism have been collected according to the standard method from Bengalee Hindu caste population of West Bengal. The result demonstrated significant ($p < 0.05$) occurrences of APFCs; Single Transverse Creases and Sydney Line on the left and right hands of the Autistic males as well as Autistic females than that of control males and females. The present study revealed a significant ($p < 0.05$) presence of the single transverse creases and Sydney line among the Autistic patients than that of controls without any sex and side differentiations. Therefore, the present study indicated the presence of Single Transverse Creases and Sydney Line might be used as one of the additional early diagnostic criteria of Autism.

GLAVNI LINIJSKI INDEKS KOD PACIJENATA SA E-BETA TALASEMIJOM: ISTRAŽIVANJE BENGALSKOG HINDU STANOVNIŠTVA IZ ZAPADNOG BENGALA, INDIJA

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Dermatoglifi su dobri markeri a njihova dijagnostička vrednost je dobro dokumentovana kod različitih genetskih poremećaja. Prenatalni embrionalni poremećaji u genetskim poremećajima uzrokuju dermatoglifske promene koje se na kraju postnatalno ne menjaju. Ove postnatalne dermatoglifske karakteristike mogu ukazati na prenatalne poremećaje zbog činjenice da se dermatoglifske karakteristike prstiju i dlanova formiraju do kraja drugog tromesečja i mogu pružiti dokaze o poremećajima u ranom razvoju. Cilj ovog rada je bio da se utvrde karakteristike dermatoglifa na dlanovima kod pacijenata sa E-beta talasemijom. Stoga je ispitano 100 pacijenata (muškaraca-50, žena-50) kod kojih je klinički dijagnostikovana E-beta talasemija. Dobljeni podaci su upoređeni sa kontrolnom grupom od 100 ispitanika (muškaraca-50, žena-50) iz Hindu populacije u zapadnom Bengal. Bilateralni otisci dlanova svih učesnika prikupljeni su standardnom metodom mastila i valjka. Za sadašnju namenu indeks glavnih linija (MLI) urađen je standardnom metodom. Značajan ($p < 0,05$) polni dimorfizam primećen je samo među kontrolama. Štaviše, ispitivanje MLI otkrilo je značajno ($p < 0,05$) veću vrednost među kontrolama u poređenju sa onom kod pacijenata sa E-beta talasemijom. Na osnovu rezultata MLI bilo je indikativno da kontrole eventualno imaju horizontalno poravnanje grebena, dok je vertikalni raspored grebena zajedno sa vertikalnim poravnanjem šake evidentan kod pacijenata sa E-beta talasemijom zbog niže vrednosti MLI. Prema našem saznanju ova studija je prvi pokušaj da se utvrdi povezanost MLI i dermatoglifa na dlanovima kod pacijenata sa E-beta talasemijom. Stoga bi palmarni dermatoglifi, uglavnom MLI, mogli igrati značajnu ulogu u svrhu skrininga kod pacijenata sa talasemijom iz Zapadnog Bengala.

MAIN LINE INDEX IN E-BETA THALASSEMIA PATIENTS: A STUDY ON BENGALEE HINDU CASTE POPULATION OF WEST BENGAL, INDIA

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Dermatoglyphics has been proved valuable marker trait and its diagnostic value is well documented in different genetic disorders. Prenatal embryonic disturbances in genetic disorders cause dermatoglyphic alterations which eventually postnatally unalterable. These post natal dermatoglyphics characteristics can signify the prenatal disturbances due to the fact that finger and palmar dermatoglyphics characteristics are formed by the end of the second trimester may provide evidence of disturbances in early development. The aim of the present attempt was to study palmar dermatoglyphics pattern of the E-beta thalassemia patients. Therefore, 100 (Male-50, Female-50) clinically diagnosed E-beta thalassemia patients were compared with 100 (Male-50, Female-50) controls from Bengalee Hindu caste population in West Bengal. Bilateral palm prints of all the participants were collected by using standard ink and roller method. For the present purpose Main Line Index (MLI) has been done using standard method. Significant ($p < 0.05$) sexual dimorphism has been noticed only among the controls. Moreover examination on MLI revealed significant ($p < 0.05$) higher value among the controls compared to that of the E-beta thalassemia patients. On the basis of the results of MLI it was indicative that the controls eventually have horizontal ridge alignments whereas vertical ridge arrangement along with vertical alignment of the hand was evident among the E-beta thalassemia patients due to the lower MLI value. To best of the knowledge present study is the first attempt on MLI regarding palmar dermatoglyphics traits in E-beta thalassemia patients. Therefore palmar dermatoglyphics, mainly MLI might play a significant role for the screening purpose among the thalassemia patients of West Bengal.

ULTRASTRUKTURA DLAKE: UPOREDNA ANALIZA KOD MAJMUNA STAROG I NOVOG SVETA

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Uvod: Dlake je jedinstvena za sisare. Protein keratin (KRTAP) jedna je od glavnih komponenti dlake i igra suštinsku ulogu u stvaranju krutih i otpornih dlačica. Važan aspekt evolucije dlake je značajno smanjenje dlakavog pokrivača kod odraslih ljudi tokom njihove nedavne istorije (nakon što su se ljudi-afrički majmuni podelili), ali ljudi zapravo imaju sličnu gustinu folikula dlake kao što je kod majmuna. Evolucionari obrasci koji potencijalno uzimaju u obzir morfološke karakteristike sugerišu genetsku osnovu za varijacije u fenotipovima. **Cilj:** Ovaj rad je pokušaj da se utvrdi varijacija dlake primata s obzirom na karakter preseka ultrastrukture na osnovu skenirajuće elektronske mikroskopije (SEM). **Materijal i metod:** Standardnom tehnikom uzeti su pramenovi dlake (po 125) od odraslih mužjaka nehumanih primata *Papio hamadryas* [koji predstavlja Katarhine (OWM)] i *Cebus albifrons* [koji predstavlja Plahirhine (NWM)] i analizirani su pomoću SEM. **Rezultati i zaključak:** Ispitivanje ultrastrukture otkrilo je značajno ($p < 0,05$) veće vrednosti za glavnu osu, sporednu osu, površinu preseka i indeks dlake u skladu sa višim filogenetskim položajem među primatima. Ova studija je takođe pronašla spljošteniji eliptični obrazac u *Cebusu* u poređenju sa *Papio* u pogledu indeksa dlake.

Glavne reči: majmuni novog sveta, majmuni starog sveta, *Cebus albifrons*, *Papio hamadryas*, SEM, kosa

HAIR ULTRASTRUCTURE: A COMPARATIVE STUDY ON OLD WORLD AND NEW WORLD MONKEY

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Introduction: Hair is unique to mammals. Keratin associated proteins (KRTAPs) are one of the major components of hair and play essential roles in the formation of rigid and resistant hair shafts. The important aspect of hair evolution is the considerable reduction in hair cover in adult humans during their recent history (after humans-African apes split) but, humans actually have a similar density of hair follicles to that seen in apes. Evolutionary patterns that potentially account for morphological characteristics suggest the genetic basis for variation in phenotypes. **Aim:** Under this circumstance, the present paper attempted to understand the variation of primate hair with regard to cross sectional character of ultrastructure on the basis of Scanning Electron Microscopy (SEM). **Material and method:** To achieve the purpose hair strands (125 each) from adult male non-human primates *Papio hamadryas* [representing Catarrhine (OWM)] and *Cebus albifrons* [representing Platyrrhine (NWM)] was taken for SEM using standard technique. **Result and Conclusion:** Examination on ultrastructure revealed significantly ($p < 0,05$) higher values for major axis, minor axis, cross section area and hair index in accordance with higher phylogenetic position among the primates. Furthermore, the present study also found more flattened elliptical pattern in *Cebus* comparison to *Papio* in terms of hair index.

Keywords: New world monkey, Old world monkey, *Cebus albifrons*, *Papio hamadryas*, SEM, Hair

KARCINOM DOJKE KOD MUŠKARACA I REGULACIJA BRCA GENA: ISTRAŽIVANJE U KALKUTI INDIJA

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Poznato je da je karcinom dojke kod muškaraca jedna od najredih bolesti. Jedan od poznatih najvećih faktora rizika za rak dojke kod muškaraca pripisuje se mutacijama u BRCA2 genu koje zauzvrat dovode do genomskih promena. Zbog toga muškarci sa mutacijom zametne linije BRCA2 razvijaju veći rizik od karcinoma dojke nego opšta populacija. Ova studija pokušava da utvrdi rizik od razvoja karcinoma dojke kod bengalskih hindu muškaraca. U ispitivanju je učestvovalo 36 pacijenata muškog pola, a za kontrolnu grupu ispitano je 70 naizgled zdravih muškaraca adekvatnog uzrasta. DNK sekvencioniranjem i analizom ekspresije gena utvrđena je značajna povezanost ($p < 0,0001$) između karcinoma dojke kod muškaraca i mutacije BRCA2 (rs1799943).

MALE BREAST CANCER AND BRCA GENE REGULATION: A STUDY FROM KOLKATA, INDIA

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Male Breast Cancer is known to be one of the rarest disease. One of the known highest risk factors for male breast cancer has been attributed to germline mutations in BRCA2 gene that in turn lead to genomic alterations. Therefore, men with a germline BRCA2 mutation develop higher risk for breast carcinoma than the general population. The present attempts to discern the risk of developing Breast Carcinoma among Bengalee Hindu males. Participants for the present consisted of 36 male patients and 70 age matched apparently healthy controls from the same area were considered. Examination on DNA sequencing and gene expression analysis revealed significant association ($p < 0.0001$) between Male Breast Cancer and BRCA2 mutation (rs1799943).. Furthermore, a 2.4 fold of down regulation of tumor proteins was found to be associated risk for patients in comparison to 1.28 folds of up regulation among the controls.

ABO KRVNE GRUPE I KANCER

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Uvod: Tokom poslednje dve dekade, u Indiji je zabeležen ekonomski rast, koji je uzrokovao promene u načinu života i ponašanju, što je delimično odgovorno za rastuću učestalost karcinoma.

Cilj: Ovo istraživanje je imalo za cilj da utvrdi povezanost između krvnih grupa ABO sistema i kancera u Bengalskoj populaciji.

Materijal i metod: Sakupljeni su i analizirani uzorci krvi od 220 odraslih pacijenata kod kojih je dijagnostikovao kancer. Kategorizacija ABO krvnih grupa je urađena prema standardnoj metodi. Učestalost alela za krvnu grupu ABO izračunata je procenom maksimalne verovatnoće.

Rezultati i zaključak: Rezultati su ukazali da je najčešći oblik raka koji je preovladavao u proučavanoj populaciji bio rak reproduktivnih organa. Međutim, među svim pacijentima sa karcinomom većina ispitanika pripada B krvnoj grupi. Poređenje krvnih grupa sa kontrolnom bengalskom populacijom otkrilo je značajne razlike u raspodeli krvnih grupa. Među pacijentima sa kancerom, učestalost A i AB krvnih grupa bila je veća od O krvne grupe. Rezultat je takođe otkrio da je ukupna relativna incidencija karcinoma bila veća kod B / O osoba.

Ključne reči: ABO krvne grupe, kancer, Bengalci

ABO BLOOD GROUP AND CANCER

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Introduction: During the last two decades, India has emerged as a fast growing economy with changing lifestyle and behavior, partially responsible for the increasing cancer burden.

Aim: The present study was undertaken to find out the association between ABO blood group and cancers in a Bengali population.

Material and Methods: Blood samples from 220 adult Bengali cancer patients were collected and analyzed. ABO blood groupings were performed following standard method. Allele frequencies for ABO blood group was computed by maximum likelihood estimation.

Results and Conclusion: The result revealed that most common form of cancer prevailed in the studied population was cancer in reproductive organs. However, among all cancer patient's majority of the individuals belong to B blood group. Comparisons of blood groups with control Bengali population revealed significant differences in blood group distribution. Among cancer patients, the frequency of A and AB blood groups were higher than O blood group. The result also revealed that the overall relative incidence of cancer was higher in B/O individuals.

Keywords: ABO blood group, cancer, Bengali

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ANTROPOMETRIJSKA STUDIJA FIZIČKOG RAZVOJA KOD STUDENATA UNIVERZITETA U SOFIJI – PRELIMINARNI REZULTATI

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Studije fizičkog razvoja mladih odraslih nemaju samo teorijski značaj, već su veoma važne za procenu i prognostriku zdravstvenog stanja cele populacije. U periodu 2016-2017 započeta je antropometrijska studija studenata Biološkog fakulteta Univerziteta u Sofiji „Sveti Kliment Ohridski“. Nastavljeno je u martu 2020. godine, ali je prekinuto merama protiv pandemije kovida 19. Tokom studija izmereno je i anketirano 90 učenika (35 mladića i 55 devojaka, starosti od 18 do 25 godina) u pogledu socijalnog i obrazovnog statusa i veličine njihovih porodica. Upoređeni su sa podacima ranijih istraživanja studenata (1986-2020). Tokom ovog perioda povećale su se polne razlike. U prvom delu perioda (1986-2002) visina raste, težina i indeks telesne mase opadaju. Nakon 2002. visina stagnira, pa čak i opada, težina i indeks telesne mase rastu. Naročito velike razlike se primećuju u pokazateljima koji odražavaju razvoj mišićno-skeletnog sistema. Uprkos maloj veličini uzorka, utvrđen je značajan uticaj socijalnih faktora na telesnu visinu kod muškaraca, a nije uočen za godine dobijanja menarhe kod žena. Prikupljene informacije poslužiće za procenu stvarnih zdravstvenih rizika učenika i za razvijanje adekvatnih programa i politika za poboljšanje života i zdravlja mlade generacije Bugarske.

ANTHROMETRIC STUDY OF PHYSICAL DEVELOPMENT OF SOFIA UNIVERSITY STUDENTS – PRELIMINARY RESULTS

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The studies of physical developments of young adults have not only theoretical significance but are very important for the evaluation and prognostic of the health status of the whole population. In the period 2016-2017 was started an anthropometric study of students of Biological Faculty of Sofia University “Saint Clemens of Ohrid”. It has been continued in March 2020, but was interrupted by the measures against COVID-19 pandemic. During the studies 90 students (35 males and 55 females, aged 18 to 25) have been measured and surveyed for social and educational status and size of their families. They have been compared with data from former studies in university students (1986-2020). During this period the normal male-female differences have increased. In the first part of the period (1986-2002) height increases, weight and body mass index decreases. After 2002 height stagnates and even decreases, weight and body mass index increases. Particularly large differences are observed in the indicators that reflect the development of the musculoskeletal system. Despite the small size of the sample a significant influence of social factors on body height in males has been found and a subsignificant one – on age at menarche in females. The collected information will serve to assess the real health risks of the students and to develop adequate programs and policies to improve life and health of the young generation of Bulgaria.

NEKI ETIČKI ASPEKTI ZDRAVSTVENE ZAŠTITE TOKOM NOVE PANDEMIJE KORONA VIRUSA

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Cilj ovog rada je bio da predstavi neke etičke aspekte koji se odnose na mere koje su preduzete tokom nege i lečenja Covid-19 pacijenata kao i onih koji su oboleli od hroničnih bolesti. **Materijal i metod:** U istraživanju je učestvovalo 50 ispitanika iz ruralnih i urbanih područja. Primenjena je tehnika polustrukturiranog onlajn intervjuja. Pitanja su se odnosila na rad lekara pod uslovima nametnutim zakonom tokom pandemije i na to kako se to odrazilo na zdravlje Covid-19 pacijenata kao i onih sa hroničnim ili akutnim bolestima koji nisu oboleli od Covid 19. **Rezultati i diskusija:** Procene preduzetih mera i učinak lekara razlikuju se značajno u zavisnosti od toga da li je ispitanicima ili članovima porodice koji su bili u pratnji potrebna medicinska nega. Većina je smatrala da su preduzete mere neetičke, da su hronični pacijenti zapostavljeni, da im se zdravlje pogoršava i da su lekari bili prezahtevni. **Zaključak:** Ovaj period tokom pandemije suočio nas je sa novim situacijama, na koje nismo nailazili skoro čitav vek, a koje su nametnule neke mere koje su često kršile nekoliko ljudskih prava. Ako bi ovaj period trebalo okarakterisati sa nekoliko reči, mnogi učesnici studije izabrali su: haos, demoralizacija, nepoverenje, ravnodušnost i patnja.

Cljučne reči: pandemija, zdravstveni sistem, mere, bolesnici sa Covid-19, hronični bolesnici bez Covid-19

SOME ETHICAL ASPECTS OF HEALTH CARE DURING THE NEW CORONA VIRUS PANDEMIC

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The purpose of this paper is to present some ethical aspects regarding the measures taken during this period regarding the care and treatment of Covid-19 patients and the chronic ones.

Method and materials: The study involved 50 subjects from rural and urban areas. The technique of the semi-structured interview, conducted in an online environment, was applied. The questions referred to the physicians' performance under the conditions imposed by law during the pandemic and how they reflected on the health of Covid-19 patients and those with chronic or acute non-Covid 19 diseases. **Results and discussion:** Assessments of the measures taken and doctors' performance differ, significantly depending on whether the respondents or family members in the entourage needed medical care. Most appreciated that the actions taken were unethical, that the chronic patients were neglected, their health worsening, and the doctors were too demanding.

Conclusion: This pandemic period has brought us face to face with new situations, not encountered for almost a century, which has imposed some measures that have often violated several human rights. If this period were to be characterized in a few words, many of the participants in the study chose: chaos, demoralization, distrust, indifference, and suffering.

Keywords: pandemic, medical system, measures, Covid-19 and non-Covid-19 patients.

VISOK I NIZAK NIVO ADAPTACIJE NA KAZNENO POPRAVNU USTANOVU MOŽE SE PREDVIDETI NA OSNOVU STEPENA UZBUĐENJA I ZADOVOLJSTVA ŽIVOTOM?

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Uvod. Poznat je uticaj koji zatvorena sredina ima na zatvorenike. Glavni cilj kazneno popravne ustanove je da čuva zatvorenike na zatvorenom prostoru i ponudi im programe koji će im pomoći da postanu bolji građani. Osoba koja se šalje u zatvor u manjoj je ili većoj meri zadovoljna svojim životom? Možda je bolje zapitati se da li je ovaj nivo zadovoljstva pod uticajem njihove kazne?

Cilj. Glavni cilj ovog istraživanja je identifikovati glavni uticaj koji zadovoljstvo životom i nivo uzbuđenja imaju na zatvorene osobe.

Metoda. Uzorkom je obuhvaćeno 900 ljudi, starosti od 18 do 70 godina iz kazneno popravne ustanove u Rumuniji. Uпитnik je podeljen svim ispitanicima. Koristili smo program SPSS verziju 19 i Anova test.

Rezultati. Rezultati nisu pokazali razlike među grupama u pogledu nivoa uzbuđenja. Zabeležen je srednji-inferiorni (ST 4.17%) kroz uzorak. U pogledu zadovoljstva životom zabeleženo je generalno zadovoljstvo životom i putem koji su odabrali kod zatvorenika sa dužom kaznom u poređenju sa onima koji imaju blažu kaznu. Kod zatvorenika sa blažom kaznom zabeležen niži nivo zadovoljstva na skali ukazuje na njihovo nezadovoljstvo prošlošću ili trenutnim životnim okolnostima. Oni takođe imaju utisak da nisu imali šansu ili im nije data prilika da pokažu šta zaista mogu postići u životu.

Zaključak. Razlike u pogledu kazne imaju uticaj na zadovoljstvo životom. Naravno, glavna razlika je u tome što je njihov nivo uzbuđenja u ponašanju direktno proporcionalan stepenu kazne. Neki rezultati u vezi zadovoljstva životom ne mogu biti pod direktnim uticajem njihove kazne.

Ključne reči: uzbuđenje, zadovoljstvo životom, odrasli zatvorenici, adaptacija, kazneno popravna ustanova.

HIGHER AND LOWER ADAPTATION TO PENITENTIARY CAN BE PREDICTED BY EXCITABILITY AND LIFE SATISFACTION?

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Introduction. The closed environment has a known influence on mental development of inmates. The correctional facilities main objective is to keep inmates in an enclosed environment and offer programs that will make them better citizens. A subject that is sent to prison has a higher or a lower life satisfaction? Or even more, is this level of life satisfaction influenced by their criminal punishment?

Aim. This research main objective is to identify the main influence that life satisfaction and excitability have on incarcerated individuals.

Method. The questionnaire was administered on a sample of 900 people, aged mainly between 18 and 70 years, from a Romanian penitentiary, SPSS version 19 and Anova tests were used.

Results. The results showed no difference between groups at the level of excitability. A medium-inferior (ST 4.17%) was throughout our sample. Life satisfaction revealed a general satisfaction and content with their chosen path for the subjects with higher penalty than those with lower penalty. For the groups with lower punishments their lower score on this scale shows a discontent with either their past or present life conditions, they also might feel that they didn't have the opportunity, and haven't been given the occasion to show what they really can in life.

Conclusion. Difference in punishment has an influence regarding life satisfaction. Of course, the main difference is that their excitability in their behaviour is directly proportional to the severity of their punishment. Some results, regarding their life satisfaction, can not be straightforwardly influenced by their punishment.

Keywords: excitability, life satisfaction, adult inmates, adaptation, penitentiary

STRATEGIJE SUOČAVANJA SA STRESOM KOJE PROMIVIŠU ZDRAV PARTNERSKI ODNOS

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Uvod. Procesima i strategijama suočavanja sa stresom može se pristupiti na individualnom i racionalnom planu, sa naglaskom na pokušaj da se suočimo sa nedaćama i izvorima stresa i da se adaptiramo na stresnu ili traumatičnu situaciju.

Cilj. Ova studija ima za cilj da ispita postojeća istraživanja vezana za strategije suočavanja sa stresnim situacijama koje koriste partneri i koje imaju pozitivan uticaj na odnos promovišući stabilnost, dugovečnost i zadovoljstvo.

Metode. Sistematična pretraga tri baze podataka sprovedena je u cilju identifikovanja članaka objavljenih u periodu između 2009. i 2019. koji predstavljaju originalna istraživanja vezana za individualno ili zajedničko suočavanje sa stresom u okviru partnerskog odnosa i barem jedna dodatna varijabla vezana za zdrav odnos u vezi. Inicijalnom pretragom pronađeno je 438 naslova od kojih su 63 bila potencijalno relevantna i 31 članak koji je odgovarao svim kriterijumima pretrage.

Rezultati. U većini studija koje su uključene u pregled uticaj strategija suočavanja sa situacijama (opšte mere) na vezu je delimično ili potpuno pozitivan. Izuzetak ovog pravila predstavljaju studije vezane za velike traume ili degenerativne bolesti. Pozitivno zajedničko suočavanje sa situacijama dobra je predikcija za zadovoljstvo u vezi, dok su negativne strategije suočavanja sa stresnim situacijama kao što su duboko razmišljanje i nabijanje sopstvene krivice u negativnom odnosu sa istim varijablama. Sve studije uključene u analizu koristile su individualne mere strategija suočavanja sa stresnim situacijama (uključujući zajedničko suočavanje) bez udruženih mera para kao jedinice. Veći deo korelacija između partnera nisu bili statistički značajni. Ipak, sve korelacije su se fokusirale na iste strategije suočavanja sa situacijama a ne različite.

Zaključak. Neophodno je sprovesti dalje istraživanje komplementarnih strategija koje partneri koriste da bi stvorili obrasce strategija specifične za par kao celinu.

Ključne reči: bes, stariji parovi, navike vezane za zdravlje

COPING STRATEGIES THAT PROMOTE RELATIONAL HEALTH

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Introduction. The coping processes and strategies can be approached at individual and relational level, with emphasis on the efforts to face the adversities and sources of stress and to adapt to stressful or traumatic situations.

Aim. The present study aims to explore existing research regarding coping strategies activated by couple partners that positively impact the relationship promoting stability, longevity and satisfaction.

Method. A systematic search of three databases was conducted to identify articles published between 2009 and 2019 that present original researches regarding individual or dyadic coping within the couple and at least one additional variable regarding the couple's relational health. The initial search yielded 438 titles, out of which 63 were potentially relevant and 31 full articles proved to meet all inclusion criteria.

Results. Within most of the studies included in the systematic review, the impact of the coping strategies (general measures) on the relationship is partially or fully positive. The exception to this result consists of studies regarding major trauma contexts or degenerative diseases. Positive dyadic coping is a good predictor for relationship satisfaction, while negative coping strategies such as rumination or self-blame negatively correlate with the same variable. All studies included in the analysis have used individual measures of coping strategies (including dyadic coping), with no situation of aggregate or joined measures for the couple as unit. Most reported correlations among couple partners were not statistically significant. Yet, those correlation have focused on the same coping strategies, not different ones.

Conclusions. Further research is needed on complementary couple strategies that partners activate in order to create coping patterns specific for the couple as a whole.

Keywords. Anger, elderly couples, health related habits

ISPOLJAVANJE BESA I ZDRAVSTVENE NAVIKE KOD STARIJIH PAROVA

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Uvod. Bes je multidimenzionalan koncept koji uključuje psihološke, kognitivne i bihevioralne elemente udružene u kompleksne obrasce. Iako je bes emocija zaslužna za opstanak, on je i faktor koji pogoršava gnev u partnerskom odnosu (intimni partnerski gnev). Bes kao osobina može biti stabilnija ali kao stanje varira u zavisnosti od velikog broja varijabli u koje spada i starosno doba.

Cilj. Ova studija ima za cilj da ispita obrasce ispoljavanja besa kod starijih parova i način na koji ova emocija utiče na već uspostavljene zdravstvene navike svakog partnera.

Metode. Za analizu podataka koristili smo kvantitativni pristup. Uzorkom je obuhvaćeno 150 parova podjeljenih u grupe na osnovu godišta (od kojih je minimum pedesetoro imalo partnera starosti 60+). Kako bismo procenili obrasce ispoljavanja besa kod partnera koristili smo Uпитnik ljutnje kao stanja i osobine ličnosti (STAXI 2, State Anger Expression Inventory) a sproveli smo i omnibus istraživanje za procenu zdravstvenih navika i drugih varijabli. Statistička analiza sprovedena je pomoću t-testa i analize varijanse kako bi se uporedile starosne i partnerske grupe.

Rezultati. Stariji parovi manje se kreću i imaju manje navika vezanih za socijalno zdravlje u poređenju sa sredovećnim i mladim parovima, ali imaju bolju kontrolu besa. Nisu uočene značajne razlike u pogledu besa kao karakterne crte, tendencija da se potisne ili ispolji bes. Stariji parovi više se oslanjaju na religiozne navike kako bi poboljšali mentalno zdravlje, kod žena ovo malo izraženije nego kod muškaraca. Takođe, znatno manje koriste usluge mentalnog zdravlja kao što su psihoterapija i savetovanje. Višefaktorska analiza varijanse sprovedena je da bi se identifikovale varijable vezane za zdravstvene navike koje posreduju u ispoljavanju besa kod starijih parova.

Ključne reči: bes, stariji parovi, zdravstvene navike

ANGER EXPRESSION AND HEALTH-RELATED HABITS IN ELDERLY COUPLES

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Introduction. Anger is a multidimensional concept that includes physiological, cognitive and behavioral elements combined in complex patterns. While being a survival emotion, anger acts as aggravating factor for violence in the couple (intimate partner violence). Anger as a trait may be more stable for individuals but as a state, it varies according to a large number of variables, age being one of them.

Aim. The present study aims to explore anger expression patterns in elderly couples and the way this emotion relates to well established health related habits of each partner.

Method. A quantitative approach was used in order to analyze data collected from a sample of 150 couples, organized by age groups (50 of them had at least one partner aged 60+). State Trait Anger Expression Inventory (STAXI 2) was used in order to evaluate anger expression patterns for partners and an omnibus survey was constructed specifically for the study in order to assess health related habits and other variables. Statistical analyses have been conducted using paired T tests and analysis of variance models to compare among age groups and partners based groups.

Results. Elderly couples have reported significantly less movement and social health related habits compared to middle aged and young couples, while scoring higher on anger control. No significant differences were found among age groups regarding trait anger, anger-in and anger-out. Elderly couples rely more on religious habits to promote mental health, with women scoring slightly higher than men. Also, they use significantly less mental health services as psychotherapy and counseling.

Keywords. Anger, elderly couples, health related habits

UTICAJ MEHANIZAMA SUOČAVANJA SA OKOLNOSTIMA I AGRESIVNOSTI NA PRILAGOĐAVANJE ZATVORSKOM OKRUŽENJU

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Uvod. Kazneno-popravni zavod je dobro poznato okruženje za mentalne bolesti. Osoba koja se šalje u zatvor ima veće šanse da iz njega izađe u gore m stanju nego pre odlaska na izdržavanje kazne. **Cilj** ovog istraživanja je da se utvrdi glavni uticaj koji agresivnost i neki mehanizmi suočavanja imaju na osobe u pritvoru. **Materijal i metod.** Tokom 2019. i 2020. godine, primenom višestrukog upitnika, urađeno je istraživanje na uzorku od 900 ljudi, starih između 18 i 65 godina, koji su bili na izdržavanju kazne u rumunskom zatvoru. Statistička obrada podataka je urađena pomoću programa SPSS verzija 19, a korišćen je A test nezavisnih grupa. **Rezultati.** Iako bi na prvi pogled samozadovoljni (usredsređeni na emocije) mehanizmi mogli biti njihov način da se nose sa situacijom (mehanizam suočavanja poput: suzdržanosti, pozitivne reinterpretacije, prihvatanja, humora, religije), 38% ispitanika je odabralo humor kao mehanizam za suočavanje, 30% je izabralo religiju, a samo 12% prihvatanje. S druge strane, socijalno podržani mehanizam (kao emocionalna socijalna podrška, instrumentalna socijalna podrška) dobio je niži rezultat, iako je njihov značaj na pozitivnu reinseraciju dobro poznat. 80% učesnika izabralo je mehanizme suočavanja pomoću izbegavanja (poput razdvajanja u ponašanju, poricanja, upotrebe supstanci, mentalnog odvajanja). Vrednost za agresivnost pokazuje srednje razvijen (ST 5,20%) stav i ponašanje, sklonost ka agresivnom nametanju sopstvenog mišljenja ili interesa. **Zaključak.** Neki mehanizmi suočavanja mogu predvideti visoko prilagođavanje životu iza rešetaka i utiču na visoki ili niži nivo agresivnosti. Ako se ovo bude pratilo u budućnosti, novo istraživanje bi takođe moglo predvideti višu nivo reintegracije.

THE INFLUENCE OF COPING MECHANISMS AND AGGRESSIVITY REGARDING THE ADAPTATION TO CARCERAL ENVIRONMENT

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Introduction. Penitentiary is a well known mental illness environment. A subject that is sent to prison has a higher chance to get out worse than before being detained.

Aim. This research main objective is to identify the main influence that aggressivity and some coping mechanisms rather than others have on incarcerated individuals.

Method. Between 2019 and 2020 a multiple questionnaire was administered to a sample of 900 people, aged mainly between 18 and 65 years, from a Romanian penitentiary, SPSS version 19 and Independent Groups Anova tests were used.

Results. Even though, at first sight, self-sufficient (emotion-focused) mechanisms might be their way of coping with stress (coping mechanism like: *restraint, positive reinterpretation, acceptance, humor, religion*), 38% of our participants chose humor as a coping mechanism, 30% chose religion and only 12% chose acceptance. On the other hand, the lower score was given to socially-supported mechanism (as *emotional social support, instrumental social support, venting*), even though their importance on positive reinseration is well-known. 80% of participants chose avoidant-coping mechanisms (like *behavioral disengagement, denial, substance use, mental disengagement*). The score for aggressivity shows a medium developed (ST 5. 20%) attitude and behavior, an inclination towards the aggressive imposition of their own opinions or interests.

Conclusion. Some coping mechanisms can predict a high adaptation to life behind bars and they have an influence regarding the higher or lower score on aggressivity. If this is to be followed with further investigation, new research can also predict a higher reintegracion score.

Keywords: coping mechanisms, aggressivity, adult inmates, adaptation, penitentiary

UMETNOST I IDENTITET: SLUČAJ MUZEJA MAJDAN (KIJEV, UKRAJINA)

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Ovo istraživanje se bavi odnosom između umetnosti nastale tokom Revolucije dostojanstva - događaja na Majdanu (Kijev, Ukrajina, 21. novembar 2013 - 23. februar 2014) i misije Muzeja Majdan (Kijev, Ukrajina) nastalog iz pepela Evromajdana.

Majdanski događaji (1) proizveli su postkolonijalni diskurs, novu apolitičku ideologiju zasnovanu na konceptima dostojanstva i Ukrajinstva; (2) generisali su simbole, društvene mitove i kolektivnu imaginativnost; (3) pokrenuli su „duh Majdana“ koji je promenio svest učesnika demonstracija; i (4) funkcionisali su kao ritual intenziviranja, agregacije, inicijacije i tranzita u kome je oblikovan identitet nove Ukrajine.

Ovde su umetnici (1) odigrali presudnu ulogu u sastavljanju glavnih elemenata postmajdanskog identiteta u Ukrajini; (2) bili u poziciji da osnaže čitav pokret konkretnim idejama; i (3) prilagode muziku predmeta-simbola koja je već prisutna u ukrajinskoj DNK kroz procese davanja značenja, simbolizacije, mitizacije, kanonizacije i interpelacije.

Ovo izlaganje, zasnovano na terenskom radu, (1) definiše „Majdan“ kao mit i uočava i identifikuje one umetničke elemente (simbole i arhetipove) koji su nastali tokom Revolucije dostojanstva i deo su procesa mitifikacije i kolektivne imaginacije na osnovu koji je nastao „duh Majdana“; i (2) razmatra misiju i ulogu Muzeja Majdan.

U zaključku se (1) potvrđuje da je Majdan mit; (2) da je Muzej Majdan jedinstveni slučaj Memorijalnog muzeja posvećenog (i) očuvanju predmeta iz Revolucije dostojanstva; (ii) širenju emancipacijske poruke 'Majdanskog duha'; i (iii) učešću u formiranju postmajdanskog identiteta u Ukrajini.

Ključne reči: Majdan, umetnost, politika, mit, kolektivna imaginacija, antropološko posmatranje

ART AND IDENTITY: THE CASE OF THE MAIDAN MUSEUM (KYIV, UKRAINE)

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This research looks at the relation between art produced during the Revolution of Dignity-Maidan events (Kyiv, Ukraine, 21st Nov 2013 - 23rd Feb 2014) and the mission of the Maidan Museum (Kyiv, Ukraine) born from the ashes of Euromaidan.

The Maidan events (1) produced a post-colonial discourse-language, a new apolitical ideology based on the concepts of dignity and Ukrainianess; (2) generated symbols, social myths, and collective imaginary; (3) triggered the 'Spirit of Maidan' that changed the consciousness of the participants of the demonstrations; and (4) functioned as a ritual of intensification-aggregation-initiation-passage in which the identity of new Ukraine was shaped.

Here, the artists (1) played a crucial role in assembling the main elements of the post-Maidan Ukrainian identity; (2) were able to empower the whole movement with concrete ideas; and (3) reworked object-symbol-music already present in the Ukrainian DNA through a process of meaningization, symbolization, mythization, canonization, and interpellation.

This presentation, based on a field work, (1) defines 'Maidan' as a myth and spots and identifies those artistic elements (symbols and archetypes) which produced during the Revolution of Dignity participated in the manufacturing of the mythification process and of collective imaginaries creating the 'Spirit of Maidan'; and (2) looks at the mission and role of the Maidan Museum.

The conclusion (1) confirms that Maidan is a myth; and (2) that Maidan Museum is a unique case of a Memorial Museum dedicated (i) to the preservation of the Revolution of Dignity's objects; (ii) the spread of the emancipatory message of the 'Spirit of Maidan'; and (iii) participates in the formation of the post-Maidan Ukraine identity.

Keywords: Maidan, art, politics, myth, collective imaginaries, anthropological gaze

TRANZICIJA ZAGAĐENJA: EKSTRAKTIVIZAM I EKOLOŠKA KATASTROFA U SEOSKIM SREDINAMA TRANSILVANIJE U SOCIJALISTIČKOJ I POSTSOCIJALISTIČKOJ FAZI

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Copșa Mică je bilo jedno od najzagađenijih mesta u Evropi 90-ih godina kao rezultat procesa industrijalizacije koje je sprovodio Čaušeskuov režim. Ovaj rad analizira uzroke i posledice ekstraktivizma i produktivizma, od rumunske komunističke ere do danas. **Materijal i metod:** Studija se zasniva na etnografskom istraživanju, na osnovu posmatranja učesnika tokom 7 meseci, seta od 12 životnih priča, 18 detaljnih intervjuva, uključujući zdravstvene i ekološke stručnjake, ukupno 30 ljudi koji su živeli u zagađenoj životnoj sredini. Koji su bili motivi da se tamo legitimise industrijska delatnost? Kakvu ulogu igra fabrika Sometra u ovoj ruralnoj populaciji? Da li na bilo koji način usvajaju odgovore i strategije? Da li je država učinila bilo šta da reši problem zagađenja? Ovo su neka istraživačka pitanja koja će se u ovom radu analizirati iz kvalitativne perspektive. **Rezultati i diskusija:** Izgradnja topionice teških metala bila je ekološka katastrofa za mnoga seoska naselja u centralnoj Transilvaniji, što je uticalo na ekološke i socijalne probleme u periodu od 1960-ih do danas. Nakon pada komunizma i dolaska neoliberalnog sistema, grčka kompanija Sometra SA kupila je livnicu i dodatno pogoršala ekološku situaciju u tom području. **Zaključak:** Analiza ekstraktivizma u ovim seoskim sredinama, u dva različita sistema, od suštinskog je značaja za rešavanje složenih problema životne sredine i ekoloških katastrofa sa zajedničkim imeniteljem: telo kao kapital.

POLLUTION TRANSITION: EXTRACTIVISM AND ECOLOGICAL DISASTER IN TRANSYLVANIAN RURAL VILLAGES IN THE SOCIALIST AND POST-SOCIALIST STAGE

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Copșa Mică was one of the most polluted places in Europe in the 90s as a result of the industrialization process carried out by the Ceausescu's regime. This article analyzes the causes and consequences of extractivism and productivism, from the Romanian communist era to the present. **Material and method:** The study is based on an ethnographic investigation, based on a participant observation for 7 months, a set of 12 life stories, 18 in-depth interviews, including health and environmental professionals, a total of 30 people who lived with environmental suffering. Which were the motives to legitimize an industrial activity there? What role does the Sometra factory play in this rural population? Do they adopt answers and strategies in any way? Has the state done anything to solve the pollution problem? These are some research questions that will be analyzed from a qualitative perspective in this paper. **Results and discussions:** The installation of the heavy metal smelter and the black smoke factory was an ecological disaster for many rural villages in central Transylvania and, therefore affected the environmental and social problems of the period 1960s-present. After the fall of communism and the arrival of the neoliberal system, the Greek company Sometra SA bought the foundry and further aggravated the ecological system in the area. **Conclusions:** An analysis of extractivism studies in these rural villages, in two different systems, is essential for addressing the complexity of ecological and environmental disasters with a common denominator: the body as capital.

Keywords: ecological disaster, extractivism, post-communism

PORODIČNA PRAKSA. ISKUSTVO ETNOGRAFSKOG TERENSKOG RADA NA COPSA MICA

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Sve češće se etnografija pojavljuje kao rezultat artikulacije ličnih i političkih stavova istraživača u istraženoj stvarnosti. U ovoj studiji je korišćeno lično emocionalno iskustvo kako bi se bolje shvatilo lokalno znanje i patnje u životnoj sredini zbog činjenice da su baba i deda autora ovog rada živeli u Copsa Mica i radili u fabrici Sometra. **Materijal i metode:** Ovaj rad je urađen na osnovu etnografskih podataka koji su dobijeni u ovoj oblasti, obrađujući relevantne teme koje se pojavljuju u etnografskoj praksi, kroz detaljne intervjue, životne priče i posmatranje učesnika. **Rezultati:** Kroz ove metodološke pristupe, pojavljuju se mnoga pitanja, poput pohvala za industrijalizam, zdrava životna sredina i hrana, usredsređujući se na to od teorije prakse do toga kako socijalni akteri zamišljaju svet. **Zaključak:** Ovaj metodološki pristup je omogućio da se sagleda na koji način društvo prihvata i reaguje na toksično zagađenje sredine, kako je to prihvatanje nastalo, ko ga promoviše, koji glasovi prevladavaju, a koji se izostavljaju, koje oblike dobijaju i u kojim telima su otelotvoreni.

Cljučne reči: metodologija, etnografska praksa, teorija prakse, memorija

A FAMILY PRACTICE. EXPERIENCE OF ETHNOGRAPHIC FIELDWORK AT COPSA MICA

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More and more ethnographies appear as a result of the articulation of the researcher's own personal and politicreflections in the investigated reality. In this study, I use emotional experience to gain a better understanding of local knowledge and environmental suffering, due to the fact that my grandparents lived in Copsa Mica and worked in the Sometra factory. **Material and methods:** This text appears from the ethnography developed in this field, addressing relevant topics that appear in ethnographic practice, through in-depth interviews, life stories and observation of participants. To give relevance to the way the field and the personal relationships with the informants are accessed, the interaction with them, the motivation of my object of study and the way it adapts and shapes with the fieldwork, recording the information obtained, and, above all, reconstructing the collective memory to participate and analyze my research problem. **Results:** Through these methodological approaches, related issues arise, such as praise for industrialism, environmental health and food, focusing on it from a theory of practice, to how social actors conceive the world. **Conclusions:** This methodological approach allowed me to observewhich social acceptances respondto the toxic pollution, how they were born, who promotes them, which voices predominate, which ones are left out, which forms they acquire and in which bodies they are embodied.

Keywords: Methodology, ethnographic practice, theory of practice, memory

FENOMEN PROSJAČENJA TOKOM PANDEMIJE COVID-19

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Prosjačenje je jedan od društvenih fenomena koji je u Rumuniji stekao posebne karakteristike posle 1989. godine, iako je postojao u jednom ili drugom obliku u svim istorijskim epohama. U Rumuniji, prisiljavanje ljudi na prosjačenje zauzima 3. mesto po načinima eksploatacije, nakon seksualnog iskorišćavanja i prisilnog rada. Cilj rada je analiza mišljenja stanovništva o fenomenu prosjačenja i o promenama koje su se dogodile sa pandemijom COVID-19. Korišćena metoda bila je sociološka anketa, koristeći upitnik kao sredstvo. Upitnik je popunilo 148 ispitanika (87 žena i 61 muškarac) starosti između 18 i 64 godine. **Rezultati:** Analiza podataka pokazala je da je stav ljudi prema fenomenu prosjačenja negativan, većina smatra da ne postoji odgovarajuće zakonodavstvo i socijalne mere za borbu protiv ove pojave. Na značajan deo ispitanika utiče starost ljudi koji prose i koji su skloni da ponude pomoć posebno deci i starijim osobama. Ponudena pomoć je uglavnom u novcu i / ili hrani. Većina ispitanika veruje da je pandemija COVID-19 dovela do povećanja broja prosjaka, sa porastom siromaštva i gubitkom posla. **Zaključci:** Pružanje materijalne koristi prosjacima dovodi do podsticanja prosjačenja i posledično do pojačavanja pojave. Prevencija i oštrije sankcije mogle bi da smanje prosjačenje. Pad životnog standarda koji je osetila većina stanovništva doveo je tokom pandemije COVID-19 do pojačavanja fenomena prosjačenja.

Cljučne reči: prosjačenje, pandemija Covid-19, eksploatacija

THE PHENOMENON OF BEGGING DURING THE COVID-19 PANDEMIC

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Begging is one of the social phenomena that acquired special characteristics in Romania after 1989, although it existed in one form or another in all historical epochs. In Romania, forcing people to beg ranks 3rd in terms of ways of exploitation, after sexual exploitation and forced labor. The study aims to analyze the opinion of the population about the phenomenon of begging and about the changes that occurred with the COVID-19 pandemic. The method used was the sociological survey, using the questionnaire as a tool. The questionnaire was completed by 148 respondents (87 women and 61 men) aged between 18 and 64 years. Results: Data analysis showed that people's attitude to the phenomenon of begging is a negative one, most believing that there is no appropriate legislation and social measures to combat this phenomenon. A significant part of the respondents are influenced by the age of the people who beg and tend to offer help especially to children and the elderly. The help offered is generally in money and / or food. Most respondents believe that the COVID-19 pandemic has led to an increase in the number of beggars, with the increase in poverty and job losses.

Conclusions: Offering material benefits to beggars leads to encouraging begging and consequently to amplifying the phenomenon. Prevention and harsher sanctions could reduce begging. The decline in living standards felt by the majority of the population led during the COVID-19 pandemic to the amplification of the phenomenon of begging.

Keywords: begging, pandemic Covid-19, exploitation

POVEĆAVANJE KVALITETA ŽIVOTA STARIJIH LJUDI U DOMOVIMA ZA STARE

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Povećanje broja starijih ljudi dovelo je do povećanja broja onih kojima je potrebna zaštita i pomoć u specijalizovanim institucijama, posebno onim koje se bave medicinskom i socijalnom pomoći. **Cilj** studije je da analizira da li socijalna interakcija mladih i starijih pozitivno utiče na raspoloženje starijih i posledično na povećanje njihovog kvaliteta života. Korišćena je metoda naučnog posmatranja i tehnika intervjua. Intervjuisali smo 27 starijih osoba (žena i muškaraca) hospitalizovanih u dva staračka doma, koji su dva puta nedeljno komunicirali sa mladima (15-21 god.). Takođe je ispitano ponašanje starijih osoba u interakciji između generacija. **Rezultati** istraživanja su pokazali da su, pre nego što ih mladi ljudi posete, stariji ljudi bili apatični. Jednom kada mladi stupe u interakciju sa starijima kako bi zajedno radili razne aktivnosti (igre, diskusije, kolaži, izrada ručno rađenih predmeta, muzika, ples itd.), stari ljudi se odmah vraćaju u život i "pune baterije". Intervjui su pokazali da su stariji ljudi oduševljeni interakcijom sa mladima i da se više ne osećaju sami, da na nekoliko sati zaboravljaju da su hospitalizovani u staračkom domu. **Zaključci** - socijalna interakcija mladi-stariji pozitivno utiče na raspoloženje i zdravlje starijih i oni posledično imaju bolji kvalitet života. Komunikacija sa mladima pomaže u poboljšanju opšteg blagostanja, uklanja osećaj usamljenosti i smanjuje rizik od bolesti.

Ključne reči: starije osobe, kvalitet života, socijalna interakcija

INCREASING THE QUALITY OF LIFE OF THE ELDERLY IN NURSING HOMES

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Increasing the number of older people has led to an increase in those in need of protection and assistance in specialized institutions, especially those structured on medical and social assistance. The aim of the study is to analyze whether the social interaction of young people and the elderly positively influences the mood of the elderly and consequently the increase of their quality of life. The method of scientific observation and the technique of the interview was used. We interviewed 27 elderly people (women and men) hospitalized in two nursing homes, who had interacted twice a week with young people (15-21 years old). The behavior of elders in the interaction between generations was also observed during this period. The research results showed that before young people visit them, the elderly are in an apathetic state. Once young people interact with elders to do various activities together (games, discussions, collages, making hand made objects, music, dance, etc.) the old people immediately come back to life and recharge their batteries. Following interviews with elders, they showed that they are delighted with the interaction with young people and that they no longer feel alone, that they forget for a few hours that they are hospitalized in a nursing home. **Conclusions** - young-elderly social interaction positively influences the mood and health of the elderly and they consequently have a better quality of life. Communication with young people helps to improve general well-being, removes the feeling of loneliness and reduces the risk of disease.

Keywords: elderly people, quality of life, social interaction

DEMOGRAFSKE KARAKTERISTIKE, UČESTALOST PATOLOŠKIH PROMENA I INCIDENCIJA INVALIDITETA U PALEOPOPULACIJI IZ KASNOG ANTIČKOG PERIODA SELA KREPOST, DIMITROVGRADSKI OKRUG, JUGOISTOČNA BUGARSKA

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Uvod: Proučavanje ranohrišćanskih zajednica u Trakiji doprinosi saznanjima o periodu formiranja društva ranog Vizantijskog carstva na početku perioda Velike seobe naroda. **Cilj:** Istraživanje skeletnih ostataka populacije ima za cilj rekonstrukciju mortaliteta i preživljavanja, demografsku distribuciju patoloških promena i učestalost invaliditeta u zajednici iz kasne antike koja je naseljavala region. **Materijal i metod:** U istraživanju su korišćene klasične antropološke metode u identifikaciji starosti i pola. Prepoznate su patološke promene i njihova interpretacija je urađena nakon što su povezane sa sličnim promenama, pronađenim u drugim paleo-populacijama. **Rezultati:** Pronađeni su ostaci kostiju 30 osoba. Od tog broja 12 skeletnih ostataka su bili dečiji. Odnos dece u uzrasnoj grupi "Infans I", 7 pojedinaca, i grupi "Infans II", 5 osoba, kao i odsustvo deca mlađe od 1.5 do 2 godine, ukazuje na nedovoljnu zastupljenost novorođenčadi. Demografska distribucija predstavlja relativno visok udeo osoba starijih od 40 godina. Populacija ima relativno visoku učestalost zubnog karijesa. Degenerativna bolest zglobova pogađa uglavnom osobe starije od 40 godina i izraženija je kod žena. Kod šest osoba pronađene su promene koje su se možda razvile nakon infekcije. Invalidnost je prouzrokovana u jednom slučaju nakon traume desne tibije, a u jednom slučaju nakon moguće luksacije zglobova kuka. **Zaključak:** Nezastupljenost novorođenčadi i male dece do godinu dana objašnjava se pogrebnim ritualom koji se praktikovao. U nekim lezijama nakon infekcije prepoznato je širenje tuberkuloze.

DEMOGRAPHIC FEATURES, PATHOLOGICAL CHANGES DISTRIBUTION AND DISABILITY INCIDENCE IN THE PALEOPOPULATION FROM LATE ANTIQUITY BY THE VILLAGE KREPOST, DIMITROVGRAD DISTRICT, SOUTH-EAST BULGARIA

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Introduction: The study of the Early Christian communities in the Thrace contributes to the knowledge of the period of formation of society of Early Byzantine Empire in the beginning of the period of the Great Migration of Peoples. **Aims:** The investigation of the skeletal population aims reconstruction of the mortality and survival, demographic distribution of the pathological changes and incidence of disability in the community from the Late Antiquity, which inhabited the region. **Methods:** In the study are used classical anthropological methods in age and sex identification. The pathological changes are recognized and their interpretation is achieved after a correlated to similar, found in other paleo-populations.

Results: Bone remains from 30 individuals are recognized. Infants are presented with 12 individuals. The proportion between both child ages Infans I, 7 individuals and Infans II – 5 individuals and lack of individuals under 1 ½-2 years suppose underrepresentation of infants. Demographic distribution presents relatively high portion of individuals in ages over 40 years. The population presents relatively high incidence of dental caries. Degenerative joint disease affects mostly individuals over 40 years, more pronounced in females. In six individuals are found changes possibly developed after infection. Disability is caused in one case after a trauma of right tibia and in one case after possible luxation of hip joints.

Conclusions: The lack of newborns and small infants under one year of age explains with funeral ritual practiced in the necropolis. In some lesions after infection, a tuberculosis dissemination is to be recognized.

KOMPARATIVNA ANTROPOLOŠKA ANALIZA NEKOLIKO BALKANSKIH POPULACIJA

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Antropološki podaci iz 5 uzoraka odraslih muškaraca iz različitog lokalnog stanovništva u severnoj Bugarskoj (Bugari, Bugari-Balkandiji, Pomaci, Gagauzi, Turci) obrađeni su statistički, analizirani po metodama Mihalskog i upoređeni sa 41 drugim uzorcima iz Bugarske, Makedonije (sadašnja republika Severna Makedonija, ali takođe i Južna i Istočna), Kosovo, Albanija i Rumunija analizom klastera i glavnih komponenata. Rezultati pokazuju da se uzorci mogu podeliti u dve velike grupe (klastera). Prva uključuje populacije sa centralnoevropskim karakteristikama - kombinacija nordijskih, armenoidnih (balkano-kavkaskih) i laponoidnih (uralo-laponoidnih) elemenata. Drugi klaster obuhvata stanovništvo sa tipičnom Atlantsko-mediteranskom (Atlanto-Pontskom) kombinacijom nordijskih i mediteranskih elemenata. Prvi klaster se uglavnom širi u severnoj Bugarskoj, Srbiji, zapadnoj Makedoniji, Kosovu i Transilvaniji. Drugi klaster obuhvata populacije sa tipičnom Atlantsko-mediteranskom (Atlanto-Pontskom) kombinacijom nordijskih i mediteranskih elemenata. Obuhvata uglavnom Trakiju, istočnu Makedoniju i zapadnu Sofijsku oblast. Jedini uzorak iz severne Bugarske koji pripada ovom klasteru je uzorak Pomaka iz sela Toros, za koje se pretpostavlja da su decendenti pavlikijanaca, doseljenih iz Južne Bugarske. Četvorica ostalih - Bugari i Turci iz srednjeg severnog dela Bugarske, Bugari- Balkandiji i Gagauzi) pripadaju centralnoevropskom stanovništvu.

COMPARATIVE ANTHROPOLOGICAL ANALYSIS OF FEW BALKAN POPULATIONS

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Anthropological data from 5 samples of adult men from different local population in North Bulgaria (Bulgarians, Bulgarians-Balkandjjs, Pomaks, Gagauzes, Turks) are processed statistically, analyzed after Michalski's methods and compared with 41 other samples from Bulgaria, Macedonia (present republic of North Macedonia, but also Southern and Eastern), Kosovo, Albania and Rumania by cluster and principal component analysis. The results show that they can be divided into two major groups (clusters). The first one includes populations with Centraleuropean characteristics – a combination of Nordic, Armenoid (Balkano-Caucasian) and Lapponoid (Uralo-Lapponoid) elements. The second cluster includes population with the typical Atlanto-Mediterranean (Atlanto-Pontic) combination of Nordic and Mediterranean elements. The first cluster spreads mostly in North Bulgaria, Serbia, Western Macedonia, Kosovo and Transylvania. The second cluster includes populations with the typical Atlanto-Mediterranean (Atlanto-Pontic) combination of Nordic and Mediterranean elements. It covers mostly Thracia, Eastern Macedonia and Western Sofia region. The only sample from North Bulgaria which belongs to this cluster is the sample of Pomaks from Toros village, for which it is assumed that they are descendants of Paulicians, migrated from Sothern Bulgaria. Four other – Bulgarians and Turks from Middle North Bulgaria, Bulgarians-Balkandjjs and Gagauzes) belong to the Centraleuropean populations.

VREME I REDOSLED NICANJA STALNIH ZUBA KOD DECE IZ BUGARSKE (PRELIMINARNI PODACI)

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Vreme i redosled nicanja stalnih zuba koristi se za procenu zrelosti dece i za pripremu plana lečenja u stomatologiji i ortodontiji, ali i u forenzičkim naukama za procenu starosti deteta. Cilj rada je da se proceni vreme nicanja trajnih zuba kod bugarske dece uzrasta 5-14 godina i uporedi sa drugim podacima iz balkanskog regiona. Prikazani su podaci za 121 dete uzrasta od 6 do 8 godina, koji su podeljeni u tri starosne grupe. Izmerena je visina, masa tela i karakteristike glave (bizigomatska širina, bigonijalna širina, fizionomska visina lica, morfološka visina lica) i utvrđen je zubni status (tip ugriza, broj izniklih zuba, karijesna aktivnost, rotacije). Podaci su obrađeni statističkim programom SPSS 16. Prvi zubi koji niču su prvi molari (gornji i donji) i centralni donji sekutići u dobi od 80 meseci (6 godina i 8 meseci). Utvrđeno je da je nicanje ovih zuba ranije kod dečaka nego kod devojčica. Uočene su statistički značajne polne i starosne razlike u nicanju nekih trajnih zuba. U poređenju sa drugim studijama, vreme nicanja trajnih prvih kutnjaka i centralnih sekutića odloženo je za nekoliko meseci, dok su rezultati za redosled nicanja zuba slični.

Ključne reči: nicanje, stalni zubi, deca

ERUPTION TIME AND SEQUENCE OF THE PERMANENT TEETH IN BULGARIAN CHILDREN (PRELIMINARY DATA)

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The time and sequence of the eruption of permanent teeth are used to assess the maturity of children and to prepare a treatment plan in dentistry and orthodontics, but also in the forensic sciences to evaluate the age of the child. The aim of the study is to estimate the time of eruption of permanent teeth in Bulgarian children aged 5-14 years and to compare with other studies from Balkan region. Data for 121 children aged 6 to 8 years, divided into three age groups are presented. Height, bodyweight and cephalometric characteristics (bizygomatic breadth, bigonial breadth, physiognomical faceheight, morphological face height, etc.) were measured and dental status (type of bite, number of erupting teeth, carious activity, rotations) was determined. The results are processed by the statistical program SPSS 16. The first teeth to erupt are the first molars (both upper and lower) and the central lower incisors at the age of 80 months (6 years and 8 months). Eruption in these teeth is found to be earlier in boys than in girls. Statistically significant gender and age differences in the eruption of some permanent teeth are observed. Compared to other studies, eruption times of permanent first molars and central incisors are delayed by several months, whereas the results for sequence of the teeth eruption are similar.

Keywords: eruption, permanent teeth, children

UTICAJ DEMOGRAFSKE TRANZICIJE NA EKONOMSKI RAZVOJ BOSNE I HERCEGOVINE

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Glavna tema ovoga rada je upoznati se sa stanovništvom i ekonomijom Bosne i Hercegovine kroz teoriju demografske tranzicije i njene etape. U ovom radu će se razmatrati proces demografske tranzicije i njen uticaj na ekonomiju i ekonomski rast u BiH.

Cilj ovog rada je analiza ekonomije i ekonomskog rasta posmatrano kroz prizmu kretanja stanovništva. U radu su korišćene metode deskripcije, komparacije, analize, sinteze, dedukcije, te statističke metode. Iako imamo projekciju stanovništva BiH u budućnosti, ne smijemo se prepustiti onome što bi po njoj moglo biti, već nam treba služiti kao podsticaj da se pokrenemo i preduzmemo mjere kako bi na najbolji mogući način ostvarili održivi razvoj, radnu snagu i ekonomski rast.

Zbog svega navedenog, za našu analizu postaje bitno razumijevanje demografske tranzicije kao ključne snage koja je rukovodila evoluiranjem klasične Maltuzijanske populacione dinamike (vođene fiksnim faktorima proizvodnje) ka "režimu" održivog rasta. Nesinhronizovane pojave koje karakterišu istu u BiH su: smanjivanje mortaliteta, povećanje očekivanog životnog vijeka i dramatičan pad fertiliteta. Obim, brzina i vrijeme ovih promjena nisu isti, te je prolazak kroz faze demografskih promjena (dinamika odvijanja demografske tranzicije) različit po regionima i unutar njih. Ključni makroekonomski efekti potpune demografske tranzicije na ovom području bili bi sljedeći: značajan porast stope štednje, godišnji porast nadnica za oko 0,4% u narednih pedeset godina, znatno smanjenje kamatnih stopa i, što je za našu analizu najznačajnije - porast prosječne produktivnosti 1,5 puta tokom istog perioda, usljed promjena starosne strukture aktivnog stanovništva indukovane tranzicijom u domenu fertiliteta.

Ključne riječi: demografska tranzicija, stanovništvo, ekonomija

THE INFLUENCE OF DEMOGRAPHIC TRANSITION ON ECONOMIC DEVELOPMENT OF BOSNIA AND HERZEGOVINA

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The main topic of this paper is to get acquainted with the population and economy of Bosnia and Herzegovina through the theory of demographic transition and its stages. This paper will consider the process of demographic transition and its impact on the economy and economic growth in BiH.

The aim of this paper is to analyze the economy and economic growth observed through prism of population movement. The paper uses methods of description, comparisons, analyzes, syntheses, deductions, and statistical methods. Although we have a projection of the BiH population in the future, we must not leave it to what it might be, but we should serve as an incentive to get moving and take action to get the best possible ways to achieve sustainable development, labor and economic growth. Because of all of the above, understanding demographic transitions becomes essential for our analysis as a key driving force by evolving classical Malthusian population dynamics (guided fixed factors of production) towards a "regime" of sustainable growth (Galor & Weil, 2000, 808). Unsynchronized phenomena that characterize the same in BiH are: reducing mortality, increasing life expectancy and dramatic decline in fertility. The scope, speed and timing of these changes are not the same, and is going through phases of demographic change (dynamics of development demographic transitions) differ by regions and within them.

The key macroeconomic effects of a complete demographic transition on this area would be as follows: a significant increase in the savings rate, an annual increase wages by about 0.4% over the next fifty years, a significant reduction interest rates and, most importantly for our analysis - an increase in the average productivity 1.5 times during the same period due to age changes active population structures induced by transition in the domain of fertility.

Keywords: demographic transition, population, economy

PARAMETRI MENTALNOG ZDRAVLJA KOD STUDENTKINJA MEDICINE U SEVERNOJ MAKEDONIJI

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Cilj rada je bio da se proceni i uporedi anksioznost, depresija i percipirani stres kod studentkinja medicine u toku predkliničkih i na početku kliničkih predmeta u zimskom semestru 2019/2020 školske godine na Medicinskom fakultetu, Univerziteta "Kiril i Metodij" u Skopju. Ukupno 329 studentkinja (137 iz prve godine, 121 iz druge i 71 iz treće godine) uzrasta od 18 do 22 godine popunilo je upitnik koji je sadržavao biografske podatke, Beckov inventar za depresiju (BDI), Beckov inventar za anksioznost (BAI) i Skalu za percipirani stres (PSS). Nije bilo značajne razlike u postignutim bodovima među grupama ($p>0.05$). Jedanaest posto studentkinja (36) je pokazalo srednju do klinički manifestnu depresiju (prema arbitrarno definiranom pragu za BDI od postignutih 21 i više bodova), koja je bila praćena visokom anksioznošću, stresom i upotrebom benzodiazepina. Ukupno 31,6% (104) je pokazalo visok nivo anksioznosti ($BAI>25$). Dvadeset i jedan procenat studentkinja su doživljavale visok nivo stresa. Obavezna kontinuirana pastoralna i psihološka podrška od samog početka do kraja studija je neophodna u sklopu medicinske edukacije u nasoj zemlji

MENTAL HEALTH PARAMETERS IN FEMALE MEDICAL STUDENTS IN NORTH MACEDONIA

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The aim of the study was to assess and to compare anxiety, depression and perceived stress in female medical students in preclinical classes and on the beginning of clinical ones. The study was undertaken during the winter semester of 2019/2020 school year at Medical Faculty, University "Ss. Cyril and Methodius", in Skopje. A total of 329 female students (137 from first, 121 from second and 71 from the third year), aged 18-22 years answered questionnaires containing biographic data, Beck Depression Inventory (BDI), Beck Anxiety Inventory (BAI) and Perceived Stress Scale (PSS). There was no significant difference in obtained parameters between groups ($p>0.05$). Eleven percent (36) showed moderate to clinically manifest depression (according to an arbitrarily defined BDI cutoff point of 21 or greater), accompanied by high anxiety and stress and consequent use of benzodiazepines. 31.6 percent (104 students) showed high anxiety levels ($BAI>25$). Twenty one percent showed high levels of stress. Continuous pastoral and psychological support, with a mandatory start at the beginning of the study program should be implemented in medical education in our country.

PROBLEMSKA NASTAVA KAO PODSTICAJNO OKRUŽENJE ZA UČENJE ANTROPOLOŠIH SADRŽAJA U OSNOVNOJ ŠKOLI

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Problemska nastava predstavlja jedan od modela razvijajuće nastave, koji je nastao iz potrebe da se poveća efikasnost nastavnog procesa. Osnovni ciljevi problemske nastave su osposobljavanje učenika za samostalnu primenu stečenih znanja u novim životnim okolnostima, što podrazumeva razvoj njihovog stvaralačkog mišljenja. Iako su brojni autori u svojim eksperimentalnim istraživanjima potvrdili pozitivne efekte problemske nastave biologije na podizanje nivoa uspeha i motivaciju učenika za učenje bioloških sadržaja, nastava biologije se u našoj zemlji već duži vremenski period ne menja značajno. Verovatni razlozi za to su nedovoljno nastavnikovo poznavanje mogućnosti primene problemske nastave, manjak motivacije za dodatna intelektualna ulaganja u nastavni proces, a nekada i nedostatak resursa za pripremu problemskih zadataka. Sagledavajući značaj savremenih teorija učenja i nastave, u uvodnom delu rada su opisane teorijske osnove problemske nastave. Mogućnost primene problemske nastave prikazana je na primeru obrade antropološkog sadržaja predviđenog u okviru nastavne teme Poreklo i raznovrsnost života u 6. razredu osnovne škole. Većom dostupnošću praktičnih primera obrade bioloških sadržaja problemskom nastavom, nastavnicima se pruža podrška i podstiče motivacija da na sličan način kreiraju problemske situacije u nastavnom procesu, a time osposobe učenike za samostalno rešavanje problema, kao i izražavanje sopstvenog mišljenja u vezi sa ispitivanim problemom.

Ključne reči: problemska nastava, nastava biologije, osnovna škola, primer dobre prakse.

PROBLEM-BASED LEARNING AS A STIMULATING ENVIRONMENT FOR LEARNING ANTHROPOLOGICAL TOPICS IN PRIMARY SCHOOL

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Problem-based teaching and learning, as one of the models of developing teaching and learning, has resulted from a need to enhance the educational process. The main goal of the model is to enable students to apply the acquired knowledge in new real-life situations, which implies the development of their creative thinking skills. Although a number of empirical studies have confirmed the positive effects of problem-based approach on raising the level of student achievement and motivation, biology teaching and learning in our country has not changed a lot for a long period of time. Some of the reasons may lie in teachers' insufficient knowledge related to the application and effects of problem-based learning, the lack of motivation to invest additional intellectual efforts in the teaching process, as well as the lack of resources for creating problem-based tasks. Considering modern theories of teaching and learning, the introductory part of the paper offers theoretical framework of problem-based education. An example of applying problem-based teaching and learning is given in relation to some anthropological contents that are part of the general topic Life Origin and Diversity of the sixth grade syllabus. A larger availability of real examples of problem-based approach provides the support and motivation for teachers to create problem-based tasks in their biology classes and thus enable students for solving problems and expressing their critical thinking related to the problems they encounter.

Keywords: problem-based teaching and learning, biology teaching and learning, primary school, an example of good practice.

ANTROPOLOŠKI SADRŽAJI U RANIJIM I NOVIM PROGRAMIMA BIOLOGIJE ZA OSNOVNU ŠKOLU U REPUBLICI SRBIJI

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Promenom koncepta nastave biologije u osnovnoj školi u kom je linearni model Nastavnog programa biologije zamenjen spiralnim modelom Programa nastave i učenja biologije došlo je, pored ostalog, do promene zastupljenosti i rasporeda izučavanja antropoloških sadržaja. Prema starom Nastavnom programu biologije, antropološki sadržaji su izučavani samo u okviru sedmog razreda kroz tri nastavne teme: Poreklo i razvoj ljudske vrste, Građa čovečjeg tela i Reproductivno zdravlje.

U okviru novog Programa nastave i učenja biologije, antropološki sadržaji se izučavaju u petom, šestom, sedmom i osmom razredu osnovne škole kroz pet nastavnih tema: Poreklo i raznovrsnost života, Jedinstvo građe i funkcije kao osnova života, Nasleđivanje i evolucija, Život u ekosistemu i Čovek i zdravlje. Iako samo nastavna tema Čovek i zdravlje svojim nazivom jasno ukazuje na antropološke sadržaje, oni su zastupljeni i u svim ostalim nastavnim temama.

U spiralnom modelu programa se u izučavanju antropoloških sadržaja mogu uočiti neke prednosti, ali i nedostaci u odnosu na raniji linearan program. Prednost novog programa je kontinuiranost u izučavanju antropoloških sadržaja od petog do osmog razreda i njihova povezanost sa drugim biološkim sadržajima. Potencijalni nedostatak spiralnog programa je nemogućnost povezivanja antropoloških sadržaja kroz razrede od strane učenika, posebno učenika mlađeg uzrasta. Pošto se novi koncept programa primenjuje tek tri školske godine (u petom, šestom i sedmom razredu), a učenici osmog razreda će ga primenjivati od školske 2021/2022. godine, još uvek je rano donositi konačne zaključke o njegovoj efikasnosti.

Ključne reči: antropološki sadržaji u osnovnoj školi, linearni koncept nastave, spiralni koncept nastave

ANTHROPOLOGICAL CONTENTS IN PREVIOUS AND NEW BIOLOGY PROGRAMS FOR PRIMARY SCHOOL IN THE REPUBLIC OF SERBIA

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By changing the concept of teaching biology in primary school, in which the linear model of the Biology Curriculum was replaced by the spiral model of the Biology Teaching and Learning Program, there was, among other things, a change in the representation and schedule of anthropological content. According to the old, Biology Curriculum, anthropological contents were studied within the seventh grade through three teaching topics: The Origin and Development of the Human Species, The Structure of the Human Body and Reproductive Health.

Within the new Biology Teaching and Learning Program, anthropological contents are studied in the fifth, sixth, seventh and eighth grades in primary school, through five teaching topics: Origin and diversity of life, Unity of material and function as the basis of life, Inheritance and evolution, Life in the ecosystem and Man and health. Although only the teaching topic Man and Health with its name clearly indicates anthropological contents, they are represented in all teaching topics.

In the spiral model of the program, some advantages can be noticed in the study of anthropological contents, but also disadvantages in relation to the earlier linear program. The advantage of the new program is the continuity in the study of anthropological contents from the fifth to the eighth grade and their connection with other biological contents. A potential disadvantage of the spiral program is the impossibility of connecting anthropological contents through classes by students, especially younger students. Since the new concept has been applied for only three years (in the fifth, sixth and seventh grade), and the students of the eighth grade will apply it from the school year 2021/2022., it is still too early to draw final conclusions about its effectiveness.

Keywords: anthropological contents in primary school, linear concept of teaching, spiral concept of teaching.

ANTROPOLOGIJA SAMOĆE, USAMLJENOSTI I LIČNE SREĆE U ESEJIMA ISIDORE SEKULIĆ

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Antropološka analiza motiva samoće, usamljenosti i lične sreće u esejima Isidore Sekulić podrazumeva bavljenje najdubljim čovekovim stanjima i težnjama njegove duše ka samospoznaji i samoostvarenju, čemu je umna spisateljica posvetila svoj stvaralački rad. Njeni eseji ukazuju na izuzetan dar uočavanja egzistencijalnih okvira u kojima bivstvovanje čoveka korespondira sa najraznovrsnijim preprekama vlastitog uma i društvenim ograničenjima, ali i na njen apsolutan sluh u semantičkom i simboličkom izražavanju pomenutih antropoloških slika. Cilj ovog rada je konkretizovanje i sintetizovanje istraživačkog materijala višeslojne i zahtevne teme, uz sintezu nekoliko istraživačkih postupaka, gde se prednost daje fenomenološkoj metodi. Rezultati pokazuju da su istraženi motivi Isidorinog dela osvetljeni kao nedvojivi deo celovite ličnosti koja prirodno traga za odgovorima o smislu čovekovog bitisanja

ANTROPOLOGY OF LONELINESS AND PERSONAL HAPPINESS IN ISIDORA SEKULIĆ'S ESSAYS

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Anthropological analysis of the motives of solitude, loneliness and personal happiness in Isidora Sekulic's essays implies dealing with the deepest human states and the aspiration of their souls to self-recognition and self-realization, to which this ingenious author devoted her creative work. Her essays point to an exquisite gift of perception of existential framework where man's being corresponds to various obstacles of their own mind, as well as social limitations and its absolute hearing in semantic and symbolical expression of the aforementioned anthropological images. The aim of this paper is to concretize and synthesize research material's multi-layer and demanding topic, along with synthesizing several research procedures where priority is given to the phenomenological method. Results indicate that light has been shed on the researched motives of Isidora's work as an inseparable part of the entire personality that naturally seeks answers to the sense of men's being.

FERTILNE RAZLIKE U RURALNO-URBANOJ ZONI SEMBERIJE

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Već decenijama unazad se govori o promeni reproduktivnog obrasca ponašanja žena prema mestu boravka. Počev od perioda industrijalizacije i urbanizacije došlo je prvo do smanjivanja seoskih površina u korist gradskih. Sve manje stanovnika se bavilo poljoprivredom što je produbilo i proces deagrarizacije uništavanjem poljoprivrednih površina pretvarajući ih u stambene ili industrijske zone. Smatralo se da su nosioci reprodukcije upravo seoska domaćinstva koja su u početku decu rađala ne samo zbog porodične ambicije već zbog potreba rada na velikim obradivim površinama. Brojnost članova porodice sredinom prošlog veka bila je daleko veća nego danas. Drugim rečima, veličina porodice se smanjila prelaskom u gradove. Semberija i ako je izuzetno agrarno područje doživela je isti preobražaj i demografski i prostorni. Cilj rada da se utvrde fertilne razlike u ruralno-urbanoj zoni Semberije. Primenom anketnog upitnika obuhvatili smo 1000 žena u fertilnoj dobi od toga 357 ispitanica u ruralnom, 575 u urbanom i 68 u prigradskom području. Parametarskom analizom varijansi ispitana je postojanost statističke značajnosti fertiliteta prema tipu naselja. Rezultati istraživanja ukazuju da su nosioci reprodukcije i dalje žene koje su nastanjene u seoskim predelima ali s daleko manjim brojem dece i članova porodice nego ranije. Prema ovoj analizi statistički značajne razlike postoje između sela i grada, kao i između sela i prigradskih naselja, dok takva razlika ne postoji između grada i prigradskih naselja. Prosečan broj dece na selu se kreće oko 2, 17. Dok urabne zone stopu ukupnog fertiliteta drže ispod 2.

Ključne reči: selo, grad, fertilitet, Semberija

FERTILE DIFFERENCES IN THE RURAL-URBAN ZONE OF SEMBERIA

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For decades, there has been talk of changing the reproductive pattern of women's behavior according to their place of residence. Starting from the period of industrialization and urbanization, there was first a reduction of rural areas in favor of urban areas. Fewer and fewer inhabitants were engaged in agriculture, which deepened the process of deagrarization by destroying agricultural land, turning into residential or industrial zones. It was considered that the carriers of reproduction were precisely rural households that initially gave birth to children not only because of family ambition but also because of the need to work on large arable land. The number of family members in the middle of the last century was far greater than today. In other words, the size of the family decreased with the move to the cities. Even if Semberija is an exceptionally agrarian area, it has undergone the same transformation, both demographically and spatially. The aim of this paper is to determine fertile differences in the rural-urban zone of Semberija. Using the survey questionnaire, we included 1000 women of childbearing age, of which 357 respondents in rural areas, 575 in urban areas and 68 in suburban areas. The stability of the statistical significance of fertility according to the type of settlement was examined by parametric analysis of variances. The results of the research indicate that the carriers of reproduction are still women who live in rural areas, but with a far smaller number of children and family members than before. According to this analysis, there are statistically significant differences between villages and cities, as well as between villages and suburbs, while such a difference does not exist between cities and suburbs. The average number of children in the countryside is around 2, 17. While the urban zones keep the total fertility rate below 2.

Keywords: village, city, fertility, Semberija

ADNEKSA KOŽE: DLAKE I NOKTI, KAO DIJAGNOSTIČKI POKAZATELJ OPŠTEG ZDRAVSTVENOG STANJA PACIJENATA

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Dlake (pili) su orožale elastične strukture koje se prostiru na celoj površini kože sa izuzetkom dlanova, tabana, dorzalnih strana distalnih falangi prstiju, unutrašnje strane prepucijuma, glansa penisa i unutrašnje strane malih i velikih usana.

Nokti (unguae) su tvrde, keratinske, sedefaste ploče koje pokrivaju dorzo-lateralnu stranu završnog članka prstiju šaka i stopala. Pored zaštitne funkcije koju imaju, nokti omogućavaju prstima hvatanje malih predmeta, obavljanje finih i preciznih radnji a uz to ima i estetsko – kozmetički značaj.

Kvalitet dlake i noktiju obično odražavaju ukupno stanje našeg zdravlja. Njihove kratkotrajne promene u anatomskom i fiziološkom smislu nisu opasne, ali ako traju više meseci ili godina mogu da budu znak ozbiljnog oboljenja.

Potpuni gubitak kose (ćelavost), u nefiziološkom dobu, njeno pojačano opadanje, ograničen gubitak dlakavosti mogu da budu posledica hormonskog disbalansa, (nadbubreg, štitna žlezda), autoimunih i vezivno-sistemske-tkivnih oboljenja (lupus), te infektivnih (alopecia, covid-19) dešavanja.

Promene na noktima u smislu gubitka boje, pojave beličastih tačaka, raslojavanja, udubljenja u nivou nokatne ploče (onychopathia) mogu da budu signal bolesti jetre, bubrežne slabosti, hronične opstruktivne bolesti pluća ali i da znače anemiju i dijabetes.

Adneksa kože: dlaka i nokti su značajan dijagnostički marker mnogih oboljenja.

U okviru fizikalnog pregleda, u rukama iskusnog kliničara, promene na adneksama kože (dlaka, nokti) predstavljaju značajan dijagnostički marker.

Ključne reči: Adneksa kože, dlaka, nokti, dijagnostika, marker

SKIN ADNEXES: HAIR AND NAILS, AS A DIAGNOSTIC INDICATOR OF GENERAL HEALTH OF PATIENTS

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The hairs (pili) are armed with elastic structures that extend over the entire surface of the skin with the exception of the palms, soles, dorsal sides of the distal phalanges of the fingers, inner side of the foreskin, glans penis and inner side of the labia minora and labia majora.

The nails (unguae) are hard, keratinous, mother-of-pearl plates that cover the dorso-lateral side of the final joint of the fingers and toes. In addition to the protective function they have, nails enable the fingers to grasp small objects, perform fine and precise actions, and it also has an aesthetic and cosmetic significance.

The quality of hair and nails usually reflects the overall state of our health. Their short-term changes in the anatomical and physiological sense are not dangerous, but if they last for several months or years, they can be a sign of a serious illness.

Complete hair loss (baldness), in non-physiological age, its increased decline, limited hair loss may be due to hormonal imbalance (adrenal gland, thyroid gland), autoimmune and connective-systemic-tissue diseases (lupus), and infectious (alopecia, covid-19) events.

Changes in the nails in terms of color loss, appearance of whitish spots, stratification, depressions in the level of the nail plate (onychopathia) can be a signal of liver disease, kidney weakness, chronic obstructive pulmonary disease, but also mean anemia and diabetes.

Skin adnexa: hair and nails are a significant diagnostic marker of many diseases. Within the physical examination, in the hands of an experienced clinician, changes in the skin adnexa (hair, nails) represent a significant diagnostic marker.

Keywords: Skin adnexa, hair, nails, diagnosis, marker

UTICAJ DEMOGRAFSKOG PROCESA STARENJA NA PRIVREDNI I EKONOMSKI RAZVOJ PIROTSKOG OKRUGA

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Cilj rada je da identifikuje uzroke depopulacije i demografskog procesa starenja stanovništva Pirotskog okruga i utvrdi kako će se navedeni procesi odraziti na njegov ekonomski razvoj. Demografski i ekonomski razvoj su u kauzalnoj povezanosti. Promene u demografskom razvoju odraziće se i na dinamiku ekonomskog razvoja. Istovremeno, intenzitet ekonomskog razvoja odrediće dalje tendencije u razvoju stanovništva. Za potrebe istraživanja analizirani su podaci Republičkog zavoda za statistiku. Analiza starosne strukture je bazirana na proračunu relevantnih demografskih indikatora: indeksa starenja, koeficijenta starosti, prosečne starosti i udela funkcionalnih kontigenata u ukupnom stanovništvu. Od 2011. do 2019. godine broj stanovnika Pirotskog okruga je smanjen za 9640. Samo na osnovu prirodnog priraštaja smanjenje je iznosilo 8515 (10,3‰ u 2019. godini). Visok stepen starenja stanovništva odražava se u činjenici da Pirotski okrug prema procenama za 2019. godinu ima 25,8% stanovništva starog 65 i više godina (povećanje za 3,4% u odnosu na vrednosti iz 2011. godine). Prosečna starost stanovništva je u istom periodu povećana sa 45,4 (2011.) na 46,7 (2019.). U analizama starosne strukture kao relevantan pokazatelj koristi se koeficijent zavisnosti starog stanovništva (broj starih 65 i više godina na 100 lica starosti 15-64 godine). Koeficijent zavisnosti starog stanovništva 2019. godine iznosio je 41,2 (povećanje za 6,9 u odnosu na 2011. godinu). Prema izloženim indikatorima i prema projekciji broja stanovnika, zaključak je da će se tendencije u starenju stanovništva i negativnoj stopi rasta nastaviti i u budućnosti.

Cljučne reči: Pirotski okrug, starenje stanovništva, depopulacija, prirodni priraštaj

THE INFLUENCE OF THE DEMOGRAPHIC PROCESS OF AGING ON THE ECONOMIC DEVELOPMENT OF THE PIROT DISTRICT

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The aim of this paper is to identify the causes of depopulation and the demographic process of aging of the population of the Pirot district and to determine how these processes will reflect economic development. Demographic and economic development are in causal connection. Changes in demographic development will also reflect on the dynamics of economic development. At the same time, the intensity of economic development will determine further tendencies in the development of the population. For the needs of the research, we used data from Statistical Yearbooks of the Statistical Office of the Republic of Serbia. The analysis of the age structure is based on the calculation of relevant demographic indicators: aging index, age coefficient, average age and the share of functional contingents in the total population. From 2011 to 2019, the number of inhabitants of the Pirot district was reduced by 9,640. Only on the basis of natural increase, the decrease was 8,515 (10,3‰ in 2019). The high degree of population aging is reflected in the fact that the Pirot district, according to estimates for 2019, has 25.8% of the population aged 65+ and more (an increase of 3.4% compared to 2011 values). The average age of the population increased from 45.4 (2011) to 46.7 (2019). In the analysis of the age structure, the coefficient of dependence of the old population is used as a relevant indicator (the number of people aged 65 and more per 100 persons aged 15-64). The dependency ratio of the old population in 2019 was 41.2 (an increase of 6.9 compared to 2011). According to the presented indicators and the population projection, the conclusion is that the tendencies in the aging population and the negative growth rate will continue in the future.

Keywords: Pirot district, population aging, depopulation, natural increase

Indeks autora i koautora / Index of authors and co-authors

Acović Aleksandar	44	Golub Rada	100	Pavlica Tatjana	28, 67, 70
Adjić Ivan	29	Golubović Ninoslav	102	Pavlović Jasna	24
Alexandru Monica Luminita	90, 91	Goncharova Natalia	22	Pejčić Ana	50, 57, 58, 59
Andelković Maja	47, 48, 49, 52	Grujičić Darko	33	Perović Tatjana	54, 55
Babić Nikola	29	Hurbo Tatjana	18	Petković Emilija	38
Babović Siniša S.	30, 66	Igić Ana	41	Petković Vesna	20
Baciu Adina	82	Igić Marija	41, 59	Petričević Sonja	66
Bagchi Subrata Sankar	63	Igić Marko. 46, 47, 48, 49, 50, 52, 56		Petrović Jelena	42
Bandyopadhyay Arup Ratan 19, 62, 64 73, 74, 75, 76, 77, 78, 79, 80		Janković Nataša	48	Petrović Milica	58
Barac Radomir	36, 42, 56	Janošević Mirjana	39	Pirinska – Apostolu Magdalena 68, 69	
Bojadziewa Biljana	34, 35	Janošević Predrag	39	Pluncevic Gligoroska Jasmina 37, 96	
Bojović Marija	58	Jaramaz Biljana	28	Popović Jelena	36, 42, 56
Bošković Mirjana	59	Jovanović Marija	41, 59	Pribičević Tijana	97, 98
Božinović Milena	101	Jovović Veselin	27	Pupovac Nikolina	29, 32
Božinović Nebojša	101	Kahrović Izet	38	Puškaš Valerija	70
Bradić-Vasić Marija	57	Kanjevac Tatjana	43, 44	Rada Cornelia	83, 84, 85
Burić Kristina	61	Kesić Ljiljana	58	Radenković Oliver	38
Burić Nina	61	Kirilov Boyan	94	Radojičić Aleksandra	52
Čadikowska Elizabeta	34, 35	Knezi Nikola	29, 31, 32	Radošević Dragana	29
Čanjak Radomir	27	Kocić Katarina	52	Rakić Rada	28, 70
Čaprić Ilma	38	Kostić Milena. 46, 47, 48, 49, 50, 52		Ristić Tamara	43
Chakraborty Parikshit	62	Krstonošić Bojana	67	Ristić Vladimir	43, 44
Chatterjee Diptendu 19, 64, 73, 74, 76		Laketa Dunja	29	Russeva Victoria	92
Chatterjee Madhumati	78	Lazarević Momir	95	Sarkar Pranabesh	73, 74
Chaudhury Sutapa	62	Lazarević Tihomir	97, 98	Savuljić Miljan	30
Ciuciuman Romero Adrián	88, 89	Lovrenčić Slavko	66	Siladi Mladenović Đendi	66
Crînguş Costin-Marian	83, 86	Macuga Lukasz	93	Šljivici Katarina	40, 45
Crnišanin Erkin	47	Mančevska Sanja	37, 96	Spasić Milan	61
Daković Bjelaković Marija	36	Marfina Olga	17	Spirkoska Biljana	96
Das Kaustav	63	Marić Dušica	29	Špirtović Omer	38
Das Piyali	76, 77	Marinković Dragoslav	33	Srdić Galić Biljana	30, 31, 66, 67
Denić Marko	57	Mekić Raid	38	Stanković Ivana	58
Dey Biswarup	76	Milislavljević Danijela	54, 55	Stanković Siniša	67
Dimitrijević Dragana	42	Milošević-Djordjević Olivera	33	Stojev Racho	81, 93
Dimitrova Albena	71, 72	Minić Ivan	50, 57	Stojanović Simona	41, 59, 61
Dodevski Ace	34, 35	Mirić Nebojša	31	Stojković Branislava	41, 59, 61
Drvendžija Zorka	29, 31	Mirkov Ljiljana	33	Stojšić Džunja Ljubica	29
Đurđev Ivana	29	Mitić Aleksandar	36, 42, 56	Stojšić Milosavljević Anastazija	31
Dutta Priyanka	80	Mladenova Silviya	65	Stošić Nenad	36, 56
Ercolani Giovanni	87	Mukherjee Koel	75	Štrkalj Goran	25
Erić Mirela	32	Murić Benin	38	Tijanić Miloš	61
Furundžić Dijana P.	53	Nakhro Khriesivonuo	64	Todorović Ana	39
Furundžić Nikola Z.	53	Nedeljković Andrija	49, 52	Todorović Kosta	61
Gajić Zoran	66	Nedić Katarina	43	Tričković Janjić Olivera 23, 40, 41, 45	
Gardašević Novica	27	Niculită Zenobia	84, 85	Trpkovska Biljana	34, 35
Gateva Maria	72	Nikolić Aleksandra	42	Udicki Mirjana	67
Ghosh Jyoti Ratan	80	Nikolić Marija	36, 42, 56	Vasić Isidora	31
Ghosh Kusum	73	Novaković Aleksa D.	30	Vasiljević Milica	52
Ghosh Roy Abhishikta	79	Obradović Radica	54, 55	Veličković Milica	44
Gligorjević Nikola	46, 47, 48, 49, 50, 52	Obradović Radmila	50, 58, 59	Virjević Kristina	33
Gocić Milena	102	Pandourska Yankova Ivaila	71	Vladimirov Ivo	81
		Pašalić Darko	95	Vučinić Nikola	32
		Pašalić Stevo	95	Vukosavljević Nikola	43

Vuletić Miona	44	Zhecheva Yanitsa	71	Zlatić Tatjana.....	40, 45
Yankova Pandourska Ivaila	72	Živanović Srboľjub.....	21	Županec Vera.....	97, 98
Zafirova Biljana	34, 35, 37	Zlatanović Marković Valentina	99		

