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3RD INTERNATIONAL CONFERENCE ON

FUTURE OF PREVENTIVE MEDICINE & PUBLIC HEALTH

MARCH 30-31, 2023
BARCELONA, SPAIN

FUTURE OF PMPH 2023

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PEERS ALLEY
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PROGRAM-AT-A-GLANCE

FUTURE OF PMPH
2023

DAY 1
MARCH 30, 2023

Scientific
Program

Topics: Preventive Medicine | Public Health and Healthcare | Healthcare Technologies | Healthcare Innovations | Digital Health | Primary Care | Occupational Health and Safety | COVID 19 | Nursing | Internal Medicine | Women's Health Psychology and Psychiatric Disorders | Infectious Diseases | Pharmaceuticals | Artificial Intelligence

08:00-08:40	**Registrations**
08:40-09:00	**Opening Ceremony**

Moderator: Mitzi S Brammer, *Saint Louis University, USA*

Keynote Forum

09:00-09:25	**Title: Assessing and reducing the risk for burnout with the Bar-On multifactor measure of performance** **Reuven Bar-On,** *Into Performance ULC, Canada*
09:25-09:50	**Title: The flashbulb-like nature of memory of the first covid-19 case and the impact of emergency** **Claudia Marin,** *University of Bari Aldo Moro, Italy*

Distinguished Speaker Talks

Chair	**Chris Parsons,** *Pardee Hospital Center for Infectious Diseases, USA*
Chair	**Bruno Baumann,** *University Hospital Münster, Germany*
09:50-10:10	**Title: How (Not What) to prescribe: Managing disruptive behaviorsin individuals with neurodevelopmental disorders** **Gabrielle Elizabeth Hodgins,** *University of North Carolina School of Medicine, USA*
10:10-10:30	**Video Presentation--Title: Through a Glass Darkly: A clinical journey** **Linda A Chernus,** *University of Cincinnati College of Medicine, USA*
10:30-10:50	**Title: The case against race-based GFR** **Prabhdeep Uppal,** *Christiana Care, USA*

Refreshment Break 10:50-11:05

11:05-11:25	**Title: Feral swine and transmission of *Brucellasuis* in the Southeastern United States** **Chris Parsons,** *Pardee Hospital Center for Infectious Diseases, USA*
11:25-11:45	**Title: Etiology of macular edema defined by deep learning in optical coherence tomography scans** **Fabio Daniel Padilla Pantoja,** *Universidad Nacional de Colombia, Colombia*
11:45-12:05	**Title: Factors associated with early biological aging in older people with HIV** **Isaura Romero Peixoto,** *Federal University of Pernambuco, Brazil*
12:05-12:25	**Title: Physicians' Perceptions about collaborating with speech-language pathologists for Dysphagia treatment in interprofessional healthcare** **Mitzi S Brammer,** *Saint Louis University, USA*
12:25-12:45	**Title: A new reliable and accurate volumetric device generating profiles of cross-sectional areas** **Frans P Houwen,** *Peracutus B.V., The Netherlands*

Group Photo

Lunch Break 12:45-13:30

Chair	**Chris Parsons,** *Pardee Hospital Center for Infectious Diseases, USA*
Chair	**Bruno Baumann,** *University Hospital Münster, Germany*

Distinguished Speaker Talks

13:30-13:50	**Title: Is he a drug dealer? Public perceptions of the severity of medical cannabis diversion** **Ne'eman-Haviv Vered,** *Ariel University, Israel*
13:50-14:10	**Title: Knowledge, attitudes and practices regarding ergonomic hazards among healthcare workers in a Saudi Government hospital** **Nawal Hatem Herzallah,** *Imam Abdulrahman Bin Faisal University, Saudi Arabia*
14:10-14:30	**Title: A decreased response to resistin in mononuclear leukocytes contributes to oxidative stress in nonalcoholic fatty liver disease** **Placida BAZ,** *CONICET-University of Buenos Aires, Argentina*
14:30-14:50	**Title: Corrosion of metals used in orthodontic treatment** **Bersan Karadede,** *Yalova University, Turkey*

Refreshment Break 14:50-15:05

Distinguished Speaker Talks

15:05-15:25	**Title: Health alert: Don't Forget Yourself, when taking care of others!** **Anneloes van den Broek,** *GGz Breburg, The Netherlands*
15:25-15:45	**Title: The applicability of the digit wrinkle scan to quantify sympathetic nerve function** **Maurice Sopacua,** *Maastricht University Medical Center, The Netherlands*
15:45-16:05	**Title: Body fat evaluation in male athletes from combat sports by comparing anthropometric, bioimpedance, and dual-energy X-ray absorptiometry measurements** **Marko Dimitrijevic,** *University of Kragujevac, Serbia*
16:05-16:25	**Title: Implication of serial coronary CT angiography for prevention of atherosclerotic cardiovascular disease** **Suraj Dahal,** *Virginia Commonwealth University (VCU), USA*

Refreshment Break 16:25-16:40

16:40-17:00	**Video Presentation--Title: Secondary hyperparathyroidism** **Shouhua Zheng,** *The First Affiliated Hospital of Zhengzhou University, China*
17:00-17:20	**Title: The impact of Diabetes mellitus on breast reconstruction outcomes and complications: A systematic literature review and meta-analysis** **Abdulelah Ahmed Alwadai,** *Aseer central hospital, Saudi Arabia*
17:20-17:40	**Title: An application of optimal control theory in medical sciences: Optimal investment in number of doctors** **Mustafa Akan,** *Halic University, Turkey*
17:40-18:00	**Title: Quality control circle: A tool for enhancing perceptions of patient safety culture among hospital staff in Chinese hospitals** **Liu Ting-Fang,** *Chinese Academy of Medical Sciences and Peking Union Medical College, China*

End of Day 1

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DAY 2
MARCH 31, 2023

Scientific Program

Topics: Preventive Medicine | Public Health and Healthcare | Healthcare Technologies | Healthcare Innovations | Digital Health | Primary Care | Occupational Health and Safety | COVID 19 | Nursing | Internal Medicine | Women's HealthPsychology and Psychiatric Disorders | Infectious Diseases | Pharmaceuticals | Artificial Intelligence

Keynote Forum

09:00-09:25	**Title: Who Looks After Us? Preventive care for healthcare provider effectiveness with the multifactor measure of performance** **Carina Fiedeldey-Van Dijk,** *Into Performance ULC, Canada & University of Pretoria, South Africa*
09:25-09:50	**Title: How to enhance competence, cognitive functions and well-being in employees aged 50+** **Una M. Rohr-Sendlmeier,** *University of Bonn, Germany*

Distinguished Speaker Talks

Chair	**Claudia Marin,** *University of Bari Aldo Moro, Italy*
Chair	**Anneloes van den Broek,** *GGz Breburg, The Netherlands*
09:50-10:10	**Title: Preventing dementia by preventing risks** **Bruno Baumann,** *University Hospital Münster, Germany*
10:10-10:30	**Title: Cooperative extension offices as mental health hubs: A social ecological case study in rural Georgia, United States** **Maria Bowie,** *University of Georgia, USA*
10:30-10:50	**Title: From reactive to proactive: implementing precision health in a community hospital** **Burns C.Blaxall,** *The Christ Hospital Health Network, USA*

Refreshment Break 10:50-11:05

11:05-11:25	**Title: Improve the colorectal cancer diagnosis using gut microbiome data** **Yi-Hui Zhou,** *North Carolina State University, USA*
11:25-11:45	**Title: Outcome after surgical stabilization of rib fractures versus nonoperative treatment in patients with multiple rib fractures and moderate to severe traumatic brain injury (CWIS-TBI)** **Francis Reginald Ali-Osman,** *Carondelet St. Joseph's Medical Center, USA*

11:45-12:05	**Title: School non-attendance among adolescents with ADHD or AS** **Katarina Alanko,** *Abo Akademi University, Finland*
12:05-12:25	**Title: Adenoma detection rate in colonoscopic screening with ketamine-based sedation: A prospective observational study** **Mirza Kovacevic,** *Cantonal Hospital Zenica, Bosnia and Herzegovina*
12:25-12:45	**Title: Cancer survivorship: Meaning making and coping among a group of prostate cancer patients in South Africa** **Shai Elliot Nkoana,** *University of Limpopo, South Africa*

Group Photo

Lunch Break 12:45-13:30

Distinguished Speaker Talks

Chair	**Claudia Marin, University of Bari Aldo Moro, Italy**
Chair	**Anneloes van den Broek, GGz Breburg, The Netherlands**

13:30-13:50	**Title: The impact of covid-19 and the economic crisis on Lebanese public health: Food insecurity and healthcare disintegration** **Noha Walid Shatila,** *Makassed General Hospital, Lebanon*
13:50-14:10	**Title: A hybrid machine learning method for covid-19 forecasting** **Si Shi,** *Macao Polytechnic University, China*
14:10-14:30	**Title: Retiring in the informal economy: Implications for social policyintervention for ageing workers in Ghana** **Samuel Ampadu OTENG,** *Lingnan University, Hong Kong*
14:30-14:50	**Title: Health disparities among Burmese diaspora: An integrative review** **Eunice Kim,** *California State University Los Angeles, USA*

Refreshment Break 14:50-15:05

Distinguished Speaker Talks

15:05-15:25	**Title: The occurrence timeline of Steroid-Induced ocular hypertension and cataract in children with systemic autoimmune diseases** **Chunxia PENG,** *Beijing Children's Hospital, Capital Medical University, China*

15:25-15:45	**Title: Causal explanations for patient engagement with primary care services in Saudi Arabia: A realist review** Alaa Alghamdi, *University College London, UK*
15:45-16:05	**Video Presentation--Title: On the fractal geometry of Gait dynamics in different neuro-degenerative diseases** Tahmineh Azizi, *University of Wisconsin-Madison, USA*

Poster Presentations(16:05-16:50)

Poster	**Title: Flavonoids-Substitution status to predict anticancer activity in selected human skin cancers** Katarzyna Jakimiuk, *Medical University of Bialystok, Poland*
Poster	**Title: The anticancer effect of rare *potentilla* species – Preliminary study in human colon cancer cell line LS180** Daniel Augustynowicz, *Medical University of Bialystok, Poland*
Poster	**Title: *In vitro* efficacy of bacterial cellulose dressings chemisorbed with selected *potentilla* extracts against biofilm formed by pathogens isolated from chronic wounds** Jakub Władysław Strawa, *Medical University of Bialystok, Poland*
E-Poster	**Title: Assessment of the impact of non-ablative monopolar and bipolar radiofrequency on the degree of hydration and remodeling of women's facial skin** Agata Skalska-Stochaj, *Stanisław Staszic State University of Applied Sciences in Piła, Poland*
E-Poster	**Title: Avoidable mortality in Kazakhstan** Lyazzat Kosherbayeva, *Asfendiyarov Kazakh National Medical University, Kazakhstan*
E-Poster	**Title: Diagnostic and further multisectoral support route of patient with autism spectrum disorder in Kazakhstan** Laura Kozhageldiyeva, *Suleyman Demirel University, Kazakhstan*

Refreshment Break 16:50-17:05

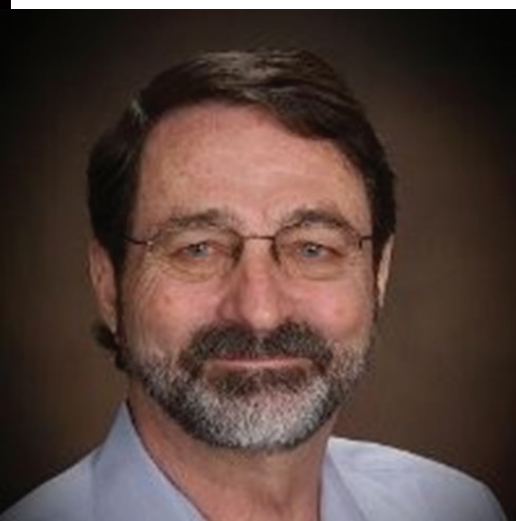|	
17:05-17:25	**Title: How to protect the interests of the infringed when an enterprise that endangers public health security goes bankrupt** Chaoyi Huang, *Chongqing University B Campus, China*
17:25-17:45	**Title: Prognostic value of free air under diaphragm on chest radiographs in correlation with peritoneal soiling intraoperatively** Ismail Ahmed Shafik, *Cairo University, Egypt*

Closing Remarks

End of Conference

BIOGRAPHY

Dr. Reuven Bar-On is renowned for his pioneering, highly published and cited work in Emotional Intelligence and the Bar-On EQ-i. He coined the term "EQ" (Emotional Quotient) in 1985.

Dr. Bar-On and Dr. Fiedeldey-Van Dijk co-developed the current version of the Bar-On Multifactor Measure of Performance (MMP) and co-founded Into Performance ULC. Prior to the MMP, Dr. Bar-On has created 10 other psychological tests since 1978. His contribution to psychology is described in Wikipedia.

Dr. Bar-On is an Associate Editor in the Organizational Psychology Section of Frontiers in Psychology, Honorary Commissioner at the National Command and Staff College (NCSC) in the US, and a Senior Researcher at the National Institute for Regulation of Emergency and Disaster (NIRED) in Israel.

Dr. Bar-On has worked with prominent scholars and organizations, and he has a comprehensive and well-cited publication record. Helived and worked in several countries throughout his career. Reuven was born in the US, and currently resides in Israel.

R. Bar-On
Into Performance ULC, Canada & National Institute for Regulation of Emergency and Disaster, Israel

Assessing and reducing the risk for burnout with the Bar-On multifactor measure of performance

Objectives: In this presentation, we will describe the application of the Bar-On Multifactor Measure of Performance (MMP) to assess and reduce the risk for burnout (RfB)and help diminish its negative impact on the workplace.

Scope and Method: The prevalence of burnout has a well-known negative impact on performance and productivity in the workplace, including its effect on individuals, organizations and on the economy. We will introduce the MMP as our method of choiceto assess and help address this risk. The MMP is a valid and reliable psychometric instrument designed to study, evaluate and enhance human performance.We will first discuss how the MMP is structurally organized to assess and strengthen 18 core factors that contribute to human performance. These multiple contributors to performance are assessed by focusing on the current behavior of the "whole person" based on evaluating the strength and balance of physical, cognitive, personal, social and inspirational factors. Our research findings will demonstrate which core factors have the highest correlation with RfB.A range of statistics were used in examining the degree of correlation between MMP's 18 core scales and RfB in a North American sample of 3,039 adults.

Results: The presenting author will describe and discuss the results obtained to date, indicating which factors appear to be the strongest contributors to RfB.

Conclusions: This presentation concludes with the recommendation that comprehensive and scientifically validated assessments, such as the MMP, need to be applied to detect the early signs of burnout and expedite the initiation of intervention when recommended. This is expected to help reduce the negative consequences of this disorder.

Figure 1. *The 18 core factors assessed with the MMP*

BIOGRAPHY

Claudia Marin(Ph.D) is Assistant Professor of Statistics (SSD: SECS-S/01) at theDepartment of Education, Psychology, Communication of the University of Bari Aldo Moro. She is the author of numerous articles published in national and international journals on data mining techniques, predictive models and statistical techniques for the evaluation of the quality of lifeand consumer psychology.

C.Marin

Department of Education, Psychology, Communication, University of Bari Aldo Moro, Italy

The flashbulb-like nature of memory of the first covid-19 case and the impact of emergency

The unexpected experience of COVID-19 allows us to investigate people's memories of the news of the first case in own country.

When a shocking, significant and surprising public event occurs, people retain in their memory not only central details related to the original event, but also peripheral details related to the context of reception of the news for a long time. This particular type of memory was developed by Brown and Kulik in 1977 and called Flashbulb Memory (FBM). As part of an international project involving several countries around the world, the research focuses on FBMs messages created during the time of the pandemic by asking people to report details about the context of reception of the messages. The aim of the study is to test the impact of COVID -19 related variables on FBM formation, such as personal subjective variables (health concerns; perceived severity by country; unexpectedness of importance, percentage of time spent thinking/discussing/searching news about the pandemic) and objective country-level variables (severity of morbidity, mortality and government restrictions).

We then compare responses to understand whether FBM formation varies across countries. The data were collected with an international survey conducted by researchers from the participating countries. To explore possible relationships between variables, hierarchical multiple regression models were used to assess whether personal subjective variables namely health concerns, perceived severity, unexpectedness of the event COVID-19, importance of the event, percentage of time spent thinking/discussing/searching for news about the pandemic, and/or objective country-level variables such as severity of morbidity, mortality and government restrictions, were able to influence flashbulb recall. In addition, predictive machine learning techniques were used to examine key covariates (gender, age, geographic residence, impact of the pandemic, perceived and objective severity, and unexpectedness, importance and recurrence) that may explain different degrees of specificity of flashbulb memories.

SCIENTIFIC ABSTRACTS

DAY 1

3rd International Conference on

Future of Preventive Medicine & Public Health

March 30-31, 2023 | Barcelona, Spain

FUTURE OF PMPH 2023

How (Not What) to prescribe: Managing disruptive behaviors in individuals with neurodevelopmental disorders

Gabrielle E. Hodgins, Rhonda Robeel, Joanmarie Lewandowski and **James Bedford**

University of North Carolina School of Medicine, USA

Disruptive behaviors (DBs) are a class of externalizing behaviors that include physical aggression, property destruction, temper outbursts, verbal aggression, and some forms of self-injurious behaviors. DBs are the most frequent reason for behavioral health referrals among individuals with neurodevelopmental disorders (NDDs), including children and adolescents. Unfortunately, the psychopharmacologic management of DBs in individuals with NDDs lacks a strong evidence base. One factor contributing to this shortcoming is that DBs are complex and poorly understood manifestations of numerous etiological pathways interacting with diverse environmental influences. Further, our current psychopharmacologic approaches frequently disregard the diversity of this patient cohort. Lastly, treatment studies do not address the heterogeneity of DBs in individuals with NDDs. This world of dueling heterogeneity partially explains why the evidence to support any given treatment is sparse. So how does the medical community compensate for the myriad complications in treatment and subsequently develop effective protocols for managing DBs? The answers lie with the best teachers in medicine: our patients. Our objective with this talk is to illustrate best practices for the management of DBs in individuals with NDDs using a case vignette. Audience members will leave with key principles of best prescribing practices and future directions for ongoing research in psychopharmacology for DBs.

Biography

Dr. Gabrielle Hodgins is a second-year Child and Adolescent Psychiatry Fellow at the University of North Carolina, where she graduated from general psychiatry residency in 2022. Dr. Hodgins graduated from The University of Miami Miller School of Medicine in 2018. While there, she co-founded The Debbie Project, a volunteer organization that partnered medical students with preschool classrooms for children with neurodevelopmental disorders. She subsequently conducted research examining the impacts of volunteering on biases towards persons with disabilities. Dr. Hodgins' passions for advocacy, patient care, and research have continued as a trainee at UNC. Dr. Hodgins graduated from the American Psychiatric Association's Leadership Fellowship in 2022 and served as a fellow representative on APA's Council for Advocacy and Government Relations from 2020-2022. She was recently awarded the American Academy of Child and Adolescent Psychiatry's Pilot Research Award for Learning Disabilities, supported by AACAP's Elaine Schlosser Lewis Fund, for ongoing psychopharmacology research.

Through a Glass Darkly: A clinical journey

Linda A. Chernus

University of Cincinnati College of Medicine, USA

The use of the empathic mode for engaging and communicating with patients has become widely accepted by many psychoanalytic psychotherapists since Heinz Kohut's early formulations (Kohut, 1971; Atwood & Stolorow, 2014.) However, diagnostic understanding based on ongoing empathic immersion with our patients is often complicated because it is continually being modified as we know them more deeply and as transference and countertransference factors influence our perceptions. To illustrate the complexity of diagnosis when it is grounded in ongoing empathic engagement with our patients, I describe in detail my treatment of an elderly woman who initially presented with severe and acute symptoms of psychological, cognitive, and physical impairments. As the treatment has progressed, my diagnostic understanding has been continually modified to include a combination of psychodynamic and organic factors including PTSD, intense unresolved grief, and extreme feelings of guilt and need for subsequent punishment. Adding further to this conundrum, this patent's treatment has been challenged by the complexity of working remotely during the Covid pandemic, which will become increasingly problematic as our patient populations continue to age.

Biography

Linda A Chernus, MSW, BCD, DPNAP, is a Professor Emerita of Psychiatry and Behavioral Neuroscience at the University of Cincinnati College of Medicine, where she was an active faculty member for 40 years. She is currently in full-time private practice. The author of more than 50 publications in refeed journals, she is the Book Review Editor of Psychoanalytic Social Workjournaland serves on editorial boards of Clinical Social Work Journal and Smith College Studies in Social Work. In 1992, she was elected by the National Academies of Practice in Washington, D. C. as a "Distinguished Practitioner and Member, National Academy of Practice in Social Work.

The case against race-based GFR

P. Uppal, B. Golden, A. Panicker, O. Khan and **M. Burday**

Christiana Care, USA

The use of race in medicine implies that we are physiologically different based on our outward, physical characteristics. However, race is not based in genetics, nor in physiology, but is entirely a social construct based on characteristics, physical locations, and behavioral patterns.

We have incorporated race into multiple clinical equations despite unclear evidence for doing so. We also recognize that the effects of racism and other social determinants of health, rather than race itself, are responsible for disparities in health outcomes.

We highlight in this paper the use of race-based glomerular filtration rate (GFR). It has been suggested that the current race-based algorithm incorporating GFR is delaying diagnosis and treatment of worsening chronic kidney disease.

Eliminating the race coefficient would improve the quality of life for individuals with CKD and prevent early progression to ESRD. The National Kidney Foundation and the American Society of Nephrology (NFK-ASN) task force recommends using CKD-epi using creatinine without the race coefficient to calculate GFR.

Biography

Currently a 3rd year Emergency & Family Medicine resident, Prabhdeep completed her Bachelor's in Biochemistry with a minor in Leadership & Public Service from Notre Dame de Namur University. She went on to receive her Masters in Global Medicine from the University of Southern California. Prabhdeep helped organize public health programs promoting nutrition in underserved communities in Northern California and is passionate about working on community programs to reduce health inequalities through the non-profit she co-found. She has published global health research related to skin disease. She hopes to continue researching health disparities and promoting health at Christiana Care.

Feral swine and transmission of *Brucellasuis* in the Southeastern United States

Chris Parsons[4], Ivan Gowe[1], Adam Parsons[2] and **Stephen Vickery[3]**

[1]Director of Infection Prevention, Margaret R. Pardee Memorial Hospital, USA
[2]Department of Cell Biology, Elon College, USA
[3]Director of Pharmacy, Pardee Center for Infectious Diseases, USA
[4]Medical Director, Pardee Hospital Center for Infectious Diseases, USA

Objective: To highlight the ongoing presence of *Brucella suis* within feral swine in the southeastern U.S. and, using an illustrative case, demonstrate the ongoing potential for transmission of *Brucella suis* infection to human hosts from feral swine.

Scope: Brucellosis is a bacterial zoonotic disease with potential for life-threatening complications including endovascular involvement and aneurysm formation. Swine-associated human brucellosis was felt previously rare since brucellosis had been eradicated in commercial swine in the U.S. However, feral swine living in the southeastern U.S. continue to serve as one of the most common reservoirs for *Brucellasuis (B.suis)* and therefore occupational or recreational exposure to feral swine in this area of the U.S. poses ongoing risk for *Brucella* infections and life-threatening brucellosis in human hosts residing in this part of the country.

Results: We recently identified a case of human brucellosis in a feral swine trapper who presented with fever and respiratory symptoms. He was initially diagnosed with a pulmonary embolus, and subsequent blood cultures revealed growth of *Brucella,* later confirmed as *B. suis.* Despite initial appropriate antibiotic therapy, he maintained fever with worsening leg pain, and magnetic resonance imaging and two-dimensional echocardiography subsequently confirmed the presence of both a thrombosed popliteal artery aneurysm and mitral valve vegetation, respectively. Fortunately, the patient recovered following receipt of combination antibiotic therapy and surgical repair of the aneurysm. Multiple family members who had performed feral swine trapping with the patient, or who had received processed meat as a gift from him, were noted later to have detectable antibodies to *Brucellasuis* and received appropriate antibiotic prophylaxis without development of clinical illness. A review of available data revealed that a large proportion of feral swine in the southeastern U.S. are infected with *Brucellasuis*, and while some of these infections result in clinical illness or death for these swine, many infections are asymptomatic. Therefore, those with occupational or recreational exposure to feral swine may be largely unaware of their risk for exposure to *Brucella.*

Conclusions: This case highlights the potential life-threatening complications of human brucellosis. It also illustrates the ongoing potential for human exposure to B. suis associated with hunting and handling of feral swine in the southeastern U.S., with need to educate the public about the risks and prevention measures associated with hunting, dressing, and preparation of feral swine.

Biography

Chris Parsons, MD, is the acting Medical Director of the Pardee Center for Infectious Diseases within the University of North Carolina Health System in the U.S. He graduated from Case Western Reserve University School of Medicine with Alpha Omega Alpha honors. He completed his internal medicine training within the Osler Medical Residency at Johns Hopkins Hospital, and his infectious diseases clinical fellowship and research training within the Division of Infectious Diseases and International Health at the University of Virginia. He has been awarded more than $10M in grant award funding from the U.S. National Institutes of Health and other foundations related to basic and translational research and clinical trials. He has received numerous teaching and research awards and has published > 50 original articles, reviews, and book chapters on a variety of infectious disease topics, including zoonotic infections. He is also the author of a recent book designed to assist community physicians with management of common infectious diseases commonly encountered in southeastern U.S.

Etiology of macular edema defined by deep learning in optical coherence tomography scans

Fabio Daniel Padilla-Pantoja[1], Yeison David Sánchez-Legarda[2], Bernardo Alfonso Quijano-Nieto[1], Oscar Julián Perdomo-Charry[3] and **Fabio Augusto González-Osorio[2]**

[1]Department of Ophthalmology, Faculty of Medicine, Universidad Nacional de Colombia, Colombia
[2]MindLab Research Group, Universidad Nacional de Colombia, Colombia
[3]School of Medicine and Health Sciences, Universidad del Rosario, Colombia

Purpose: To develop an automated method based on Deep Learning (DL) to classify macular edema (ME) from the evaluation of optical coherence tomography (OCT) scans.

Methods: A total of 4,230 images were obtained from data repositories of patients attended in an Ophthalmology Clinic in Colombia and two free open-access databases. They were annotated with four biomarkers (BMs) as intraretinal fluid, subretinal fluid, hyperreflective foci/tissue and drusen. Then, the scans were labeled as control or ocular disease among diabetic macular edema (DME), neovascular age-related macular degeneration (nAMD), and retinal vein occlusion (RVO) by two expert ophthalmologists. Our method was developed by following four consecutive phases: segmentation of BMs, the combination of BMs, feature extraction with convolutional neural networks to achieve binary classification for each disease, and finally, multiclass classification of diseases and control images.

Results: The accuracy of our model for nAMD was 97%, and for DME, RVO and control

Table 1. *Accuracy, sensitivity, specificity, and Cohen's Kappa Coefficient for the multiclass classification of the three major exudative retinal diseases and control images for the test set.*

	Multiclass Classification			
Disease	Accuracy	Sensitivity	Specificity	Cohen's Kappa Coefficient
Control	0.93	0.96	0.85	0.84
nAMD*	0.97	0.98	0.93	
RVO†	0.93	0.97	0.73	
DME‡	0.94	0.94	0.93	

Figure 1: Heatmap visualization of regions considered by the model to perform disease classification. The original optical coherence tomography scan, manual annotation performed by expert ophthalmologists, and model prediction are shown from left to right to provide a visual comparison. (a) Detection of subretinal fluid, hyperreflective foci/tissue and drusen was highlighted for recognition of neovascular age-related macular degeneration, nAMD. (b) Detection of intraretinal fluid and diffuse hyperreflective tissue conducts to recognition of diabetic macular edema, DME. (c) Macrocystoid spaces, subretinal fluid and hyperreflective foci are highlighted on retinal vein occlusion, RVO. (d) No fluid or biomarker was highlighted by the deep learning model in the control scan.

were 94%, 93%, and 93% respectively. Area under curve values were 0.99, 0.98, 0.96, and 0.97 respectively. The mean Cohen's Kappa Coefficient for the multiclass classification task was 0.84. (Table 1). The calculation of the Gradient Weighted Class Activation Map (Grad-CAM) was implemented to provide a visual explanation of the more relevant areas to classify into a disease.Figure 1 shows model interpretability with feature maps as heat maps, where red zones mean activated parts of our method.

Conclusion: The proposed DL model may identify OCT scans as normal and ME. In addition, it may classify its cause between three major exudative retinal diseases with high accuracy and reliability. Our DL approach can optimize the efficiency and timeliness of appropriate etiological diagnosis of ME, thus improving patient access and clinical decision-making. It could be useful in places with a shortage of specialists and for readers that evaluate OCT scans remotely.
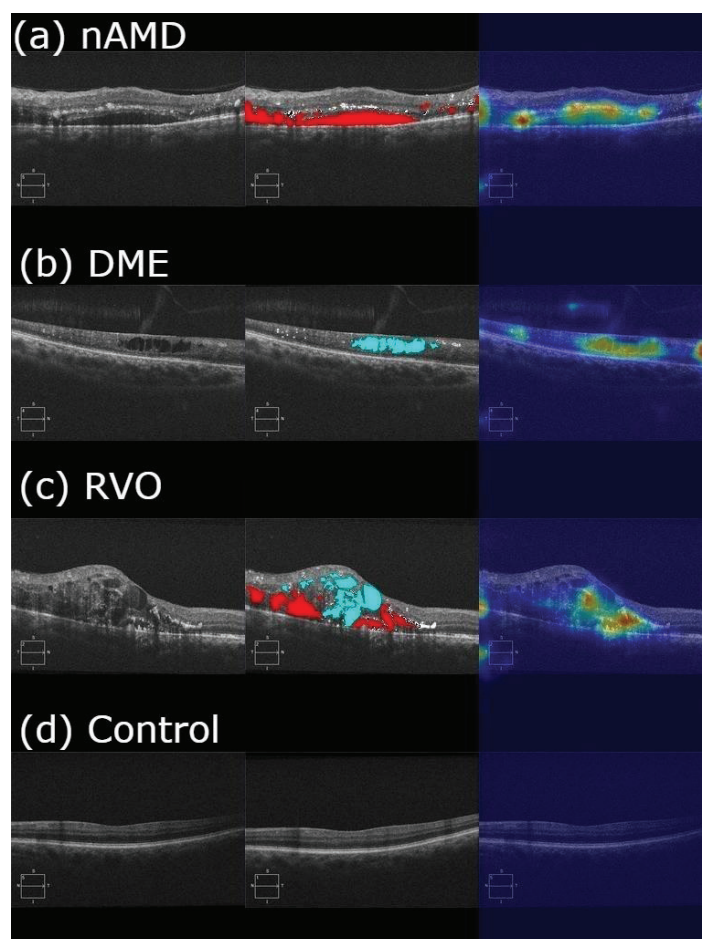
Biography

Medical Doctor and Ophthalmologist graduated from the Universidad Nacional de Colombia, Occasional Professor of the Department of Ophthalmology (Faculty of Medicine) of Universidad Nacional de Colombia. I have a great interest in research, with an emphasis on the fields of molecular biology, genetics, and immunology, as well as the development of diagnostic tools based on artificial intelligence. With a passion for learning about these areas and sharing knowledge, I have served as a speaker for residents and ophthalmologists. I have leadership skills, teamwork, responsibility, and strong commitment to the comprehensive well-being of patients.With full willingness to persevere and improve continuously, I have the firm conviction of being more, to serve better.

Factors associated with early biological aging in older people with HIV

Isaura Romero Peixoto[1,2], Ladjane Santos Wolmer de Melo[2] and **Heloisa Ramos Lacerda[1,3]**

[1]Post-graduate Program in Tropical Medicine, Federal University of Pernambuco, Brazil
[2]Clinics Hospital of Pernambuco, Federal University of Pernambuco, Brazil
[3]Departament of Clinical Medicine, University of Pernambuco, Brazil

Objective: The advances and availability of antiretroviral treatment has enabled a longer life expectancy for the world's HIV population. However, with its chronicity, premature aging challenges the management of people living with HIV. This study aimed to identify an association between risk factors and premature aging, using the biological age estimated by artificial intelligence (AI) based on deep learning (Aging 3.0).

Method: This was a cross-sectional, analytical study with 59 older people living with HIV and using antiretroviral therapy, recruited by convenience sampling in two HIV referral hospitals in Recife /PE / Brazil, between May/2018 and February/2020.

Results: The mean age of the 59 older people 64.3 years and 66.1% were male. Premature aging was identified in 67.8%. The presence of cannabis and diabetes were significant (p=0.045 and p=0.042, respectively). For current and nadir CD4+ cell counts, participants were divided into groups comparing biological age (BA) and chronological age (CA). Just one group presented no premature aging, whereas the group with premature aging was subdivided into BA>CA up to 4 years and BA>CA in 5 or more years. The prevalence of diabetes and prediabetes was 20.3% and 35.6%, respectively, and the significant risk factors were physical activity, coronary disease, risk of cardiovascular disease in ten years, HDL cholesterol levels and glycemia.

Conclusion: Our results suggest that older people living HIV experienced early biological aging, as estimated by a set of peripheral blood biomarkers, and chronic diseases not related to AIDS.

Biography

- Graduated in Medicine from University Federal of Pernambuco (UFPE).
- Medical Residency in clinical area by University of Pernambuco UPE).
- Post-Graduation in Cardiology from UPE.
- Title of Specialist in Adult Intensive Care by the Brazilian Society of Intensive Care.
- Specialization in Palliative Care from the University of Brasilia.
- Master in Medicine from UFPE.
- PhD in Tropical Medicine from UFPE.
- Teacher in Medicine at UFPE.
- Teacher in Medicine at University Tiradentes.

Physicians' Perceptions about collaborating with speech-language pathologists for Dysphagia treatment in interprofessional healthcare

M. Brammer and **C. Vicari**

Saint Louis University, USA

Swallowing disorders affect over 15 million people across the United States. Dysphagia is a complex disorder and occurs co-morbidly with other diagnoses.

As such, there is frequent collaboration amongst healthcare professionals, including speech-language pathologists, to appropriately assess and manage the dysphagia. The objective of this research was to explore the collaboration between speech-language pathologists and physicians who work with patients diagnosed with dysphagia. The researchers surveyed Otolaryngologists and gastroenterologists about their collaborative relationships and interprofessional practice in general as it relates to the assessment and management of dysphagia. Data were analyzed quantitatively and qualitatively using codes, categories and then overarching themes.

The presenter will discuss the study results and professional implications for interprofessional practice.

Biography

Dr. Mitzi Brammer is an associate professor and graduate program director in the Speech, Language & Hearing Sciences program at Saint Louis University. Her research interests include student and faculty resilience, interprofessional practice/education, inclusive practices, and language and literacy, particularly with adolescents. Dr. Brammer received her B.S.E. and her M.Sp. from Arkansas State University. She has a Ph.D. in Curriculum Design and Instruction from the University of Missouri-St. Louis. Future research endeavors include the development of a Yes/No protocol for preschool children who are on the autism spectrum as well as investigating how overall functioning changes through the lifespan in middle aged and geriatric autistic individuals.

A new reliable and accurate volumetric device generating profiles of cross-sectional areas

F. Houwen[1], J. Stemkens[2], D. van Sonsbeek[3], R. van Sonsbeek[4], R. van der Hulst[5] and **H. van Langen[6]**

[1]Peracutus B.V., The Netherlands
[2]Stemkens.Com B.V., The Netherlands
[3,4]D-Sight B.V., The Netherlands
[5]Department of Plastic and Reconstructive Surgery, Maastricht University Medical Center, The Netherlands
[6]Department of Medical Physics and Devices, VieCuri Medical Centre, The Netherlands

Lymphedema is swelling of a body part due to excess accumulation of lymphatic fluid. In most cases, lymphedema is the result of lymphatic vessel damage caused by surgery, trauma,infection or filariasis. There are two main goals to measure lymphedema with high accuracy: 1) early diagnosis which may prevent clinically significant lymphedema to develop by early treatment, and 2) evaluate changes in volume (lymphedema) as measure of treatment effects.Besides for clinical environments high accuracy volume measurements also have important applications in sport sciences and technical/industrial environments and others.

As limb volume changes over time are generally small, a reliable and objective method is needed. All methods used to date have challenges to achieve a usable clinical accuracy1. We have developed and patented a new volumetric device, the Peracutus Aqua Meth (PAM) (picture)[2]. Pumping water in or out of the measuring unit at a nearly constant flow rate renders a continuous profile of cross-sectional areas along the length of the limb (or any other object). Based on the profile, the volume of any chosen segment of a limb can be determined. A demonstration and an animation are available: https://www.peracutus.com/products-and-results/peracutus-aqua-meth/.

The first prototype of the PAM was used in a clinical study including 39 healthy test subjectsto demonstrate correct volume measurements[3].

The figure below shows the profiles of 3 subsequent measurements. In order to correct for differences in stretching the fingers and holding the arm at different depths in the measuring unit a new reference point, the hand median, was mathematically defined[4]. Aligning profiles in this way greatly enhanced the accuracy of the measurements. Standard deviations of around 1.5% and less are obtained for cross-sectional area measurements as well as for arm volume determinations and segments thereof.
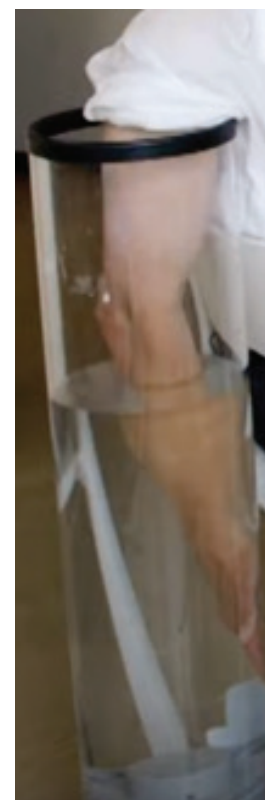
Measuring unit of the PAM
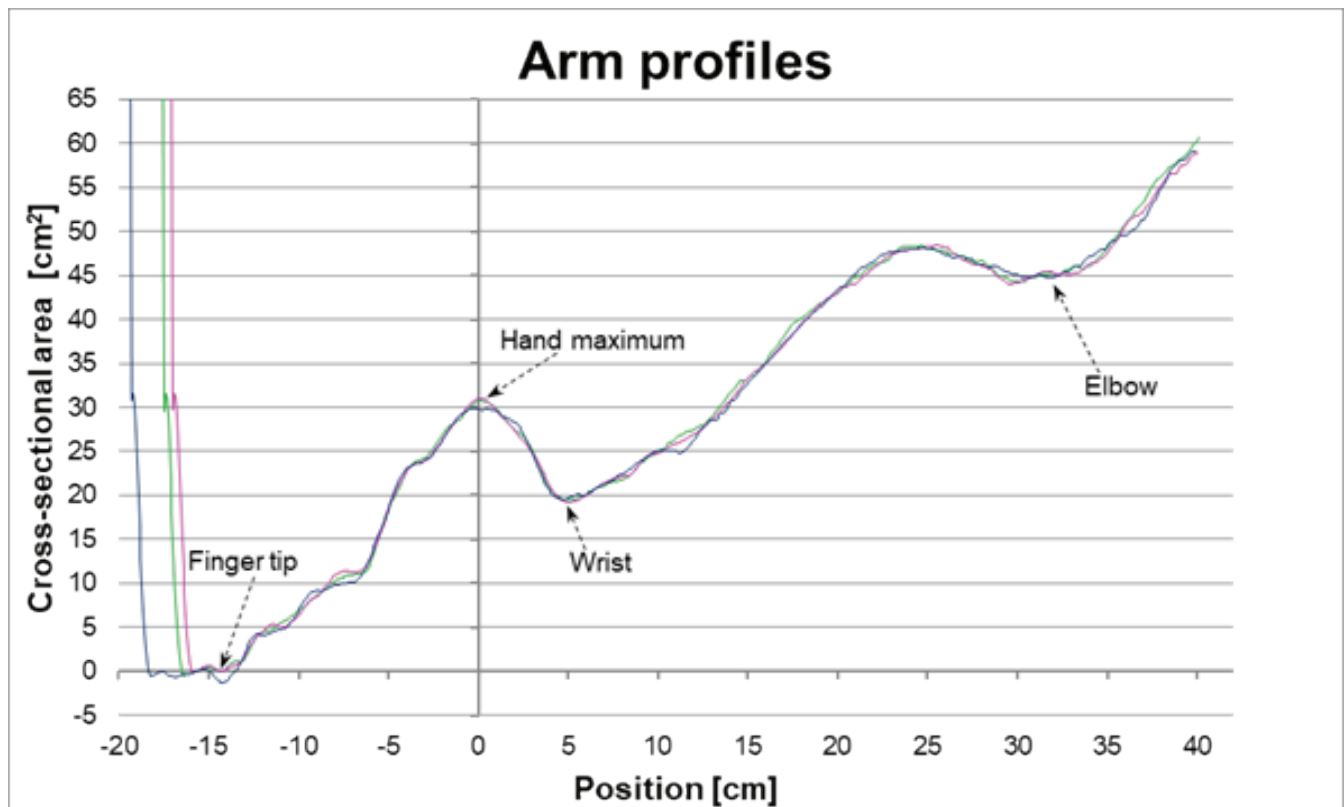
Typical profiles of an arm.
The finger tip, hand maximum, wrist, forearm, elbow and upper arm are easily distinguished.

Biography

Frans Houwen (1958) studied Biology at the Radboud University in Nijmegen, and gained a PhD in anaerobic microbiology and biochemistry at the Agricultural University in Wageningen.

Passionate by science he then worked for several years at the Agricultural University of Uppsala (Sweden) and at the University of Ghent (Belgium). Back in The Netherlands he worked for SanquinBloodbank (Maastricht) as manager of the divisions Production, Laboratory & Distribution, including Quality, (international) guidelines, and software application management. Then, as a project manager he carried out several projects to initiate and improve processes and methods. In an industrial environment he has contributed as microbiologist / system developer to the creation of a number products at the interphase of biology, engineering and software.

Starting from innovation and the belief that (multidisciplinary) collaboration is exciting and needed, he started his own companies ScienceLynk B.V. in 2009 and Peracutus B.V in 2013.

Is he a drug dealer? Public perceptions of the severity of medical cannabis diversion

Vered Ne'eman-Haviv[1] and **Nir Rozmann[2]**
[1]Ariel University, Israel
[2]Western Galilee College, Israel

Background: Prescription drug diversion is a well-known phenomenon in the research literature, but it has hardly been studied in relation to medical cannabis. Medical cannabis is often approved in Israel as a last resort for several medical problems, including nausea and vomiting caused by chemotherapy, pain due to cancer, neuropathic pain, inflammatory bowel disease, as well as post-traumatic stress disorder and epilepsy.The study examined public perception in Israel of the severity of medical cannabis diversion, its morality, and normativeness.

Methods: The sample included 380 Israeli participants who completed a quantitative questionnaire to respond to four scenarios about diverting medical cannabis to a person with/without a license and with/without payment (a 2×2 design).

Results: The findings show that although the participants received advance information about the severity of medical cannabis diversion as a drug trafficking offense, they perceived the severity of the offense as moderate, and as an act that is at least moderately moral and normative. We found significant differences in the participants' perceptions based on the circumstances presented in the various scenarios.

Conclusion: Studies show that public opinion plays an important role in supporting, designing, and changing medical cannabis policy. Understanding public perceptions may lead to changes in policy and to narrowing the gap between public and legal perceptions. We discuss the implications of the findings in relation to the gap between public attitudes and legal policy in Israel.

Biography

Vered Ne'eman-Haviv, PhD, Applied Criminologist. Vered is a senior lecturer and researcher in the Department of Criminology, Ariel University. Her research interests include interdisciplinary fields related to morality, use of psychoactive substances and medicine misuse, and gender violence.

Knowledge, attitudes and practices regarding ergonomic hazards among healthcare workers in a Saudi Government hospital

Nawal H. Herzallah, Sultan T. AlOtaibi and
Sukainah AlHazim
Imam Abdulrahman Bin Faisal University, Saudi Arabia

Background: Musculoskeletal disorders (MSDs) affecting healthcare workers (HCWs) ought to never bedealt with softly. It has subsequently gotten important to incorporate ergonomics in clinical practice toprevent MSDs.

The objectives of this study will be to investigate knowledge, attitudes, and practicesrelated to ergonomics among HCWs in a large governmental healthcare facility.

Methods: A cross-sectional study will be conducted in which the participants will be interviewed tocomplete a validated four-section questionnaire (demographic data, knowledge, attitude, and practiceinformation related to ergonomics). The questionnaire is a newly self-developed based on literaturereview and it will be pilot-tested after development.

Results: This study will include 300 HCWs. Their average knowledge, attitude and scores regardingergonomics will be calculated. The risk factors such as gender, race and educational level of knowledge,attitudes, and practices related to ergonomics among HCWs will be investigated.

Conclusion: This study will assess their knowledge, attitude and practice towards ergonomics at work. Itis important to apply ergonomics at work to prevent MSDs in their routine clinical work.

Biography

Dr. Nawal Herzallah is a medical doctor graduating from the Royal College of Surgeons in Ireland in 2017 with honors, pursuing a career in public health, she attained distinction in her MSc Health Policy degree and is currently a PhD Candidate in Public Health at the University College London. With an interest in preventive medicine, occupational health, mental and geriatric health.

A decreased response to resistin in mononuclear leukocytes contributes to oxidative stress in nonalcoholic fatty liver disease

Plácida Baz[1], Cecilia C Garcia[1], Bárbara Piotrkowski[2,3], Daniel Poncino[4], Javier Benavides[5], Luis Colombato[5], María Laura Reyes Toso[6,7], Silvina Yantorno[6,7], Valeria Descalzi[6,7], Gabriel E Gondolesi[6,7], Cesar G Fraga[2,3] and **Alejandra C Cherñavsky[8]**

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[2]*Faculty of Pharmacy and Biochemistry, University of Buenos Aires, Argentina*
[3]*Institute of Biochemistry and Molecular Medicine (IBIMOL), University of Buenos Aires-CONICET, Buenos Aires, Argentina*
[4]*Hepatology Section, Gastroenterology Service, Dr. Julio Méndez Sanatorium, Buenos Aires, Argentina*
[5]*Hepatology Section, Gastroenterology Service, British Hospital of Buenos Aires, Argentina*
[6]*Hepatology Unit, Hepatobiliary Surgery and Liver Transplantation, Hospital Universitario Fundación Favaloro, Argentina*
[7]*Institute of Translational Medicine, Transplantation and Bioengineering, Fundación Favaloro University, Argentina*
[8]*Faculty of Pharmacy and Biochemistry, Institute of Immunology, Genetics and Metabolism (INIGEM), CONICET-University of Buenos Aires, Hospital de Clínicas José de San Martín, Argentina*

Deregulation of immune response and oxidative stress contribute to nonalcoholic fatty liver disease (NAFLD) pathogenesis. Resistin is a physiological modulator of inflammation and redox homeostasis of different cell types. Increased resistin serum concentration and the direct association between resistin hepatic expression and NAFLD severity suggest that resistin participates in NAFLD pathogenesis. To evaluate resistin-induced regulation of redox homeostasis in mononuclear leukocytes from NAFLD patients and controls. We evaluated basal and resistin-mediated modulation of reactive oxygen species (ROS) and glutathione content by flow cytometry, and antioxidant enzyme activities by spectrophotometry. Peripheral blood mononuclear cells (PBMC) from NAFLD patients showed higher ROS content and glutathione peroxidase activity and lower glutathione content, superoxide dismutase and glutathione reductase activities than control PBMC. Resistin decreased ROS levels and superoxide dismutase activity and increased glutathione reductase and catalase activities in PBMC from controls but not from patients. Resistin regulates redox homeostasis in mononuclear leukocytes. A decreased response to resistin in leukocytes from NAFLD patients is associated with an impaired redox homeostasis.

Biography

Corrosion of metals used in orthodontic treatment

Bersan KARADEDE

Yalova University, Turkey

Side effects caused by metals used for therapeutic purposes in the human body have been known for a long time. These metals can cause toxic or allergic reactions in the human body. Allergies are directly related to the immune system. Allergies may be characterized by local or general allergic manifestations in the human body. Today, allergic reactions caused by metals is a very important problem that is not overemphasized in modern orthodontics, does not occupy the agenda much, but will require more attention in the future. In this presentation titled "Corrosion of Metals Used in Orthodontic Treatment", it is aimed to examine and evaluate all these conditions in detail.

Allergic reactions are triggered as a result of the release of metal ions to the environment following the corrosion of the relevant metal or alloy. Allergy, in the most general terms, is the reaction of the body's immune system to chemical agents. Depending on the metal or alloy used for therapeutic purposes, different levels of allergic reactions may occur in the individual. In such cases, it is mentioned that genetic factors may also be effective. In addition to these, carcinogenic, mutagenic and cytotoxic effects of metals or alloys have also been reported in studies. The body's responses to allergic reactions may occur as early or late type. In clinical studies by researchers, significant changes in the ion levels of metals in tissue fluids have been detected after the use of metals or alloys in orthodontic treatments. For this reason, metals or alloys should not be considered biologically inert. However, when the body's contact with the metal or alloy is cut off, the tissues heal and recover.

As a result, when taking anamnesis from individuals who will receive fixed mechanical orthodontic treatment, it should be asked in detail whether they have metal allergy or any substance or any kind of allergy. If there is a suspicious situation, an allergy test should be requested. The allergic condition that occurs during the treatment should be carefully evaluated and necessary measures should be taken quickly.

Biography

Dr. Dt. Berşan Karadede, graduated from the Faculty of Dentistry in 2016 with her thesis named "Maxillofacial Surgery Techniques and Complications". In 2021, she received her PhD in orthodontics by conducting a multidisciplinary thesis named "Prospective Investigation of NLRC4 Inflammasome Pathway Gene Expression Levels in Patients Using Orthodontic Fixed Mechanics". She started her second doctorate in the field of "Health Law" in 2021. She made clinical observations in Germany in 2017, 2021 and in Spain in 2022. She has been an invited speaker, organizer and participant in many scientific organizations. She has many international and national publications, book chapter authorship and refereeing. She gave lectures at İzmir Katip Çelebi University between 2019-2021.

Health alert: Don't Forget Yourself, when taking care of others!

A. Van den Broek[1,2] and **L. de Vroege**[1,2]

[1]*Department of Anxiety and Depression, GGz Breburg, The Netherlands*
[2]*Department of Tranzo, Tilburg School of Social & Behavioral Sciences, Tilburg University, The Netherlands*

The DFY-study (Don't Forget Yourself-study: Dutch Regional/National Research Program) focusses on mental health of mental healthcare workers (MHCW) pre-, during-, and post-pandemic. The results of three studies will be addressed.

In January 2022, 50% of the MHCW (N=1372) in the Netherlands reported in a self-report questionnaire that they experienced stress and 30% reported signs of depression. An increase in registration at the mental health care institutions took place simultaneously with mental complaints as a result of the COVID-19 pandemic. This increased workload, next to the pressure of the lengthening of waiting time for admission. The shift from face-to-face to telehealth and the confrontation with social differences among the clients and as a consequence conspiracy thinking in the treatment room, brought unknown topics of conversation and made a big appeal to the MHCW. Alarm bells rang among human resource departments.

The second national study in January 2023 showed that MHCW (N=510) reported less symptoms of depression, anxiety and anger but still reported substantial symptoms of stress (35.7%). Nevertheless, some results point out thatpost-pandemic, this particular employee population shows resilience and significantly reported less mental symptoms post-pandemic compared to during the pandemic (i.e., for stress ($X2(1, N=1882)= 24.37$, $p<.001$, $V=.11$), and depression ($X2(1, N=1882)= 27.20$, $p<.001$, $V=.12$)).

As result of our systematic review (about 1000 papers) on the moderating effect of the COVID-19 pandemic on the mental wellbeing of MHCW on sustainable employability, we realized that to prevent MHCW from mental health problems and maintain sustainable employment during pandemic waves, systematic screening of mental health is recommended to provide early protection and offers the opportunity to identify future problems and prevent MHCW from sick leave and/or even resigning.

The DFY-study (Don't Forget Yourself-study) offers relevant signals to the government by monitoring frequently.

Biography

Anneloes is director of postgraduate training for psychologists Mental Health Breburg since 2012. She is a Clinical Psychologist, Psychotherapist, Psychotraumatherapist, Cognitive Behavioral Therapist, EMDR-practitioner, since 2001. As a Senior scientist-practitioner she is connected to Tranzo, department of Scientist Practitioners at Tilburg University, since 1995. In July 2022 she finished the Master of Health Administration at TIAS, a Top-ranked School for Business and Society of Tilburg University.

Anneloes has 32 years of work experience as a psychologist in psychiatry: in- and outpatients with complex problems depression, anxiety, PTSD and Personality Disorder. Administrative activities: member of the board of the Dutch National Federation of Health Psychologists and their Specialism (FGzPt) and Chairman Preventie the Dutch Association of Directors of Post graduate training for psychologists in Mental Health (LPO). As an author the focus of the past years was on several publications about Mental Health of healthcare professionals during the COVID-19 pandemic.

The applicability of the digit wrinkle scan to quantify sympathetic nerve function

Maurice Sopacua[1,2], Carla M.L. Gorissen-Brouwers[1], Bianca T.A. de Greef[1], Isis B.T. Joosten[1], Catharina G. Faber[1], Ingemar S.J. Merkies[1,3] and **Janneke G.J. Hoeijmakers[1]**

[1]Department of Neurology, School of Mental Health and Neuroscience, Maastricht University Medical Center, The Netherlands
[2]Department of Rehabilitation Medicine, Libra Revalidatie and Audiologie, The Netherlands
[3]Department of Neurology, Curaçao Medical Center, Curaçao

Objective: Stimulated skin wrinkling test (SSW) has been launched as a non-invasive diagnostic procedure. However, no normative age dependent values have been reported that can be applied in clinical practice. The objectives of the study were to (1) collect age-dependent normative values according to the 5-point scale assessment for the SSW, to (2) determine reliability scores for the obtained norm values, and to (3) introduce a new digital method for SSW assessment, the Digit Wrinkle Scan© (DWS©) for detection of wrinkles in a more quantitative manner.

Methods: Firstly, 82 healthy participants were included, divided in 5 age groups. The participants underwent SSW using lidocaine and prilocaine topical cream. Secondly, 35 healthy participants were included to test whether the DWS© could be a novel manner to assess the grade of wrinkling quantitatively. We determined the inter-observer reliability of both methods. Also, the intra-observer reliability was calculated for the DWS©.

Results: We found a decrease in normative values over age. The inter-observer reliability of assessment by the 5-point scale method was moderate after SSW (Cohen's k: 0.53). Results of the DWS© indicate that total wrinkle length per mm^2 showed moderate to good agreement for the 4th and 5th digits after SSW, and a low agreement for the other digits.

Conclusion: Age-dependent normative values were obtained according to the 5-point scale, but its clinical application is doubtful since we found a moderate inter-observer reliability. We introduced the DWS© as a possible new method in order to quantify the grade of wrinkling.

Significance: We found unsatisfactory reliability scores, which hampers its usefulness for clinical practice.

Biography

Maurice Sopacua studied Human Movement Sciences at the VU University in Amsterdam, the Netherlands. He graduated for his Master's degree in the field of Rehabilitation & Physiotherapy. After that, he studied Medicine at the Rijksuniversiteit Groningen, the Netherlands. He started his PhD-research in the Neurology department of Maastricht UMC+, under supervision of Prof. C.G. Faber, with the title 'Improving the assessments of the diagnosis of Small Fiber Neuropathy'. In the thesis, he focused on genetic epidemiological research and clinical diagnostic tools. From June 2018, he started as resident in Rehabilitation Medicine in Adelante Zorggroep, Hoensbroek, the Netherlands. Since March 2022, he is a PM&R specialist in Libra Revalidatie & Audiologie, Eindhoven, the Netherlands. His daily practice is in the hospitals Sint Jans Gasthuis (Weert, The Netherlands) and Elkerliek Ziekenhuis (Helmond, the Netherlands). His specialization is in the field of chronic pain, neurodegenerative and neuromuscular disorders.

Body fat evaluation in male athletes from combat sports by comparing anthropometric, bioimpedance, and dual-energy X-ray absorptiometry measurements

Marko Dimitrijevic[1], Verica Paunovic[2], Vladimir Zivkovic[1,3], Sergey Bolevich[4] and **Vladimir Jakovljević[1,4]**

[1]Department of Physiology, University of Kragujevac, Serbia
[2]Institute of Microbiology and Immunology, University of Belgrade, Serbia
[3]Department of Human Pathology, First Moscow State Medical University I.M., Russia
[4]First Moscow State Medical University I.M., Bol'shaya Pirogovskaya Ulitsa, Russia

Multiple anthropometric equations have been developed aiming to provide accurate and affordable assessment of body fat composition in male athletes. This study examined correlations of values obtained from seventeen different anthropometric equations to DXA as well as BIA and DXA values. Male athletes (n = 101) from three different combat sports, wrestling (n = 33), judo (n = 35), and kickboxing (n = 33), with an average age of 20.9 ± 4.2 were included. Body fat percentage was estimated using anthropometry, BIA, and DXA. Correlations between anthropometric methods and DXA, as well as BIA and DXA, were determined using Spearman's rank correlation. Sixteen out of seventeen estimates of body fat percentages using existing anthropometric equations showed strong positive correlation with the values derived from DXA measurements (r = 0.569 - 0.909). The highest correlation was observed using the equation derived by Yuhasz, r = 0.909, followed by the equations from Oliver et al., Evans et al., Faulkner, and Thorland et al. (r ≈ 0.9). Statistical analysis of body fat percentages from DXA and BIA measurements also showed high positive correlation (r = 0.710). Correlation of seventeen anthropometric equations with BIA and DXA methods revealed that equations by Yuhasz, Oliver et al., Evans et al., Faulkner, and Thorland et al. are suitable alternative for assessing body fat percentage among male athletes from combat sports, showing even stronger correlation than BIA method.

Biography

- Graduated coach in sports
- FISAF International sports medicine coach
- Master of sports and therapeutic physical activities Doctor of Medical Sciences
- Founder and president of the FIT IN club, Marko Dimitrijević

Education

- Fisaf International Academy in Belgrade in 2012 certificate core fitness instructor. Fisaf International Academy in Belgrade in 2013, certificate personal trainer in fitness.
- Graduated trainer in sports at the Faculty of Sport Belgrade in 2017, mentor Prof. Dr. Franja Fratrić.
- Master of academic studies, Faculty of Medicine in Belgrade in 2018, module "Physical activity, health and exercise therapy", mentor prof. Dr. Sanja Mazić.
- 2019. Doctoral academic studies Faculty of Medicine Kragujevac, Experimental physiology and application in sports medicine, mentor Prof. Dr. Vlada Jakovljević and Prof. Dr. Vladimir Živković
- McGill Method Leve 2, Assessment: Converging a precise diagnosis, mentor Dr. Stuart McGill in 2019.
- McGill Method level 3, High performance training: Progressing backs from pain to performance, mentor Dr. Stuart McGill in 2019.

Work experience

- In 2016, he was chosen as the best fitness trainer by SRFS. Since 2020, fitness coach of the Crvena Zvezda judo club
- In 2014, Marko Dimitrijević founded the personal health studio FIT IN, where he works as a personal fitness trainer.
- Since 2020, he has been working as an assistant lecturer at the Faculty of Sports "University Union-Nikola Tesla", Department of Sports Medicine.

PEERS ALLEY
M E D I A

Implication of serial coronary CT Angiography for prevention of atherosclerotic cardiovascular disease

Suraj Dahal
Virginia Commonwealth University (VCU), USA

Coronary CT Angiogram was predominantly utilized to detect coronary diameter stenosis for several years. However, with recent advances in techniques to detect atherosclerosis, coronary CT angiograms have been increasingly used to measure plaque burden and further explore plaque characteristics. High-risk plaques, total plaque volume, low-density non-calcified plaques, and calcified plaques are some of the types of plaque characteristics that is now possible to be detected with the help of coronary CT Angiogram. There are numerous clinical trials that have utilized coronary CT angiography to demonstrate the potential benefits of Icosapent ethyl (Vascepa), statins, apixaban, rivaroxaban, aged garlic extract, biologic agents, and omega-3 fatty acids in reducing coronary plaque progression. In addition to the coronary CT Angiogram, a non-contrast cardiac CT scans (calcium scan) can quantify coronary artery calcification (CAC). These calcifications (CAC) are excellent predictors of future cardiac events, and therefore, also provide an opportunity to start preventive therapy like statins and aspirin. In this presentation, I will be discussing the roles of coronary artery calcium scan and coronary CT Angiogram in preventing atherosclerotic cardiovascular disease.

Biography

Suraj is a current cardiovascular disease fellow in the T32 research pathway at Virginia Commonwealth University in Richmond, Virginia, USA. He did his residency in Internal Medicine in New York City from 2013-2016. He worked for 3 years as an academic physician in internal medicine department at the University of Buffalo, New York from 2016-2019. He then moved to Los Angeles where he did a 2-year research fellowship in coronary CT angiogram, coronary artery calcium score, and preventive cardiology at Harbor-UCLA medical Center in Los Angeles, California. Currently, Suraj is focusing his research in detecting atherosclerotic cardiovascular disease in women with breast cancer.

Secondary hyperparathyroidism

Shouhua Zheng

The First Affiliated Hospital of Zhengzhou University, China

Secondary hyperparathyroidism (SHPT), which refers to compensatory hyperparathyroid hormone secretion caused by calcium ion balance disturbance, is one of the most common complications of chronic kidney disease (CKD). According to epidemiological survey statistics, the prevalence rate of chronic kidney disease in China is 10.8%, and it is on the rise. According to incomplete statistics, there are about 119.5 million chronic kidney disease patients in China. With the continuous progress of dialysis technology, the survival of CKD patients has been significantly improved, but the incidence of SHPT gradually increases with the increase of dialysis time, and about 32% of patients with chronic kidney disease eventually develop refractory or severe SHPT.

The elevated parathyroid hormone can involve systems throughout the body, leading to multi-system complications and adverse clinical events such as malnutrition, anemia, calcification of blood vessels and heart valves, renal bone disease, restless leg syndrome, pruritus, and ectopic calcification.

At present, the main treatment methods for secondary hyperparathyroidism include drug therapy and surgical therapy. The majority of patients with SHPT rely on phosphate binders, active vitamin D sterols, vitamin D receptor activators, and calcium for drug treatment. Subtotal parathyroidectomy or total parathyroidectomy plus auto transplantation is the most widely used surgical treatment. However, it is impossible to determine which surgical method is the most effective. The choice of surgical method always depends on the individual preference of the surgeon and the clinical condition of the patient.

The occurrence of SHPT can seriously affect the life of patients and significantly reduce their quality of life. Severe SHPT may even lead to death, so the early diagnosis and treatment of SHPT are very important for dialysis patients with chronic kidney disease, and it needs to arouse extensive attention from the medical community.

Biography

Zheng Shouhua, M.D.,Prof., Chief Physician, master tutor, now works in the First Affiliated Hospital of Zhengzhou University. He has been engaged in thyroid surgery for many years, and studied in Plastic Surgery Hospital of Chinese Academy of Medical Sciences, specializing in medical aesthetic plastic surgery. He once studied in ETSU QUILLEN COLLEGE OF MEDICINE in the United States as an exchange visitor, and also studied the diagnosis and treatment of related diseases in China-Japan Friendship Hospital. Participated in the translation of Zollinger Surgical Atlas, Thyroid Surgery and Controversies in the Field of Thyroid Surgery. Participated in a number of national and provincial scientific research projects, published a number of papers in international surgery journals and SCI journals, and won a number of provincial scientific and technological progress awards. Current research direction: Common and difficult diseases of thyroid gland and parathyroid gland, including malignant tumors, functional abnormalities, etc.

PEERS ALLEY
MEDIA

The impact of Diabetes mellitus on breast reconstruction outcomes and complications: A systematic literature review and meta-analysis

Abdulelah Alwadai[2], Hatan Mortada[1], Basma Bamakhrama[3], Tuqa Alsinan[4], Maha Darwish Hanawi[5], Saud Mansour Alfaryan[6], Faisal M. Obeid[7] and **Khalid Arab[8]**

[1]*Department of Surgery, Division of Plastic Surgery, King Saud University Medical City, King Saud University, Saudi Arabia*
[2]*Department of Plastic Surgery & Burn Unit, Aseer Central Hospital, Saudi Arabia*
[3]*Department of Surgery, Division of Plastic and Reconstructive Surgery, King Abdulaziz University, Saudi Arabia*
[4]*Department of Pediatric Surgery, Prince Sultan Military Medical City, Saudi Arabia*
[5]*College of Medicine, Alfaisal University, Saudi Arabia*
[6]*College of Medicine, King Saud bin Abdulaziz University for Health Sciences, Saudi Arabia*
[7]*Department of Surgery, College of Medicine, Imam Mohammad Ibn Saud Islamic University, Saudi Arabia*
[8]*Department of Surgery, Division of Plastic Surgery, College of Medicine, King Saud University, Saudi Arabia*

Introduction: As the incidence of breast cancer and diabetes rises, so does the number of patients with diabetes undergoing breast reconstruction (BR). Patients with diabetes are at a higher risk for post-operative complications. The current study examined the effects of diabetes on BR wound outcomes and overall complications postoperatively.

Methods: This study followed the preferred reporting items for systematic reviews and meta-analyses (PRISMA) guidelines. We conducted a systematic search and meta analysis for published articles on the effects of DM on BR in January 2022 using the PubMed, MEDLINE, and Cochrane databases. Diabetes, breast reconstruction, and complications were used as keywords.

Results: Forty-three studies were included in the qualitative synthesis, and five provided data to be included in the meta-analysis published between 2006 and 2020. A total of 19,731 patients (9.07%) had diabetes, whereas 197,812 patients had no diabetes. The results of the pooled outcomes revealed no differences in the risk of total flap loss (p = 0.892) and wound infection (p = 0.579,). Nevertheless, the risk of wound dehiscence was significantly higher among patients with diabetes than their non-diabetic counterparts (p \0.0001).

Conclusion: Diabetic patients undergoing BR have a significantly higher risk of wound dehiscence. As a result of the adverse effects of diabetes status on BR outcomes, patients need to be counseled about optimizing their diabetes management before surgery. Because of the heterogeneity in our results, prospective randomized studies are needed to shed light on the consequences of diabetes mellitus in BR surgeries.
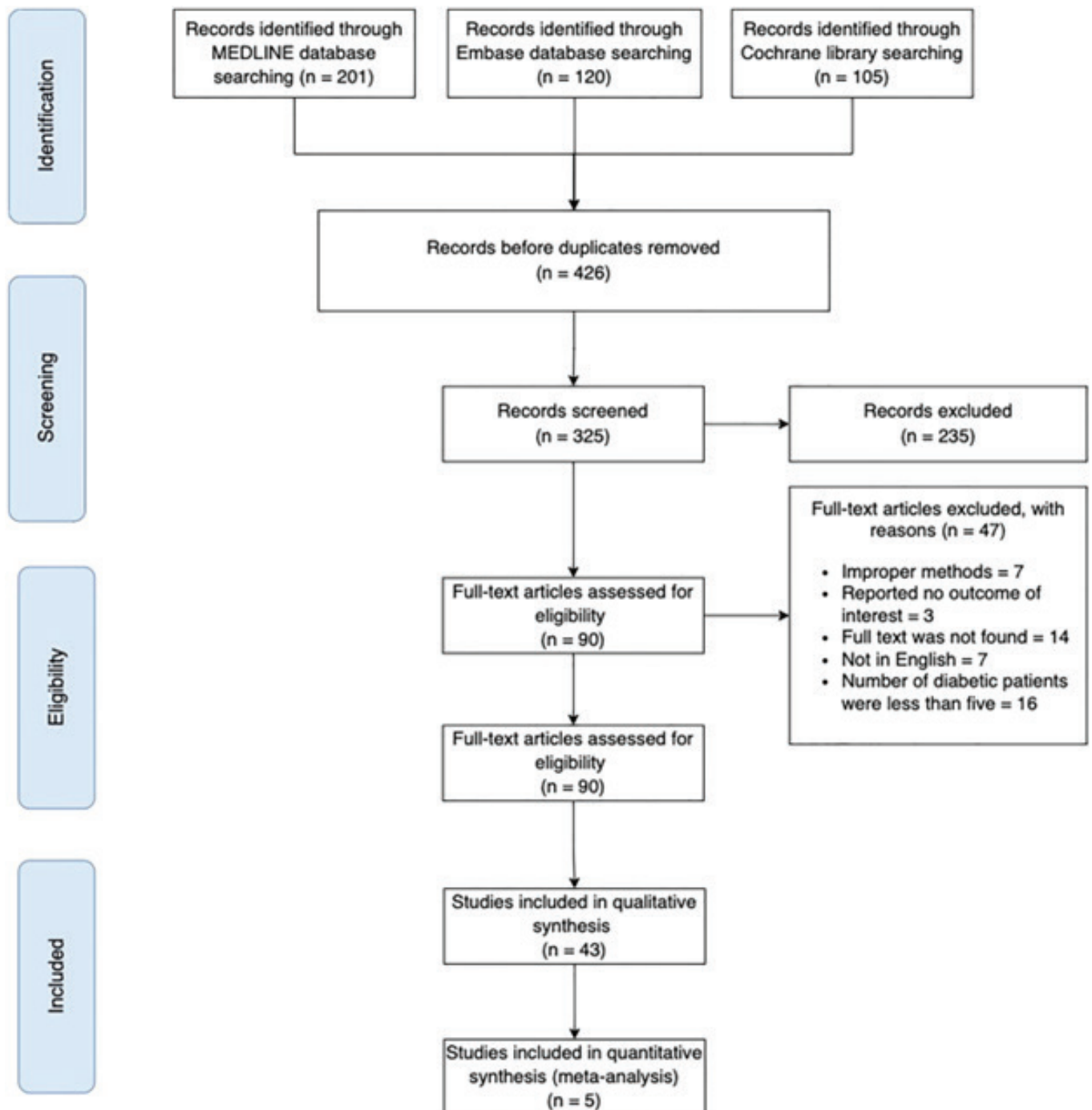
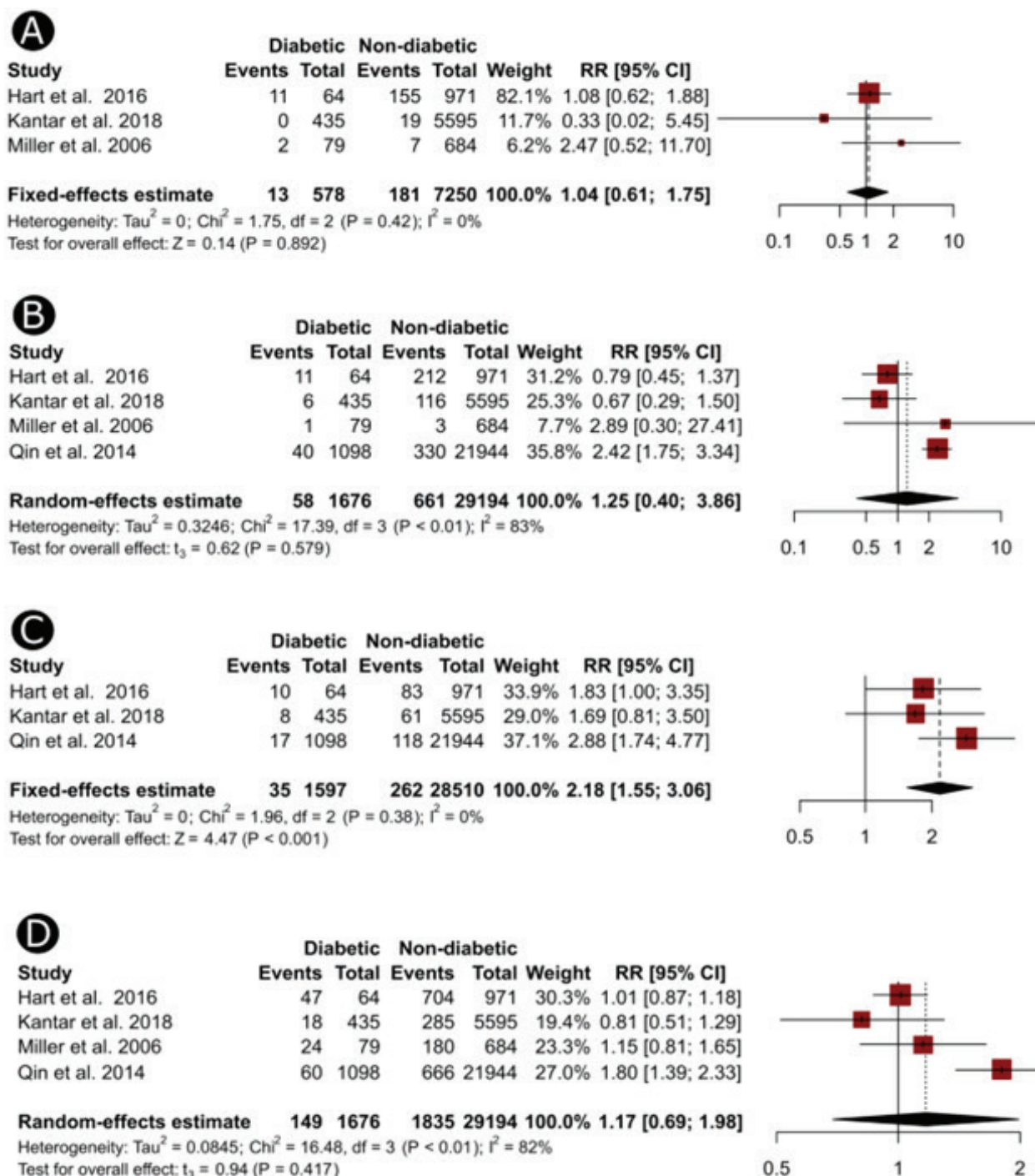*Fig 1* PRISMA Flow chart for systematic review. The process of selecting the include studies.

Fig 3. *Forest plots showing the pooled relative risks of flap loos(A), Wound infection(B), Wound dehiscence(c) and total flap complications(D)*

Biography

- PGY 5 plastic surgery resident, Riyadh, Saudi Arabia
- Department of Plastic Surgery & Burn Unit, Aseer Central Hospital, Saudi Arabia

An application of optimal control theory in medical sciences: Optimal investment in number of doctors

Mustafa Akan[1] and **Ebru Geçici[2]**
[1]Haliç University, Turkey
[2]Yıldız University, Turkey

Health care is ever more important with the aging population and with the increased awareness of the importance of the medical systems due to the corona crisis that showed the capacity of the health care infrastructure, especially in terms of numbers of health care personnel such as doctors, was not sufficient. Assuming that the number of doctors per patient is one of the determinants of patient satisfaction, optimal investments in new doctors, specialist doctors and foreign doctors are analyzed. Optimal Control Theory is employed to determine the optimal investment strategy for new doctors (new graduates), specialists and foreign doctors to maximize the net (of costs) patient satisfaction over a fixed time horizon. It is found that a nation with an insufficient number of total doctors and specialist doctors at the beginning of the planning horizon should increase the investment in new doctors as a quadratic function of time, increase the local specialist doctors linearly, while employing foreign doctors as to equate their cost to the marginal satisfaction of patients

Biography

- Professor Akan holds a BS degree in Electrical Engineering from Robert College, and MBA and Doctorate degrees from Bosphoros University. He joined Haliç University in 2010.

- He teaches both quantitative methods and finance courses at Halic University and a graduate level course (Optimal Control Theory) at Bosphoros University. He was a visiting professor in summers (2020,2021) at Ingolstadt (THI, Germany).

- He was the manager of Treasury, Economic Research, and Planning Departments at Interbank and İktisat Bank for 5 years, the Executive Vice-President of Garanti Bank in charge of Treasury and Investment Banking Departments for 6 years. He served as the CEO of İmtaş(UAP), Ege, Generali, and Liberty İnsurance companies between 1992-2008.

- Professor Akan has published several articles in scientific journals, participated as a keynote speaker in several conferences, and published two books one in finance with a colleague and another on optimal control theory.

Quality control circle: A tool for enhancing perceptions of patient safety culture among hospital staff in Chinese hospitals

Tingfang Liu[1,2,3], Dan Zhang[1,2], Meixia Liao[1,2] and **Yiping Zhou[1,2]**

[1]Institute for Hospital Management, Tsinghua University, China
[2]Tsinghua Shenzhen International Graduate School, Tsinghua University, China
[3]Chinese Academy of Medical Sciences and Peking Union Medical College, China

Objective: To explore whether quality control circle (QCC) is associated with hospital staff's perceptions of patient safety culture (PSC).

Design: A cross-sectional survey in 12 public hospitals from October to December 2018 and a longitudinal survey in one public hospital from November 2017 to November 2018.

Setting: In 12 public hospitals from six provinces located in eastern, central and western of China, and one public hospital in eastern China.

Participants: In total, 811 and 102 hospital staff participated in the cross-sectional survey and the longitudinal survey, respectively. These participants included doctors, nurses, medical technicians and administrative staff.

Main Outcome Measures: Hospital staff's perceptions of PSC were measured by the Hospital Survey on Patient Safety Culture (HSOPSC) questionnaire. The association between QCC implementation and PSC was identified by univariate analysis and multiple linear regression analysis.

Results: Univariate analysis showed that the staff from hospitals that had implemented QCC received significantly higher HSOPSC scores than those from hospitals where QCC had not been implemented (3.73 ± 0.61 vs. 3.57 ± 0.41, P < 0.05). The QCC implementation was a significant predictor in the established multiple linear regression model. One year after QCC implementation, the hospital involved in the longitudinal survey scored higher in HSOPSC than before (3.75 ± 0.42 vs. 3.60 ± 0.36, P < 0.001).

Conclusions: QCC implementation was positively associated with PSC and the former could promote the establishment of the latter. It is suggested that QCC can play an active role in enhancing PSC so as to further improve patient safety management.

Biography

Liu Tingfang, founding director of the Department of Leadership and Management of Peking Union Medical College, distinguished professor, doctoral supervisor, vice chairman of the Degree Evaluation Subcommittee, founder of the Hospital Management Institute of Tsinghua University, chairman of the China Hospital Quality Management Alliance, lifelong academician of the International Academy of Medical Quality and Safety, vice chairman of the Asian Society for Quality Function Development, and member of the Advisory Expert Committee of China Medical Reform Leading Group. He has trained nearly 50 masters, doctoral students, and postdoctoral fellows, edited 8 monographs, participated in 4 editors, reviewed 4 books, published 165 core journal articles (including 30 SCI), and presided over and completed a total of 45 scientific research projects entrusted by national and provincial ministries and commissions. He was invited to attend a total of 10 speeches at international forums. The audience of the forum was more than 3 million.

*KEYNOTE
PRESENTATIONS*

DAY 2

3rd International
Conference on

Future of
Preventive
Medicine &
Public Health

March 30-31, 2023 | Barcelona, Spain

FUTURE OF PMPH 2023

BIOGRAPHY

Dr. Carina Fiedeldey-Van Dijk is an expert in the inner workings of psychological assessments. She consults for organizations to develop strong leadership, achieve top performance, and attract and retain the best talent.

Dr. Fiedeldey-Van Dijk and Dr. Bar-On co-developed the current version of the Bar-On Multifactor Measure of Performance (MMP) and co-founded Into Performance ULC. Carina authored, developed, and validated several psychometric assessments on emotional intelligence, leadership, organizational climate, wellness, risk for controlled substance abuse, and the Equality Framework™ for social auditing of organizational EDI practices.

Carina is also the President of ePsy Consultancy, a partner of Thomas International, North America, researcher in the Department of Psychology at the University of Pretoria, and Master Coach with the Behavioural Coaching Institute (BCI). She taught research methodology and statistics at graduate levels. Carina was born in South Africa, and currently resides in Canada.

C. Fiedeldey-Van Dijk
Into Performance ULC, Canada & University of Pretoria, South Africa

Who Looks After Us? Preventive care for healthcare provider effectiveness with the multifactor measure of performance

Objectives: The delegates to this conference represent an impressive consortium of healthcare professionals, leaders, and decision-makers with demonstrative achievements. Yet, who takes care of the health and well-being of our allied service providers to sustain effective performance?

Scope: With our focus on the future of healthcare and those needing our expertise, we tend to delay or ignore attention to ourselves. Every healthcare provider here and at work deserves the benefit of looking after themselves along with others to positively affect their performance.

Method: The Bar-On Multifactor Measure of Performance (MMP) is an innovative method to identify weaknesses and imbalances in underlying factors that contribute to performance and well-being.

The published development and psychometric validation of this fourth version of the MMP is based on a large normative population (n=3,039). It is suitable for understanding current performance strengths and areas for professional and leadership performance improvement. Preventive monitoring at regular intervals is supported by targeted development suggestions. It can facilitate recruitment, selection, and succession planning. The MMP takes an average of 20 minutes to complete. Administration is largely automated, and performance results are immediately accessible online for point-of-care.

Results: Knowing what drives us to perform and how we display this at work, is essential for becoming better at it. We will share with delegates a few select profile examples with a brief case history. We will demonstrate these interactively and discuss how one might
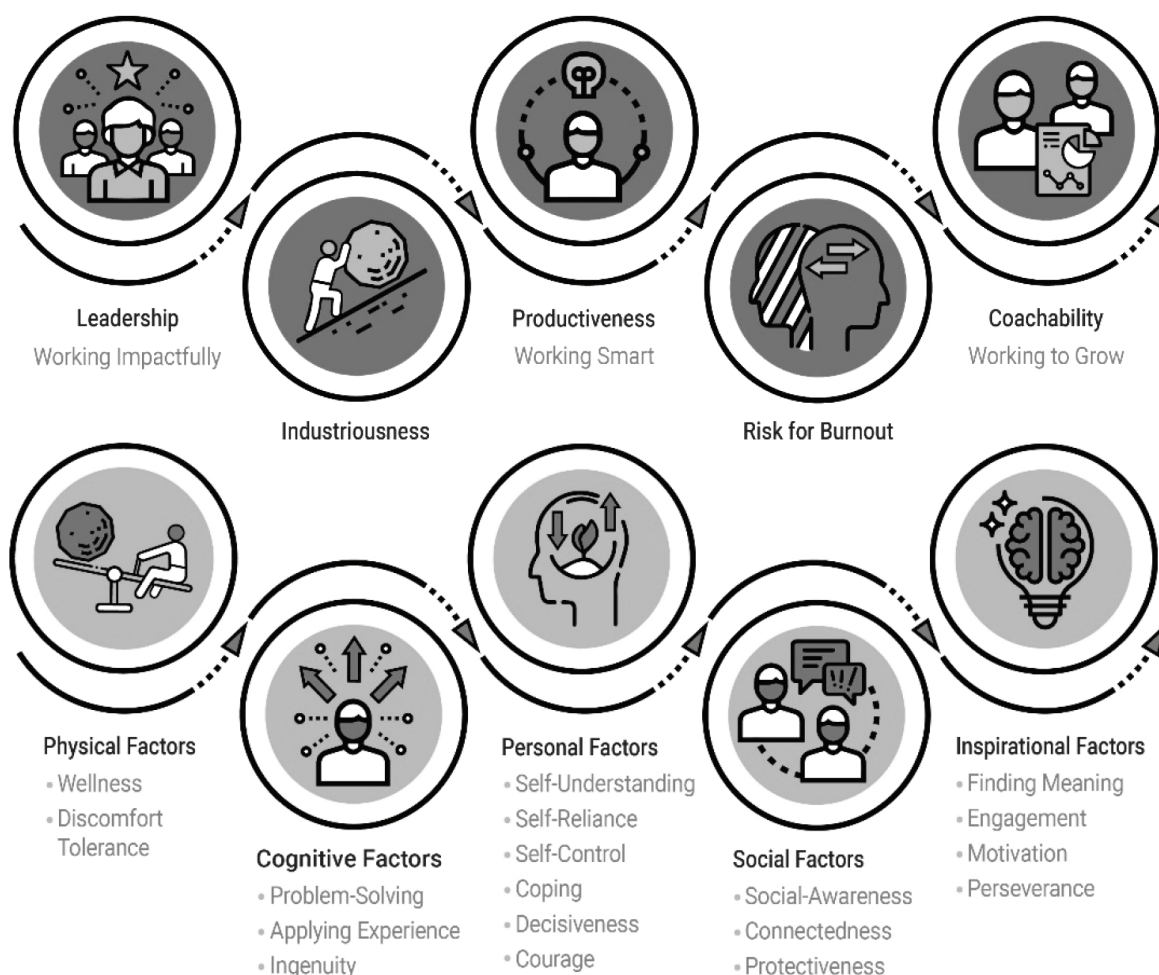
Figure 1. The ring and core factors assessed with the MMP

be able to identify early signs that could uniquely affect individuals'somatic and mental attentiveness, their intrapersonalacuity, relationship quality, and what encourages them for overall happiness and success.

Conclusion: The MMP offers an opportunity to invest in ourselves to enhance our effectiveness and resilience, and extend the same to empower our patients as well.

BIOGRAPHY

Prof. Dr. Una M. Röhr-Sendlmeier, Institute of Psychology, University of Bonn, Germany, was Head of Developmental and Educational Psychology from 2002 to 2020. Fields of study at Universities of Bonn, Zurich (Switzerland) and TU-Berlin: Psychology (Diploma), Education and English (State Examination for Teaching); scholarships from Studienstiftung des DeutschenVolkes, Max-Planck-Institute for Human Development, Deutsche Forschungsgemeinschaft; Ph.D. 1985; Habilitation 1989. Prior to first appointment as professor of Educational Psychology at Bonn University in 1990, leading researcher at Berlin Academy of Sciences on further education of workers in different industries. Funded by various Ministries and foundations, her research focuses on the development of potentials in a life-span perspective, e.g. promoting cognitive abilities, social competence, stress management, families with working mothers and incidental learning. Since 2007 editor of book series on lifelong learning (Logos, Berlin) and since 2008 co-editor of journal "Learning and Education" (Vandenhoeck-Ruprecht, Göttingen). She published 111 articles/chapters and 14 books.

Una M. Röhr-Sendlmeier
Institute of Psychology, University of Bonn, Germany

How to enhance competence, cognitive functions and well-being in employees aged 50+

Employees aged 50+ are often considered not to be able to keep up with changing demands at work. However, findings from developmental psychology point to large potentials in a life-span perspective. A comprehensive training programme was designed to enhance individual competence, cognitive functions and stress management for older employees which can easily be integrated into every day work. An evaluation study with N=633 participants (M=55.03 years, 433 female) focused on whether such training (n=247) had effects in comparison to non-treatment controls (n=199). Trainings were administered in 24 groups in 15 weekly sessions of 150 minutes each during work hours. Further validation studies investigated the effects of trained instructors (6 groups, n=54) and single-component trainings (12 groups, 120 minutes for 7 weeks) containing either the competence (n=49), the cognitive (n=43) or the stress-management exercises (n=41), each including activation as in the comprehensive trainings. Tests and questionnaires were administered before (t1) and after trainings (t2) and at follow-up six months later (t3). Results show positive training effects of the comprehensive trainings at t2 in comparison to controls with respect to subjective health, self-concept of professional competence, self-efficacy, coping with stress and cognitive abilities, i.e. concentration and mental speed. Effect sizes (Cohen's d) of significant results (p<.05) were small to medium (d=.223 to d=.764). At t3, most improvements had been maintained or had even increased, pointing to the fact that trained strategies had been adopted into everyday work. Trainings administered by trained instructors showed equivalent effects. Single-component trainings led to specific effects according to their content, and each led to improved cognitive abilities. However, subjective health and self-efficacy were only promoted by the comprehensive trainings, indicating broader effects. Thus, especially the comprehensive training programme can be recommended as preventive measure to ensure quality of life and improved performance of employees aged 50+.

Preventing dementia by preventing risks

Bruno Baumann[1] and **Milenko Kujovic[2]**
[1]Department of Mental Health, University Hospital Münster, Germany
[2]Department of Psychiatry and Psychotherapy, Heinrich-Heine-University Düsseldorf, Germany

Objectives: Alzheimer's disease (AD) and vascular dementia are the most common types of dementia. The pathologies of both diseases are estimated to occur in over 90% of all-cause-dementias. Dementias are associated with a high socio-economic burden and a deep suffering of those affected and their care-givers. As of now, dementias such as AD are considered unstoppable processes. Although prevalences of dementia are still rising, incidences fell in some developed countries in recent years. It is conceivable that controlling risk factors might have accounted for this.

Scope: Appropriately, in 2020, a commission by The Lancet concluded that up to 40% of all dementia cases could be avoided by timely elimination of modifiable risk factors. Searching for evidence supporting this thesis, we observed a cohort from 2007 to 2020, who underwent therapy with intensive correction of multiple risk factors.

Methods: First descriptive results on the cohort.

Results: During a mean observation time of 3.4 years, 33% of all patients with mild cognitive impairment (MCI) or with manifest dementia showed cognitive improvement. That means that from the first visit and persisting to the last visit, a transition from MCI to cognitively healthy (CH) or from dementia to MCI or CH occured. In sum, 83% of all subjects remained in the CH or in the MCI condition or improved in disease stage.

Conclusion: Ongoing analysis aims to underline that this favorable outcome is attributable to elimination of risk factors. Strategies to implement the challenging approach carried out in this cohort into current health systems will be discussed.

Biography

Bruno Baumann is a neurologist and a professor of psychiatry at the University of Münster, Germany. He studied medicine at the university of Essen and music at the Folkwang university of the Arts. He reveived his PhD on the pathomorphology of Parkinsonsim. Bruno Baumann published 77 research articles, and numerous book articles. Together with researchers of the Karlsruhe Institute of Technology, he is co-founder of the ALFREDO project featuring an AI-based platform for early recognition and individual treatment of dementia. This multidisciplinary project is based on results of the neurocognitive disorder cohort study RIFADE, which observed patients with cognitive symptoms and their risk factors over a period from 2007 to 2020. The main research topics of Bruno Baumann are brain structural and functional alterations in cognitive and emotional disorders, and risk factors and EEG-based biomarkers of dementia. He holds patents in the field of EEG and neuronal stimulation.

Cooperative extension offices as mental health hubs: A social ecological case study in rural Georgia, United States

Maria Bowie, Virginia Brown, Diane Bales, Anna Scheyett, Rebecca Thomas and **Georgeanne Cook**

University of Georgia, USA

Rural communities in the U.S. face multiple mental health challenges, with lack of accessible, acceptable services, skepticism towards those outside the community, and stigma towards help-seeking. Mobilizing rural communities to address mental health may be possible if facilitated by a trusted local organization such as Cooperative Extension Service (Extension). Extension promotes community wellbeing through evidence-based programming, extending the reach of land grant universities to local communities. Extension offices are deeply embedded in their communities; personnel are well-known and local residents. In this article we propose a novel model for Extension offices as a trusted place for mental health resource, service, and advocacy hubs, available and accessible to all diverse members of rural communities. Using Social Ecological Theory, we provide examples of how Extension can serve as an integrated hub to help rural communities meet their mental health needs and can be partners and collaborators with mental health providers/ agencies.

Biography

Maria Bowie, DrPH, serves as the grant management specialist for University of Georgia Cooperative Extension on the Athens Campus. Her work and most recent research focuses on emergency preparedness, farm and rural stress/suicide prevention, opioid misuse prevention, and vaccine education. Maria completed her doctorate in public health in 2020 and also has a Master's in public administration and Bachelor's in Education, all from UGA. She has worked with UGA Extension for over 20 years in a variety of roles, including serving as a 4-H/youth development Extension agent, UGA College of Agricultural and Environmental Sciences marketing and communications director, Walk Georgia program director, and employee recruitment and internship coordinator, and grant specialist.

From reactive to proactive: Implementing precision health in a community hospital

Burns C. Blaxall

The Christ Hospital Health Network, USA

Precision Health at The Christ Hospital Health Network aims to transition healthcare delivery from reactive to proactive. Here we will discuss our approach to evaluating the impact of implementing precision health in every aspect of clinical care, from patient outcomes and satisfaction to physician participation to financial impact and health resource utilization. We have implemented precision health approaches ranging from proactive heritable disease risk evaluation for both cancer and cardiovascular disease with interactive ChatBots and genetic counseling/ testing (>30,000 pts evaluated in under two years, >7,000 identified with heritable disease risk) to system-wide pharmacogenomics to augmented intelligence-based clinical decision support. Critical to our success is ensuring complete integration of all things precision health into our electronic medical record as a single source of truth. We believe our approach to precision health will become a model for improved outcomes and value-based care initiatives. We are currently leading the first ever prospective, randomized, controlled trial of comprehensive pharmacogenomics. Preliminary data suggest reduction of ER visits, hospitalizations and 30-day readmissions by 30- 40%.

Biography

Burns C. Blaxall, PhD, is the founding Executive Director of Precision Health at The Christ Hospital Health Network (TCHHN). He leads a transition from reactive to proactive healthcare delivery by harnessing the power of personal diagnostic and genomic data. Using approaches ranging from cutting edge hereditary disease risk assessment, genetic counseling and testing to pharmacogenomics and genome-guided clinical care pathways, Precision Health at TCHHN aims to provide proactive, individualized care for every patient.

Improve the colorectal cancer diagnosis using gut microbiome data

Yi-Hui Zhou[1] and **George Sun[2]**

[1]Departments of Biological Sciences and Statistics, North Carolina State University, USA

[2]Bioinformatics Research Center, North Carolina State University, USA

In the United States, colorectal cancer is the second largest cause of cancer death, and accurate early detection and identification of high-risk patients is a high priority. Although fecal screening tests are available, the close relationship between colorectal cancer and the gut microbiome has generated considerable interest. We describe a machine learning method for gut microbiome data to assist in diagnosing colorectal cancer. Our methodology integrates feature engineering, mediation analysis, statistical modeling, and network analysis into a novel unified pipeline. Simulation results illustrate the value of the method in comparison to existing methods. For predicting colorectal cancer in two real datasets, this pipeline showed an 8.7% higher prediction accuracy and 13% higher area under the receiver operator characteristic curve than other published work. Additionally, the approach highlights important colorectal cancer-related taxa for prioritization, such as high levels of Bacteroides fragilis, which can help elucidate disease pathology.

Biography

Dr. Zhou is a tenured faculty member and member in Biological Sciences and Statistics at N.C. State University, USA, where she was appointed as part of the Chancellor's Faculty of Excellence Program. She has an Associate Director role in the Bioinformatics Research Center, which has 19 faculty spanning multiple colleges and departments, including Computer Science, Biological Sciences, and Statistics. She was Associate Editor for Biometrics 2018 – 2021 and is an active A.E. for Biostatistics. Her current research interests include machine learning, data science, causal inference, precision medicine, and environmental health sciences. Dr. Zhou created and received funding for the High Dimensional Predictive Biology Lab, and her team has developed numerous software packages that significantly impact the fields of public health and biostatistics.

Outcome after surgical stabilization of rib fractures versus nonoperative treatment in patients with multiple rib fractures and moderate to severe traumatic brain injury (CWIS-TBI)

Francis Ali-Osman[2], Jonne T.H. Prins[1], Esther M.M. Van Lieshout[1], Zachary M. Bauman[3], Eva-Corina Caragounis[4], Jeff Choi5, D. Benjamin Christie[6], Peter A. Cole[7], William B. DeVoe[8], Andrew R. Doben[9], Evert A. Eriksson[10], Joseph D. Forrester[5], Douglas R. Fraser[11], Brendan Gontarz[9], Claire Hardman[12], Daniel G. Hyatt[8], Adam J. Kaye[13], Huan-Jang Ko[14], Kiara N. Leasia[15], Stuart Leon[10], Silvana F. Marasco[16], Allison G. McNickle[11], Timothy Nowack[6], Temi D. Ogunleye[17], Prakash Priya[13], Aaron P. Richman[18], Victoria Schlanser[19], Gregory R. Semon[12], Ying-Hao Su[14], Michael H.J. Verhofstad[1], Julie Whitis[20], Fredric M. Pieracci[21] and **Mathieu M.E. Wijffels[1]**

[1]Trauma Research Unit Department of Surgery, Erasmus MC, University Medical Center Rotterdam, The Netherlands
[2]Department of Trauma Surgery, Carondelet St. Joseph's Medical Center, USA
[3]Division of Trauma, Emergency General Surgery, Critical Care Surgery, Department of Surgery, University of Nebraska Medical Center, USA
[4]Department of Surgery, Institute of Clinical Sciences, Sahlgrenska Academy, University of Gothenburg, Sweden
[5]Section of Acute Care Surgery, Department of Surgery, Stanford University, USA
[6]Department of Trauma Surgery/Critical Care, Mercer University School of Medicine, The Medical Center Navicent Health, USA
[7]Health Partners Orthopedics & Sports Medicine, USA; Department of Orthopaedic Surgery, University of Minnesota, Minneapolis, USA; Department of Orthopaedic Surgery, USA
[8]Department of Surgery, Riverside Methodist Hospital, USA
[9]Department of Surgery, Saint Francis Hospital, USA
[10]Division of Trauma and Critical Care, Department of Surgery, Medical University of South Carolina, USA
[11]Department of Surgery, UNLV School of Medicine, USA
[12]Division of Trauma, Department of Surgery, Wright State University/Miami Valley Hospital, USA
[13]Department of Surgery, Overland Park Regional Medical Center, USA
[14]Division of Trauma Surgery, Department of Surgery, National Taiwan University Hospital, Taiwan
[15]Department of Surgery, Denver Health Medical Center, USA
[16]CJOB Department of Cardiothoracic Surgery, The Alfred, Melbourne, Australia; Department of Surgery, Monash University, Australia
[17]Department of Orthopaedic Surgery, University of Minnesota, USA; Department of Orthopaedic Surgery, USA
[18]Department of Surgery, Boston Medical Center, Boston University School of Medicine, USA
[19]Department of Trauma/Burn, John H Stroger Hospital of Cook County, USA
[20]Department of Surgery, University of Texas Rio Grande Valley, Doctors Hospital at Renaissance, USA
[21]Department of Surgery, Denver Health Medical Center, University of Colorado School of Medicine, USA

Background: Outcomes after surgical stabilization of rib fractures (SSRF) have not been studied in patients with multiple rib fractures and traumatic brain injury (TBI). We hypothesized that SSRF, as compared to nonoperative management, is associated with favorable outcomes in patients with TBI.

Methods: A multicenter, retrospective cohort study was performed in patients with rib fractures and TBI between January 2012 and July 2019. Patients who underwent SSRF were compared to those managed nonoperatively. The primary outcome was mechanical ventilation-free days. Secondary outcomes were Intensive Care Unit (ICU-LOS) and hospital length of stay (HLOS), tracheostomy, occurrence of complications,

neurologic outcome, and mortality. Patients were further stratified into moderate (GCS 9-12) and severe (GCS ≤8) TBI.

Results: The study cohort consisted of 456 patients of which 111 (24.3%) underwent SSRF. SSRF was performed at a median of 3 days and SSRF-related complication rate was 3.6%. In multivariable analyses, there was no difference in mechanical ventilation-free days between the SSRF and nonoperative groups. The odds of developing pneumonia (OR 0.59 (95% CI 0.38-0.98), p=0.043) and 30-day mortality (OR 0.32 (95% CI 0.11-0.91), p=0.032) were significantly lower in the SSRF group. Patients with moderate TBI had similar outcome in both groups. In patients with severe TBI, the odds of 30-day mortality was significantly lower after SSRF (0.19 (95% CI 0.04-0.88), p=0.034).

Conclusions: In patients with multiple rib fractures and TBI, the mechanical ventilation-free days did not differ between the two treatment groups. In addition, SSRF was associated with a significantly lower risk of pneumonia and 30-day mortality. In patients with moderate TBI, outcome was similar. In patients with severe TBI a lower 30-day mortality was observed. There was a low SSRF-related complication risk. These data suggest a potential role for SSRF in select patients with TBI.

Biography

Francis Ali-Osman is a general surgeon, trauma surgeon and intensive care physician currently practicing with Acute Care Surgical Specialists LLC in Tucson, AZ USA. He has been in practice since 2013 and currently serves as the Trauma Medical Director and Chief of Surgery at Carondelet St. Joseph's Medical Center in Tucson as well as the Vice-President and President Elect of the Arizona Trauma Association. He has performed over 400 rib fixation surgeries and is recognized as one of many world experts in the operative management of rib fractures. He has published his work in a number of peer review journals and extensively presented his work on the subject since 2014. His additional clinical interests include geriatric trauma, complex wound care, acute care general surgery and ICU infections.

School non-attendance among adolescents with ADHD or AS

K. Alanko, Sofia Niemi and **M. Lagerström**

Abo Akademi University, Finland

Objectives: Having a neurodevelopmental disorder, such as attention deficit hyperactivity disorder (ADHD) or autism spectrum disorders (AS) pose a risk for elevated school absenteeism. Insight into the mechanisms of the association is needed. The aim of the present study was to investigate school attendance problems (SAP) and both the symptoms related and the perceived reasons for them, as reported by adolescents with ADHD ($n = 95$), AS (n = 14) compared with neurotypical adolescents ($n = 1,474$).

Methods: The current study ($N = 1,583$) used the Inventory of School Attendance Problems (ISAP), consisting of a symptom (ISAP S) and a function subscale (ISAP F), to measure SAPs. A linear mixed effects model was used to analyze outcomes on the ISAP factors, controlling for background variables living status, gender, other diagnoses, highest level of education for the parent and age.

Results: More than 10 % absence was reported by 16 % of adolescents with ADHD, 8 % by the neurotypical group and 3/7 respondents in the AS group. Adolescents with ADHD showed significantly more symptoms of agoraphobia/ panic, problems within the family and problems with parents than neurotypical peers. The symptoms separation anxiety, agoraphobia/ panic, aggression, problems within the family and problems with parents more often were perceived as the reason for SAP. Trends within the AS group will be presented at the conference.

Conclusions: Neuroatypical youth report increased rates of school absence. The current study showed that the reasons for absence for adolescents with ADHD, AS were similar, but reported to an elevated level, compared with neurotypical adolescents. The results are discussed in light of previous literature and presenting clinical implications.

Biography

Katarina Alanko is a Finnish psychologist, focusing on child and adolescent development and wellbeing. She is currently the PI of the "School Non-attendance in Finland and in Sweden" project, aiming to study the phenomena of school attendance problems, validate measurement instruments and study intervention efficacy in the two countries. She conducts her research at the Swedish-speaking university in Finland, Åbo Akademi.

PEERS ALLEY MEDIA

Adenoma detection rate in colonoscopic screening with ketamine-based sedation: A prospective observational study

Mirza Kovacevic

Department of Anesthesiology, Resuscitation and Intensive Care, Cantonal Hospital Zenica, Bosnia and Herzegovina

Objective: This study aimed to determine the relationship between one of the most commonly used anesthesia techniques, ketamine-based sedation, on the value of adenoma detection rate (ADR) during colonoscopy screening.

Methods: This prospective, observational study included 140 patients, who underwent a standard colonoscopy preparation before the procedure. Sedation regimens included ketamine at 0.5 mg/kg and propofol at 0.5 mg/kg. Additional doses of propofol were administered at 0.5 mg/kg to maintain the Ramsey Sedation scale. Baseline characteristics, ADR, bowel preparation quality according to the Chicago bowel preparation (CHBP) scale, cecal intubation, colonoscopy removal, and complications were analysed.

Results: The mean age of patients was 55.76 years; 40 (28.6%) were males and 100 (71.4%) were females. The ADR was 43.57%, wherein 15.71% in males and 27.86% in females. There were 43.6% adenomas, 17.9% biopsies, and 22.9% polypectomies. The largest location of adenomas/polyps were in the rectum and sigmoid and ascending colon (p=0.11), a biopsy of the sigmoid colon and ileum (p<0.05), polypectomy of the rectum and sigmoid and ascending colon (p<0.05). The cecal intubation was 93.6% with a withdrawal time that is >6 min in most patients (80%) (p<0.05). The CHBP scale showed good bowel preparation (p<0.05) without complications.

Conclusions: Ketamine-based sedation is in good overall correlation with ADR. Therefore, the sedation technique should be included for ADR assessment in the future.

Biography

Born on October 31, 1988. in Tuzla, Bosnia and Herzegovina. Primary and secondary school finished in Gračanica, Bosnia and Herzegovina. I obtained my medical degree at Faculty of Medicine at the University of Tuzla, and graduated at the same University in 2013. Employed at the Cantonal Hospital Zenica in the Department of Anesthesiology, Resuscitation and Intensive Care since 2013. Anesthesiology residency training started in 2015. Specialist exam passed in 2020. in Tuzla and acquired the title of specialist of anesthesiology, resuscitation and intensive care. My postgraduate (doctoral) studies began in 2019 year at the University of Tuzla. Since then, I have been actively involved in scientific research. As the author and co-author of several published scientific and professional papers. Before and during my doctoral studies, I was a lecturer at numerous domestic and international symposia and congresses, with membership of the Association of Anesthesiologists of the Federation of BiH.

Cancer survivorship: Meaning making and coping among a group of prostate cancer patients in South Africa

S. Nkoana, T. Sodi, M. Makgahlela and **J. Mokwena**

University of Limpopo, South Africa

The purpose of the study was to explore the role of religion in meaning making and coping among a group of black patients receiving some form of prostate cancer (PCa) treatment at a public hospital in Limpopo Province, South Africa. A sample of 20 PCa patients, with ages ranging from 67 to 85 years (mean age =76yrs; SD: 5.3) selected through purposive sampling. Data were collected through in-depth, semi-structured individual interviews and analysed using interpretative phenomenological analysis (IPA). The findings demonstrated that religion is an important factor in meaning making and coping by prostate cancer survivors. The findings suggest that healthcare practitioners need to pay close attention to the meanings that cancer patients assign to their illness to provide the appropriate care and support.

Biography

Dr Nkoana is a licensed Clinical Psychologist currently employed as an Associate Professor in the Department of Psychology, University of Limpopo, South Africa. He is an external examiner for the MSc (Clinical Psychology) program at Sefako Makgatho Health Sciences University (formerly Medical University of Southern Africa – Medunsa), South Africa. Dr Nkoanateaches Applied Clinical Neuropsychology and is the past coordinator of the Graduate Clinical Psychology training program at the University of Limpopo. He has published research in Behavioral Medicine, Public Health and Mental health.

The impact of covid-19 and the economic crisis on Lebanese public health: Food insecurity and healthcare disintegration

N. Shatila[5], A.C. Corriero[1], A.T. Aborode[2,3] and **M. Reggio[4]**

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[2]Health African Platform, Nigeria
[3]West African Institute of Public Health, Nigeria
[4]University of West England, United Kingdom
[5]Department of General Surgery, Makassed General Hospital, Lebanon

Background: The economic crisis in Lebanon, a middle-income eastern Mediterranean country, has been threatening the health of the local population. This review will look at the impact of the economic crisis and COVID-19 on health and healthcare in the country, discussing food insecurity and water shortages, and the hospital crisis for what concerns medications, electricity shortages and workforce issues.

Methodology: Peer Reviewed Literature produced between 2015 and 2021, indexed in Pubmed, Scopus and Google Scholar was used to compile this short report. News and governmental reports, alongside reports of NGOs like *Médicins sans frontières were* also collected; these were analyzed for the production of this short report.

Results: The challenges and public health consequences caused by the economic crisis and the COVID-19 pandemic in Lebanon were identified and commented upon. From food insecurity and water shortages, to the Beirut port explosion and the 2021 lack of fuel and electricity, it was found that the health and well-being of the Lebanese population is currently being threatened from many points of view. With food inflation rates rapidly escalating in 2020 and peaking at 441% in October, new-born and infant milk being non-existent and 20 hour power cuts daily, the situation in Lebanon does not seem to be improving. The country needs to receive international help to relieve the population from these synergetic crises.

Conclusion: Long-term economic reforms with an emphasis on employment should be at the forefront of the government's priority list; this should be done to prevent disasters like food insecurity and electricity shortages from posing threats to the lives and the wellbeing of the people in Lebanon again.

Biography

My name is Noha Shatila and I was born on January 6 1996 in England. I'm a Lebanese physician currently working as PGYII in the general surgery department at Makassed General, while also taking shifts in FoaudKhory Hospital. I studied medicine in Beirut Arab University and afterwards did my internship in various hospitals across Lebanon. I have also travelled to Europe for medical electives during medschool (Poland and England). During my childhood years, I was taught the english, arabic, german and french languages.

A hybrid machine learning method for covid-19 forecasting

Si Shi[1], Wuman Luo[1], Rita Tse[1] and **Giovanni Pau[2,3]**
[1]Faculty of Applied Sciences, Macao Polytechnic University, China
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[3]UCLA Samueli Computer Science, University of California, USA

The COVID-19 pandemic, starting in December 2019, has ravaged the whole world. Scholars from all over the world have utilized traditional and advanced approaches to detect and forecast the spreading of this disease. However, most of these researches need a large number of features and private information which are not easily accessed. Moreover, single models cannot achieve satisfactory results. To address the above two issues, we propose a hybrid machine learning method. The open-source dataset we use stems from a Kaggle competition: "COVID19 Global Forecasting (Week 4)", which collected the confirmed cases and fatalities as well as the date and region information provided by the JHU CSSE (Johns Hopkins University Center for Systems Science and Engineering). After finishing preliminary feature engineering, we construct a hybrid machine learning model using stack techniques and integrate LASSO (Least Absolute Shrinkage and Selection Operator), SVM (Support Vector Machine), RF(Random Forest), LGBM(Light Gradient Boosting Machine), and Linear Regression models to fit and forecast the transmission of COVID-19. Despite of limited features, the model obtains 0.5350 as its coefficient of determination and outperforms the baselines. We plot the model in Figure 1.
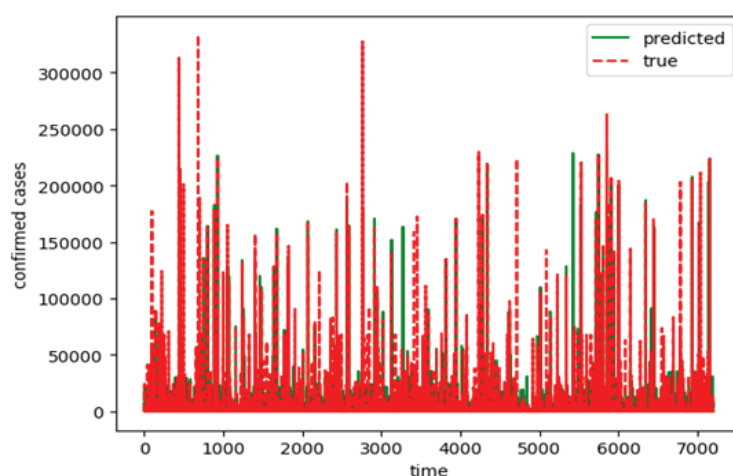

Figure 1: The predicted and true confirmed cases

Moreover, we conduct comparison experiments with the traditional epidemiologymodel—susceptible-infectious-removed (SIR). The results are shown in Table 1.

Table 1: The comparison between our model and SIR

Model	RMSE of Confirmed Cases	RMSE of Fatalities
Ours	13041.93	1348.30
SIR	160367.25	368640.15

Table 1 shows that our proposed hybrid model surpasses the SIR model in terms of the evaluation metric: RMSE (Root Mean Square Error).In conclusion, our work shows satisfactory performance in COVID-19 forecasting and provides promising application prospects for combining medicine and artificial intelligence.

Biography

Si Shi received her Master of Management degree from Donghua University in 2015. She worked as an Assistant Professor at Shanghai Sanda University from 2016 to 2019. Currently, she is a Ph.D. student in the Faculty of Applied Sciences at Macao Polytechnic University. Her major is Computer Applied Technology. She has abundant research experience and finished several multi-disciplinary scientific research projects and textbook compiling. Her research interests include Machine Learning, Financial AI, Educational AI, Medical AI, and other intersections of AI and industry domains. She published a paper in the SCIE Journal "Neural Computing and Applications".

Retiring in the informal economy: Implications for social policy intervention for ageing workers in Ghana

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[1]Lingnan University, Hong Kong

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Ghana's economy is predominantly informal with about 80% of workers in small enterprises run and managed by family members with no fixed retirement procedures. Although, retirement is basically an individual decision, it has social policy implications for the nation as a whole. The purpose of this study is to provide empirical evidence on what is likely to inform the decision to retire for the over 50s in Ghana's informal economy. This is to ensure the development of effective policies for the ageing informal work force. Using an exploratory sequential method, to examine the understanding and preferred type of retirement, family business owners aged 50 years and above participated in a study, ($n = 35$ qualitative; $n = 383$ quantitative), conducted in Kumasi, Ghana's second largest city. Findings, revealed that retirement for business owners, largely meant a gradual withdrawal from economic activities. Also, gender, family and work-related factors significantly predicted retirement decision-making of family business owners. Recommendations included tailored retirement planning education by both Social Workers and insurance providers, and a more flexible phased pension plan for those in the informal economy to ensure the wellbeing of aging self-employed who have poor health and are financially insecure.

Biography

Samuel, is a PhD student with the School of Graduate Studies, Lingnan University, Hong Kong (LU). He has research and practice experience in ageing issues, work and social inequalities with a special focus in the global south. His PhD research focuses on work-related ageism among older persons in Ghana's informal economy. Currently,he is working on projects such as gerontechnology for better elderly care in Asia and Africa and older persons' sexuality and health related-well-being.

Health disparities among Burmese diaspora: An integrative review

Eunice E. Kim[1,2], Qais Alemi[2], Carl Stempel[3] and Hafifa Siddiq[4]

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[2]Department of Social Work and Social Ecology, Loma Linda University, USA
[3]Department of Sociology and Social Services, California State University, USA
[4]Charles R. Drew University of Medicine and Science, USA

Tens of thousands of displaced Burmese ethnic minorities have endured various adversities for over six decades but are largely underserved. This study aimed to illuminate the health impacts of their misfortunes and unmet areas of concern. Using a holistic lens, we conducted an integrative review of 47 papers spanning the years 2004 to 2022 from diverse data sources. The results revealed widespread multimorbidity, triggered mainly by displacement. The diaspora's problematic health conditions were worse than their host country's general population. There was a strong indication that the diaspora's unfortunate health trajectory is determined early in life. Ongoing human rights violations and grossly inadequate healthcare interventions deepened pre-existing health conditions. Noteworthy emerging treatment initiatives, including integrative health care, were underutilized. The persisting health and intervention needs among the diaspora warrant advanced studies to facilitate much-needed resource mobilization and collaboration among stakeholders to promote health equity.

Biography

I am a licensed clinical social worker. I served the Los Angeles Department of Children and Family Services for over two decades, addressing child abuse and neglect. Currently, I am teaching social work at California State University Los Angeles and enrolled in a Ph.D. program at Loma Linda University (LLU). I am a part of the Professional Presentation and Publication Research Lab at LLU, run by Dr. Zephon Lister, Kim Freeman, and Susanne Montgomery. Moreover, I am assisting a faculty at the University of California, Los Angeles, Department of Social Welfare and Medicine/Geriatrics, Dr. Lené Levy-Storms, with her research projects on aging populations. Further, I love traveling and have visited over 40 countries in the past 20 years. This endeavor has enhanced my cultural sensitivity. As I advance my scholarship, I want to extend my contribution to global social justice and equity in healthcare systems for marginalized people.

The occurrence timeline of Steroid-induced ocular hypertension and cataract in children with systemic autoimmune diseases

Chunxia Peng[1], Honggai Yan[1], Xiaohua Tan[2], Jifeng Yu[1], Tianwei Liang[1], Wei Shi[1] and **Li Li[1]**

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[2]Department of Rheumatology and Immunology, Beijing Children's Hospital, Capital Medical University, National Center for Children's Health, China

Purpose: Steroid-induced ocular hypertension (SIOH) and cataract can result in visual loss. This study evaluated the timetable of SIOH and steroid-induced posterior subcapsular cataract (SI-PSC) occurrences in children with systemic autoimmune diseases (SAD) undergoing long-term systemic corticosteroid treatment.

Methods: Thirty-seven children with SAD treated with long-term oral corticosteroids were enrolled in this study. Intraocular pressure (IOP), SI-PSC occurrences, visual field and peripapillary retinal nerve fibre layer (pRNFL) thicknesses were recorded every 3 months for at least 6 months.

Results: Of the 37 children, with average age 11.0 ± 2.9 years, 22 patients (59.5%) had SIOH, 2 progressed as glaucoma at the 18-month and 3-year follow-up, respectively, and 12 (32.4%) patients had SI-PSC. Among patients with SIOH, 45.5% (10/22) of them had SI-PSC occurrence and among patients with normal IOP, 13.3% (2/15) of them had SI-PSC. Seventeen patients participated in a longitudinal study with a follow-up period of at least 18 months. The incidence of SIOH started at 1 month 52.9% (9/17) and gradually increased to 70.6% (12/17) at 6 months, then decreased to 35.3% (6/17). SI-PSC onset started at 6 months (17.6%, 3/17), and its occurrence increased to 35.3% (6/17) at 12 months and reached to 41.2% (7/17) at 18 months. The pRNFL was thicker in the children with SIOH than the healthy controls (p = 0.01).

Conclusion: SIOH and SI-PSC are common coexistent complications in children with long-term corticosteroids treatment, and the occurrence times during the first month and 6 months, respectively. Patients with SIOH have a higher probability of cataract.

Table 1 Anti-glaucoma eye drops and cataract occurrence timetable in the patients followed up for more than 18 months.

Table 2 Anti-glaucoma eye drops and cataract occurrence timetable in the patients followed up for more than 18 months

Patient no	1 m		3 m		6 m		9 m		12 m		15 m		18 m	
	Drugs	Cataract	Drugs	Cataract	Drugs	Cataract	Drugs	Cataract	Drugs	Cataract	Drugs	Cataract	Drugs	Cataract
1	0	–	0	–	1	–	1	–	0	–	0	–	0	–
2	2	–	2	–	3	–	2	–	2	+	2	+	0	+
3	0	–	0	–	0	–	0	–	0	–	0	–	0	–
4	2	–	2	–	3	–	3	–	4	–	4	–	4	+
5	2	–	3	–	1	–	1	–	0	+	0	+	0	+
6	1	–	1	–	0	–	0	–	0	–	0	–	0	–
7	4	–	2	–	1	+	0	+	0	+	0	+	0	+
8	0	–	3	–	3	–	2	–	2	–	2	–	2	–
9	0	–	0	–	2	–	2	–	2	+	2	+	2	+
10	1	–	1	–	2	+	2	+	2	+	2	+	2	+
11	0	–	0	–	0	–	0	–	0	–	0	–	0	–
12	0	–	0	–	0	–	0	–	0	–	0	–	0	–
13	0	–	0	–	0	–	0	–	0	–	0	–	0	–
14	3	–	3	–	3	+	3	+	2	+	2	+	1	+
15	3	–	1	–	1	–	1	–	0	–	0	–	0	–
16	0	–	2	–	2	–	1	–	1	–	0	–	0	–
17	3	–	2	–	2	–	2	–	2	–	2	–	2	–
Total	21	0	22	0	24	3	20	3	17	6	16	6	13	7
Counts	9	–	11	–	12	3	11	12	8	6	7	6	6	7
(*n*, %)	52.9%		64.7%		70.6%	17.6%	64.7%	70.6%	47.1%	35.3%	41.2%	35.3%	35.3%	41.2%

Figure. The timeline of the number of anti-glaucoma eye drops and eyes presented with cataract.
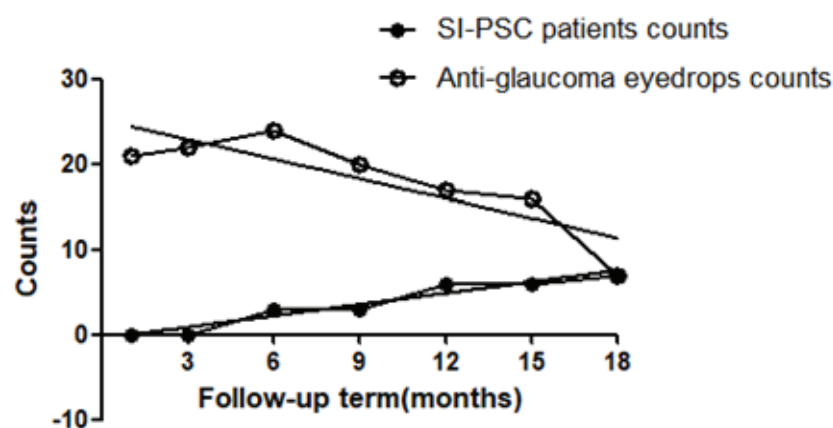
Biography

Chunxia PENG, MD. Pediatric neuro-ophthalmologist. Dr. Peng had been working as vitreoretinal surgeon for 7 years after graduating from Hebei Medical University and had 3-year neuro-ophthalmology training as postgraduate work in PLA General Hospital after obtaining Dr. degree from Beijing Tongren Hospital, Capital Medical University. In 2017, she began to work in the Department of Ophthalmology, Beijng Children's Hospital, Capital Medical University and dedicated to pediatric neuro-ophthalmology and ROP clinical works and studies. Recent years she has done many studies about optic nerve structural injury in both adults and children with optic neuropathy with optical coherence tomography and published these studies results in various international journals. She came to work in Beijng Children's Hospital in 2017and found that there were quite a few children with long-term systemic corticosteroid treatment who need to monitor intraocular pressure. Therefore, she and her term started this study.

Causal explanations for patient engagement with primary care services in Saudi Arabia: A realist review

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[2]Family Physician and Researcher, King Fahad University Hospital, Imam Abdulrahman Bin Faisal University, Saudi Arabia
[3]Lecturer and Researcher of Workforce, Organisation and Wellbeing, School of Health Sciences, University of Surrey, UK
[4]Lecturer in Psychology, Schoolof Human Sciences, Facultyof Education, Health and Human Sciences, University of Greenwich, UK

Introduction: Primary healthcare (PHC) in Saudi Arabia (SA) has lagged behind secondary care, and evidence suggests that up to 65% of the cases seen in emergency departments (ED) are non-urgent and more appropriately managed in primary PHC settings.

Previous research has focused on patient satisfaction with PHC services in SA. However, engagement with PHC services is a more complex process that goes beyond satisfaction level. Yet, uncertainty still exists about causal explanations for patient engagement with PHC services and what refinements are needed for PHC. This review aims to understand the causal explanations for patient engagement with PHC and generate theories of how patient engagement with PHC in SA might be achieved through identified contexts and mechanisms.

Methods and Analysis: A realist approach was used for evidence synthesis, including peer-reviewed and grey literature relevant to Saudi PHC delivery and patient engagement with PHCs. A realist analysis was used to provide causal explanations through the generation and articulation of contexts, mechanisms, and outcomes of patient engagement with PHCs in SA.

Results: 27 documents were used to collect the data. The decision to seek PHC help is impacted by patient's awareness of PHCs' role. Socio-cultural factors and religious beliefs have an impact on patient access to PHCs. Concerns about professionalism at PHCs, particularly staff education and skills, have an impact on patient trust and interaction with PHCs. Organisational factors such as infrastructure and PHC resources might help or hinder patient engagement with PHC. Gaps in continuous care at PHCs have explained the presence of patients with non-urgent chronic conditions in EDs instead of PHCs.

Implications: Patient engagement with PHC in SA is multifactorial and influenced by local, contextual, and social circumstances, as well as organisational processes and available resources. The findings of this review have

informed an empirical study to explore further current patient engagement with PHC in SA, disentangling healthcare wants and needs. This will support a better understanding of the factors that lead to patient engagement and inform recommendations to support PHC development within the Saudi context, which might also be useful in any PHC system.

Biography

Alaa is a medical doctor who works at the Department of Family and Community Medicine at King Fahad University Hospital in Dammam, Saudi Arabia. Alaa began her PhD studies at University College London (UCL) in 2019 to pursue her interests in population health, for which primary healthcare is a central value. Her research focuses on the Ministry of Health (MOH) workforce, service design, delivery, and evaluation, with an emphasis on the design and organisation of General Practice. Her project focuses on developing recommendations for improving patient engagement with primary care in Saudi Arabia. She employs qualitative research methods and synthesises evidence, incorporating both realist and critical perspectives. She obtained a Bachelor of Medicine and Bachelor of Surgery (MBBS) from King Faisal University, Saudi Arabia, in 2011 and a Master of Education (EdM) in Applied human development with a concentration in health education from Boston University in 2017.

On the fractal geometry of Gait dynamics in different neuro-degenerative diseases

T. Azizi

University of Wisconsin-Madison, USA

Neuro-degenerative diseases significantly influence the gait behavior and the ability to move. To explore theetiology of neuro-degenerative disease, it would be useful to characterize gait dynamics. The purpose of thisstudy is to classify different neuro-degenerative diseases using fractal geometry. We use Gait Dynamics in NeuroDegenerative Disease Data Base including recordings from patients with Parkinson's disease (n = 15), Huntington's disease (n = 20), or amyotrophic lateral sclerosis (n = 13) and 16 healthy control subjects are alsoincluded (Hausdorff JM et al., 2000). The vibration analysis using power spectral densities (PSD) method hasbeen carried out to discover whether some type of power-law scaling exists for various statistical moments atdifferent scales of these databases. Using Discrete Wavelet Transform (DWT) and Wavelet Leader Multifractal(WLM) analysis, we explore the possibility that these recordings belong to the class of multifractal process forwhich a large number of scaling exponents are required to characterize their scaling structures. A non-linearanalysis called the Fractal Dimension (FD) using Higuchi algorithm has been performed to quantify the fractalcomplexity of recordings. According to our results, we noticed that neither the power spectral densities nor theHiguchi algorithm to find the fractal dimension alone were sufficient to separate different classes of patients andhealthy people. In addition, when multifractal analysis and scaling exponent were used as a classifier, the threeclasses could not be well separated. However, this study revealed that we have a wide range of exponents forsome of the gait recordings which indicates they have multifractal structure and they need to be indexed bydifferent exponents as we decompose them into different subsets. In other words, these multifractal subjectsrequire much more exponents to characterize their scaling properties compared to monofractal gait recordingswhich their spectrum displays a narrow width of scaling exponent. Another important outcome from our multifractal analysis is recognizing obvious changes in the shape of D(h) curves for some of the gait recordings whichis crucial in finding the best strategies to better controlling the gait mechanisms in different neuro-degenerativediseases. Although the vibration analysis, fractal dimension and multifractal analysis may not be able to classifygait recordings, however, they can be used as comprehensive frameworks to further analysis, characterize andcompare the complexity and fractal behavior of gait recordings and data structures of different neurodegenerative diseases in clinical database. Likewise, beside the Higuchi algorithm to find the fractal dimension as a complexity measure for the gait recordings, it will require much more efforts and further clinicalanalysis to find a specific threshold which make the fractal dimension to be considered as a biomarker anddiagnosis tool for different neuro-degenerative diseases.

Biography

I am a highly innovative and accomplished researcher in Department of Biostatistics and Medical Informatics at University of Wisconsin-Madison with extensive understanding and more than Five years' experience of presentations, development of novel models and tools, and computational analysis to quantitatively bridge the gap between in-vitro experiments and in-vivo endpoints. My research has been directed towards areas including mathematical biology, dynamical systems theory, computational analysis, mathematical modeling, statistical modeling, Neuroscience, epidemiological models, topological data analysis, fractional calculus and fractal geometry, multiscale modeling.

Flavonoids-Substitution status to predict anticancer activity in selected human skin cancers

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Skin cancer affects millions of people every year. The growing number of skin cancer cases in recent decades and especially the most common melanoma, requires the search for new methods of treatment. An important area of studies is the search for therapeutic agents among natural products that could be a substrate for the production of more effective semi-synthetic drugs. Both *in vitro* and *in vivo* studies have shown that flavonoids have the ability to prevent carcinogenesis and inhibit the growth of cancer cells. In this study, we used bioinformatics tool to search for flavonoid compounds with potential anticancer activity in extensive *in vitro* biological studies. In this regard, we tested the activity of 36 structurally diverse flavonoids and cis-platinum as a reference drug against the SCC-25 cell line, as well as two melanoma cell lines, C32 and A375. Initial screening for antitumor activity was performed with the MTT and NRU assays (after 24 h, 48 h and 72 h incubation). In the MTT assay, the most active (indicated as IC50 values after 48 h incubation) representative of all flavonoids was 5,6-dihydroxyflavone (A375: 36.40 ± 1.82 µM; C32: 47.50 ± 2.37 µM; SCC-25: 53.90 ± 2.71 µM), 7,8-dihydroxyflavone (A375: 33.10 ± 1.65 µM; C32: 56.50 ± 2.83 µM; SCC-25: 57.40 ± 2.87 µM) and zapotin (A375: 31.30 ± 1.57 µM; C32: 26.50 ± 1.33 µM; SCC-25: 21.90 ± 1.09 µM). The analysis of DNA biosynthesis inhibition also shows in all cases that 5,6-dihydroxyflavone, 7,8-dihydroxyflavone and zapotin were the dominant compounds with anticancer activity against the studied cell lines. In addition, a statistical analysis was performed to describe the SAR. Further experiments are underway to find the exact mechanism of the anticancer activity of the studied compounds.

Biography

From 2019 I work as a scientific researcher at the Department of Pharmacognosy Medical University of Białystok, Poland. During this time, I performed a comprehensive assessment of the chemical composition of the knawel species, Scleranthus perennis and S. annuus, which not have been studied so far and isolated for the first time in the world four new flavonoid compounds. As part of my scientific work, I completed two international internships, at the University of Zagreb and Chieti where I focused on the research of biological activity of natural compounds and analytical methods allowing simultaneous determination of phytochemical markers in the plant extracts. The results of my research were presented at national and international conferences and published in thematic journals. Also, as part of my teaching duties, I conduct classes for pharmacy students at the Medical University of Białystok. In 2022 I was awarded a doctoral degree in pharmaceutical sciences.

The anticancer effect of rare *Potentilla* species – Preliminary study in human colon cancer cell line LS180

D. Augustynowicz[1], M. K. Lemieszek[2], J. W. Strawa[1], A. Wiater[3] and **M.Tomczyk[1]**

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[2]Department of Medical Biology, Institute of Rural Health, Poland
[3]Department of Industrial and Environmental Microbiology, Maria Curie-Skłodowska University, Poland

*P*otentilla L. (Rosaceae) species are valuable medicinal plants that have been known since antiquity as a remedy inter alia against diarrhoea, oral inflammations and topical infections [1]. The literature data report that species from this genus are a rich source of polyphenols, especially hydrolysable tannins, flavonoids and phenolic acids, and possess anti-neoplastic activity against various cancer cell lines [2,3]. Thus, the present investigation aimed to assess the secondary metabolites composition of selected acetone extracts from aerial parts of rare Potentilla species P. aurea (PAU7), P. *erecta* (PER7), *P. fruticosa* (PFR7), *P. hyparctica* (PHY7), *P. megalantha* (PME7), *P. nepalensis* (PNE7), *P. pensylvanica* (PPE7), *P. pulcherrima* (PPU7), *P. rigoi* (PRI7) and *P. thuringiaca* (PTH7) with the employment of LC-HRMS analysis. The anticancer potential of the selected extracts has been assessed in the human colon cancer cell line LS180 using the MTT, BrdU and LDH assays.

The LC-HRMS analysis revealed the abundance of hydrolysable tannins and their derivatives, such as agrimoniin, pedunculagin α or β, ellagic acid derivatives, flavonoids, such as kaempferol, quercetin and isorhamnetin derivatives and phenolic acids. The most significant anticancer effect in the MTT test revealed PFR7, which at the highest tested concentration of 250 µg/mL deceased LS180 cells proliferation by 94.8% ($IC_{50\ PFR7}$= 89 µg/mL), and the observed effect was significantly stronger than changes induced by 25 µM 5-fluorouracil used as a positive control. It should be emphasized that all investigated extracts at the highest tested concentrations revealed a stronger anticancer effect than 25 µM 5-FU. The BrdU assay revealed that all investigated extracts decreased DNA synthesis in colon cancer cells in a dose-dependent manner, and the strongest antiproliferative properties showed PFR7 with the IC50 value at 50 µg/mL. The LDH assay demonstrated that all examined extracts damaged colon cancer cell membranes. The strongest cytotoxicity revealed PFR7, which in concentrations from 25 to 250 µg/mL increased LDH levels by 102% and 424%, respectively. Obtained results suggested the great anticancer potential of investigated Potentilla extracts in the field of colon cancer chemoprevention. Nevertheless, further *in vivo* as well as clinical studies are required.

Biography

Pharmacist, PhD student working at the Department of Pharmacognosy at Medical University Pref Bialystok, Bialystok, Poland. Research areas include phytochemical evaluations of plants secondary metabolites, especially species from genus *Potentilla,* their isolation and characterization, as well as pharmacological evaluations of active phytoconstituents in biological systems.

In Vitro efficacy of bacterial cellulose dressings chemisorbed with selected *Potentilla* extracts against biofilm formed by pathogens isolated from chronic wounds

J.W. Strawa[1], M. Brożyna[2], A. Junka[2], D. Augustynowicz[1], A. Wiater[3] and **M. Tomczyk[1]**

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[2]Department of Pharmaceutical Microbiology and Parasitology, Wroclaw Medical University, Unique Application Model Laboratory, Poland
[3]Department of Industrial and Environmental Microbiology, Institute of Biological Sciences, Maria Curie-Skłodowska University, Poland

Bacterial cellulose (BC) is a polymer of high absorption capacity, which makes it suitable for the incorporation of broad spectrum of antimicrobial substances [1]. BC fortified with natural antimicrobials, including these of plant origin, may be considered an excellent dressing designed for the treatment of infected chronic wounds [2]. In this study, we have evaluated the antimicrobial and antibiofilm activity of experimental bacterial cellulose dressings enriched *ex situ* with selected *Potentilla* L. (Rosaceae) [3] extracts against biofilm-forming nosocomial pathogens, *Staphylococcus aureus, Pseudomonas aeruginosa* and *Candida albicans*. All of 16 tested extracts displayed activity against the above-mentioned fungus, none of them was active against *P. aeruginosa* and two of them displayed activity also against *S. aureus*, the leading etiological factor of chronic wound

infection [4]. The activity of these two most potent extracts obtained from *P. argentea* and *P. grandiflora* was tested in *in vitro* setting, where biofilm-forming pathogens were co-cultured together with wound bed forming cells, fibroblasts (Figure 1). The chemical composition of the most active subfractions was determined using the LC-PDA-HRMS method. The chromatographic analysis revealed that agrimoniin was the principal substance present in both extracts. Further results revealed that exposure on the extracts translated into significant reduction of staphylococcal and fungal biofilms. At the same time, exposure of fibroblast cell lines on extracts correlated with no observed level of cytotoxicity. Thus, obtained data, if developed, may pave a way for the introduction of plant-based, antibiofilm dressings to the clinical practice of chronic wound treatment.
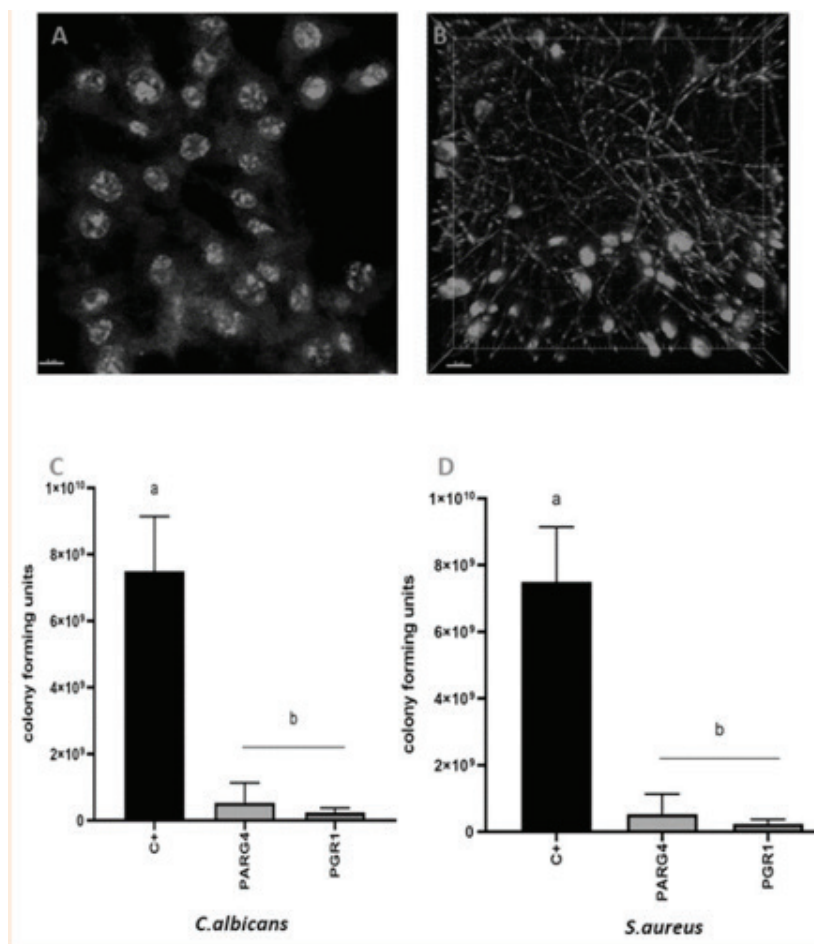
Figure 1. Co-culture of fibroblasts and C. albicans of S. aureus biofilm (A, B, respectively) visualized using L/D dyeing and confocal microscopy. The charts C and D show the drop of number of C. albicans or S. aureus cells, respectively, after treatment with analyzed compounds, compared to the control (C+, untreated cells), *a, b - statistically significant differences (p<0.5).

Biography

Jakub W. Strawa, is a pharmacist and assistant at the Department of Pharmacognosy, Faculty of Pharmacy with the Division of Laboratory Medicine, Medical University of Bialystok. His scientific work focuses on the identification and isolation of new natural compounds, as well as their qualitative and quantitative analysis using chromatographic techniques (HPTLC, HPLC) coupled with mass spectrometry. His area of interest includes the discovery of new biologically active structures and the optimization of the purification process and identification using in-source ionization and pre-column derivatization. He is the author of numerous peer-reviewed publications in the areas of phytochemistry, analytical method development and biological activity evaluation. His ORCID is 0000-0001-7133-1817.

Assessment of the impact of non-ablative monopolar and bipolar radiofrequency on the degree of hydration and remodeling of women's facial skin

Agata Skalska-Stochaj[1], Dorota Hojan-Jezierska[2] and Leszek Kubisz[2]

[1]Department of Cosmetology, Stanisław Staszic State University of Applied Sciences in Piła, Poland
[2]Department of Biophysics, Poznań University of Medical Sciences, Poland

The present research compared the effectiveness of the monopolar radiofrequency method with that of bipolar method in the facial skin of women in selected age groups. The study included 150 women in good general health and healthy skin. The first group consisted of 75 female participants who received monopolar radiofrequency electromagnetic field treatment (RFM) and 75 women who were treated using the bipolar method (RFB). In both the RFM and RFB groups, 5 age groups were distinguished, i.e. group I (20-29), group II (30-39), group III (40-49), group IV (50-59), group V (60-69). The methods comprise tewametry, the measurement of the stratum corneum barrier function (transepidermal water loss - TEWL), and corneometry - measurement of epidermis hydration. Tewametric and corneometric measurements of the facial skin were performed to determine its condition following radiofrequency electromagnetic field therapy and to assess the sustainability of the obtained results after 4 months of therapy. The follow-up measurement was performed prior to the first treatment session and the subsequent ones after one month, and four months following the first measurement. The best results, indicating an improvement in epidermal hydration were observed for bipolar radiofrequency method in the age group 40-49 years and group 50-59 years. There are a number of factors influencing the condition of the skin, such as ethnicity, color, thickness, which are essential for assessing the effectiveness and sustainability of the results. Each method of non-invasive skin rejuvenation is based on its regeneration which, in turn, indicates its time-consuming character, while the effects are distributed over time. In the radiofrequency method, a non-ablative tissue tightening is observed, as well as an improvement of skin tone occur by means of its remodeling in the process of neocolagenesis and elastogenesis following deep volumetric heating.

Biography

Held diplomas, academic degrees:

- MA in cosmetology in the field of public health, obtained at the Faculty of Health Sciences, Nicolaus Copernicus University in Toruń, Collegium Medicum in Bydgoszcz, Work subject: Dangerous organic and inorganic compounds in cosmetics.

- Postgraduate Extramural Study of Scientific Research Methodology, 2nd Faculty of Medicine, Medical University of Karol Marcinkowski in Poznań.

- Doctor of Medical Sciences in the field of Medical Biology obtained at the Department of Biophysics, Department of Biophysics, Medical University of Poznań. Title of the doctoral dissertation: Assessment of the influence of radiofrequency treatment on selected biophysical properties of the skin.

Information on didactic, organizational and science popularizing achievements:

- Head of the Department of Cosmetology of the ANS in Piła, Poland.

- Research in the field of minimally invasive, biophysical methods of imaging and diagnostics of human skin (ultrasonography, corneometry, cutanometry, tewametry)

- Facial skin aging, antiaging methods, procedures stimulating the process of neocolagenesis

- Chairman of the student research club, tutor, supervisor and reviewer of theses

- Conducting lectures, exercises, laboratories, seminars in the field of cosmetology in the subjects: Basics of cosmetology, dermatology, beauty cosmetology, spa and wellness.

Avoidable mortality in Kazakhstan

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[2]AYeconomics, Spain

The health system is an important sector that forms the fund of human capital that determines the productive potential of the economy. One of the tools for assessing the effectiveness of the health care system is the study of avoidable mortality, which includes components as preventable and treatable mortality.

The aim is to study the avoidable mortality in Kazakhstan

Scope and Methods: Health system indicators data obtained from the Bureau of National Statistics of the Republic of Kazakhstan. A calculation of the avoidable mortality (preventable and treatable) based on the methodology presented by the OECD. Study period was from 2015 to 2020.

Results: Our study results show a decline in both preventive and treatable mortality between 2015 and 2019 and a sharp increase in all regions of Kazakhstan in 2020. The number of preventable mortality rose two times while treatable rates increase three times in last studied year (2020). These changes can be explained due to the situation with COVID-19. In addition, the high rates of avoidable deaths are associated with cardiovascular disease, cancer, and respiratory disease. From preventable mortality, it is necessary to note the high mortality from injuries and alcohol consumption.

Conclusion: Our findings indicate the need to revisit and strengthen injury-related interventions that affect the implementation of sustainability goals (particularly in North regions of the Kazakhstan). Moreover, decision-makers need to consider measures to implement tasks in the face of uncertainty to ensure public health.

Biography

Lyazzat Kosherbayeva MD, PhD, Head of the health policy and management department Kazakh National medical university. Interested area are health technology assessment, public health. Attend as a key expert in different projects: Technology development of health policy assessment in Kazakhstan in intersectoral and regional perspectives (2021-2023); The psychological impact of COVID-19 on people employed in small and medium-sized businesses in the health care system in urban and rural areas of the Kazakhstan (2021); Development of Health Technology Assessment in Kazakhstan etc.

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M E D I A

Diagnostic and further multisectoral support route of patient with autism spectrum disorder in Kazakhstan

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Objectives of the work: Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder characterized by a lack of social communication, limited interests and repetitive behavior that affects 1 in 160 children worldwide1. According to the Ministry of Health of the Republic of Kazakhstan (MoH), the number of detected cases of autism in children over the past 7 years has increased 5 times[2].

Scope of this work is to analyze the regulatory documents that describes the algorithm of multisectoral support (health, education and social protection) to people with ASD.

Research methods: a search was carried out on the electronic databases. Regulatory documents (orders, guidelines, teaching standards etc.)3-5 were analyzed.

Results and discussion: Nowadays, a number of activities have been carried out by three ministries to ensure equity and UHC policies. The MoH has approved two clinical protocols over the past two years, which enabled to keep the ASD diagnosis after 18 years. In the field of education, admission age to Committee has been changed from 3 years to 0, consequently ASD children can timely receive specialized education. Despite the changes, there are still challenges like providing tutors at schools. Also, late ASD detection (4 years and above) detected in regions leads to later actions by social protection organizations.

Conclusion: It is necessary to continue the work to improve the existing practice of ASD, in particular, activities should be focused on improving the screening process, consider the introduction of new technologies for the early diagnosis of ASD. It is necessary to develop patient flow with ASD and identify gaps in providing assistance to the child and parents / guardians.

Biography

Laura Kozhageldiyeva is a Master of Public Health who has an experience in different projects funded by the Government and International organizations as well. Laura has an input to Chronic Disease Management implementation and Motivational Interviewing with support of lead international consultants. Her recent projects were related to improvement of complex care to children with disabilities in Kazakhstan.

How to protect the interests of the infringed when an enterprise that endangers public health security goes bankrupt

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When an event that endangers public health security occurs, the enterprise that causes the event often file for bankruptcy, which leads to the current problem of how to protect the interests of the infringed in bankruptcy proceedings. This is a typical problem of bankruptcy law, but neither the bankruptcy law of the United States nor that of China has made specific provisions for this problem, putting the interests of the infringed at risk. The study of the vaccine incident of Changchun Changsheng Biotechnology and the baby powder incident of Johnson & Johnson reveals that the solution to this problem is essentially the same in China and the United States (i.e., to divest some assets from a bankrupt company and use them to compensate the infringed), but the two countries have different starting points and different problems to solve. In the baby powder incident of Johnson & Johnson, the bankruptcy court of the United States mainly considered how to reduce the total cost to society and give necessary compensation to the infringed. In the vaccine incident of Changchun Changsheng Biotechnology, the Chinese government considered how to provide adequate compensation to the infringed but not how to reduce the total cost to society. Compared with China's approach, due to the lack of government intervention, the approach of the United States may not ensure adequate compensation for the infringed and it is less efficient. However, where the Chinese government's practices are in conflict with the Chinese Enterprise Bankruptcy Law and other laws, the Chinese government should amend relevant legislation in a timely manner in the future to achieve a legal basis.

Biography

Dr. Chaoyi Huang, born in 1990, earned his bachelor's, master's, and doctoral degrees from Jilin University Law School, one of the top law schools in China. In the past ten years, Dr. Huang Chaoyi has been engaged in comparative law and policy research, especially the comparative study of bankruptcy law and policy. He specializes in the study of interdisciplinary issues in the field of bankruptcy law. After earning his doctorate from the Law School of Jilin University, Dr. Huang Chaoyi chose to conduct academic research at the Law School of Chongqing University, another leading law school in China ranking B+ in the Fourth Discipline Assessment of the Ministry of Education of China.

Prognostic value of free air under diaphragm on chest radiographs in correlation with peritoneal soiling intraoperatively

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Cairo University, Egypt

Purpose: Gastrointestinal perforation is a significant injury that originates mainly from gastrointestinal ulcers. It is associated with a high rate of morbidity and mortality. The height of the column of the air under the diaphragm can be used to estimate the amount of peritoneal soiling due to viscus perforation. This study aimed to determine the correlation between this estimate and the incidence of morbidity and mortality.

Methods: To achieve this aim, a prospective cohort study was conducted on 83 patients at Kasr al ainy hospital who, between March 2021 and March 2022, presented to the emergency department with free air under the diaphragm at chest X-ray and required surgical intervention for a perforated viscus. For each case, the amount of peritoneal soiling and the amount of air under the diaphragm as determined by a chest X-ray were recorded.

Results: The mean air under the diaphragm in a plain erect chest X-ray was 1.78 ± 1.92 cm, and the mean amount of peritoneal soiling was 1201.83 ± 948.99 CC. There are positive correlations between the amount of air under the diaphragm as shown on an X-ray and the size of the perforation ($p = 0.034$), the amount of peritoneal soiling ($p = 0.003$), and the mortality ($p = 0.013$).

Conclusion: There was a statistically significant correlation between air under the diaphragm according to X-ray and the amount of peritoneal soiling in patients with a perforated viscus. This measure can be used as a sensitive tool to predict morbidity and mortality as more free air in the chest X-ray is associated with significant mortality. These results may enhance the decision making using sensitive and available tool of diagnosis.

Biography

Dr. Ismail Shafik, M.D., Ph.D., is a professor and Chairman of the colorectal diseases department, Cairo University, Secretary of the Mediterranean Society of Pelvic Floor Disorders, Coordinator of the Egyptian Society of Colorectal Surgery, a member of the international society of professors of surgery in colorectal, USA, and the Mediterranean colorectal society in Rome, with more than 200 works of research published. Primary research interests encompasses the principal surgical fields with research heralding advancements in anatomy, physiology and the surgical approach within complex settings. Years of broad range surgical expertise in trauma, as the former Chairman of the Kasr-Al-Aini trauma department, Dr. Ismail's research has an intuitive and practical nature. Recently, preventative and prognostic medicine has been a point of focus, noticing that practical, robust and standardized practices of prevention are becoming more necessary, especially in the modern fast paced progression of the surgical field.

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