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5th International Conference on

FUTURE OF PREVENTIVE MEDICINE AND PUBLIC HEALTH

MARCH 20-21, 2025 | LONDON, UK

FUTURE OF PMPH 2025

SCIENTIFIC PROGRAM

DAY 01
THURSDAY

MARCH 20, 2025

HALL -1

08:00-08:30	**Registrations**
08:30-08:40	**Inaugural Ceremony**
Moderator:	**Shumei Song,** *Coriell Institute for Medical Research, USA*

Sessions: Public Health | Preventive Medicine | Healthcare Innovations | Midwifery | Patient Safety | Digital Health | Primary Care | COVID 19 | Nursing | Internal Medicine | Family Medicine | Women's Health | Psychology and Psychiatric Disorders | Pharmaceuticals | AI in Healthcare

Distinguished Speaker Talks

Session Chair	**Bankole Johnson,** *Casa Privée, USA | Larkin University, USA*
Session Chair	**Stephen E. Lupe,** *The Cleveland Clinic, USA*
08:40-09:00	Title: First Evidence of an AI-Enhanced Digital Comprehensive Care Model on Health Outcomes of IBS Patients
	Stephen E. Lupe, *The Cleveland Clinic, USA*
09:00-09:20	Title: Development of a Durable, Load Variable, Energy Storage and Return Prosthetic Foot for Low Resource Countries
	Justin Zebulon Laferrier, *Johnson & Wales University, USA*
09:20-09:40	Title: Stem Cells and Cell Factors: Paving the Way for Future Breakthroughs in Parkinson's Disease Treatment
	Bankole Johnson, *Casa Privée, USA | Larkin University, USA*
09:40-10:00	Title: Patients' Perceptions of Remote Patient Monitoring by a Centralized Virtual Ward – A Qualitative Study
	Alex Jaranka, *Karolinska Institutet, Care Sciences and Society, Sweden*
10:00-10:20	Title: Dissemination and Implementation of Humanoid AI Robot Healthcare Providers: A Health Communication Perspective
	Do Kyun David Kim, *University of Louisiana at Lafayette, USA*

GROUP PHOTO 10:20-10:30

REFRESHMENT BREAK 10:30-10:50	
10:50-11:10	Title: Hippo/YAP1 Signaling in Gastroesophageal Cancer Progression,Therapy Resistance, Metastasis, and Remodeling Tumor Microenvironment
	Shumei Song, *Coriell Institute for Medical Research, USA*
11:10-11:30	Title: Cybersecurity and Liability in Digital Health
	Giovanna Capilli, *San Raffaele University of Rome, Italy*
11:30-11:50	Title: Echoes of the Hills: Challenging Exclusion through Black Storytelling in Appalachian Health and Policy
	Marcia Dinkins, *Black Appalachian Coalition (BLAC), USA*
11:50-12:10	Title: Dietary Resistant Starch Modulates Gut Microbiota and Attenuates Chronic Kidney Disease Progression
	Oleg Karaduta, *University of Arkansas for Medical Sciences College of Health Professions, USA*
12:10-12:30	Title: VITABALANCE-MED- Global and Inclusive Health: An Innovative Concept & Educational Project
	António Rui Marcelino Leal, *SANITUS Foundation, Portugal*
12:30-12:50	Title: Developing Relational Consciousness in Preventative Healthcare
	Nikki Kiyimba, *Mātai Rongo, New Zealand | ReDefined Wellbeing Hub, New Zealand*
GROUP PHOTO 12:50-13:00	
LUNCH BREAK 13:00-13:40	
Session Chair	**Bankole Johnson,** *Casa Privée, USA | Larkin University, USA*
Session Chair	**Stephen E. Lupe,** *The Cleveland Clinic, USA*
13:40-14:00	Title: Service-Learning to Promote Vision Care for Older People
	Maria Covadonga Vázquez Sánchez, *University of Santiago de Compostela, Spain*
14:00-14:20	Title: The Importance of the Nutrigenetic Analysis and Epigenetic Clock in Longevity Anti -Aging Processes
	Gulsen Meral, *Epigenetic Coaching Company, UK*
14:20-14:40	Title: The Possible Association Between Drug-Induced lupus and Epstein-Barr Virus
	Julie Kristine Knudsen Salomon, *University of Southern Denmark, Denmark*

14:40-15:00	Title: Association Between Occupational Stress, Markers of Inflammation, and Oxidative Stress in Intensive Care Unit Workers: A Cross-Sectional Study **Luciano Antonio Rodrigues,** *University Center of Espírito Santo (UNESC), Brazil*
15:00-15:20	Title: A Comprehensive and Equity-Promoting Response by a Civil Society–Public Partnership to COVID-19 in Chiapas, Mexico **Ana Laura Rodríguez Vázquez,** *Instituto Nacional de Salud Publica, Mexico*
15:20-15:40	Title: Biological Age and its Relationship with Mortality of Elderly People with COVID-19 in a Public Hospital in Northeastern Brazil **Isaura Romero Peixoto,** *Federal University of Pernambuco, Brazil | Federal University of Pernambuco, Brazil*
15:40-16:00	Title: Automated Classification of Prostate Cancer Severity Using Pre-Trained Models **Sílvia Cristina Ferreira Barros,** *University of Trás-os-Montes e Alto Douro, Portugal*
	REFRESHMENT BREAK 16:00-16:20
16:20-16:40	Title: The Deep and Continuing Impact in Education of COVID-19 **Tim Oates,** *Cambridge University Press and Assessment, UK*
16:40-17:00	TItle: Evaluation of New-Onset BK Viruria in Post-Renal Transplant Recipients by Quantitative PCR **Raza Ullah Asif,** *National University of Medical Sciences (NUMS), Pakistan*
17:00-17:20	Title: Bacteria in Different Swimming Pool Characters Induce Diseases to Swimmers **Vimolmas Tansathitaya,** *Mahidol University, Thailand*
17:20-17:40	Title: Enhancing Information Sharing in Healthcare through AI and Natural Language Processing: An Integrative Approach **Sabrina Guetibi,** *Artificial Intelligence & Data Science Group, IPSS Team, Faculty of Science of Rabat, Mohammed V University in Rabat, Morocco*
17:40-18:00	Title: Optimizing Standing Configurations Following Percutaneous Epidural Stimulation in Persons with Spinal Cord Injury **Ahmad M. Alazzam,** *Hunter Holmes McGuire VA Medical Center, USA*
18:00-18:20	Title: Prevention of Viral Postnatal Infections: A Focus on Human Milk **Manuela Donalisio,** *University of Turin, Italy*

18:20-18:40	Title: Bridging Lab Innovation to Point-of-Care Solutions: Validating LAMP for Early Diagnosis of Congenital Chagas Disease in Public Health Maternities **Alejandro Gabriel Schijman,** *INGEBI " Dr Hector Torres" - CONICET, Argentina*
NETWORKING	
END OF DAY 1	

SCIENTIFIC PROGRAM

DAY 02
FRIDAY

MARCH 21, 2025

HALL -1

08:20-08:30	**Introduction**
Moderator:	**Shumei Song,** *Coriell Institute for Medical Research, USA*

Sessions: Public Health | Preventive Medicine | Healthcare Innovations | Midwifery | Patient Safety | Digital Health | Primary Care | COVID 19 | Nursing | Internal Medicine | Family Medicine | Women's Health | Psychology and Psychiatric Disorders | Pharmaceuticals | AI in Healthcare

Distinguished Speaker Talks

Session Chair	**Wisal Mustafa Hassan Ahmed,** *FGM Advisor, UNFPA HQ/Clinical Assistant Professor, University of Washington, USA*
Session Chair	**António Rui Marcelino Leal,** *SANITUS Foundation, Portugal*
08:30-08:50	Title: Evaluating the Long-Term Impact of Large-Scale Trainings on Female Genital Mutilation Related Knowledge, Attitudes, and Practices Among Sudanese Midwives in Khartoum State
	Wisal Mustafa Hassan Ahmed, *FGM Advisor, UNFPA HQ/Clinical Assistant Professor, University of Washington, USA*
08:50-09:10	Title: Efficacy of Photobiomodulation Therapy in Treatment of Chronic Kidney Disease
	Jih-Huah Wu, *Ming Chuan University, Taiwan*
09:10-09:30	Title: Towards Automated Policy Predictions via Structured Attribute-Based Access Control
	Anna Bamberger, *King's College London, UK*
09:30-09:50	Title: Conservative Management of Scoliosis: Evaluating Surface Topography for the Rigo System
	Marissa E. Selthafner, *Children's Wisconsin, Medical College of Wisconsin, USA*
09:50-10:10	Title: Transfers of the Sternal Head of Pectoralis Major and Latissimus Dorsi to Treat Sprengel Syndrome
	Ricardo Berriel Mendes, *Institute NAEON, Brazil*

10:10-10:30	Title: Palivizumab Prophylaxis Against Respiratory Syncytial Virus Infection in Patients Younger than 2 Years of Age with Congenital Heart Disease
	Rihab Agouba, *King Abdulaziz Medical City, Saudi Arabia*
GROUP PHOTO 10:30-10:40	
REFRESHMENT BREAK 10:40-11:00	
11:00-11:20	Title: Nursing Interventions that Promote Contraceptive Decision-Making in Women after Voluntary Abortion
	Sara Elisabete Cavaco Palma, *Polytechnic Institute of Santarém, Portugal*
11:20-11:40	Title: Successful Weight Loss in Adolescents with Overweight or Obesity Using a Swallowable Intragastric Balloon and Nutritional Oversight
	Formiga Andrea, *CIBO Clinic, Italy*
11:40-12:00	Title: Nursing Management and Patient Experience: The Swallowable Intragastric Balloon for Morbid Obesity a Comprehensive Approach
	Mireille Galea, *Saint James Hospital, Malta*
12:00-12:20	Title: Comparative Safety of Paxlovid and Molnupiravir: Risk of Interstitial Lung Disease in COVID-19 Patients with Autoimmune Diseases
	I-Han Cheng, *University College London (UCL), UK*
12:20-12:40	Title: Lesch-Nyhan Syndrome - A Non-Extracting Approach to Prevent the Oral Aspects of Self-Mutilation
	Joseph Shapira, *Hebrew University-Hadassah, Israel*
12:40-13:00	Title: Cutibacterium Acnes: From Skin Commensal to Pathogen in Shoulder Surgery
	Muhammad Ali Javaid, *Cwm Taf Morgannwg University Health Board, UK*
GROUP PHOTO 13:00-13:10	
LUNCH BREAK 13:10-13:50	
Session Chair	**Wisal Mustafa Hassan Ahmed,** *FGM Advisor, UNFPA HQ/Clinical Assistant Professor, University of Washington, USA*
Session Chair	**António Rui Marcelino Leal,** *SANITUS Foundation, Portugal*
13:50-14:10	Title: The Spectrum of Vitamin D Responsiveness: Implications for Public Health
	Ulla Marjatta Järvelin, *Independent Researcher, Finland*

14:10-14:30	Title: Depression in Pregnant Non-Diabetic Women and Women with Gestational Diabetes in Bangladesh – A Comparative Study Based on Multiple Logistic Regression **Kaniz Fatimah,** *American International University Bangladesh, Bangladesh*
14:30-14:50	Title: Modelling Dynamic Spreading of Covid-19 Cases in Hong Kong: A Semiparametric Spatio-Temporal Zero-Inflated Poisson Analysis **Zudi Lu,** *City University of Hong Kong, China*
14:50-15:10	Title: Severe Re-Impacted Deciduous Tooth in 25-Years-Old Female With Permanent Dentition Associated to High-Risk Oral-Sinus Communication Surgery: A Rare Case Report **Chami Bassima,** *Mohamed V Instruction Military Hospital, Morocco*
15:10-15:30	Title: Antimicrobial Susceptibility Patterns and Molecular Detection of *Enterococcus* in Patients with Urinary Tract Infection: Experience in a Tertiary Care Hospital in Bangladesh **Nahla Islam Neeva,** *Monowara Sikder Medical College, Bangladesh*
15:30-15:50	Title: Cervical Health for a Lifetime: Smartscope a New Armamentarium **Indira Palo,** *M.K.C.G. Medical College, India*
15:50-16:10	Title: Herlyn-Werner-Wunderlich Syndrome – Rare but Remediable with Early Diagnosis **Madhumitha J,** *Panimalar Medical College, India* **Rituparna Baruah,** *Srimanta Sankardeva Hospital and Research Institute, India*
REFRESHMENT BREAK 16:10-16:30	
16:30-16:50	Title: Integrating Sensory Modalities and Technologies in Artistic Contexts: A New Frontier for Preventive Medicine and Public Health **Piper Hutson,** *Lindenwood University, USA*
16:50-17:10	Title: Fixation of Depressed Posterolateral Tibial Plateau Fractures Using a Direct Lateral Approach **Reza Noktehsanj,** *Ardabil University of Medical Sciences, Iran*
17:10-17:30	Title: Unveiling the Recent Approaches of Paddy Rice Against *Helminthosporium Oryzae* Disease **Shabana Memon,** *Sindh Agriculture University Tandojam, Pakistan*
17:30-17:50	Title: Prospect of Scanning Electron Microscopy and Energy Dispersive X-ray (SEM-EDX) Technique for the Rapid Detection of Pathogens **Muhammad Saiful Islam Khan,** *Central Asian University, Uzbekistan*

HALL -02

Interdisciplinary Talks in Healthcare and Preventive Medicine	
Session Chair	**Gulsen Meral,** *Epigenetic Coaching Company, UK*
Session Chair	**Nikki Kiyimba,** *Mātai Rongo, New Zealand | ReDefined Wellbeing Hub, New Zealand*
11:00-11:20	Title: Real Life Data Important to Make Appropriate Choices at the End of Life in Patients with Pancreatic Cancer **Brigitte C.M. Haberkorn,** *Maasstad Ziekenhuis Rotterdam, The Netherlands*
11:20-11:40	Title: Transforming Healthcare through Adaptive User Interfaces and AI-Driven Solutions **Randy Lin,** *Algoma University, Canada*
11:40-12:00	Title: Individuals' Food Preferences can be Influenced by the Music Styles: An ERP Study **Dingyue Tian,** *Southwest University, China*
12:00-12:20	Title: Low-Frequency Magnetic Field Therapy for GBM: Current Advances, Mechanisms, Challenges and Future Perspectives **Zhifeng Shi,** *Fudan University, China*
12:20-12:40	Title: Legal and Compliance Implications for AI Systems using Medical Data under the EU AI Act **Nimród Mike,** *Corvinus University of Budapest, Hungary*
12:40-13:00	Title: Vietnamese Herbal Product (TD0019 – Vai Gay Sao Thai Duong) in the Treatment of Cervical Radiculopathy **Nguyen Thi Huong Lien,** *Sao Thai Duong Joint Stock Company, Vietnam*
GROUP PHOTO 13:00-13:10	
LUNCH BREAK 13:10-13:50	
Session Chair	**Gulsen Meral,** *Epigenetic Coaching Company, UK*
Session Chair	**Nikki Kiyimba,** *Mātai Rongo, New Zealand | ReDefined Wellbeing Hub, New Zealand*
13:50-14:10	Title: Integrated Spherical Fuzzy-CRITIC and Spherical Fuzzy–TOPSIS Method in Prioritizing Earthquake Risks and Planning: An Overview in Disaster Management **Emin Tarakci,** *Istanbul Medeniyet University, Turkey*

14:10-14:30	Title: Technology as a Tool to Enhance Development of Skillset in Autistic Individuals: Specific to Female Gender **Sophia Rahaman,** *Manipal Academy of Higher Education, UAE*
14:30-14:50	Title: Studying Ecotoxicology of the Fungal Culture Filtrates from *Aspergillus Terreus* and *Aspergillus Sydowii* under Polythene Degradation Process **Avinash Ade,** *Savitribai Phule Pune University, India*
14:50-15:10	Title: Polyethylene & Polypropylene Degradation using Marine Fungi **Rajkumar Damodhar Kherdekar,** *Savitribai Phule Pune University, India*
15:10-15:30	Title: Nanorobotics in Neurosurgery: Precision, Therapeutic Potential and Future Directions **Mihit Kalawatia,** *Rajarshi Chhatrapati Shahu Maharaj Government Medical College, India*
15:30-15:50	Title: A Comparison of Clinical Profile and Treatment Outcome of Hodgkin's Lymphoma in Tanzania According to HIV Status During the HAART era **Mercy Mbai,** *Longisa County Referral Hospital, Kenya*
15:50-16:10	Title: Development of Valid and Reliable Questionnaire to Evaluate Knowledge, Attitude, and Practices (KAP) of Lifestyle Medicine Domains **Nesrain Alhamedi,** *King Abdulaziz University Hospital, Saudi Arabia*
REFRESHMENT BREAK 16:10-16:30	
Posters	
16:30-16:45	Title: Understanding the Dynamic Process of Human Behavior Changes Towards Disaster Preparedness: Integrating Theoretical Perspectives **Dennis Culhane,** *University of Pennsylvania, USA*
16:45-17:00	Title: HL7 FHIR Platform, Scalable, Reliable and Comprehensive of Clinical Databases Analyzed with Machine Learning for ICU Public Healthcare Center **Bernardo Chávez Plaza,** *Hospital El Salvador, Chile*
17:00-17:15	Title: Comparison of Sensitivity between the Fecal Immunochemical Test (FIT) and the Guaiac Fecal Occult Blood Test (gFOBT) **Antonia Šoić,** *University Hospital for Tumors, Sestre Milosrdnice University Hospital Center, Croatia*
17:15-17:30	Title: Does the Concentration of Hemoglobin in the Stool Depend on the Temperature and Exposure Time in the Fecal Immunochemical Test (FIT) on the OC-SENSOR CERES Device? **Sanja Langer,** *University Hospital for Tumors, Sestre Milosrdnice University Hospital Center, Croatia*

17:30-17:45	Title: A Seed Extract of Mucuna Pruriens Reduced Male Reproductive Endocrine Disruptions in Rats Induced by Chlorpromazine
	Sahar Mohammed Ahmed Al-Karawi, *Mustansiriyah University, Iraq*
Distinguished Speaker Talks	
17:45-18:05	Title: Estimating the Risk of Cancer Incidence and Radiation-Induced Cancer Death of Children Patients Undergoing Digital Radiology X-Ray Examinations
	Khatereh Shamsi, *Babol University of Medical Sciences, Iran*
18:05-18:25	Title: Ameliorative Effects of Sesamum Indicum Aqueous Extract on Letrozole-Induced Polycystic Ovary Syndrome in Adult Female Rats and Formulation of Sesame Syrup
	Zeynab Khosrowpour, *Shahid Beheshti University of Medical Sciences, Iran*
18:25-18:45	Title: Prevention of Cervical Cancer Related to HPV Infections
	Melika Ziaoddini, *Azad University, Iran*
18:45-19:05	Title: An Optimized Deep Focused U-Net Model for Image Segmentation
	Haroon Haider Khan, *COMSATS University, Pakistan*
19:05-19:25	Title: An Exploratory Study of Food Waste Management Practices at Consumer and Retailer Level
	Lubna Kasim Ali Al Rushdy, *Bahçeşehir University, Turkey*
Video Presentations	
V1	Title: U.S. 988 “Care Traffic Control” Technologies in Public Behavioral Health Systems: Driving Performance Outcomes That Matter
	John Draper, *Behavioral Health Link, Inc., USA*
V2	Title: The Role of Imaging in the Diagnosis of Three Endemic Diseases of the Southern Cone Leishmaniasis, Dengue, and Chikungunya
	Monica Alicia Galeano, *Garrahan Hospital, Argentina*
V3	Title: Antibacterial Effect of Ozonated Solutions on Enterococcus Faecalis and Pseudomonas Aeruginosa
	Hernán Freddy Ortega Cruz, *National University of the Altiplano, Puno-Perú*
V4	Title: Longitudinal Patterns of Family Expressed Emotion and their Association with Adolescent Depression Rehabilitation: A Latent Transition Analysis
	Lalit Dzifa Kodzo, *Zhengzhou University, China*
NETWORKING	

END OF DAY 2

FUTURE OF PMPH 2025

DAY 01

5th INTERNATIONAL CONFERENCE ON

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MARCH 20-21, 2025

SPEAKER TALKS

First Evidence of an AI-Enhanced Digital Comprehensive Care Model on Health Outcomes of IBS Patients

Stephen Lupe[1], Tiffany Taft[2], Sam Jactel[3], Mythili Pathipati[3], Jordan Brown[3] and **Joseph Olson[3]**

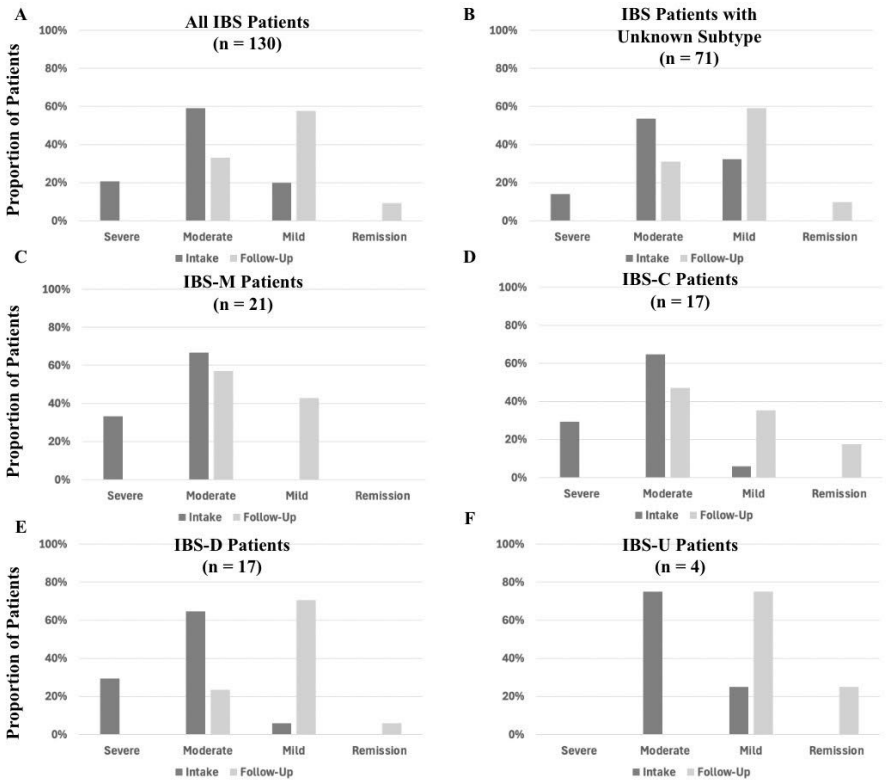
[1]The Cleveland Clinic, USA
[2]The Rome Foundation Research Institute, USA
[3]Ayble Health, USA

Expert consensus acknowledges that traditional care delivery methods struggle to meet the multidisciplinary needs of patients with functional bowel diseases like irritable bowel syndrome (IBS). Barriers to effective care include limited access to clinicians and imprecise, non-personalized treatment. Consequently, patients are left to self-manage diet and/or brain-gut behavioral treatments with suboptimal outcomes. Digital comprehensive care models led by experienced providers are a promising solution to improve access and facilitate collection of high-resolution data to enhance precise treatment, especially when leveraging clinician-supervised artificial intelligence (AI) tools.

This is the first example of an AI-enabled digital comprehensive care platform for IBS patients. Data were prospectively collected from 130 patients (78% female; 73% White) who self-reported IBS symptoms between April 2023 and May 2024. All patients had active IBS symptoms at intake (>=80 on the IBS-SSS) and provided at least one follow-up symptom survey (surveys completed / patient: M = 16.17, SD = 20.01). Patients participated in at least one of the following care pathways: 1) a multidisciplinary care team, 2) a holistic nutrition program including a personalized elimination diet, and 3) a brain-gut behavioral therapy (BGBT) program with gut-directed hypnosis, cognitive behavioral therapy, and acceptance and commitment therapy. Each pathway was assisted by AI algorithms, trained on a large multimodal GI dataset, to identify and communicate key trends in daily patient-reported outcomes and further personalize care plans.

Seventy-six percent of patients experienced clinically significant symptom amelioration (>=35 point reduction). A repeated-measures ANOVA on IBS-SSS scores showed significant symptom improvement regardless of IBS subtype (p<.001, partial eta^2=0.63; intake M=235.57, SD=69.32; post-intervention M=150.86, SD=59.15). In addition, a rapid and sustained symptom response to the program was observed, beginning at week 1 (p<.001; M=163.2, SD=65.14) and improving weekly through 3 months of care (p=.004; M=122.8, SD=79.2). Patient retention was high, with 94% retained at month 1 and 78% at month 3.

The present study provides strong preliminary evidence that virtual comprehensive care models led by qualified providers and enhanced by artificial intelligence (AI) are promising solutions to deliver effective, evidence-based care in an accessible and personalized manner.



Biography

Dr. Stephen Lupe is a Clinical Health Psychologist and the Director of Behavioural Medicine at the department of Gastroenterology, Hepatology, and Nutrition in the Digestive Disease and Surgery Institute of the Cleveland Clinic. Dr. Lupe completed his Master's degree and Doctorate in clinical psychology with a specialization in integrated behavioural health at The Florida Institute of Technology in Melbourne, Florida. Dr. Lupe then completed his predoctoral internship and post-doctoral fellowship in health psychology at the University of Florida Health Science Center. His clinical and research interests include integrated care, Inflammatory Bowel Disease, Irritable Bowel Syndrome, brain-gut-microbiome communication, health promotion, program development within health systems, and interdisciplinary treatment team approaches aimed at increasing health behaviours.

Development of a Durable, Load Variable, Energy Storage and Return Prosthetic Foot for Low Resource Countries

Justin Z Laferrier

Johnson & Wales University, USA

Major advances in research and development as it pertains prosthetic feet have increased the quality of life for many individuals with amputations. However, a negative aspect of these advancements is that the majority of end users are not able to benefit from these advances in technology. While these prosthetics are technologically impressive and work well for the small number of individuals that can obtain them, they fail to meet the needs of the vast majority of amputees worldwide. More than 80% of the world's amputee population reside in low resource countries. Of this population approximately 95% of these individuals do not have access to prosthetics. While cost alone is prohibitive, these designs are also unfeasible for developing countries due to their required maintenance from a skilled technician, the inadequate durability in adverse environments, inability to function correctly over a variable load range, and inability to achieve and maintain a reliable power supply and over all local availability of these components. Research is needed in this area to promote the design and development of a cost-effective prosthetic foot that meets economic, environmental, cultural, and physical standards including durability, local availability, simple repair, local production, lightweight, biomechanically appropriate, and structural integrity which can handle adverse climate and working conditions. Currently of all the low-cost prosthetic feet (>25) commonly used in these regions none have passed international standards organization (ISO) testing.

Objectives: The goal of this project is to design, fabricate, and test a durable, low-cost, sustainable, energy storage and return, prosthetic foot for individuals with lower limb amputations in developing countries. The prosthetic foot complex will be able to provide optimal function, durability, comfort, and cultural acceptance during wide variations of load carriage, in adverse terrains and severe weather conditions.

Results: The research team was able to design and develop a low-cost durable, energy storage and return, 3D printed prototype prosthetic foot for individuals with lower limb amputations in developing countries.

Conclusion: While there is more work to be done the current prototype offers a potential improvement over commonly offered prosthetic feet for individuals with lower-limb amputations living in low resources countries.

Biography

Dr. Laferrier is the Associate Director of the Physical Therapy Department at Johnson & Wales University. His expertise is in Biomechanics, Amputation and Poly-trauma rehabilitation, Adaptive Sport, Exercise, and Recreation, Rehabilitation Engineering, Ehlers Danlos Syndrome, and Diagnostic Imaging. He holds Board-Certified Specialist certifications in Neurology, Orthopedics, and Sports from the American Board of Physical Therapy Specialties. He is also a Certified Assistive Technology Professional from the Rehabilitation Engineering and Assistive Technology Society of North America, and a Certified Strength and Conditioning Specialist from the National Strength and Conditioning Association. Dr. Laferrier is a veteran of the US Marines and US Army and while in the Army served as the officer-in-charge (OIC) of physical therapy for the polytrauma and amputee Centers for Excellence in Washington D.C. and San Antonio TX. Dr. Laferrier has worked all over the world evaluating and treating some of the most severe and complex conditions found today.

Stem Cells and Cell Factors: Paving the Way for Future Breakthroughs in Parkinson's Disease Treatment

Bankole Johnson[1,2]

[1]Casa Privée, USA
[2]Larkin University, USA

Parkinson's disease (PD) is a prevalent neurodegenerative disorder associated with aging, characterized by the progressive degeneration of dopamine-producing neurons in the substantia nigra. This neuronal loss results in symptoms such as tremors, rigidity, and bradykinesia. Current research and clinical trials are extensively investigating cell therapy as a potential treatment for PD and other neurological disorders, including Amyotrophic Lateral Sclerosis, Multiple Sclerosis, Spinal Cord Injury, and Traumatic Brain Injury. These trials frequently use autologous cells or cells sourced from healthy donors. However, considerations regarding immune rejection and ethical concerns must be addressed.

Current studies involve various stem cell types, such as Embryonic Stem Cells (ESCs), Induced Pluripotent Stem Cells (iPSCs), and Mesenchymal Stem Cells (MSCs). Key areas of focus include Growth Factors to improve dopaminergic neuron survival and Alpha-Synuclein, which is associated with PD progression. Early trial results from stem cell-derived dopaminergic neurons show promise for restoring motor function. Additionally, CRISPR technology is being applied to correct PD-related mutations in stem cells, offering potential for personalized treatments.

Despite the impressive advancements in the field, further research is needed to make these therapies widely accessible. This presentation will showcase a case report of a middle-aged woman with advanced Parkinson's disease who achieved significant symptom relief, including reduced tremors and rigidity and improved mobility, following treatment with intrathecal stem cells and cell factors administered via Kiesselbach's plexus. These promising results highlight the potential for future breakthroughs in Parkinson's disease

treatment.

Biography

Recognized as one of the leading brain scientists in the nation, Professor Dr. Bankole Johnson holds over 80 global patents, primarily on how genes influence behavior. A licensed physician and board-certified psychiatrist in the U.S., he is also certified in neurology, addiction, forensic medicine, and disability assessment. His contributions to medicine and science have earned him numerous awards. He gained national attention for his appearance in HBO's 2007 documentary *Addiction*, which won the Governor's Award, the highest honor from the Academy of Television Arts and Sciences. He also appeared in CNN, including L. Coates show, (2024), and is a regular medical correspondent on major U.S. networks, especially during the COVID-19 pandemic. Currently, he is the Founder, Executive Chairman, and CEO of Casa Privée in Miami, and the Founder and Chief Medical Officer of Adial Pharmaceuticals Inc., a NASDAQ-listed company. He is also a Professor of Biomedical Sciences at Larkin University in Miami.

Patients' Perceptions of Remote Patient Monitoring by a Centralized Virtual Ward – A Qualitative Study

Jaranka Alex[1], Hägglund Maria[2], Nilsson Gunnar[1], Papachristou Panos[1] and **Taloyan Marina[1]**

[1]Department of Neurobiology, Karolinska Institutet, Care Sciences and Society, Sweden
[2]Department of Women's and Children's Health; Participatory eHealth and Health Data Research Group, Uppsala University, Sweden

Introduction: Remote patient monitoring (RPM) of chronic patients has the potential to reduce in-clinic visits and promote proactive care in primary care settings. However, managing the vast data from RPM platforms has led to inefficiencies and project closures. A research project launched at a primary care centre in Stockholm Region, in collaboration with Karolinska Institutet, investigated the piloting of a virtual care team to monitor chronic patients via an RPM platform. This study explores patient perceptions and understanding of sharing vitals and interacting with a virtual care team outside their primary centre.

Methods: The project was conducted between October 2018 and April 2019 with 395 patients at a Stockholm primary care centre. In-depth interviews with 22 patients were performed and qualitatively analyzed.

Results: Interviews revealed a positive attitude towards RPM, with a key theme of "Team-based remote monitoring that is accessible, secure, and stringent." Participants highlighted enhanced accessibility, security, care competence, stringent monitoring, and communication challenges between the virtual care team and the clinical staff at the primary care centre.

Conclusions: The patient-centred experience was enhanced by increased interactions and shared vital signs with the virtual care team. Further research is needed to understand factors impacting the patients´ perception on virtual care team in the primary care settings.

Discussion: Facilitating micro-consultations and frequent interactions through remote monitoring can improve care management. Effective communication and data integration between virtual care teams and primary care clinicians are crucial for successful remote care delivery in the primary care settings.

Biography

Dr. Jaranka is specialist in family medicine. He is currently working as an expert in digital health for the Region of Stockholm, Sweden. Since 2017, Dr. Jaranka has been working as C-level officer at private health care companies and in the Medtech sector.

Dissemination and Implementation of Humanoid AI Robot Healthcare Providers: A Health Communication Perspective

D.K. David Kim

Department of Communication, University of Louisiana at Lafayette, USA

The effectiveness of healthcare services is strongly influenced by the quality of the patient-healthcare provider relationship that is fundamentally built on communication. Ideal communication between patient and healthcare provider should foster trust, empathy, and mutual understanding, as these qualities encourage patient compliance, improve health outcomes, and support a patient-centered approach to care. As the demand for healthcare continues to rise, the emergence of humanoid AI robot (HAIR) healthcare providers offers unique opportunities to expand access and enhance the effectiveness of healthcare services. Many healthcare facilities have already begun implementing several communicative robots for various purposes. In light of these shifts, this presentation will focus on essential communication attributes that should be integrated into the development of HAIR doctors and healthcare providers of the future.

In order to identify desirable communication qualities for HAIR healthcare providers, this presentation will synthesize findings from a series of studies exploring public perceptions of communication with HAIR healthcare providers over several years. The communication attributes considered include trust, accessibility, knowledge, emotional responsiveness, active listening, honesty, and other key aspects of traditional patient-healthcare provider communication, which can be adopted for non-human healthcare providers and help bridge the human-technology gap in patient care.

Lastly, this presentation will introduce a framework of ideal communication attributes to guide the development of HAIR in ways that should meet patient expectations. By incorporating these communication attributes, HAIR can enhance positive health interactions, thus increasing patient satisfaction and promoting positive healthcare outcomes. The suc-

cessful implementation of communicative HAIR healthcare providers would revolutionize the existing form of healthcare delivery to be more efficient, effective, and accessible, opening many new opportunities for patient-centered healthcare services in our future healthcare systems.

Biography

Dr. David Kim is a professor of strategic communication at the University of Louisiana at Lafayette, U.S.A. As an internationally renowned interdisciplinary scholar and practitioner, he has collaborated with professionals, researchers, and governmental agencies on diverse health communication campaigns, interventions, and projects related to public health promotion, public health policies, organizational and social change, community engagement, and advancing technologies for a desirable future. Scholarly, he is a renowned scholar in the theory of diffusion of innovations (DOI) and social marketing. Dr. Kim has led and participated in several domestic and international strategic communication projects over 20 years. He has published his research, practice, opinions, and insights through many books, academic journals, and various other publications, while presenting at numerous conferences, educational institutions, governmental agencies, and professional organizations.

Hippo/YAP1 Signaling in Gastroesophageal Cancer Progression, Therapy Resistance, Metastasis, and Remodeling Tumor Microenvironment

Shumei Song, Yanting Zhang, Xiaodan Yao and **Dipti Athavale**

Coriell Institute for Medical Research, USA

Gastroesophageal Cancer (GEAC) is a major global health burden, with ~45% of GEAC patients having peritoneal metastases (PMs; malignant ascites or implants in peritoneal cavity), causing poor survival (<six months) and a very poor quality of life, as they experience ascites (requiring frequent drainage), inability to eat well, weight loss, electrolyte imbalances, luminal obstruction(s), and cachexia (wasting). Unfortunately, treatments are limited, and management very difficult, with limited molecular understanding of PMs. Stromal-epithelial-immune interactions particularly involving YAP1^{high} CAFs may contribute to tumor aggressiveness, metastases and immunosuppressive tumor microenvironment (TME). However, the precise role of Hippo/YAP1 in the tumor metastases and the molecular mechanisms driving cancer metastases and immunosuppressive TME remain unclear. In this study, we demonstrated that YAP1 was highly upregulated in GEAC tumor tissues compared to normal and higher in PMs and conferred cancer stem cell (CSC) properties and appeared to be a metastatic driver. Further, in addition to express in tumor cell clusters, YAP1 is highly expressed in cancer associated fibroblasts (CAFs) clusters and significantly associated with CAFs activation and poor survival. Knockout YAP1 in the CAFs cells reduced tumor cell invasion *in vitro* and reduced tumor growth *in vivo* when co-inoculation of tumor cells, while boost T cell response when co-culture CAFs (YAP1 KO vs control) with immune cells from PBMCs or CD45+ immune cells from malignant ascites. Cytokine array in CAFs with YAP1 KO vs control further revealed that YAP1 dictate the production of many cytokines/chemokines from CAFs cells that potentially mediated metastasis. Conclusion: Hippo/YAP1 signaling is essential for cancer stem cell traits, therapy resistance and peritoneal metastasis. Our data provide a strong rationale to target YAP1 in clinic in Upper GI malignancies especially in patients with PMs.

Biography

Dr. Song is a Professor at the Coriell Institute for Medical Research in Camden, New Jersey and the Director of Translational GI Research, MD Anderson Cancer Center at Cooper, Cooper University Hospital, Camden, New Jersey. Dr. Song received her Ph, D in Molecular Biology and Biochemistry from Beijing Cancer Institute, Peking University, China where her graduate work focus on the cloning and elucidating the functional role of the VEGF receptor KDR on tumor angiogenesis and tumor metastases in gastric cancer. After obtaining her Ph.D at 1999, She immediately pursue her postdoctoral fellowship in UT, MD Anderson Cancer Center in Houston and focus on cancer biology in gastrointestinal cancers especially specifically in the esophagus, the area of the body where the esophagus joins the stomach, also known as the gastroesophageal (or GE) junction and gastric cancer. She has been gained extensive experience in gastrointestinal cancer biology, gene transcription and expression regulation, and molecular approaches to investigate the molecular mechanisms of GE junction and gastric cancer initiation, progression, and metastasis.

As an independent investigator, Dr. Song's laboratory and the team are working to investigate the molecular mechanisms and novel targets focusing on how deregulation of Hippo/YAP signaling in mediating CSCs traits, therapy resistance and metastases in gastroesophageal cancers. One of the major projects in the laboratory is to decipher how Hippo/YAP/TAZ or other stem cell factors SOXs mediated immunosuppressive tumor microenvironments and the interaction among tumor cell, macrophage, CAFs and T cells for novel therapeutic strategies. The long-term goal is to develop YAP1/TAZ/TEAD inhibitors for targeted therapy of gastrointestinal cancers and discover novel target and immunotherapy in advanced GI tumors by fully exploring patients derived tissues/cells.

Before Coriell, Dr. Song was the Professor in the Department of Gastrointestinal Medical Oncology at the University of MD Anderson Cancer Center in Houston, Texas where she has been focusing on GI cancer research for more than 20 years.

Cybersecurity and Liability in Digital Health

Giovanna Capilli

San Raffaele University of Rome, Italy

This paper examines the integration of digital technologies in healthcare, focusing on E-Health, M-Health, and Digital Therapeutics (DTx), highlighting both their potential for improving patient care and the critical challenges they pose regarding data security, privacy, and liability. The objective is to identify key vulnerabilities in data handling within these technologies and to propose regulatory strategies to mitigate associated risks. The study includes a review of recent research on security and privacy in digital health, revealing alarming trends, such as insecure data transmissions and insufficient privacy policies in mobile health applications. These gaps expose patients to unauthorized data sharing, profiling, and potential misuse of sensitive information, raising serious concerns about privacy and trust.

Methodologically, the study synthesizes current regulatory frameworks, particularly the EU General Data Protection Regulation (GDPR) and Medical Device Regulation (MDR) 2017/745, evaluating their applicability to digital health and AI-driven technologies. The findings suggest an urgent need for a comprehensive regulatory framework that clarifies accountability among stakeholders, embeds data protection standards, and specifies liability in case of data breaches or unauthorized use. The conclusion emphasizes that a harmonized EU approach, with clear guidelines on privacy, cybersecurity, and liability for digital health, is essential for fostering patient trust and supporting the sustainable growth of digital health technologies.

Biography

- Full Professor of Private Law at the San Raffaele University Rome.
- Titular professor of the courses: Private law | Private Law of Robotics and Artificial Intelligence | Health Private Law | Medical Law and liability.
- Director and Coordinator of the Specialization Course on *Cyber-Security: Policy, Regulatory, and Technical Aspects*.
- PhD in Comparative Private Law and European Union Private Law.
- Honorary Judge at the regional Civil Court of Rome.
- Lawyer, advocate in the Court of Cassation and in other Higher Jurisdictions.
- She has participated as a speaker in numerous national and international conferences and collaborates as an expert with national and international entities and research institutions.
- Author of various monographs, articles and essays published in Italian and foreign reviews.

Echoes of the Hills: Challenging Exclusion through Black Storytelling in Appalachian Health and Policy

Marcia Dinkins

Founder & Executive Director Black Appalachian Coalition (BLAC), USA

This study investigates how Black storytelling in Appalachia challenges the exclusion and whitewashing of Black experiences in public health and policymaking. It explores the role of storytelling as a tool for addressing health disparities, environmental injustice, and systemic inequities that disproportionately impact Black Appalachian communities. The primary objective is to highlight how these narratives can reshape public health strategies and influence policy reform to be more inclusive and equitable.

Focusing on marginalized Black communities in Appalachia, the research employs a mixed-methods approach that combines narrative storytelling, focus groups, and public health data analysis. Through interviews and storytelling sessions, participants share personal experiences related to environmental health, mental wellness, and access to healthcare. These stories are analyzed for recurring themes of exclusion, resilience, and the fight for recognition in health and policy discussions.

The findings show that Black storytelling disrupts mainstream, whitewashed narratives that often ignore the unique struggles of Black Appalachians. These stories not only reveal the health and environmental challenges faced by these communities but also emphasize their resilience and agency. Policymakers and healthcare professionals who engaged with the stories reported greater awareness of the need for culturally sensitive and inclusive health interventions that understand and intersect with environmental health and harms.

In conclusion, Black storytelling in Appalachia serves as a powerful mechanism for reclaiming spaces of exclusion in both public health and policymaking. By amplifying marginalized voices, these narratives push for more equitable policy changes and health outcomes, making the case for sustained integration of storytelling into both health and policy strategies in Appalachian communities.

Biography

Bishop Marcia Dinkins, PhD in Leadership and Sustainability and Doctorate of Ministry, is a visionary leader focused on environmental justice, racial equity, and community healing. As the founder and executive director of the Black Appalachian Coalition, she uses storytelling to amplify the voices of Black communities in Appalachia, addressing systemic inequities in public health, environmental challenges, and economic justice.

An ordained bishop, Dinkins has spearheaded initiatives to combat environmental racism and promote policy reform, emphasizing equitable access to healthcare. Her unique approach blends faith, advocacy, and cultural storytelling, ensuring Black Appalachians, particularly women, are included in health and policy discussions.

With over two decades of experience, Bishop Dinkins is a sought-after speaker and consultant, known for her ability to lead with compassion, resilience, and a commitment to community-driven change. She continues to empower marginalized communities through her leadership and advocacy.

Dietary Resistant Starch Modulates Gut Microbiota and Attenuates Chronic Kidney Disease Progression

Oleg Karaduta[1], Galina Glazko[2], Zeljko Dvanajscak[3] and **Boris Zybailov[2]**

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[2]Department of Biomedical Informatics, University of Arkansas for Medical Sciences, USA
[3]Arkana Laboratories, USA

Chronic kidney disease (CKD) is a global health challenge characterized by progressive inflammation and organ damage. Gut microbiota dysbiosis plays a significant role in CKD progression, offering a promising target for dietary interventions. This study evaluates the effects of resistant starch (RS) supplementation on CKD progression using both a rat model and a 5/6 nephrectomy mouse model, leveraging metaproteomics and histopathological analysis.

Our findings demonstrate that RS supplementation improves kidney health by reducing tubulointerstitial injury and modulating gut microbiota composition. Specifically, RS increased the abundance of butyrate-producing bacteria, including *Roseburia Hominis* and *Ruminococcus Torques*, while decreasing harmful mucin-degrading species. Enhanced gut barrier integrity and downregulation of CKD-associated biomarkers such as S100-A6 and haptoglobin were observed. Additionally, RS-fed animals exhibited shifts in metabolic pathways, including upregulated indole metabolism, which is associated with intestinal health and reduced systemic inflammation. Histopathological analysis corroborated these findings, showing significant reductions in kidney damage in RS-fed CKD groups compared to controls. This study highlights the potential of RS as a cost-effective, scalable intervention to mitigate CKD progression by targeting the gut-kidney axis.

As a cost-effective, scalable intervention, RS supplementation exemplifies the potential of preventive medicine in managing chronic diseases by targeting upstream factors like gut dysbiosis and systemic inflammation. These findings underscore the critical role of diet in

proactive healthcare strategies, providing a foundation for future translational studies in human populations. These results underscore the critical role of gut microbiota modulation in managing chronic diseases and provide a foundation for future translational studies in human populations.

Biography

Dr. Oleg Karaduta, a graduate of Volgograd State Medical University in General Medicine, completed his residency in General Surgery, becoming Chief Resident at Volgograd Regional Hospital in 2006. In 2011, he joined the University of Arkansas for Medical Sciences (UAMS), focusing on chronic kidney disease (CKD) and its cardiovascular complications. During his postdoctoral fellowship, he investigated the gut microbiome's role in CKD and dietary interventions to mitigate disease progression.

Supported by prestigious grants, including the Burroughs Wellcome Fund, and recognized with multiple awards, Dr. Karaduta now serves as Director of Research at the College of Health Professions. His work integrates advanced metaproteomics to explore resistant starch's therapeutic potential in modulating gut microbiota, reducing inflammation, and slowing CKD progression. His findings underscore the importance of gut-kidney axis modulation and scalable dietary interventions in managing chronic diseases.

VITABALANCE-MED- Global and Inclusive Health: An Innovative Concept & Educational Project

António Rui Leal[1], João Neves-Amado[2] and **Raquel Chaves[3]**

[1]SANITUS Foundation-Porto, Portugal
[2]Faculty of Health Sciences and Nursing, Center for Interdisciplinary Research in Health, Universidade Católica Portuguesa, Portugal
[3]Universidade de Trás-os-Montes- ECVA, Portugal

The authors present a case study of a validation project for a new conceptualmodel for health education based in a Poster with **five educational pyramids**. Presented in appealing visual, reinforces the pedagogic idea of a new balanced inter-action of the scientific knowledge concerning main health domains: Prevention (cardiovascular), Nutrition, Exercise, Behaviour, Eco-social-system.

The actual proposal is based in our previous experience in the year of 2012. In that format the results of this educational and interventional project in Portugal provided the opportunity to involve schools and families in health improvements. Actually, we propose a new and multidisciplinary model, including the organisation of a course (presential or on-line) for primary School teachers with a pyramidal manual and a kit providing several pedagogical materials. A preliminary version of the poster was previously presented in the Congress ***"Handi-Capabilities, Sports and Work"*** at UNESCO – Paris, 9-9-2024. The year of 2025 bring us to a new research project, based on this inclusive and inter-cultural model, that will use a controlled program with a 3 branches study. It is assumed that two evaluative methodologies will be used: 1-apply two quantitative questionnaires (**VitaBalance-Med**-v3 with 25 questions +**Fantastic** Lifestyle Assessment); 2 - analyse the qualitative results of the school involvement (based on teacher's evidences/reports). The next step will be to diffuse these results and gradually to involve other countries and/or international organisations to spread this very adaptable (visual) project for **GLOBAL & INCLUSIVE HEATH *(iVBM)*** in equilibrium with

environmental & inter-cultural issues (a new social and health emergency), that is already being adapted to workers and older people.

Biography

- SANITUS Foundation President.
- Occupational Medicine and PMR Specialist.
- PhD in Cardiovascular Prevention, Master in Sports.
- Medical experiences in Portugal, France, USA and Romania.

Developing Relational Consciousness in Preventative Healthcare

Nikki Kiyimba[1,2]

[1]Mātai Rongo, New Zealand
[2]ReDefined Wellbeing Hub, New Zealand

In Aotearoa New Zealand, holistic healthcare is an essential part of 'hauora' or wellbeing for clients. This includes respect for spirituality/wairuatanga, social connectedness/whānau, and the relationship with whenua/land for all clients. There are several indigenous models used by healthcare practitioners to ensure clients are treated with dignity, and which expose and address areas of imbalance. In this presentation, these indigenous Māori indicators of hauora/wellbeing are mapped onto the Western construct of *relational consciousness* to demonstrate the universality of the need for balance in all areas of life. Relational consciousness was first proposed by British researchers David Hay and Rebecca Nye and refers to the connections each person has with self, others, the environment, and the divine. In other areas of empirical research, contemporary physics expands our understandings of consciousness by highlighting new phenomena such as quantum entanglement. Quantum entanglement explains unusual synchronous connections between what are experienced as separate entities across space and time. When space, time and matter are collapsed, 'entanglement' emerges as the basis of reality.

In preventative healthcare, this presentation argues for a theoretical and practical move away from our historic polemic narratives that perpetuate perceptions of artificial separation between mind and body. It also argues for the need to move away from social narratives in healthcare that separate individuals from their social relationships, their physical environment, and their experiences of the spiritual. To embed the quantum scientific paradigm in our understanding of human health we need to move our practices and concepts away from working with 'parts' of people, and recognise the interconnectedness of human

physiology, psychology, spirituality, relationality and environmental topography. This presentation will utilise the concept of relational consciousness as a heuristic framework to map out a proposal for how to operationalise connectedness as a new paradigm for preventative healthcare.

Biography

Nikki Kiyimba is a Clinical Psychologist specialising in working with clients with enduring mental health challenges and complex trauma. She is Director of Mātai Rongo, a training, consultancy and client-facing organisation in Aotearoa New Zealand. Her practice is significantly influenced by indigenous Māori models of healthcare, which emphasise the presence of mauri, or life-force in all things. This involves integration of Western medical models of healthcare, with holistic indigenous practices. Nikki has also authored several books, published more than fifty peer reviewed articles and is at the forefront of professional training for a range of health and social care professionals.

Service-Learning to Promote Vision Care for Older People

María Covadonga Vázquez-Sánchez[1], Luz M. Gigirey[2] and **Carlos Pío del Oro-Sáez[2]**

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[2]Faculty of Economics and Business Sciences- Avda. del Burgo, s/n - University of Santiago de Compostela, Spain

Visual impairment affects quality of life. However, older people consider vision loss to be normal in old age and only seek optometric care if the deficit has a significant impact on the performance of their daily activities. A service-learning project from the University of Santiago de Compostela is aimed at users of gerontological centres with two objectives: 1) to detect avoidable vision loss and promote visual health care for users and caregivers; 2) to improve student´s clinical skills. Eight centres in the city of Santiago de Compostela participated in this project between 2017-2023. The service-learning activity was developed in the entities to bring the student closer to the professional reality (Figure 1). Undergraduate and postgraduate optometry students provided the vision care service under the supervision of a teacher. 297 older adults agreed to participate in the activity, some of whom had cognitive impairment. The activity has revealed a high presence of uncorrected refractive error and eye health problems, as well as a lack of use of optical correction. The students reported great satisfaction with the clinical learning acquired. We believe that the service-learning project provides evidence of the visual status of elderly users of gerontological centres in our local area and promotes eye health care among the target population, while contributing to the clinical training of optometry students. Investigating the visual needs of this population group is essential to implement specific actions to reduce the impact of visual impairment on their quality of life. This service-learning project can be a useful tool for this purpose.

Figure 1: Work area in one of the collaborating centres

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Biography

María Covadonga Vázquez Sánchez is an Assistant Professor in the Optometry Area at the University of Santiago de Compostela (Spain). Doctorate in Vision Sciences from the same university. Her research is focused on the study of visual and auditory dysfunctions in the elderly, with special attention to dual sensory loss. She has published several articles on this topic and presented manuscripts at international scientific conferences. At the present, she carries out her research work in nursing homes and institutions that promote comprehensive and specialised care for elderly people with cognitive impairment and dementia. Since 2017, she has been coordinating educational innovation projects in service-learning aimed at providing a visual and auditory care service to highly vulnerable elderly people.

The Importance of the Nutrigenetic Analysis and Epigenetic Clock in Longevity Anti -Aging Processes

Gulsen Meral[1,2,3]

[1]Epigenetic Coaching Company, UK
[2]President of the Nutrigenetic-Epigenetic Society Turkey
[3]Epigenetic Coaching Founder,UK

As the global population ages, understanding the biological mechanisms of longevity and healthy aging has become increasingly important. Aging is a systemic process that affects all biological systems and is characterized by an increased incidence of age-related degenerative diseases. DNA methylation plays a significant role in the aging process, with changes in methylation levels associated with age-related diseases. One-carbon metabolism, which includes folate and vitamin B12, supports DNA methylation, and high homocysteine levels are linked to age-related diseases.

The epigenetic clock uses DNA methylation patterns to estimate biological age and monitor the aging process. A healthy lifestyle helps align biological and chronological ages, but environmental factors can disrupt this balance. Regular monitoring of the epigenetic clock allows for the assessment of the effectiveness of dietary and lifestyle interventions. Nutrigenetic analysis has emerged as a valuable tool in examining the interaction between nutrition and genetics. Genetic factors can influence the absorption, metabolism, and utilization of various nutrients. Nutrigenetic analysis helps personalize dietary recommendations based on genetic profiles and reduce the risk of deficiencies.

Anti-aging encompasses a range of interventions aimed at slowing down or reversing the effects of aging. These strategies typically involve genetic, biochemical, and lifestyle changes. Combining nutrigenetic analysis with epigenetic clock data offers a comprehensive approach to supporting healthy aging and longevity.

Biography

Associate Professor Gülsen Meral graduated from Istanbul University Cerrahpaşa School of Medicine in 1994. She became a specialist in paediatrics in 2001 and worked as a specialist as well as deputy chief physician and chief physician at several hospitals.She was the Rector's advisor between 2019-2021 at the Northern Cyprus ITU. She is also an Acupuncture instructor. She worked as a Nutrigenetics graduate course and lecturer and gave undergraduate and graduate courses on child development. She has many national and international publications, and worked on editorial boards and as reviewers. She has a Master's Degree in Hospital Management. She has a Turkish language literature undergraduate education. She completed PhD program in Molecular Biology and Medical Genetics. In addition to her scientific achievements, she is ambitious about poetry and has 5 poetry books. She is the Founder of the Nutrigenetics and Epigenetics Association, and has memberships in the Green Crescent and Rumelia Association, Istanbul Acupuncture Association, and International Society of Nutrigenetics & Nutrigenomics. She participated in the first and second International Epigenetic Congress as the president. She is still the organizer and educator of the Epigenetic Coaching Program. She is actively giving trainings on Nutrigenetic & Epigenetic Counselling to health professionals from all over the World as a certified CPD program. She continues research and training as the founder and manager of Epigenetic Coaching.

The Possible Association Between Drug-Induced Lupus and Epstein-Barr Virus

Julie Kristine Knudsen Salomon[1], Nicole Hartwig Trier[2], Anette Holck Draborg[2], Christoffer Tandrup Nielsen[3,4], Søren Jacobsen[4], Peter Højrup[1] and Gunnar Houen[1,2]

[1]Department of Biochemistry and Molecular Biology, University of Southern Denmark, Denmark
[2]Department of Autoimmunity, Statens Serum Institut, Denmark
[3]Copenhagen Research Center for Autoimmune Connective Tissue Diseases, Center for Rheumatology and Spine Diseases Rigshospitalet, Denmark
[4]Faculty of Health and Medical Sciences, Department of Clinical Medicine, University of Copenhagen, Denmark

Systemic lupus erythematosus (SLE) is an autoimmune disease, which has been associated with Epstein–Barr virus (EBV) and Cytomegalovirus (CMV) infection. Drug-induced lupus (DIL) is a lupus-like disease caused by the intake of therapeutic drugs, which has been estimated to cause approximately 10–15% of lupus-like cases. Although SLE and DIL share common clinical symptoms, there are some fundamental differences between DIL and SLE onset. Moreover, it remains to be examined whether environmental factors, such as EBV and CMV infections, may contribute to the development of DIL.

This study focused on examining the possible association between DIL and EBV and CMV infections, by examining IgG titers to EBV and CMV antigens in serum samples by enzyme-linked immunosorbent assays.

Antibody titers to EBV early antigen–diffuse and CMV pp52 were found to be significantly elevated in both SLE and DIL patients compared to healthy controls, although no correlation was found for antibodies to the two virus antigens in the respective disease groups. Moreover, total IgG titers were reduced in SLE and DIL serum samples, which may reflect a general lymphocytopenia, which commonly is associated with SLE.

The current findings support that EBV and CMV infections may contribute to the development of DIL and that onset of both diseases are related.

Biography

Julie Kristine Knudsen Salomon has completed her Cand. Scient degree at the age of 30 years, from the University of southern Denmark, Denmark. She has worked at several research and development projects in both the public and private research sector in the field of immunology and she is currently working as a teacher.

PEERS ALLEY MEDIA

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March 20-21, 2025 | London, UK

Association Between Occupational Stress, Markers of Inflammation, and Oxidative Stress in Intensive Care Unit Workers: A Cross-Sectional Study

Luciano Antonio Rodrigues[1], Adriene de Freitas Moreno Rodrigues[1], Manuela Negrelli Brunetti[2], Monique Michels[3] and **Felipe Dal Pizzol[4]**

[1]UNESC - University Center of Espírito Santo, Brazil
[2]UFES - Federal University of Espírito Santo, Brazil
[3]Seven Research and Statistics, Brazil
[4]University of the Extreme South of Santa Catarina, Brazil

The professional activities generate important events on the physical and mental health of the workers, and it is important to evaluate the stressor characteristics involved in the illness of specific occupational groups. Health professionals from intensive care units (ICU) are more conducive to developing occupational stress in relation the work activities. Burnout syndrome is a type of persistent stress that can lead to several biopsychosocial problems resulting from constant, intense and repetitive emotional pressure in a long time. The stressful conditions lead to the formation of excess free radicals and lipid peroxidation, which result from factors that damage cell membranes directly and generate a great number of problems. This study aimed to evaluate the relation between the occupational stress and the markers of oxidative stress and inflammation in health professionals in ICU. The sample consisted of 133 intensivists from the city of Colatina, state of Espírito Santo, Brazil. The Maslach Inventory Burnout Survey was used to assess burnout syndrome. Oxidative stress was measured in proteins and lipids, and cytokine levels were assessed via enzyme-linked immunosorbent assay. The highest levels of burnout syndrome (emotional exhaustion dimension) were found in nurses and physical therapists and showed greater changes in markers of protein damage and inflammation. On the emotional exhaustion dimension, it was higher among professionals who consumed some type of alcoholic beverage and some type of stimulant, whether caffeine, tea, or soft drinks, at least twice a week. There was a positive relationship between the development of burnout syndrome,

specifically in the dimension of low personal involvement at work, and oxidative damage in lipids (thiobarbituric acid reactive substances). There is evidence of relationship between occupational stress and oxidative stress in professionals with low personal involvement in their work.

Biography

Dr. Luciano Rodrigues is a professor and researcher at the University Center of Espírito Santo – UNESC, Colatina, Brazil. He has a PhD in Health Sciences and a Master's degree in Integrated Territorial Management and other specializations in the area of teaching and organizational psychology. He has a degree in Nursing and Obstetrics from the Federal University of Espírito Santo. He is currently Coordinator of the Ethics Committee for Research on Human Beings at the University Center of Espírito Santo (CEP/UNESC), Lead Researcher of the Territory, Health and Society Research Group and Coordinator of the Rondon UNESC Nucleus (extension activities and research focused on the Rondon Project - Ministry of Defense of Brazil). He is a Journal Reviewer and Volunteer for the Scouts of Brazil.

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A Comprehensive and Equity-Promoting Response by a Civil Society–Public Partnership to COVID-19 in Chiapas, Mexico

Ana Laura Rodríguez-Vázquez[1,2], Zeus Aranda[2] and **Elvire Brun[2]**

[1]Instituto Nacional de Salud Publica, Mexico
[2]Partners in Health, Mexico

The COVID-19 pandemic disproportionately affected rural, underserved populations in Chiapas, Mexico, exacerbating pre-existing healthcare inequities. This study evaluates the collaborative response between Compañeros En Salud (CES) and the Chiapas Ministry of Health (MOH), designed to mitigate the impact of COVID-19 through a comprehensive infection prevention and control (SIPC) program. The objective was to enhance healthcare equity, prevent the spread of SARS-CoV-2, and maintain essential health services in nine rural communities and one semi-urban locality.

Methods: The program was implemented across ten outpatient clinics and a dedicated Respiratory Disease Clinic (RDC). Key interventions included communication campaigns to counter misinformation, contact tracing, healthcare delivery, and community engagement. A mixed-methods approach was employed, including epidemiological data analysis, community surveys, and participatory strategies to assess outcomes. The Five S's health system framework (staff, stuff, space, systems, social support) guided the interventions.

Results: From March 2020 to June 2022, 3,514 suspected and confirmed COVID-19 cases were identified and managed, and over 2,500 close contacts were traced. A significant challenge was overcoming the lack of formalized communication channels and role definitions between CES and MOH, which impacted efficiency. However, the RDC provided care to over 3,000 patients, and the SIPC program achieved a 71% vaccination rate among the target population. Notably, the intervention led to a significant reduction in COVID-19-related mortality from 27% in 2020 to 3% by mid-2022.

Conclusion: This partnership demonstrated that civil society-public collaborations can

effectively address healthcare challenges in resource-limited settings during a pandemic. Key to success were community engagement, flexibility, and sustained communication. The study provides a model for similar partnerships in future health crises, emphasizing the need for clear governance and stronger integration of community voices in healthcare delivery.

Biography

Ana Laura Rodríguez Vázquez is a medical doctor graduated from the National Autonomous University of Mexico (UNAM) and estudied a master's degree in public health from the National Institute of Public Health (INSP). She has over five years of experience working with vulnerable communities in Mexico. In addition, she has completed diplomas in management and leadership, as well as training in advocacy and geriatrics. She has played key roles in the development of community health, & leaded responses to health crises such as the COVID-19 pandemic, and working on the prevention and control of infectious diseases like tuberculosis and HIV in collaboration with Partners in Health Mexico. Currently, she collaborates with Partners in Health Peru on a social medicine project aimed at improving healthcare for underserved communities. She also served as Medical Director at the "Anna Seethaler" People's Hospital in Oaxaca, working to promote healthcare equity.

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Biological Age and its Relationship with Mortality of Elderly People with COVID-19 in a Public Hospital in Northeastern Brazil

Isaura Romero Peixoto[1,2], Alicia Rafaela Martinez Accioly[1,3], Silvana Maria de Morais Campos[4], Eduarda Erika Ursulino Mattos[4] and **e Elias Germano de Oliveira Júnior[4]**

[1]Clinics Hospital of Pernambuco, Federal University of Pernambuco, Brazil
[2]Post-Graduate Program in Tropical Medicine, Federal University of Pernambuco, Brazil
[3]Post-Graduate Program in Neuropsychiatry and Behavioral Sciences, Universidade Federal de Pernambuco, Brazil
[4]Faculty of Medical Sciences in Jaboatao, Undergraduate in Medicine at Afya, Brazil

Objective: To estimate the biological age of elderly people hospitalized with a confirmed diagnosis of COVID-19, and its relationship with mortality.

Methods: A retrospective and quantitative cohort study, carried out in a public hospital in the city of Recife-PE, from April 2020 to April 2021, with 115 elderly people of both sexes. The biological age of the participants was estimated by a calculator that uses nine laboratory blood tests and mortality was analyzed.

Results: Of the 115 elderly people hospitalized in a public referral hospital for COVID-19, the predominant gender was male, age ≥ 70 years, black/brown skin color, illiterate/low education, with a partner. Arterial hypertension and diabetes were the most common comorbidities in the study population. Regarding ICU admission, use of mechanical ventilation, length of ICU stay and mortality, there was a significant association with premature aging (p-value = 0.009, 0.009, 0.042 and 0.009 respectively).

Conclusion: Biological Age was able to predict clinical outcomes, proving to be superior to

Chronological Age.

Table 3 – ICU admission, use of invasive mechanical ventilation assistance, Hospitalization time, death and premature aging in elderly people hospitalized with COVID-19.

Variable	Premature aging		PR	CI 95% PR	p-value
	Yes	No			
	n (%)	n (%)			
ICU admission					
Yes	58 (96,7)	2 (3,3)	1,18	1,03 – 1,35	**0,009 ***
No	45 (81,8)	10 (18,2)	1,00	---	
Use of mechanical ventilation					
Yes	75 (94,9)	4 (5,1)	1,22	1,02 – 1,46	**0,009 ****
No	28 (77,8)	8 (22,2)	1,00	---	
Hospitalization time	Mediana	Mediana			
	(P_{25}; P_{75})	**(P_{25}; P_{75})**			
	11,0	6,0	---	---	**0,042 *****
	(6,0 – 20,0)	(4,3 – 7,0)			
Death					
Yes	37 (100,0)	0 (0,0)	1,18	1,08 – 1,30	**0,009 ****
No	**66(84,6)**	**12(15,4)**	1,00	---	---

(*) Chi-square (**) Fisher's exact (***) Mann-Whitney

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 and Geriatrics from the University of Brasilia
- Master in Medicine from UFPE
- PhD in Tropical Medicine from UFPE
- Preceptor in Medicine at UFPE
- Teacher in Medicine at Afya faculty of medical sciences of Jaboatão

Automated Classification of Prostate Cancer Severity Using Pre-Trained Models

Sílvia Barros, Vitor Filipe and **Lio Gonçalves**

University of Trás-os-Montes e Alto Douro, Portugal

Prostate cancer is one of the most common types of cancer in men. The ISUP grade and Gleason Score are terms related to the classification of this cancer based on the histological characteristics of the tissues examined in a biopsy. This paper explains an approach that utilizes and evaluates pre-trained models such as ResNet-50, VGG19, and InceptionV3, regarding their ability to automatically classify prostate cancer and its severity based on images and masks annotated with ISUP grades and Gleason Scores. The results of the ResNet-50, VGG19 and InceptionV3 models showed mixed behavior in terms of performance. ResNet-50 showed underfitting in the validation set, despite improvements in AUC and accuracy. VGG19 performed well with a consistent reduction in losses and an increase in AUC and accuracy, indicating good generalization. InceptionV3 showed overfitting, with the validation curve showing an initial increase, followed by a drop. Despite this, there was an improvement in AUC and accuracy during training. Based on these results, it can be concluded that this approach is potentially useful for determining the ISUP grade when provided with training data and masks that have annotated Gleason scores.

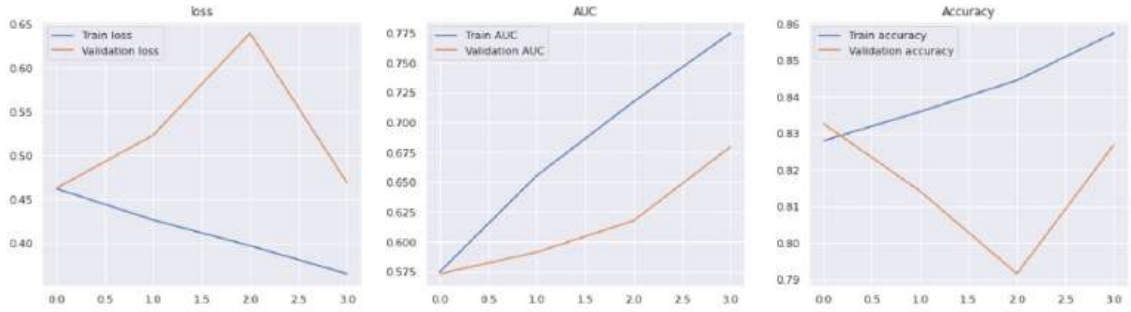

Fig. 1 Graphical Representation of the Metrics for the ResNet-50 model.

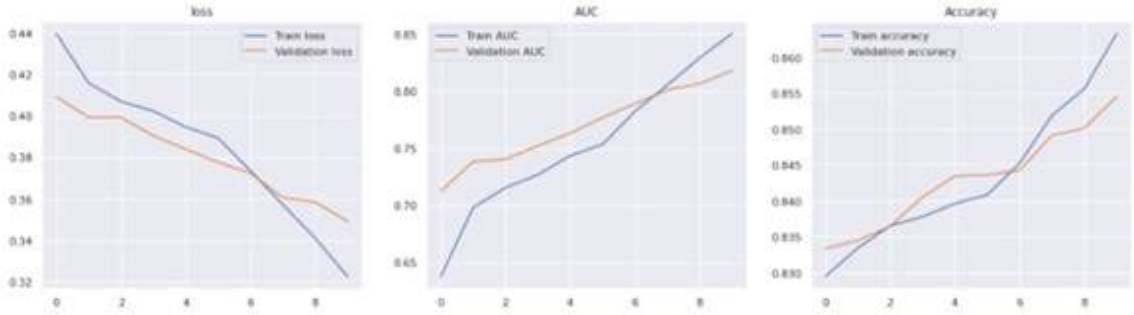

Fig. 2 Graphical Representation of the Metrics for the VGG19 model.

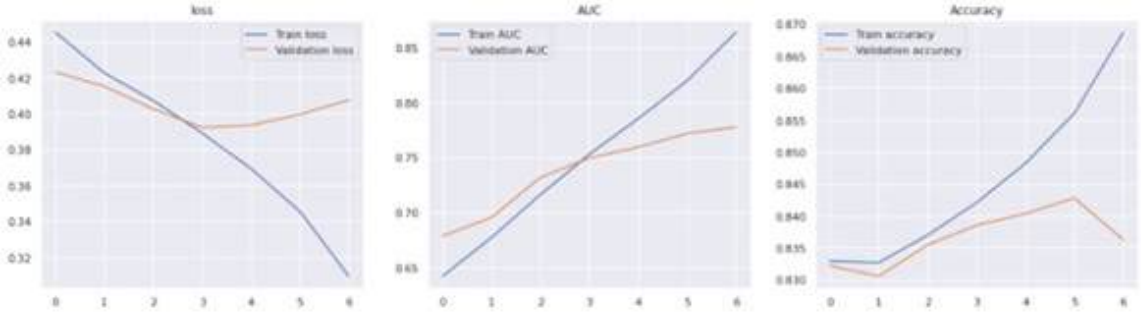

Fig 3. Graphical Representation of the Metrics for the InceptionV3 model.

Biography

Sílvia Barros, aged 22, exemplifies a committed scholar in the domain of Biomedical Engineering, whose inquisitive nature has led to the dissemination of a scholarly article, in which she explored the classification of prostate cancer, thereby presenting potential novel insights into this discipline. Currently, she is pursuing a Master's degree in Biomedical Engineering at the Faculty of Engineering of the University of Porto, thereby enhancing her expertise within the same academic sphere.

The Deep and Continuing Impact in Education of COVID-19

Tim Oates

Director of Assessment Research and Development, Cambridge University Press & Assessment, UK

The presentation argues that COVID-19 impact in schools in England continues to present government with a public policy problem unique in its depth, distribution and persistence. International collaborators agree that governments including that of England are grossly underestimating the scale and nature of the ongoing impact. It is easy to treat schools' concerns and the research on COVID-19 as fragments and snapshots – to construct a view suitable for the development of appropriate public policy these need to be synthesised to provide a robust understanding of the nature of the challenge. COVID-19 impact is not a thing of the past – it is moving like a series of different waves up through the system. 11 year olds affected by interrupted learning are entering secondary school with very different problems to those born and young in the pandemic entering primary schools – who are displaying acute developmental needs. Schools face unprecedented challenge and require adequate support to address the challenge to equity and attainment.

Biography

Tim Oates is Group Director of Assessment Research and Development at Cambridge University Press & Assessment, focusing on national and international research on assessment and measurement, including comparative analysis of curriculum policy and system performance. In 2010 he published 'Could do better' which laid down the principles for the review of the National Curriculum in England. He was chair of the Expert Panel for Review of the National Curriculum in England 2010-14. Emerging from this review, subsequent research on the quality and function of textbooks and other resources has been taken up around the world and discussed at two international summits on learning resources. He has chaired various curriculum groups for the Department for Education in England. He has published widely on assessment and curriculum issues, and routinely provides briefings and advice to UK and other governments. He has worked with OECD on curriculum matters, has provided support on curriculum reform to a range of nations including New Zealand, Kazakhstan, Sweden, Kenya and Kuwait. He is Fellow of Churchill College Cambridge and in 2015 received a CBE for services to education.

PEERS ALLEY MEDIA

5th International Conference on

FUTURE OF PREVENTIVE MEDICINE AND PUBLIC HEALTH

March 20-21, 2025 | London, UK

Evaluation of New-Onset BK Viruria in Post-Renal Transplant Recipients by Quantitative PCR

Raza Ullah Asif, Eijaz Ghani, Muhammad Ali Rathore, Saadiya Mushtaq, Faraz Ahmed and **Hammad Hussain**

National University of Medical Sciences (NUMS), Pakistan

Objective: To determine the frequency of BK viruria in post-renal transplant recipients and its association with age, viral load, and time of viral re-activation.

Study Design: Prospective Cohort study.

Place and duration of study: Tertiary Care Hospital, Rawalpindi for twelve months from January to December 2023.

Methodology: Urine samples of 108 renal transplant recipients were collected and analyzed for BK viruria on quarterly basis (3 monthly), who were admitted in or visited the department of Urology, Tertiary Care Hospital Rawalpindi for follow-up during initial twelve months post-transplantation. DNA extraction was performed on a TANbead ® extractor, while amplification was carried out by Bio-Rad CFX-96 thermal cycler using Sacace TM ® amplification kit. Data was analyzed using SPSS version-27.

Results: In the cohort of 108 renal transplant recipients, BK viruria was detected in 16.7% of cases. There was a higher incidence of BK viruria in females (20%) than males (16%). Majority of positive cases were in 41-60 years age group (61.1%) as shown in figure-1. Most of the patients (66.6%) had viral load below 1 million copies/ml. BK viruria was mostly detected during third quarter (7-9 months) post-transplant as shown in figure-2. Chi-square test was applied between age, gender and viral load which showed a significant relationship (p-value < 0.05).

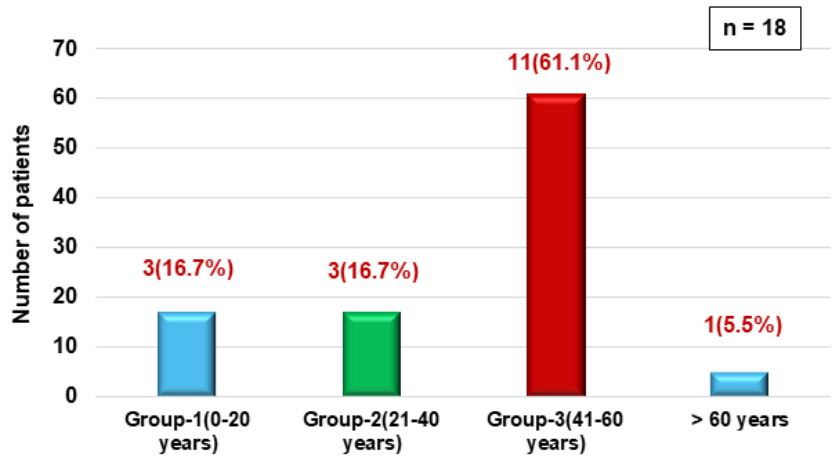

Fig 1: BK Viruria and Age. Bar chart shows higher incidence of BK viruria in middle age group (41-60 years).

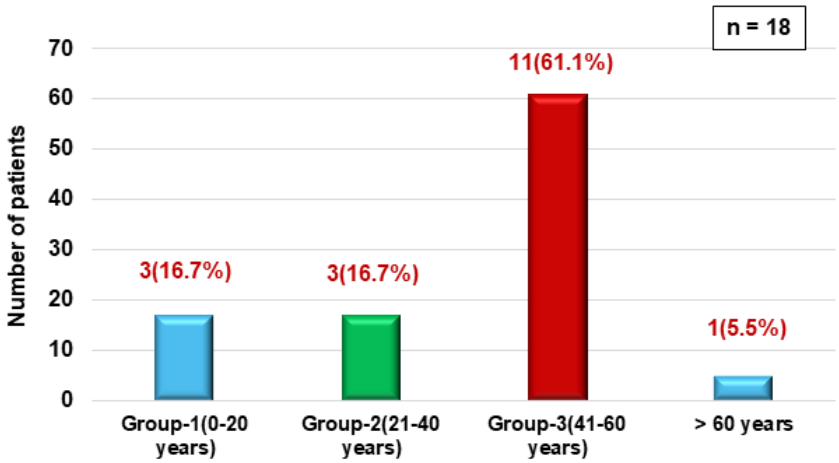

Fig 2: BK Viruria and time of viral re-activation. Bar chart indicates that higher chances of BK virus reactivation are in 7-9 months post-transplant requiring a vigilant monitoring during this period.

Conclusion: The study showed a frequency of 16.7% of BK viruria in post-renal transplant recipients during the initial 12 months post-transplant. Age significantly influenced viral load and time of viral reactivation, with middle-aged recipients showing higher viral loads. BK viruria increased progressively over the initial nine months with peak prevalence in the third quarter post-transplant.

Biography

Dr. Raza Ullah Asif is renowned Virologist and Infectious disease specialist from National University of Medical Sciences (NUMS), Pakistan. Graduated from Army Medical College, Rawalpindi and NUST University Islamabad in 2013, he has been playing a key role in medical training and research collaborations with national institutes in Pakistan.

With 10 years of experience in the field of Medicine and infectious diseases, Dr. Raza Ullah Asif has been actively involved in clinical research, diagnostics and patient care. He has contributed valuable research on BK virus infection in renal transplant recipients and BK virus associated nephropathy(BKVAN).

Currently he is serving as Senior Registrar in the Virology Department in NUMS University Rawalpindi.

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Bacteria in Different Swimming Pool Characters Induce Diseases to Swimmers

Vimolmas Tansathitaya[1], Tanapati Pahakham[2], Prangwalai Chanchaem[3], Areekul Amornsriwatanakul[1] and **Sunchai Payungporn[3]**

[1]College of Sports Science and Technology, Mahidol University, Thailand
[2]Faculty of Medicine, Center of Excellence in Systems Biology, University ,Thailand
[3]Faculty of Medicine, Department of Biochemistry, Research Unit of Systems Microbiology, Chulalongkorn University, Thailand

Introduction: Swimming pools offer a popular form of recreation and exercise. However, they can also harbor a diverse array of microorganisms, including potentially pathogenic bacteria, posing a risk to swimmers' health. These microorganisms originate from both environmental sources and the swimmers themselves, often entering the pool through contamination from bodies and inadequate hygiene practices. The microbial communities within swimming pools can vary depending on factors such as pool type, maintenance practices, and swimmer density.

Method: Thirty-eight swimming pools from central, eastern, and southern regions of Thailand were selected for water sampling, representing a variety of pool types (private, residential, and recreational). Two liters of water were collected per pool and stored in sterile centrifuge bottles. Samples were transported to Chulalongkorn University laboratory within one hour of collection. Total DNA was extracted, and 16S rRNA genes were amplified and sequenced.

Chao1 and Shannon diversity indices were used for statistical analysis.

Results: A wide range of bacterial species was identified across the sampled swimming pools, with distinct compositions observed among private, residential, and recreational pools. Even after controlling for sampling time, chlorine levels, pH, and water temperature, significant differences in bacterial communities were apparent. Pools with lower pH levels

and those with higher pH levels combined with high swimmer density tended to exhibit a greater abundance of potentially pathogenic bacteria.

Conclusion: This study highlights the ubiquity of bacteria in swimming pools, even in those with seemingly adequate chlorine levels and pH. The number of swimmers and water temperature appear to be significant factors influencing the microbial quality of pool water. Effective hygiene practices and regular monitoring are crucial to maintaining safe and healthy swimming environments.

This study highlights the ubiquity of bacteria in swimming pools, even in those with seemingly adequate chlorine levels and pH. The number of swimmers and water temperature appear to be significant factors influencing the microbial quality of pool water. Effective hygiene practices and regular monitoring are crucial to maintaining safe and healthy swimming environments.

Biography

Currently, She serve as a lecturer at the College of Sports Science and Technology, Mahidol University, Thailand. Her primary research interests revolve around miRNA and chronic diseases, as well as the impact of exercise. She also have a keen interest in exploring the role of the microbiome in chronic diseases and exercise, which was highlighted in a 2022 publication. Additionally, she has conducted significant research on the intergenerational effects of diseases, focusing on birth abnormalities in the second and third generations of descendants. In this research, miRNAs and target genes served as crucial biomarkers.

She most recent completed research, funded by Tinarathpatra Co Ltd., Thai Health Promotion Foundation, and Mahidol University, investigated BDNF gene expression in amphetamine drug users and its connection to cognitive function improvement.

She doctoral studies in Health Promotion and Human Services at the University of Cincinnati sparked her interest in the potential evolution of genotypes in response to lifestyle changes and the role of exercise in mitigating disease. This initial curiosity has evolved into a passion for investigating the genetic underpinnings of health, particularly through in-depth epigenetic studies focusing on miRNAs and target genes as key indicators.

Enhancing Information Sharing in Healthcare through AI and Natural Language Processing: An Integrative Approach

Sabrina Guetibi

Faculty of Science of Rabat, Artificial Intelligence & Data Science Group, IPSS Team, Mohammed V University in Rabat, Morocco

This research delves into Artificial Intelligence and Natural Language Processing as critical tools to improve information sharing and operational efficiency in healthcare. Previous work emphasizes how AI revolutionises hospital operations by categorising it into Assisted, Augmented, and Autonomous Intelligence. While these approaches highlight AI's transformative potential, this study also underscores the role of NLP in facilitating seamless data extraction and sharing. Together, AI and NLP optimise resource allocation and enhance patient care by offering more integrated and accessible healthcare information systems.

The study employs a comparative analysis with existing AI frameworks, demonstrating how NLP complements Assisted Intelligence in improving clinical documentation. Augmented Intelligence, previously noted for aiding diagnostics, is shown to benefit from NLP's capability to analyse patient records rapidly, enhancing decision-making accuracy. Although Autonomous Intelligence remains in development, integrating it with NLP could amplify automated processes such as robotic surgery and patient monitoring.

A comprehensive literature review and case studies form the methodological backbone of this research. Findings reveal that combining AI with NLP supports the efficient sharing of patient information, streamlines operations, and reduces clinical errors. Table 1 contrasts the AI applications across different operational levels, and Figure 1 illustrates the integrative AI- NLP implementation framework.

Our results advocate for a strategic and phased AI implementation, considering the comparative success of AI without NLP as observed in prior studies. With this integrative approach, AI and NLP can substantially elevate healthcare systems by fostering more connected and efficient operational frameworks.

Biography

Sabrina Guetibi is an Associate Researcher at Université Mohammed V Rabat, specializing in operations management, supply chain systems, and management information systems. She serves as a pedagogical director at the Superior Institutions of Science and Technology, Associate College of Cardiff Metropolitan University, while continuing to teach and emphasize higher education and professional development. Sabrina explores artificial intelligence in healthcare, focusing on optimizing information systems and enhancing continuous improvement. Her recent paper, Integrating Artificial Intelligence with Information Systems in Healthcare Supply Chain Management, reflects her commitment to advancing healthcare solutions. With a robust portfolio of publications and conference presentations centered on healthcare information systems and process improvement, Sabrina holds a Ph.D. in Science and Engineering from the Faculty of Science and Technics in Fez, integrating research with impactful educational practices.

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Optimizing Standing Configurations Following Percutaneous Epidural Stimulation in Persons with Spinal Cord Injury

Ahmad M. Alazzam[1], William B. Balance[1], Andrew C. Smith[2], Enrico Rejc[3] Kenneth A. Weber II[4], Robert Trainer[5,6] and **Ashraf S. Gorgey[1,5]**

[1]Spinal Cord Injury and Disorders Center, Hunter Holmes McGuire VA Medical Center, USA
[2]Department of Physical Medicine and Rehabilitation, Physical Therapy Program, University of Colorado, USA
[3]Department of Medicine, University of Udine, Italy
[4]Department of Anesthesiology, Perioperative and Pain Medicine, Stanford University School of Medicine, USA
[5]Physical Medicine and Rehabilitation, Virginia Commonwealth University, USA
[6]Physical Medicine and Rehabilitation, Richmond VA Medical Center, USA

Background: Percutaneous spinal cord epidural stimulation (pSCES) has shown promise in restoring varying levels of motor control in individuals with motor complete spinal cord injury (SCI). Standardizing pSCES configurations can potentially lead to targeted motor improvements. Previous approaches relied on the amplitude of SCES-evoked potentials (EPs) to determine optimal stimulation parameters.

Methods: This retrospective study evaluated the effects of wide and narrow-field stimulation configurations on motor recruitment curves across three agonist-antagonist muscle groups. Participants (n=4) with SCI underwent individualization of stimulation configurations based on their spinal cord lesion characteristics, assessed via magnetic resonance imaging. Recruitment curve slopes, calculated using a six-degree polynomial function, were used to derive slope ratios for muscle groups critical for standing.

Results: Participants exhibited axial spinal cord damage ratios between 0.80 and 0.92, suggesting preserved supraspinal connectivity. Despite this close range, motor performance during standing varied based on stimulation configurations. A slope ratio ≥1 was determined to be optimal for enabling standing. Retrospective analysis of supine recruitment curve

slope ratios aligned with visually assessed extensor-to-flexor EP amplitudes in two of four participants. Two participants successfully transitioned to independent standing with tonic stimulation, while the others required assistance.

Conclusions: The findings suggest that recruitment curve slope ratios for agonist-antagonist muscle groups may provide an effective method for identifying optimal pSCES configurations to facilitate standing in individuals with SCI. These results highlight the importance of personalized stimulation protocols and the potential of slope ratio metrics as a tool for improving motor outcomes in SCI patients.

Biography

Mr. Ahmad Alazzam has spent the last three years studying percutaneous epidural stimulation under the mentorship of Dr. Ashraf Gorgey at the McGuire VA Medical Center and his team, focusing on advancing motor recovery in individuals with spinal cord injuries (SCI). Their work includes exploring the effects of long pulse width stimulation on denervated lower motor neuron (LMN) SCI individuals and investigating the impact of LMN injuries on muscle mass and fat mass using MRI techniques. Additionally, they have developed a strong interest in understanding metabolic changes associated with SCI, particularly basal metabolic rate (BMR) and predictive equations tailored for individuals with upper motor neuron (UMN) and LMN SCI.

Currently Mr. Alazzam is completing a graduate degree in Medical Sciences at the University of South Florida. With aspirations of becoming a physician-scientist, he is committed to contributing to translational research and developing innovative rehabilitation approaches for improving the lives of individuals with SCI.

Prevention of Viral Postnatal Infections: A Focus on Human Milk

Manuela Donalisio[4], Irene Arduino[1], Javier Calvo[2,3], Massimo Rittà[1], Sergio Cabeza[2], Marta Llobera[2], David Lembo[1] and **Antoni Gayà[2,3]**

[1]Department of Clinical and Biological Sciences, Laboratory of Molecular Virology and Antiviral Research, University of Turin, Italy
[2]Banc de Teixits, Fundació Banc de Sang i Teixits de les Illes Balears (FBSTIB), Spain
[3]Cell Therapy and Tissue Engineering Group (TERCIT), Balearic Islands Health Research Institute (IdISBa), Spain
[4]Department of Clinical and Biological Sciences, Laboratory of Molecular Virology and Antiviral Research, University of Turin, Italy

A mother's own milk is the first choice for improving the short- and long-term outcomes for all newborns, including preterm infants. Human milk encompasses many kinds of biological functions, including intrinsic antiviral properties for the presence of specific bioactive and immunomodulatory factors involved in the milk-mediated defense system against viral infections. In this context, our research group of virologists contributed demonstrating the antiviral role of several components, such as the colostrum-derived extracellular vesicles and glycosaminoglycans, and exploring their mechanism of action. However, despite the presence of protective factors in human milk, breastfeeding can be a route of transmission for viruses from mother to infant.

When a mother's own milk is unavailable or in short supply, the use of donor milk (DM) represents the best alternative; in this context, the heat treatment of DM is mandatory in human milk banks (HMBs) to guarantee microbiological safety. Currently, the Holder pasteurization (HoP) process is recommended in international guidelines for the constitution of HMBs. However, it's established that HoP affects several milk components to variable degrees, with a marked effect on milk protein content and activity. Therefore, HMBs and researchers are committed to developing novel or enhanced methods to process DM

that can ensure microbial inactivation, while improving the preservation of its nutritional, immunological, and functional constituents.

In this context, in collaboration with neonatologists we studied and compared the impact of HoP, the High Temperature Short Time pasteurization (HTST) and different time-temperature combinations on the antiviral activity of human milk against a panel of viruses of concern in the pediatric field, including cytomegalovirus, respiratory syncytial virus, rotavirus, and on its biological components, such as the immunoglobulin content. Our studies open the debate on whether the pasteurization temperature commonly used in Human Milk Banks should be changed to better preserve the biological components of milk.

Biography

Manuela Donalisio is Associate Professor of Microbiology at the Department of Clinical and Biological Sciences of the University Of Turin, Italy. Her research interests have focused mainly on the study of the antiviral activity of human milk and preservation of its biological functions, the discovery and development of antiviral molecules and nanoformulations, studies on virus-cell interactions in order to deepen the knowledge on the viral pathogenesis and to identify new pharmacological targets. Her studies of Antiviral Research are applied to a wide panel of viruses including respiratory viruses - responsible for annual large outbreaks-sexually transmitted viruses, emerging arthropod-transmitted viruses and viruses responsible for gastrointestinal infections.

These multidisciplinary studies have been performed in collaboration with neonatologists, chemists and engineers of national and international Universities and with pharmaceutical and biotech companies. To date she is author of more than 60 publications in peer-reviewed journals and her publication h-index is 26. She has been serving as an editorial board member of reputed journals.

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Bridging Lab Innovation to Point-of-Care Solutions: Validating LAMP for Early Diagnosis of Congenital Chagas Disease in Public Health Maternities

Schijman A. G[1], Longhi S[2], Garcia Casares L[2], Muñoz-Calderon A[2], Rodriguez Brieschke M.T[2], Heredia Viviana[2] and **Alonso-Padilla J[2]**

[1]Laboratory of Molecular Biology of Chagas Disease, Instituto de Investigaciones en Ingeniería Genética y Biología Molecular " INGEBI " Dr Hector Torres" - CONICET, Argentina
[2]Instituto de Salud Global, Spain

Background: Congenital Chagas disease (CCD) remains a public health challenge in Latin America and non-endemic regions due to migration. Early CCD diagnosis is vital for timely treatment.

Objectives: This study assessed the efficacy of Loop-mediated Isothermal Amplification (LAMP) for rapid CCD diagnosis using dried blood spots (DBS) on FTA cards compared to heparinized blood, with a commercial Real-Time PCR kit as the comparator.

Methods: Analytical validation involved contrived blood samples spiked with *Trypanosoma cruzi* strains from various discrete typing units, comparing DBS to heparinized blood. Blood-based DNA extraction employed the PURE ultrarapid system (Eiken Chemical Co., Tokyo, Japan). LAMP was implemented in 10 maternity hospitals across Paraguay, Bolivia, and Argentina, training 14 healthcare professionals. Performance evaluation utilized a standardized DBS panel with negative controls and spiked samples (50 and 20 parasites/mL). Clinical validation included 306 paired DBS and heparinized samples from 222 newborns of *T. cruzi*-seropositive mothers, collected at birth and/or approximately at 2 months of age. LAMP results were compared to Real-Time PCR (*T. cruzi* DNA test, Wiener Lab, Argentina).

Results: LAMP achieved detection limits (LoD95) of 5 parasites/mL for heparinized blood and 15/20 parasites/mL for DBS depending on the *T.cruzi* strain. Inter-laboratory harmonization revealed strong agreement (κ = 0.924) for controls and 50 parasites/mL samples and good agreement near the LoD for DBS (κ = 0.718). While microscopy detected four CCD cases,

LAMP identified eight in both DBS and fluid blood, fully concordant with PCR ($\kappa = 1$).

Conclusions: LAMP demonstrated superior sensitivity over microscopy for both DBS and fluid blood. This rapid, reliable diagnostic tool enhances early *T. cruzi* detection in newborns and neonates, improving CCD management in Public Health Maternities.

Biography

Alejandro Gabriel Schijman holds a Ph.D. from the University of Buenos Aires and the Superior Researcher Degree of CONICET, leading the Laboratory of Molecular Biology of Chagas Disease at INGEBI-CONICET, Argentina.

His research has significantly advanced Chagas disease understanding and management. He identified acidic ribosomal P proteins, immunodominant molecules linked to chronic Chagas cardiopathy through molecular mimicry.He optimized PCR-based methods for *Trypanosoma cruzi* diagnosis and monitoring, coordinating international studies with WHO-TDR and PAHO to establish reference protocols used in major clinical trials. These efforts led to commercial diagnostic kits approved by regulatory agencies.

Additionally, his validated loop-mediated isothermal amplification (LAMP) for point-of-care neonatal diagnosis of congenital Chagas disease, improving early intervention. His work on molecular typing of *T. cruzi* discrete typing units has provided valuable insights into infection complexity and tissue tropism.

These contributions aim to improve diagnostic tools, therapeutic strategies, and public health outcomes for Chagas disease globally.

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MARCH 20-21, 2025

SPEAKER TALKS

Evaluating the Long-Term Impact of Large-Scale Trainings on Female Genital Mutilation Related Knowledge, Attitudes, and Practices Among Sudanese Midwives in Khartoum State

Wisal Ahmed[1], Mohammed Abdelrahim[2], Stephen Gloyd[3], Carey Farquhar[4], and **Nancy Puttkammer[5]**

[1]FGM Advisor, UNFPA HQ/Clinical Assistant Professor, Department of Global Health, University of Washington, USA
[2]Independent Researcher, Sudan
[3]Departments of Global Health, Health Systems and Population Health, University of Washington, USA
[4]Departments of Global Health, Epidemiology and Medicine, University of Washington, USA
[5]Department of Global Health, International Training and Education Center for Health, University of Washington, USA

Background: Female genital mutilation (FGM) is a harmful practice that affects 14 million women and girls in Sudan, with type III being the commonest (72%). Type III involves the cutting of the inner and outer vulvar folds with or without removal of the clitoral glans and closing the outer vulvar folds leaving a small opening for urine and menstrual blood flow. Twenty four percent of girls and women (15 – 49 years) who gave birth in the preceding year report having FGM type 3 repeated by midwives. Midwives' involvement not only violates health professional code of conduct and negatively impacts FGM abandonment efforts.

Three-quarters of midwives in Khartoum state received several trainings from the Ministry of Health and National Medical Council for Health Professions in efforts to stop their involvement. To our knowledge, there is no study to date that examines the long term effect of large scale trainings on health worker's knowledge, attitudes and practices on FGM.

Objectives: We hypothesized higher knowledge-levels, opposition to midwives' involvement, and quality in clinical practice among midwives who reported previous training.

Method: We conducted an exposure based cross-sectional study in October 2022 - January 2023, using closed and open-ended questions via phone interviews in Khartoum State

which houses 11% of all midwives and has highest midwives' involvement in FGM. We used primary outcomes aligned to the three levels (reaction, learning and behavior) of Kirkpatrick's training evaluation model in descriptive and multivariable analyses in Stata.

Results: Half of midwives reported receiving trainings prior to 2018 **(Table 1)**. Midwives who had FGM training were more aware that performing FGM violates code of conduct (P = .001), reported to always counsel patients to abandon FGM (*P <.001*) but did not perform correct clinical procedures during labor (*P = .29*) compared to midwives who did not report training. The knowledge and attitudinal findings were not statistically significant in multivariable logistic regression model adjusting for age **(Table 2)**. Exploratory analysis of training curricula showed higher knowledge, correct attitude, and clinical practices among those who reported in-service training before 2016.

Conclusion: The long-term effectiveness of large-scale training on knowledge, attitudes and clinical practice among midwives involved in FGM is limited. Further evaluation on the didactic and clinical practice training is needed and possibly a complex intervention package besides training is needed.

Table 1: Training Profile: The reported type, year, and number of trainings with female genital mutilation content received by 127 midwives in Khartoum State, Sudan.

FGM training content received	**Midwives n (%) §**
In-service <2016	72 (48%)
In-service 2016 – 2018*	65 (43%)
Induction 2016 – 2018	27 (21%)
In-service >2018**	79 (53%)
Number of FGM training content received	**Midwives n (%) §**
One training	46 (25%)
Two trainings	58 (46%)
Three trainings	23 (13%)

§ Number (percentage)

*FGM training content version was adapted to World Health Organization's 2016 guidelines on the management of health complications

** FGM training content version was adapted to United Nations Population Fund and United Nations Child Fund's manual on social norm change

Table 2: Female genital mutilation related knowledge, attitudes, and practices among trained compared to non-trained midwives in Khartoum State, Sudan.

Kirkpatrick's evaluation model Levels	Crude Estimates+			Adjusted Estimates‡		
	OR¶	95% CI°	P value	aOR†	95% CI°	P value
Learning Outcomes (Kirkpatrick Level 2)						
Knowledge of four health complications	1.2	0.6 – 2.5	0.62	1	0.5 – 2.0	0.92
Knowledge of four FGM types	2.2	0.8 – 5.6	0.11	3.4	1.2 – 9.9	0.02
Behavior Outcomes (Kirkpatrick Level 3)						
Believe that health workers should follow FGM as social norm	0.3	0.1 – 0.7	0.01	0.3	0.1 – 0.9	0.03
Aware that performing FGM violates professional code of conduct	3.3	1.6 – 6.7	0.001*	2.4	1.1 – 5.1	0.03
Correct de-infibulation[1] surgical procedure	0.6	0.2– 1.6	0.29	0.6	0.2 – 1.7	0.34

+Logistic regression model

‡ Logistic regression model adjusted for age

¶Odds Ratio †Adjusted Odds Ratio

°95% Confidence Interval

*P value was statistically significant using Holm-Sidak Correction

[1]De-infibulation as defined by WHO refers to the practice of cutting open the sealed vaginal opening of a woman who has been infibulated to allow intercourse or to facilitate childbirth. Infibulation is a type of FGM where vulval folds are opposed leaving a small opening for urine or menstrual flow.

Biography

Dr. Wisal Ahmed is a Sudanese medical doctor and public health expert with over two decades of experience in programmatic interventions and research in resource-limited settings. She has close to a decade work on evidence based health sector programming on female genital mutilation as a technical specialist in 15 countries initially with the World Health Organization, and currently an advisor and Global Coordinator for the UNFPA-UNICEF Joint Programme on the Elimination of Female Genital Mutilation, a multisectoral program in 17 countries. She is a clinical assistant professor at the University of Washington in WA, USA with an MPH in Epidemiology and a PhD in Implementation Science from the same institution.

Efficacy of Photobiomodulation Therapy in Treatment of Chronic Kidney Disease

Jih-Huah Wu[1] and **Chuan-Tsung Su**[2]

[1]Department of Biomedical Engineering, Ming Chuan University, Taiwan
[2]Department of Healthcare Information and Management, Ming Chuan University, Taiwan

The end-stage renal disease (ESRD) is an advanced and permanent stage of chronic kidney disease (CKD), characterized by a significant decline in kidney function to the extent that the kidneys are incapable of performing essential bodily functions. Renal replacement therapy (RRT) or kidney transplantation is typically necessary for the survival of ESRD patients. The global prevalence of CKD exceeds 13%, with over 2.5 million patient are dependent on RRT. We have conducted two clinic trials to verify the effectiveness of photobiomoduliton (PBM) on hemodialysis (HD) patients. One is about the microcirculation of arteriovenous fistula (AVF) in patients who had undergone HD. The other clinic trail shows PBM can improve the sleep and life quality of HD patients. Future work is to treat the patients who have CKD to avoid to reach ESRD.

Biography

Jih-Huah Wu received his Ph. D. degree in Optical Sciences at National Central University in Taiwan in 2005. After served as one year post-doctoral fellow in the Department of Power Mechanical Engineering in National Tsing Hua University, he joined Ming Chun University served as an assistant professor at the Department of Biomedical Engineering. He has become an associate professor since 2010. He has become a full professor since 2014. His research interests include laser acupuncture, light therapy, electro-optical system design, and the applications of semiconductor lasers in biomedical researches. Since 2024, he is the dean of the school of Health and Biomedical Engineering at Ming Chuan University.

Towards Automated Policy Predictions via Structured Attribute-Based Access Control

Anna Bamberger and **Maribel Fernandez**

Department of Informatics, King's College London, UK

We present a new access control policy prediction algorithm that uses historical access control transactions or existing policies as input and can deal with the case of incomplete logs and/or policies, e.g., to deal with unknown users making future access requests. Looking to facilitate organisational planning and regulatory compliance we employ time-series forecasting to create predictions about future categorisation of users and resources, without pre-defining any data features deemed to be relevant but rather looking to create a more autonomous miner capable of identifying such relevance from raw data. We use a public ICU health metric data set showing that the miner can work on both logs as well as policy specifications.

Contributions:

We present a new approach to utilise ML-based predictions on historical resource data with the **attribute-based CBAC model** to aim for an autonomous miner which can evaluate at what point and how to make future access control decisions.

The policies synthesised by the miner consist of **category definitions** (formulas involving attributes/values) and a list of permitted actions for each category. These with the CBAC axioms, define the valid authorisations. We discuss an example.

We describe how the predictive process can be used to ensure that, **despite log incompleteness, our generated future policies are correct and of high quality, even if generated by an autonomous miner with no human input.**

Biography

Anna Bamberger

Anna's experience includes cloud consulting, architecture, and security implementation within the Amazon Web Services Professional Services division, where she focused on the UK public health sector.

After AWS Anna worked with Fortune 500 companies across financial services and technology on building business as well as technical strategies. Anna is a current EPSRC funded Ph.D. researcher at King's College London, where her research focuses on automating the generation of access control policies with machine learning.

Maribel Fernández

Professor Maribel Fernández is Vice-Dean (People & Planning) in the Faculty of Natural, Mathematical & Engineering Sciences and Professor of Computer Science in the Department of Informatics at King's College London.

Her research focuses on the development of tools for the specification, analysis and verification of software systems used in various domains, including biology, security and finance.

In 2020, she received the IEEE Big Data Security Senior Research Award and was named Distinguished Scientist by ACM.

Conservative Management of Scoliosis: Evaluating Surface Topography for the Rigo System

Marissa Selthafner, Natalie Schmidt, Adam Thiessen and **Xue-Cheng Liu**

Children's Wisconsin, Medical College of Wisconsin, USA

Introduction: The Rigo classification system classifies adolescent idiopathic scoliosis (AIS) according to four main types. This determines a conservative treatment plan, including bracing and physiotherapeutic scoliosis-specific exercises (PSSE). If the conservative plan is effective, the patient's curve will not progress to requiring surgical management. X-ray is often used, which repeatedly exposes patients to radiation. However, the reliability of surface topography (ST) for the Rigo classification system has not been studied. The goals of this study were to assess the intra- and inter-observer reliability and accuracy of the Rigo system between ST and X-ray for Rigo types and subtypes.

Methods: X-ray and ST images (Figure 1) were selected for 31 AIS patients. Three blinded investigators classified images using the Rigo system, twice for each patient on different weeks. Once complete, all investigators agreed upon a finalized Rigo classification for each image.

Results: The intra-observer Kappa value was slightly better for ST (0.77) than X-ray (0.75) for types, and for ST (0.74) than X-ray (0.65) for subtypes ($p<0.001$). The inter-observer Kappa was expectedly lower than intra-observer, with ST (0.53) comparable to X-ray (0.54) for the type ($p<0.001$). ST (0.43) was slightly better than X-ray (0.36) for the subtype ($p<0.001$). For the type, the overall accuracy of the observers was slightly lower for ST (77.96%, SE 3.04%) than X-ray (79.57%, SE 2.96%). For the subtype, the accuracy of observers was slightly higher for ST (70.97%) than X-ray (65.05%).

Conclusion: Surface topography is comparable to X-ray in reliability for the Rigo system. It can effectively be used to reduce radiation to patients and enhance bracing and PSSE outcomes, with the goal of avoiding surgical management.

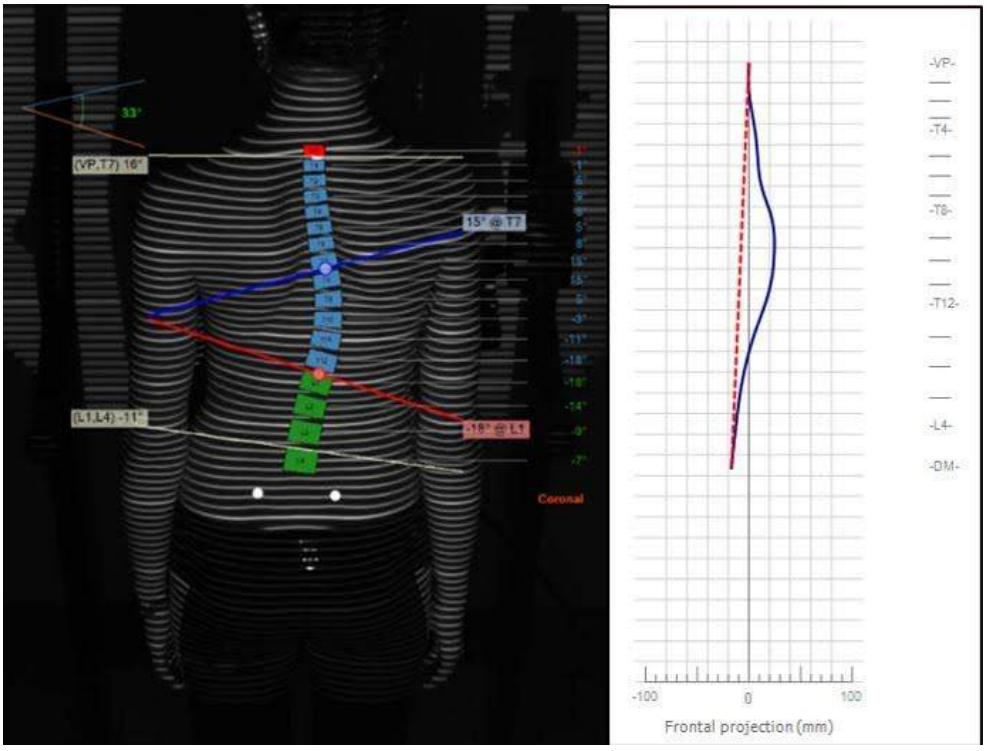

Fig 1.[1] PA view of ST (left) and curve displacement (right) of AIS patient.

Biography

Dr. Marissa Selthafner is a certified C2 Barcelona Schroth physical therapist at Children's Wisconsin, with a focus on treating adolescent idiopathic scoliosis using a variety of methods. She specializes in complex spine diagnoses including scoliosis, kyphosis, disc involvement, spondylolysis and spondylolisthesis.

Natalie Schmidt is a third-year medical student at the Medical College of Wisconsin. She is passionate about innovating medicine through engineering.

Dr. Adam Thiessen is an Assistant professor in the Department of Pediatric Orthopaedic Surgery at the Medical College of Wisconsin. He is fellowship-trained in Pediatric Orthopaedics.

Dr. Xue-Cheng Liu is a Professor of Orthopaedic Surgery at the Medical College of Wisconsin. He is the Director of the Musculoskeletal Functional Assessment Center at Children's Wisconsin.

Transfers of the Sternal Head of Pectoralis Major and Latissimus Dorsi to Treat Sprengel Syndrome

Ricardo Berriel Mendes, Jose Carlos Garcia Jr., Bassem Elhassan and **Paulo Cavalcante Muzy**

Institute NAEON, Brazil

This technical note introduces a novel surgical procedure for the treatment of Sprengel's Syndrome, a rare congenital condition characterized by an elevated, hypoplastic, and malrotated scapula. Traditional treatments have had limited success, prompting the development of this new approach. The technique, grounded in orthopedic principles, combines muscle and bone repositioning to improve range of motion, reduce pain, and achieve aesthetic normalization.

The surgery involves clavicle morcellation and a posterior longitudinal approach for muscle release and transfer. The patient is positioned laterally under general anesthesia, with evoked potential monitoring to prevent neurological complications. Clavicle morcellation is performed to facilitate scapula movement and prevent brachial plexus impingement. The procedure includes releasing fibrous bands and specific muscles around the scapula, with careful attention to avoid nerve damage.

The innovative aspect lies in the transfer of the sternal head of the pectoralis major and the latissimus dorsi to the inferior aspect of the scapula, aiming to restore functional scapula movement. A case report of a 4 year old patient demonstrates the procedure's efficacy, highlighting improvements in scapular elevation and deltoid strength. Cosmetic enhancements are also noted. This approach potentially offers significant advantages for patients with Sprengel's Syndrome.

Conclusion: The note concludes with a discussion on the rationale behind muscle transfers and their role in enhancing scapular movements, providing a promising outlook for this challenging congenital condition.

Biography

ACADEMIC BACKGROUND AND TITLE

- 2008-2014 – Medical Degree from Estácio de Sá University, Rio de Janeiro, Brazil.
- 2016-2019 – Medical Residency in Orthopedics and Traumatology at the Federal University of the State of Rio de Janeiro.
- 2019 – Member of the Arthroscopy Association of North America (AANA)
- 2020 – Member of the Brazilian Society of Orthopedics and Traumatology (SBOT)
- 2020 – Member of the Brazilian Medical Association (AMB).
- 2021 – Member of the Brazilian Society of Shoulder and Elbow Surgery (SBCOC).
- 2021 – Member of the Brazilian Society for Tissue Regeneration (SBRET).
- 2021-2022 – Subspecialty in Sports Medicine with the NAEON Group, São Paulo, Brazil.
- 2022 – Member of the International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine (ISAKOS).
- 2023 – Director and Head of the Fellowship Program in Shoulder and Elbow Subspecialty at the NAEON Group, São Paulo, Brazil.
- 2023 – Fellowship at Clinique Bizet, Paris, France.
- 2023 – Fellowship at Clinique de L'Union, Toulouse, France.

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Palivizumab Prophylaxis Against Respiratory Syncytial Virus Infection in Patients Younger than 2 Years of Age with Congenital Heart Disease

Rihab Agouba, Mohammed Hassan A. Mohammed, Islam El Obaidy, Fahad Alhabshan and **Riyadh Abu-Sulaiman**

Department of Pediatric Cardiology, Cardiac Science, King Abdulaziz Medical City, Saudi Arabia

Background: Respiratory syncytial virus (RSV) is a viral pathogen that causes annual epidemics of lower respiratory tract infection with substantial morbidity and mortality in young children, especially those with congenital heart disease (CHD).

Objective: Identify the compliance rate with vaccination and study the effect of RSV vaccination on hospital admissions.

Design: Retrospective descriptive study.

Setting: Cardiac center.

Patients and Methods: Patient data was obtained from outpatient clinic records, inpatient records, and a surgical database for the period from October 2010 to March 2016. Infants with hemodynamically significant CHD, cyanotic CHD and moderate-to-severe pulmonary hypertension were included in the study. Palivizumab 15/mg/kg was given monthly starting from October, the usual beginning of the epidemic season, with five doses in the first season and six doses in the remaining season scheduled for administration. Patients were interviewed at every clinic visit for any side effects during the previous month, occurrence of any RSV infection and any hospital admission. Selection criteria included RSV vaccination and absence of RSV disease. Patients were excluded if they had RSV infection or a repaired cardiac lesion.

Main Outcome Measures: Compliance rate, hospital admission frequency and period of stay.

Sample Size: 530 during six seasons of RSV epidemics.

Results: Fourteen patients (2.6%) developed RSV infection and 13 (2.5%) required hospital admission, but only one patient (0.1%) needed intensive care admission. 11deathes unrelated to RSV infection. The compliance rate was 97%.

Conclusion: Palivizumab well tolerated and effective in the prophylaxis of RSV infection in children with CHD. As well reduce hospital admissions and PICU.

Limitations: Retrospective design.

Conflict of Interest: None.

Patients per season...

Season	No of patients during each season	Cyanotic	Acyanotic	No of doses per season	No of patients with RSV infection after prophylaxis	No of patients needing hospital admission
2010-2011	52	28	24	52	3	2 (1 needed ICU)
2011-2012	70	28	42	70	3	3
2012-2013	93	46	47	93	3	3
2013-2014	138	66	72	124	1	1
2014-2015	77	43	34	77	3	3
2015-2016	100	41	59	100	1	1
Total	**530**	**252**	**278**	**516**	**14**	**13**

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Nursing Interventions that Promote Contraceptive Decision-Making in Women after Voluntary Abortion

Sara Palma[1], Ricardo São-João[2] and **Helena Presado[3]**

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[2]School of Management and Technology, Polytechnic Institute of Santarém, Portugal
Nursing Research, Innovation and Development Center of Lisbon (CIDNUR), Portugal
[3]Nursing School of Lisbon, University of Lisbon, Portugal
Nursing Research, Innovation and Development Center of Lisbon (CIDNUR), Portugal

Contraception aims to protect women, couples and families from unplanned and unwanted pregnancies. Nurse-midwives reliable sources of information on sexual and reproductive health and agents for empowering women to choose a contraceptive method based on their needs, preferences and lifestyle. Globally, many unplanned pregnancies end in voluntary termination-of-pregnancy, sometimes associated with poor response from health services, inadequate subsequent contraceptive advice, failure to take or incorrect and discontinued use of the method.

Objectives: With this research, we intend to answer the question: "How do nurses-midwives promote the decision-making process for a contraceptive method, after voluntary termination-of-pregnancy?".

Methods: A mixed methods design was used with a simultaneous strategy: QUAL+quan of an exploratory type, guided by Nola Pender's conceptual model of Health Promotion. In the qualitative component, 5 nurse-midwives participated and in the quantitative component, 172 women participated in the voluntary termination-of-pregnancy consultation.

Results and discussions: From the analysis of the interviews, interventions were proposed such as professional training in contraception and contraceptive counseling, the reformulation of the curriculum of the 1st and 2nd cycle of studies in nursing courses, the creation of greater accessibility to health services, an adequate physical environment and the im-

plementation of tools supporting contraceptive counseling. The results of the study with women confirm that, although they have a preventive attitude towards contraceptives, they demonstrate a low level of literacy about them. The respondents' assessment of the quality of contraceptive advice provided by nurses is positive. The results of the studies allowed the development of six nursing interventions.

Conclusion: We understand that they can be promoters of quality care, drivers of women's ability to choose a contraceptive method suitable for each one and adopted when it is intended to implement behavioral changes in health in a group or population.

Biography

Prof. Sara Elisabete Cavaco Palma at the Santarém Nursing School. Researcher in Charge of the Project “Contraceptive counseling throughout the reproductive life cycle”, at the Center of Research, Innovation and Development in Nursing of Lisbon (CIDNUR), Portugal. Researcher at the Center for Research and Quality of Life (CIEQV), Portugal. Researcher at the Nursing Research Platform Lisbon of Health Research Center (CIIS) in the Portuguese Catholic University in the “Hope2Care” Research Project, Lisbon. Long experience in caring for women in the context of contraceptive counseling and voluntary termination of pregnancy. She has developed studies in the context of promoting sexual and reproductive health, with emphasis on contraceptive counseling to prevent voluntary termination of pregnancy.

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Successful Weight Loss in Adolescents with Overweight or Obesity Using a Swallowable Intragastric Balloon and Nutritional Oversight

Andrea Formiga[5], Christopher Oyola[1], Marcos Berry[2], María Alejandra Paez Salazar[3], Diolanda De Abreu[4], Alex Escalona[6], Marcos Rodriguez[7] and **Roberta Ienca[8]**

[1]Aesthetic Medical Center, Clinica Bruselas, Spain
[2]Bariatric and Metabolic Surgery Unit, Clinica Las Condes, Chile
[3]Aesthetic Medical Center, Clinica Estética Dra Alejandra Paez, Chile
[4]Aesthetic Medical Center, Centro Europeo Medico y Estético(CEME), Spain
[5]Bariatric and Digestive Surgery Center, CIBO Clinic, Italy
[6]Bariatric and Metabolic Surgery Unit, Clinica UANDES, Chile
[7]Obesity and Bariatric Center, Hospital Clinico Del Sur, Chile
[8]Department of Obesity, Weight Management Center, Nuova Villa Claudia Clinic, Italy

Purpose Medical devices benefit patients living with overweight or obesity, but studies in the adolescent population are lacking. The goal of this study was to collect information on the performance and safety of a swallowable intragastric balloon program (SGBP) in adolescent patients.

Materials and Methods Data were collected retrospectively on patients aged 15 to 17 years with body mass index (BMI) ≥ 27 kg/m2 who received the swallowable intragastric balloon (SGB) and associated lifestyle and nutritional change program. Patients had not responded to previous dietary and behavioral modification weight loss treatments and elected to undergo SGBP. The SGB was swallowed and filled with 550 mL of distilled water in an outpatient setting, and a multidisciplinary team delivered a lifestyle/nutritional change program. Mean % total body weight loss (%TBWL) was calculated for each patient compared with baseline.

Biography

Dr. Andrea Formiga is General Surgeon and Endoscopist at the Columbus Clinic in Milan, as well as Director of the Interdisciplinary Center for Bariatric and Obesity (C.I.B.O.) in Milan. From 2022 Bariatric Surgeon at St. James Hospital Malta. After earning a degree in Medicine and Surgery from the University of Milan (1996), he specialized, again in the same university, in General Surgery (2002). In the years from 1994 to 1997, the Doctor took his first professional steps as a student / doctor who attended the U.O. of General Surgery of the San Giuseppe Hospital in Milan. From 1998 he then began to work, at first as a trainee and, later, as a freelance Specialist in General Surgery, at the San Marco Polyclinic, under the guidance of Prof. Carlo Rebuffat. From 2008 he began to devote himself to bariatric activity at the San Carlo Clinic in Milan, while from 2014 to 2015 he was Head of General Surgery and Digestive Endoscopy at the Italian Auxological Institute. This professional experience was followed by that, from 2016 to 2018, as Head of the Division of General and Bariatric Surgery of the Zucchi Clinical Institutes of Monza. Since 2002, Dr. Formiga has been a freelancer, an activity to which over the years he has also joined that of collaborator at the Villa Arbe Nursing Home in Milan, the Montanari Nursing Home in Morciano di Romagna. Dr. Formiga has the largest Italian case history for Endobariatric treatments (Apollo Overstitch, POSE, Endobarrier therapy, BIB, Spatz, Allurion Elipse) carried out and a large number of major Bariatric Surgery interventions.

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Nursing Management and Patient Experience: The Swallowable Intragastric Balloon for Morbid Obesity a Comprehensive Approach

Mireille Galea, Kim Restall and **Andrea Formiga**

Saint James Hospital, Malta

Background: Beyond dietary interventions, treatment options for weight loss are often restricted to patients who meet specific obesity criteria. Early intervention, prior to the onset of obesity, has the potential to mitigate associated morbidity and mortality, enabling significant, life-changing weight management. The Allurion swallowable intragastric balloon (IGB) offers a non-invasive solution that does not require endoscopy or sedation for placement or removal.

Objective: To evaluate the role of nursing management and patient safety during the pre-, during-, and post – insertion phases of the IGB.

Data Collection: Data included patient weight, BMI, percentage total body weight loss (%TBWL), and reported adverse events, collected from Saint James Hospital, Malta.

Description: Nursing experience in manging patients before, during and after balloon placement. Pre-procedure care focused on patient education and preparation. Post-procedure monitoring of patients and follow up care providing ongoing support, ensuring patient safety and satisfaction throughout the treatment.

Results: In total, 45 adults of which 23 (54%) females underwent placement of the swallowable IGB and completed the study follow-up through IGB passage at four months.

Conclusion: The less invasive nature and overall positive safety profile of the Allurion swallowable intragastric balloon make it a viable option for patients seeking effective weight loss treatment. Its non-invasive technique and lack of need for removal offer an attractive alternative for patients looking for a safer, less burdensome weight management solution.

Results: A total of 45 patients, 60% female, were included in the study with a mean age of 45.7 ±11.7 years. The mean baseline weight was 107.54 ±19.16 kg and the mean BMI was 36..1 ± 5.02 kg/m2. After one year, the mean total weight loss was 11.0% ±8.4. The mean balloon placement duration was 13.1 ±2.82 minutes, with 43.7% of patients requiring a stylet to facilitate placement. The most common symptoms were nausea (80.4%) and gastric pain (80.3%), which resolved in the majority of patients within a week. Early deflation of the balloon occurred in one patient (<1%); No patients showed symptoms suggesting gastric balloon obstruction.

Biography

Ms. Mireille Galea is a registered Nurse with over 20 years of experience in the healthcare sector. She graduated in 2004 from the Institute of Health Care at the University of Malta. Mireille began her career in a state hospital before transitioning to a full-time role in a private hospital in 2008. Currently, she serves as the Hospital nursing officer, overseeing the inpatient wards, outpatient department and immediate Medical Care unit.

In 2023, Mireille played a key role in leading the hospital's successful ISO certification process, demonstrating her commitment to quality care and patient safety. At this conference, she will share insights on enhancing healthcare delivery to improve patient engagement and outcomes, particularly for bariatric patients.

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Comparative Safety of Paxlovid and Molnupiravir: Risk of Interstitial Lung Disease in COVID-19 Patients with Autoimmune Diseases

I-Han Cheng[1], Xiangyang Huang[2], Yu-Hsun Wang[2], Yao-Min Hung[3] and **James Cheng-Chung Wei[1,4]**

[1]Musculoskeletal Science and Medical Engineering, University College London (UCL), UK
[2]Department of Rheumatology and Immunology, West China School of Public Health and West China Fourth Hospital, Sichuan University, China
[3]Department of Internal Medicine, Taipei Veterans General Taitung Branch, Taiwan
[4]Department of Medical Research, Chung Shan Medical University Hospital, Taiwan

Background: Patients with autoimmune diseases face a higher risk of severe COVID-19 and related complications, necessitating effective and safe treatments. While antivirals such as nirmatrelvir-ritonavir (Paxlovid) and Molnupiravir have been widely used, their safety profiles concerning interstitial lung disease (ILD) in this vulnerable population remain unclear.

Objective: This study aims to compare the risk of ILD associated with Paxlovid and Molnupiravir in COVID-19 patients with autoimmune diseases.

Methods: We conducted a retrospective cohort study using data from the US Collaborative Network, including 18,384 COVID-19 patients with autoimmune diseases treated with Paxlovid or Molnupiravir within five days of diagnosis. Propensity score matching was applied to balance baseline characteristics, and ILD cases were identified through ICD-10 codes and confirmed by radiographic evidence. Hazard ratios (HRs) were calculated using Kaplan-Meier survival analysis and Cox proportional hazards models.

Results: Among the matched cohort, 54 ILD cases occurred in the Paxlovid group and 79 in the Molnupiravir group (HR: 0.73; 95% CI: 0.52–1.03). Subgroup analyses by age, sex, and race yielded consistent findings, indicating no significant differences between the two antivirals.

Conclusions: The findings suggest that Paxlovid and Molnupiravir are safe options for COVID-19 treatment in patients with autoimmune diseases, with no increased risk of ILD. These results provide reassurance for clinicians regarding the use of these antivirals in high-risk populations.

Implications: This study contributes to the growing evidence supporting the safety of COVID-19 antivirals and highlights the importance of tailored treatment approaches for patients with complex medical conditions.

Biography

I-Han Cheng, MD, is a medical doctor from Taiwan currently pursuing a master's degree in Musculoskeletal Science and Medical Engineering at University College London (UCL). Their clinical training spans Taiwan, the United States, and the United Kingdom, where they gained hands-on experience in various specialties, including pediatric surgery, internal medicine and orthopedics.

Dr. Cheng has a strong research background, focusing on autoimmune diseases, asthma, and the application of advanced techniques in medical diagnostics and therapeutics. They have authored multiple publications in high-impact journals and presented at international conferences. Notably, their recent work explores the comparative safety of antivirals in COVID-19 patients with autoimmune diseases.

Dr. Cheng is also an advocate for integrating technology into medicine, with experience in biodesign and innovations such as ergonomic surgical devices. Passionate about improving patient outcomes, they aim to contribute to advancements in rehabilitation and medical engineering.

Lesch-Nyhan Syndrome - A Non-Extracting Approach to Prevent the Oral Aspects of Self-Mutilation

Joseph Shapira[1,2]

[1]Professor of Pediatrics Dentistry and former Head, Faculty of Dental Medicine, Department of Pediatric Dentistry, Hebrew University-Hadassah, Israel
[2]Director of the Oral Hygiene Training Clinic, SHLVA – National Center for Disabilities, Israel

The purpose of this presentation is to describe a method which has been successfully employed for patients with Lesch-Nyhan syndrome (LNS) with Self-Injurious Behavior (SIB), who have attended the Special Needs Clinic in the Department of Pediatric Dentistry at the Hadassah Medical Centre.

Patients who present SIB can be considered a treatment challenge in the dental office or hospital setting. Several treatment modalities have been employed to manage the abnormalities or conditions that Favor the appearance of self-mutilation or self-injurious behavior.

The 4 groups of therapeutic modalities that have been tried in patients with SIB are: behavior modification (psychological), pharmacological, surgical procedures (extractions) and intra/extra oral devices.

Among these the intraoral physical devices are the only methods enables self-injury to be prevented. They represent a direct barrier that prevents the patient from being able to bite his oral tissues: tongue, lips and oral mucosa.

In 2016, our group published on this subject “overcoming the oral aspects of self-mutilation: description of a method” (Spec Care Dentist 36: 282, 2016), outlining a modern, creative, elegant and innovative technique with longer than 10 years of follow- up, in a way that any general dentists can learn and apply. This method has already been applied and performed on all our patients with the syndrome who approached us for help.

The method was invested in order to meet the expectations of parents who ask us as caregivers to find every possible way to save the teeth and not to extract them, in order to preserve the appearance of the child's smile and self-esteem.

Biography

Dr. Joseph Shapira is a Professor Emeritus in Pediatric Dentistry and was the Chair of the Department of Pediatric Dentistry, at the Hebrew University-Hadassah Faculty of Dental Medicine, Jerusalem, Israel.

Following his graduation at the Hebrew University - Hadassah Medical Centre, he had specialized at CHOP the Children's Hospital of Philadelphia, University of Pennsylvania, for two years residency program in Pediatrics Dentistry and dentistry for Special Needs and High risk Medically Compromised Patients.

Prof. Shapira has dedicated his professional life to the education, treatment, and research for children with special needs and high-risk medically compromised children, including the use of sedative agents to manage anxiety and behavior control.

Prof. Shapira has published more than 110 articles in refereed International Journals and lectures on these subjects around the world.

At present, he also serves as the Director of the Prevention Program for Oral Health at SHALVA - the National Center for Care and Inclusion of Children with Disabilities, works in a private clinic and volunteers in the Department of Pediatric Dentistry at the Hadassah Dental School, which he still considers his second home.

Cutibacterium Acnes: From Skin Commensal to Pathogen in Shoulder Surgery

Muhammad Ali Javaid, Arshad Iqbal, Muhammad Sohail and **Faiz Khan**

Department of Trauma and Orthopaedics, Cwm Taf Morgannwg University Health Board, UK

Cutibacterium acnes, previously known as Propionibacterium acnes, is a gram-positive rod in the pilosebaceous glands and commonly implicated in acne vulgaris. Its role in prosthetic joint infections, particularly in shoulder surgeries, has recently gained attention due to its prevalence around the shoulder girdle. This review collates evidence on the pathogenic role of C. acnes in shoulder surgeries, discussing preventive measures, risk factors, clinical presentation, investigation, and treatment strategies. C. acnes infections are complex, often presenting with non-specific symptoms and delayed diagnoses. Risk factors include male sex, presence of hair, shoulder steroid injections, and previous shoulder surgeries. Investigations such as inflammatory markers, synovial fluid analysis, diagnostic arthroscopy, tissue cultures, and advanced molecular techniques like next-generation sequencing and multiplex polymerase chain reaction are explored for their effectiveness in detecting C. acnes. Treatment strategies range from prolonged antibiotics and antibiotic spacers to single-stage and two-stage revision surgeries. Studies indicate that single-stage revision may provide better outcomes compared to two-stage revision. Effective management of C. acnes infections requires careful assessment, relevant investigations, and tailored treatment approaches. This review emphasizes the need for further research to address intraoperative contamination and to develop more efficient diagnostic and treatment methods.

Biography

Dr. Muhammad Ali Javaid is a passionate junior doctor with a keen interest in musculoskeletal diseases, their prevention, and pathogenesis. Having recently graduated from the University of Health Sciences in Pakistan, he has quickly distinguished himself as an aspiring and dedicated researcher and clinician in the field of medicine.

As an emerging researcher, Dr. Javaid is committed to advancing our understanding of musculoskeletal disease prevention through innovative research and evidence-based practice. He is eager to share his insights and learn from colleagues at this international conference, contributing to the global effort in improving musculoskeletal health and enhancing patient care worldwide.

The Spectrum of Vitamin D Responsiveness: Implications for Public Health

Ulla M. Järvelin[1] and **Juho M. Järvelin**[2]

[1]Independent Researcher, Finland
[2]Medical Faculty, Department of General Medicine, Turku University, Finland

Vitamin D resistance (VDRES) explains the necessity for higher doses of Vitamin D (VD) than those recommended for treatment success. VD receptor (VDR) signaling blockades, such as those caused by infections and poisons, are one basis for VDRES etiology. Mutations within genes affecting the VD system cause susceptibility to developing low VD responsiveness and autoimmunity. In contrast, VD hypersensitivity (VDHY) occurs if there is extra VD in the body; for example, as a result of an overdose of a VD supplement. Excess $1,25(OH)_2D_3$ is also produced in lymphomas and granulomatous diseases. The placenta produces excess $1,25(OH)_2D_3$. Gene mutations regulating the production or degradation of $1,25(OH)^2D_3$ enhance the effects of $1,25(OH)_2D_3$. Increased $1,25(OH)_2D_3$ levels stimulate calcium absorption in the gut, leading to hypercalcemia. Hypercalcemia can result in the calcification of the kidneys, circulatory system, or placenta, leading to kidney failure, cardiovascular disease, and pregnancy complications. The primary treatment involves avoiding exposure to the sun and VD supplements. The prevalence rates of VDRES and VDHY remain unclear. According to a Finnish study in 2015, 25%, 51%, and 24% of the patients had strong, medium, and poor responses, respectively. Later, in 2017, the same research group conducted another study that validated the findings. High-dose VD treatment can be a promising method for treating diseases caused by VDRES, such as autoimmune diseases; however, evaluating its potential side effects is necessary. To avoid VD-mediated hypercalcemia, VD responsiveness must be considered when treating pregnancies or cardiovascular diseases associated with VD. Moreover, it is unclear what effect VD level or VD substitution has on different diseases. Examining the VD response can provide more accurate results.

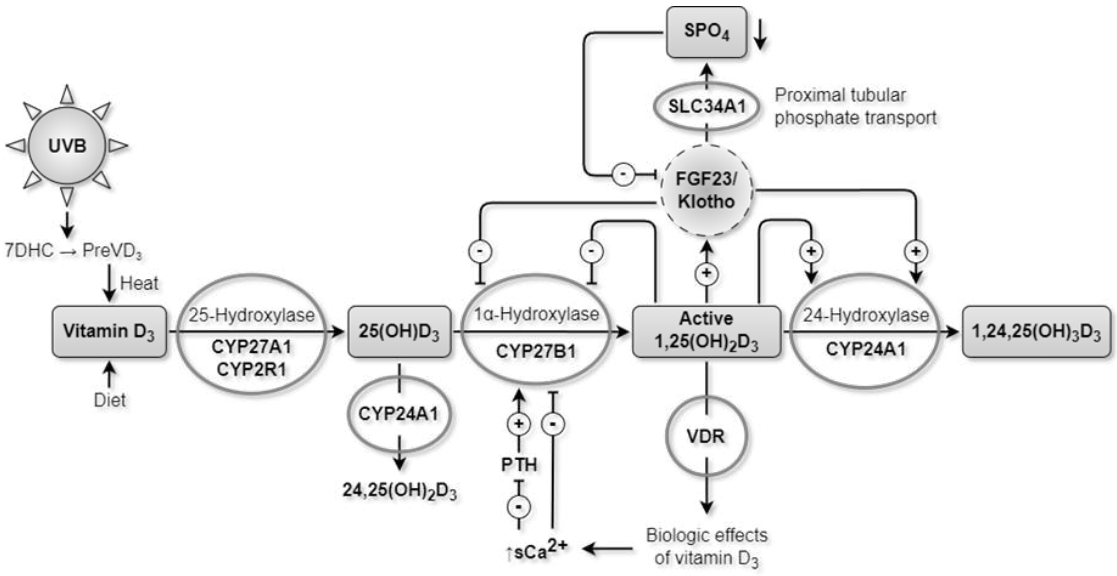

Figure 1. Vitamin D metabolism. Mutations of genes CYP27A1, CYP2R1, CYP27B1, and VDR cause rickets or autoimmune conditions. Mutations of genes CYP24A1 and SLC34A1 lead to organ calcifications.

Biography

Ulla Marjatta Järvelin is a medical doctor by education specializing in emergency medicine and general medicine. She has worked as a health center doctor for a long time and for the last 13 years before her retirement as an emergency clinic doctor at Tampere University Hospital. She has also worked in the vitamin D research group at Tampere University for some years.

She has familiarized herself with anthroposophic medicine during study trips in Sweden, Switzerland, and Germany, and she has also worked as a school doctor at Waldorf Schools for many years.

She has been interested in Vitamin D for a long time. Its use is generally well-established, especially in infants for rickets prophylaxis, expectant mothers, and the elderly. However, using vitamin D also has disadvantages, and now that she is retired, she has finally had the time to familiarize herself with this matter.

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Depression in Pregnant Non-Diabetic Women and Women with Gestational Diabetes in Bangladesh – A Comparative Study Based on Multiple Logistic Regression

Kaniz Fatimah

American International University Bangladesh, Bangladesh

Background: Pregnancy can be challenging for women dealing with depression and gestational diabetes mellitus (GDM). While much of the existing literature focuses on depression before pregnancy or postpartum depression, there is a lack of research specifically addressing antenatal depression in women with GDM. This study aims to bridge this gap by investigating and comparing antenatal depression in pregnant women with and without GDM in Bangladesh, using data collected during the gestational period.

Methods: A cross-sectional study was conducted among 111 pregnant women, including 66 with GDM and 45 without GDM, at BIRDEM-2 GENERAL HOSPITAL, Dhaka, from September 2017 to March 2018. Data was collected through semi-structured interviews covering socio-demographic information, obstetric history, diabetes status, and depression symptoms.

Results: The study found varying levels of antenatal depression in 61.3% of participants, with 27% experiencing mild depression, 4.5% moderate depression, and 29.7% severe depression. Among non-diabetic women, 24.4% had depression, while 86.4% of women with GDM experienced depression. Exploratory analysis indicated that factors such as age group, menstrual history, and GDM status had a significant impact on depression. However, multiple logistic regression analysis identified GDM as the primary factor influencing depression, while socio-demographic factors did not show statistical significance.

Conclusion: The presence of GDM increases the risk of antenatal depression in pregnant women. Screening for depression and providing appropriate treatment for women diagnosed with GDM is crucial.

Biography

Dr. Kaniz Fatimah graduated with an MBBS from the University of Dhaka In July 2011, specifically from the Medical College for Women and Hospital in Dhaka, qualifying as a doctor in Bangladesh. She became a Consultant Assistant in a hospital. At the same time, she pursued postgraduate Diplomas in "Family Medicine" and "Medical Ultrasound Diagnosis." In July 2018, she earned a Master's in Public Health, majoring in Epidemiology, from the American International University-Bangladesh.

Following this, Dr Fatimah relocated to the UK, where she successfully passed her PLAB exams and obtained GMC registration to practice. Since October 2023, she has worked full-time for the Lewisham and Greenwich NHS Trust as a Junior Clinical Fellow (SHO Level) in General Medicine. Additionally, she teaches medical students affiliated with the Trust.

Modelling Dynamic Spreading of Covid-19 Cases in Hong Kong: A Semiparametric Spatio-Temporal Zero-Inflated Poisson Analysis

Zudi Lu and **Weiao Gan**

Department of Biostatistics, City University of Hong Kong, China

Spatial epidemiology is an exciting research field that combines epidemiology with spatial analysis through analyzing the spatial distribution of disease incidence. A typical example of it is the covid-19 pandemic crisis. To control disease spreading and facilitate resource management for it, it is critical to understand how diseases are spreading and distributed across geographical areas and identify dynamic patterns of disease development. In fact, the COVID-19 pandemic had a profound impact on the lives, work and mobility in Hong Kong. Although Poisson regression analysis of the covid cases number is popular, it cannot well consider the daily zero cases. Further, the first confirmed case in Hong Kong that was reported on 21 January 2020 involves a traveller entering Hong Kong from Shenzhen, Guangdong Province. It is hence crucial to understand the neighbouring impacts of the cities in Guangdong on the disease spreading in Hong Kong. In this paper, we hence aim to propose a semiparametric spatio-temporal zero-inflated Poisson autoregressive (ZIPAR) analysis to address the zero cases and the neighbouring effects in modelling of the covid-19 cases in Hong Kong.

We have developed the statistical procedures with estimation properties and algorithms for the extension of spatial ZIP to semiparametric spatio-temporal setting of zero-inflated mixture Poisson autoregressive models. The performances of the procedures are examined by Monte Carol simulations. Its application to modelling of the covid-19 cases in Hong Kong is further studied and demonstrated. We conclude that our proposed method can work well as shown by the Monte Carol simulations, and the semiparametric spatio-temporal ZIPAR models outperform the corresponding Poisson modelling, and spatial neighbouring effects from the neighbouring cities to Hong Kong are significant.

Hong Kong as an international metropolitan city has close connections with the world. Analyzing the diseases spreading not only locally but also internationally is worth further investigation.

Biography

Prior to joining the Department of Biostatistics at City University of Hong Kong as a tenured Professor in July 2024, Zudi Lu was working with the University of Southampton as a Professor/Chair in Statistics from late 2013 to July 2024 in the UK. He had also worked at international academic institutions with the University of Adelaide (2009-2013) and Curtin University (2006-2009) in Australia, the London School of Economics (2003-2006), UK, the Academy of Mathematics and Systems Science (1997-2003) in Beijing, China, and the Universite Catholique de Louvain (1996-1997), Belgium, after receiving his PhD degree in Statistics in 1996 from the Chinese Academy of Sciences. Zudi was a recipient of the ARC Future Fellowship Award (Australian Distinguished Young Scientist Fund) in 2010 and the Marie Curie Actions (People) Grant Award as a Marie Curie Fellow from the European Commission in 2014. He is an elected member of the International Statistical Institute.

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Severe Re-Impacted Deciduous Tooth in 25-Years-Old Female With Permanent Dentition Associated to High-Risk Oral-Sinus Communication Surgery: A Rare Case Report

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[1]Professor of Oral Surgery and Oral Pathology, Department of Dentistry in Mohamed V Instruction Military Hospital, Morocco
[2]Faculty of Dentistry in Rabat, Department of Oral Surgery, Mohammed V University of Rabat, Morocco
[3]Resident of Oral Surgery and Oral Pathology, Department of Dentistry in Mohamed V Instruction Military Hospital, Morocco
[4]Faculty of Dentistry, Department of Oral Surgery, Mohammed V University of Rabat, Morocco

Re-impaction of a teeth has been defined “as a condition in which a previously erupted tooth becomes submerged in the tissues “[J.J Pondborg]. Other terms used in the literature similar to re-impaction are: secondary retention, half retention, submergence, re-inclusion.

The total re-impaction of primary tooth is a very uncommon phenomenon and few cases have been reported in the literature. “Re-Impaction of deciduous tooth ” is a rare phenomena involving more often mixed denture than permanent dentition.

The purpose of this work is to describe a rare primary second molar re-impaction discovered in a young women with permanent denture.

A 23-year-old female presented to the Oral Surgery Department. She was referred by her orthodontist for germectomy of wisdom tooth, and the removal of right impacted maxillary second premolar.

Intraoral examination revealed the presence of a diastema between the first molar and right canine due to the absence of the two premolars. We also noticed the mesial inclination of the maxillary right first molar and a distal inclination of the first premolar the vestibular palpation did not detect any curve.

The orthopantomographic examination revealed the impacted tooth. A CBCT revealed a tooth with three divergent roots and the intramaxillary sinus position of two roots (palatal

and vestibular).

Under local anesthesia, mucoperisotal flap allowed the exposure of the impacted tooth. Maxillary sinus cavity was visualized directly after the tooth removal. The tooth crown present an occlusal decay cavity and resembles the decidious maxillary molar with three roots rather than the second permanent maxillary premolar.

The clinicians must be aware that late discovery and managing of re-impacted deciduous tooth can be in risk of causing permanent dental injury.

Biography

- Professor of higher education in oral surgery, Faculty of Dentistry of Rabat, Mohamed V university in Rabat Morocco
- Former Head of the Department of oral Surgery and oral pathology at the Faculty of Dentistry of Rabat, Mohamed V university in Rabat Morocco
- Member of the Evaluation Committee of the Faculty of Dentistry of Rabat
- Former member of the Research Committee of the Faculty of Dentistry of Rabat, Morocco
- Member of the Laboratory of Biostistics and Clinical Research and Epidemiology of the Faculty of Medicine and Pharmacy of Rabat Morocco
- Former Attached dentist in Oral Surgery Department of the Faculty of Dentistry of Strasbourg France
- University Diploma “Dental Care under Conscious Sedation” Strasbourg, France 2005
- University Diploma “Biostatistics and Clinical Research Methodology,” Morocco 2008
- University Diploma “Medical Pedagogy” Faculty of Medicine and Pharmacy, Rabat, 2010
- University Diploma “Methods in Clinical Research”, ISPED, Bordeaux, France 2016
- Author and co-author of several publications:

“Impacted lateral incisor associated with compound odontoma: a rare case report”

Chirurgia 2020

“An unusual localization of maxillary periapical cemento-osseous dysplasia: a case report” European Journal of Oral and Maxillofacial Surgery 2021 December;5(3):128-30 5.

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Idiopathic failure of eruption: Diagnosis and management dilemma Advances in Oral and Maxillofacial Surgery 6 (2022) 100259 8.

Quality of life after extraction of mandibular wisdom teeth: A systematic review. Annals of Medicine and Surgery 81 (2022) 104387 9.

Is the combination of pentoxifylline and tocopherol really effective in the treatment of drug-induced osteonecrosis of the jaws? Literature review. Advances in Oral and Maxillofacial Surgery 8 (2022) 100345

Severe re-impacted deciduous tooth in 25-years-old female with permanent dentition associated to high-risk oral-sinus communication surgery: a rare case report. Annals of Medicine & Surgery 86(3):p 1664-1668, March 2024.

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Antimicrobial Susceptibility Patterns and Molecular Detection of *Enterococcus* in Patients with Urinary Tract Infection: Experience in a Tertiary Care Hospital in Bangladesh

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[1]Department of Microbiology, Monowara Sikder Medical College, Bangladesh
[2]Department of Medicine, Sylhet MAG Osmani Medical College, Bangladesh
[3]Department of Microbiology and Virology, Sylhet MAG Osmani Medical College, Bangladesh

Objectives: One of the most prevalent infectious diseases identified in both communities and hospitalized patients is urinary tract infection (UTI). *Enterococcus* is evolved into a clinically pertinent uropathogen due to its evolving resistance to multiple antimicrobial agents. This study, detects antimicrobial susceptibility patterns and molecular detection of *Enterococcus* species from patients with urinary tract infections.

Methods: In this cross-sectional observational study, 165 urine samples were obtained from clinically diagnosed patients with UTIs of different ages and gender. *Enterococcus* species were identified by standard microbiological procedure and PCR (by using species-specific primers for *Enterococcus faecalis*). A modified Kirby Bauer Disc diffusion method was used to identify the antimicrobial susceptibility pattern following Clinical and Laboratory Standards Institute (CLSI) guidelines.

Results: Out of 165 urine samples, 134 samples yielded positive cultures. *Enterococcus* species were isolated from 23 (17.1%) urine samples. Among all Enterococcus, 16 (69.6%) isolates were *E. faecalis*, detected by PCR assay. A higher (30.4%) proportion of *Enterococcus* positive patients were from the age group 48-57 years and female patients (78.2%) had a higher prevalence. Enterococcal infection was found in 56.5% of non-catheterized patients and 43.5% of catheterized patients. Vancomycin and linezolid (78.3%) and meropenem (73.9%) sensitivity was prevalent among all *Enterococcus* species. They showed 100% resistance towards ceftriaxone, cefixime 95.7%, cefuroxime 91.3%, azithromycin 82.6%.

Conclusion: This research indicated the occurrence of *Enterococcus* species and the advent of multidrug-resistant *E. faecalis* in patients with UTIs. Routine speciation and antimicrobial susceptibility testing of *Enterococcus* in various clinical samples is encouraged.

Biography

Dr. Nahla Islam Neeva holds the position of Associate Professor (CC) and Head of the Department of Microbiology at Monowara Sikder Medical College, Bangladesh. She is a dedicated medical microbiologist with a robust academic background and extensive experience, specializing in molecular diagnostics and infectious disease research. Dr. Nahla earned her M.Phil. in Microbiology from Sylhet MAG Osmani Medical College.

With substantial hands-on experience in real-time RT-PCR, particularly for the SARS-CoV-2 virus, Dr. Nahla has established herself as an expert in the field. She also serves as an external examiner for Microbiology courses at various medical colleges across Bangladesh. She is a life member of the Bangladesh Society of Medical Microbiologists. Her commitment to advancing molecular biology and infectious disease research drives her continuous pursuit of learning and innovation in the field.

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Cervical Health for a Lifetime: Smartscope a New Armamentarium

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[2]Department of Obstetrics and Gynecology, Shri Jagannath Medical College and Hospital, India

Background: Cervical cancer is a major contributor to mortality and morbidity in women. PAP test is commonly used for cervical cancer screening having low sensitivity and subjectivity, lack of permanent record and over estimation. Here, Smartscope visual screening test is compared with PAP test. This study aims to compare SS test with PAP and its management in resource limited countries.

Introduction: Every year a total of 5,69,847 new cases of cervical cancer are detected globally with approximately 3,11,365 deaths. About 85% of these deaths occurred in low and middleincome countries. In India, there are about 123,907 new cases detected annually. The high mortality rate from cervical cancer globally can be reduced through a comprehensive approach that includes primary prevention, effective screening and treatment programs. Cervical cancer is a major contributor to mortality and morbidity in women. PAP test are commonly used for cervical cancer screening. Both tests have inherent limitations like 50% low sensitivity (PAP test) and subjectivity in interpretation, lack of permanent record and overestimation. Here, Smartscope visual screening test (SS test) was compared with PAP tests. The Smartscope is a noninvasive handheld device that can detect cervical abnormalities in less than ten minutes, with the aid of a tablet and an intuitive app. The test result is color-coded and supplemented by a visual report. Smartscope diagnoses precancerous lesion with a sensitivity of 80 to 85 percent, which is almost double that of the PAP smear test in some cases where laboratory equipment or expertise may be spotty. Effective screening is a powerful tool to reduce the burden of mortality and morbidity of cervical cancer. The objective was to screen all women in reproductive age group as well as high risk cases.

Materials and Methods: A prospective observational study conducted at MKCG MCH OPD over 8 months. About 204 women in the age group 25–65 years underwent PAP and SS test. Screen positive on any one test were subjected to colposcopy and biopsy.

Results: Out of 204 screened patients, 76 women were found PAP positive and 104 were tested positive through Smartscope (VIA and VILI), of which about 85 patients underwent thermal ablation and symptoms resolved in 63 of them. Out of 21 patients who underwent cervical biopsy showed a maximum of 58.6% as CIN I, 13.7% of CIN II with no case suggestive of advanced cancer. These patients were treated on the basis of SEE and TREAT approach and followed up.

Conclusion: SS test has greater potential as a primary screening test in low resource setting due to its better sensitivity and NPV as compared to PAP test.

Biography

Dr. Indira Palo, W/o- Dr. Sura Kishore Mishra from Berhampur, Ganjam, Odisha, India. And presently working as an Associate Professor in the Department of Obstetrics & Gynaecology, MKCG Medical College & Hospital, Berhampur, Ganjam, Odisha, India. After completing her graduation (MBBS) and post-graduation (MD Obs. & Gynae.) from this institution, she has also appointed as a Senior Resident, Assistant professor in the same Department. Teaching is her passion and has completed reputed advance course in Medical Education. Her area of interest is High Risk Pregnancy, USG & Laparoscopy and Preventive Oncology. She the Secretary of Berhampur O&G society and has membership of various learned bodies like FOGSI, IMA, ISAR, SFM, IAGE & Rotary. She has 20 Research Papers publications in various National / International Journals of repute to her credit. She has keen interest in academic activities and presented research papers as Guest Speaker in various Conferences/ Workshops/ CME/Training Programs held across the country.

Herlyn-Werner-Wunderlich Syndrome – Rare but Remediable with Early Diagnosis

Madhumitha J[1] and **Rituparna Baruah**[2]

[1]Panimalar Medical College, India
[2]Srimanta Sankardeva Hospital and Research Institute, India

Objective: To raise awareness about HWW/OHVIRA syndrome among family and general physicians

Scope: A detailed case presentation with clinical work up, history, imaging studies used to confirm the diagnosis, exact surgical intervention taken to reverse the anatomical defect and restore normal physiological function with post op follow up.

Results: With Early diagnosis and surgical intervention, the prognosis is good.

Method: Laparoscopy assisted vaginoplasty

Conclusion: HWW/OHVIRA is a relatively rare congenital anomaly which is often misdiagnosed due to variable presentation. Delayed diagnosis and intervention can have devastating health consequences which are preventable with high index of suspicion and awareness of this condition.

Biography

Madhumitha J

Dr. J. Madhumitha is working as an Assistant Professor in Panimalar Medical College, Chennai, Tamil Nadu. She acquired her Post-Doctoral Fellowship in Endogynecology in Apollo Hospitals Chennai, affiliated with MGR University, Tamil Nadu. She did her MBBS in 2007 in Father Muller Medical College, RGUHS, Karnataka. She completed DGO in 2018 from JJM Medical College, Davangere, RGUHS, and her Secondary DNB OBG in 2021 from Apollo Hospitals, Chennai. She completed her Senior Residency in Shree Balaji Medical College, Chennai in 2022. She has worked as Associate Consultant Gynecologic surgeon in Multispecialty Surgical Camps held in Himachal Pradesh Districts (Joint Venture of NRHM and Aakash Hospitals, New Delhi) in 2022. She is a member of OGSSI, IAGE and AAGL.

Rituparna Baruah

Dr. Rituparna Baruah is a Practicing OBGYN and Laparoscopic surgeon at Aditya super speciality hospital Assam. She acquired her Post-Doctoral Fellowship in Endogynecology in Apollo Hospitals Chennai, affiliated with MGR University, Tamil Nadu, did her MS OG from Guahati medical college, Assam, India.

Integrating Sensory Modalities and Technologies in Artistic Contexts: A New Frontier for Preventive Medicine and Public Health

Piper Hutson

Lindenwood University, USA

This research explores the innovative intersection of neuroscience, sensory modalities, and emerging technologies to reshape preventive medicine and public health through tailored artistic experiences. By leveraging advances in Augmentative and Alternative Communication (AAC) systems, haptic feedback, virtual and augmented reality (VR/AR), and generative AI, we can create sensory-rich interventions that are personalized to individual sensory profiles and aesthetic preferences. Utilizing these technologies, we can design immersive environments that stimulate and engage the senses in ways that promote both mental and physical well-being. For example, VR/AR platforms can be used to create therapeutic art spaces that cater to neurodivergent individuals, while haptic feedback and AAC systems offer more inclusive communication channels for those with speech or motor impairments. Generative AI can further personalize these experiences, adapting to users' real-time feedback to enhance emotional and cognitive engagement. Grounded in NeuroArts and the principles of Sensemaking, this talk will highlight how sensory-informed strategies—enhanced by these technologies—are breaking new ground in preventive health, creating more engaging, accessible, and effective public health interventions. Attendees will gain insights into the future of healthcare, where tailored art and sensory experiences contribute directly to disease prevention, emotional regulation, and enhanced community health outcomes.

Biography

Piper A. Hutson, EdD, is distinguished in neurodiversity, art history, and education, blending these disciplines to promote inclusivity in art and urban spaces. Holding a Doctor of Education, focusing on adult learning and art history, and is an Arts and Health Specialist at the Missouri Arts Council. With a background in both art history and neuroscience, Piper is dedicated to advocating for neurodivergent individuals, emphasizing

the importance of accessibility and inclusion in arts and healthcare spaces. Her work spans developing tailored art experiences for diverse communities, creating sensory-friendly environments, and promoting interdisciplinary collaborations between artists, neuroscientists, and public health professionals. Piper is also actively involved in initiatives focused on veterans, neurodivergent women, and the aging population, using the arts as a tool for healing and community engagement. She frequently speaks on topics related to NeuroArts, sensory modalities, and how art can transform healthcare systems. Piper is currently working on projects that blend adaptive printmaking, neuroplasticity, and therapeutic environments to improve emotional and cognitive well-being for all.

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Fixation of Depressed Posterolateral Tibial Plateau Fractures Using a Direct Lateral Approach

Reza Noktehsanj[1], Keyvan Amini[2] and **Payman Amini[3]**

[1]Department of Surgery and Orthopedics, Ardabil University of Medical Sciences, Iran
[2]Department of Emergency, Ardabil University of Medical Sciences, Iran
[3]School of Medicine, Ardabil University of Medical Sciences, Iran

Fixation of plateau posterolateral fracture (PLF) is challenging because the fracture site is mostly covered by vital neurovascular structures. We operated on 15 cases of PLF using a direct lateral approach. Between 2017 and 2019, 15 cases of PLFs were fixed with a direct lateral approach and a tricortical autologous bone graft from the iliac crest. A depression of more than 2 mm was indicated for the surgical treatment. Clinical evaluation included Lysholm score, International Knee Documentation Committee Score (IKDC) score, and Tegner activity scale. The last follow-up was at 24 months after the operation. The mean postoperative Tegner activity scale did not change significantly compared to before the injury (6.5 (6–7) vs. 7 (6–8, $p = 0.5$)). The postoperative IKDC and Lysholm scores improved significantly compared to before the operation ($p < 0.001$). The full range of motion was seen in all patients except one who was manipulated after three months. Surgical treatment using a direct lateral approach is a safe procedure for PLFs that results in good, short-term clinical and radiologic outcomes without fibular osteotomy or compromising the important neurovascular structures. This study offers a less invasive with better exposure and direct reduction of the fracture fragments in PLFs. The advantages of the presented lateral approach include a direct vision for anatomic reduction, the ability to dispense with fibular osteotomy, and the preservation of soft tissue around the posterolateral corner of the tibia plateau.

Biography

Dr. Reza Noktesanj is an Assistant Professor at Ardabil University of Medical Sciences, Iran. He is an orthopedic surgeon and holds a fellowship in knee replacement surgeries. Additionally, Dr. Noktesanj serves as the Education Deputy at Ardabil University of Medical Sciences.

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Unveiling the Recent Approaches of Paddy Rice Against *Helminthosporium Oryzae* Disease

Shabana Memon[1], Ghulam Hussain Jatoi[2] and **Babar Ali Shaikh[3]**

[1]Faculty of Crop Production, Department of Plant Breeding and Genetics, Sindh Agriculture University Tandojam, Pakistan

[2]Faculty of Crop Protection, Department of Plant Pathology, Sindh Agriculture University Tandojam, Pakistan

[3]Scientific Officer, Agriculture Research Center, Pakistan

Rice is a significant crop consumed by most of the human population. The consumption of rice is increasing day by day in an alarming situation, especially in Asian countries. The scarcity of paddy rice due to biotic disasters has been prolonged due to global warming and climatic fluctuations. One of the major problems occurring in paddy rice is brown spot disease. This fungal disease causes severe infestation on the leaves, placing brown spot lesions in the center of the leaves causing severe loss in yield. In this situation, research was conducted in the Department of Plant Pathology, Sindh Agriculture University, Tando Jam, to emphasize the harmful effects of brown spot disease on paddy rice and its remedies through various advanced research. Isolation and purification of various genotypes of rice were examined and a pathogenicity test of predominantly isolated fungus was reported. In this study, various fungicides were used to evaluate the effect on the isolates which may inhibit the growth of this disease. The seeds of rice were treated with various treatments: hot water (53-540C) for 10-12 minutes before planting (controlling primary infection), azoxystrobin, propiconazole, and melody. Inhibition of fungal disease was observed effectively with 150 and 200 ppm azoxystrobin (35.22 mm). However, propiconazole was moderately affected (10.00 mm) and Melody was less effective (13.46 mm), respectively. Among four fungicides azoxystrobin proven to be more effective in inhibiting the growth of brown spot disease. Hence, the efficacy of various fungicides would be helpful to control the harmful disease in paddy rice.

Biography

Shabana Memon is working as an Associate Professor in the Department of Plant Breeding and Genetics, at Sindh Agriculture University, Tando Jam, Sindh, Pakistan. She was born in England, and she is a British Citizen but live in Sindh, Pakistan. Her basic education started at St. Patrick's Girls High School, Karachi. For her Bachelor's and Master's Degrees, she was enrolled in Plant Breeding and Genetics, at Sindh Agriculture University, Tando Jam, and secured 1st position, during her Master's with a score of 90.14%. She has awarded with the 'Chancellor Gold Medal' and the Silver Giltage Medal. Furthermore, she was awarded the 'Star Laureate Award' and 'Life Millennium Award' along with shields. She went to China at Nanjing University, Nanjing, and was awarded a Ph. D Degree in Molecular Biology, from the School of Life Sciences in 2015. For, eighteen years she has been serving in this Department, possessing more than 80 scientific research publications, 04 Ph. D students, >50 Master's students, 55 national conferences, 35 trainings/workshops, 02 research projects, members in scientific research & editor in journals.

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Prospect of Scanning Electron Microscopy and Energy Dispersive X-ray (SEM-EDX) Technique for the Rapid Detection of Pathogens

Muhammad Saiful Islam Khan[1] and **Yunji-Kim**[2]

[1]Central Asian University, Uzbekistan
[2]Korea Food Research Institute, Republic of Korea

The demand for rapid, consistent and easy-to-use techniques for detecting and identifying pathogens in various areas, such as clinical diagnosis, the pharmaceutical industry, environmental science and food inspection, is very crucial. In this study, the reference strains of six frequently encountered food borne microbes, specifically, *Salmonella Typhimutialrium* ATCC 43971, *Escherichia coli* 0157: H7 ATCC 43890, *Cronobacter sakazakii* ATCC 29004, *Bacillus subtilis ATCC* 14579, *Staphylococcus aureus* KCCM 40050, and *Listeria monocytogenes* ATCC 19115, were chosen for scanning electron microscopy (SEM) and energy dispersive X-ray (EDX) analysis. SEM analysis requires a tedious sample preparation stage that was avoided in this analysis and hence the identification procedure becomes remarkably fast. In order to avoid any charging effect a metallic substrate such as silver (Ag) foil was used to hold the microbial cells in sample holder. The thickness of the Ag foil used was a 0.01 µm. The elemental data for individual single cells were obtained from EDX at two different excitation voltages such as 10 kV and 5 kV. Principal component analysis (PCA) was performed for the individual elemental data of each microbe obtained from EDX. PCA data analysis shows six different clusters for six different pathogens analysed in this study. The morphological and elemental information found from SEM-EDX analysis in combination with PCA allows the fast detection and identification of single microbial cells instead of carrying out the lengthy microbial cultivation technique. The combination of morphological and elemental information can also differentiate between viable and nonviable cells.

Biography

Muhammad Saiful Islam Khan has completed his PhD in 2017 majoring in Food Biotechnology from Korea University of Science and Technology and postdoctoral studies from Korea Food Research Institute, Republic of Korea. He is among few individuals who were granted several scholarships, awards and/or fellowships through his educational and professional achievements. At present, he is working as an Associate Professor under the faculty of Medicine at Central Asian University, Tashkent, Uzbekistan. He has published more than 15 articles in high impact journals. Professor Yun-Ji Kim completed her PhD studies from Utah State University in 1991. She has published more than 60 journal articles. She is food hygiene specialist and working with Korea Food research Institute as a Principal Researcher and adjunct faculty at Food Biotechnology department in Korea University of Science and Technology, Daejeon, Republic of Korea.

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DAY 02

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Real Life Data Important to Make Appropriate Choices at the End of Life in Patients with Pancreatic Cancer

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Introduction: Pancreatic cancer is one of the five most common causes of cancer mortality in developed countries. In patients with metastatic disease, the most frequent treatment used is FOLFIRINOX, which is associated with moderate toxicity which could influence quality of life. The efficacy of FOLFIRINOX in a general population in the Netherlands has not been subject of research before, and therefore, this research has been set up in order to investigate what the real-life benefits of FOLFIRINOX are in a population with metastatic pancreatic cancer (mPC) treated in three general hospitals in the Netherlands.

Methods: The data used in this study was collected by patient records leading to a noninterventional retrospective cohort study. Eighty-six patients, over 18 years of age, diagnosed with mPC between the years 2015 and 2022 and treated with FOLFIRINOX at Maasstad Hospital in Rotterdam, Amphia Hospital in Breda, or Catharina Hospital in Eindhoven, were included in the study. Kaplan-Meier models were used in order to represent survival outcomes.

Results: The results showed a median overall survival of 228 days (IQR 118–355). Only 14.0% (n = 12) completed the first-line treatment, and 51.2% (n = 44) of patients stopped treatment before or during cycle 6. Toxicity is highest, grade 3, after the first cycle but remains high for grade 1 and 2 during all treatment cycles.

Conclusion: Survival rates for patient with metastatic pancreatic cancer treated with FOLFIRINOX were worse in our study population than in comparative studies.

It is evident that results from trials cannot always be directly translated to daily practice. It is therefore necessary to check after approval whether new drugs live up to their expectations. And thereby, should we not be more critical in offering treatment to patients with such a poor life expectancy and focus more on the quality of life?

Biography

Brigitte C.M. Haberkorn, Internist-oncologist at the Maasstad hospital in Rotterdam since 2013. Also registered as an internist in geriatric medicine since October 1, 2024. Areas of interest; Gastrointestinal and Urogenital Malignancies. Key areas; Geriatric oncology and Common Sense Oncology (appropriate care).

Transforming Healthcare through Adaptive User Interfaces andAI-Driven Solutions

Randy Lin

Algoma University, Canada

The integration of Large Language Models (LLMs), such as GPT-4, is reshaping preventive medicine and public health by creating adaptive, personalized, and accessible healthcare solutions. Central to these advancements is the Adaptive User Interface Framework (AUIF), which serves as the foundation for multiple innovations. AUIF leverages LLMs to adjust healthcare user interfaces in real time, enhancing patient engagement by personalizing content, simplifying medical information, and addressing cultural and accessibility needs.

Building on the AUIF, two major developments in telehealth are transforming patient care. First, emotion-sensitive telehealth systems use LLMs to detect patient emotions in real time, adapting virtual interactions and creating calming environments to reduce anxiety. Second, dynamic content personalization enables telehealth platforms to adjust information and interface elements based on patient needs, improving health literacy and adherence to preventive care.

The second set of innovations focuses on multimodal-based technologies. For underserved populations, LLM-powered voice systems provide healthcare access through traditional telephone lines, eliminating the need for internet connectivity. This allows patients in remote areas to book appointments and receive information via voice commands. For individuals with visual impairments, vision-enabled navigation systems guide users through complex indoor spaces, such as hospitals, by processing real-time visual data and providing audio cues, enhancing independence and accessibility.

The AUIF's adaptability ensures that healthcare systems can be tailored to meet the diverse needs of various populations. Some solutions intersect multiple themes. For example, the voice-driven system not only enhances accessibility for rural communities but also

leverages adaptive interfaces to personalize user interactions. Additionally, the GPT-based solution for small clinics addresses the digital struggles faced by resource-limited healthcare providers, offering cost-effective, AI-driven automation for appointment scheduling and administrative tasks.

These innovations collectively demonstrate how AI-driven adaptive systems can make healthcare more inclusive, scalable, and effective for underserved populations and small healthcare providers alike.

Biography

Dr. Lin joined the School of Computer Science & Technology at our Brampton campus as a full-time faculty member in April 2023, bringing with him a rich background in AI, healthcare technology, and a deep commitment to community engagement. He received his Ph.D. from the University of Saskatchewan in 2023, where he notably collaborated with multiple Indigenous communities. Prior to joining Algoma, he was an Assistant Professor at Thompson Rivers University and also gained significant industry experience as a professional engineer. Dr. Lin's research interests encompass AI in healthcare and adaptive interface design. He is currently collaborating with healthcare providers in Northern Ontario, aiming to improve healthcare delivery quality and efficiency. Eager to share his expertise and passion for AI, Dr. Lin is looking forward to fostering cutting-edge projects with his colleagues and students and inspiring them to explore careers in this dynamic field.

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Individuals' Food Preferences can be Influenced by the Music Styles: An ERP Study

Dingyue Tian[1,2], Ziyuan Xu[3], Han Yan[4], Bijie Tie[1], Wen Zhao[5,6], Yuanluo Jing[1], Yazhi Pang[1], Xiaolin Liu[7], Jia Zhao[1,8] and **Yong Liu[1,8]**

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[4]Faculty of Education, Department of Educational Psychology, East China Normal University, China
[5]School of International Studies, Civil Aviation University of China, China
[6]Faculty of Education, Southwest University, China
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Studies have shown that a cross-modal association between listening to music and eating. This study aims to explore the influence of music style on individuals' food preferences and provide evidence for understanding multi-sensory research. Twenty-seven participants participated in the experiment which consisted of two parts. First, participants completed basic demographic information, followed by a food choice task after exposure to four different music styles: classical, jazz, rap, and rock, with ERP data recorded simultaneously. The behavioral results showed that participants selected more high-calorie foods after exposure to jazz and rock music compared to low-calorie foods. Additionally, during jazz and rock music, participants selected more high-calorie foods, while they favored low-calorie foods during classical music. The ERP results showed that the N1 amplitudes were smallest during the food choice task following the classical music and greatest during the food choice task following the rock music, while the N450 amplitudes were smallest during the food choice task following the jazz music. P2 amplitudes were smallest during the food choice task following the rock music and greatest during the food choice task following

the classical music, and P3 amplitudes during the food choice task following jazz music were the greatest. The aforementioned ERP differences were observed irrespective of food choices. However, we did not find a significant interaction between foods (high and low-calorie) and music. Pearson correlation analysis revealed a positive relationship between body satisfaction and P3 amplitudes for classical, jazz, and rock music, with BMI negatively correlated with body satisfaction. This study provides innovative practical perspectives for healthy eating.

Biography

Dingyue Tian is slated to pursue her master's degree in Biomedical Engineering at the Chinese Academy of Medical Sciences and Peking Union Medical College. She will obtain a Bachelor's degree in the domain of Psychology from Southwest University, from which she is set to graduate in 2025. Her areas of research interest primarily center on Multi-sensory and ERPs. Additionally, she has a profound interest in the Dermatology Database. In her academic endeavors, Tian is dedicated to leveraging her knowledge and skills to make significant contributions to the field of Biomedical Engineering.

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Low-Frequency Magnetic Field Therapy for GBM: Current Advances, Mechanisms, Challenges and Future Perspectives

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[4]Neurosurgical Institute of Fudan University, China
[5]Shanghai Clinical Medical Center of Neurosurgery, China

Objectives: Glioblastoma (GBM) is an aggressive brain tumour with limited treatment options due to the blood-brain barrier and tumour heterogeneity. This review aims to explore low-frequency magnetic fields (LF-MFs) as a non-invasive therapy for GBM, focusing on their potential to inhibit tumour growth, enhance chemotherapy sensitivity, and minimize side effects.

Scope: The review examines the current advances, mechanisms, and challenges of LF-MF therapy for GBM, analyzing preclinical and clinical studies that investigate the effects of various magnetic field parameters on tumour cells and patient outcomes. It also highlights new technologies, such as the superconducting quantum interference device (SQUID), which enhance LF-MF signal accuracy.

Methods Used: A systematic review of preclinical and clinical studies was conducted using databases like PubMed and Web of Science. A total of 41 relevant studies were analyzed to evaluate the impact of LF-MFs on glioma cell apoptosis, proliferation, and chemotherapy response. Data on magnetic field parameters, treatment effects, and underlying mechanisms were extracted and reviewed.

Results: LF-MFs were found to induce apoptosis, disrupt mitochondrial function, and increase reactive oxygen species (ROS) in GBM cells, enhancing their sensitivity to drugs like temozolomide. Key signaling pathways, including p53 and ERK, were regulated by LF-

MFs, promoting antitumour effects. The hypothesis on the mechanisms underlying the effects of LF-MFs on GBM cells suggests that these magnetic fields may influence cellular behavior through complex biophysical mechanisms (Fig.1). The use of SQUID improved LF-MF signal detection, enhancing treatment precision and effectiveness.

Conclusion: LF-MFs show significant potential as an adjunct therapy for GBM, offering a non-invasive approach that can complement existing treatments. However, optimizing magnetic field parameters and further research into their biological interactions are needed to fully realize their clinical potential. Future studies should aim to establish standardized protocols and explore personalized LF-MF applications for improved GBM management.

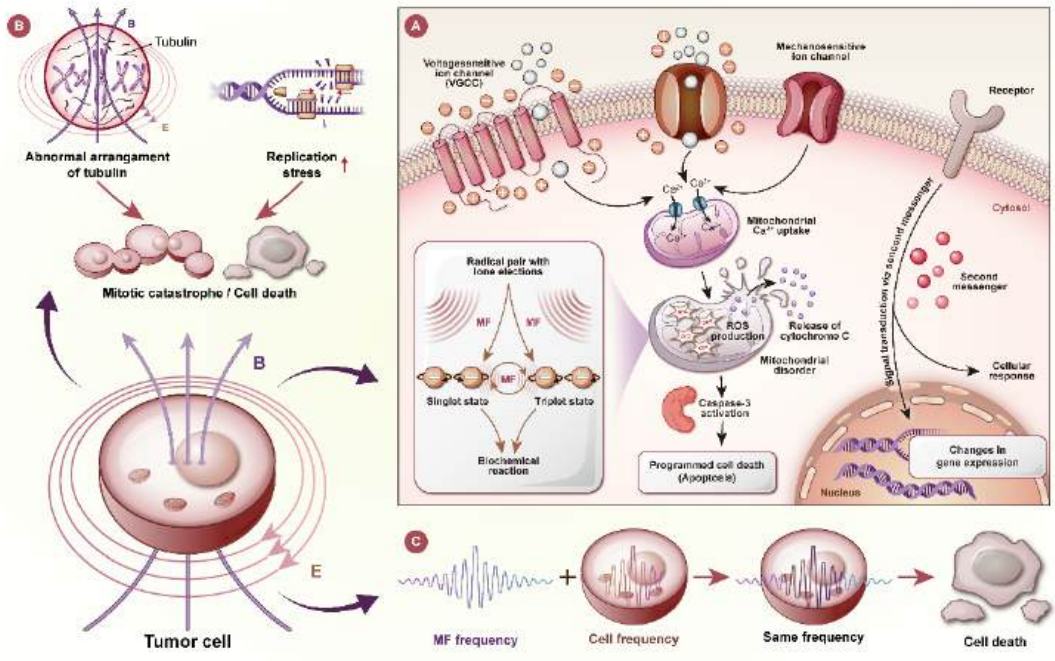

Fig. 1. Hypothesis on the mechanisms underlying the effects of LF-MFs on GBM cells.

A. On the one hand, MFs can not only cause the opening of ion channels, such as voltage-gated Ca^{2+} channels (VGCCs) or mechanosensitive ion channels, but also generate Lorentz forces on moving charged particles, ultimately inducing ion influx, for example, MFs contributes to inducing cancer cell apoptosis by mediating the influx of Ca2+ through the mitochondrial pathway, and mitochondrial energy metabolism can produce paired free radicals or ion free radicals, MFs can inhibit or catalyse biochemical reactions by interfering with the conversion of radical pairs from the singlet state to the triplet state; On the other hand, MFs transmit the signals into cells by influencing the signal transduction mediated by cell receptors, thereby affecting biological effects.

B. MFs can affect the arrangement of tubulin and DNA, thus interfere with mitosis and induce tumour cell death.

C. The resonance effect occurs when the frequency of biochemical reaction mechanism is the same as that of magnetic field signal, and then shows significant biological effect.

Biography

Dr. Zhifeng Shi, M.D. PhD, is Associate Chief Neurosurgeon, Associate Professor of Department of Neurosurgery, Huashan Hospital, Fudan University, and vice-director of Medical Research Institue of Huashan Hospital. He finished his neurosurgical training in Huashan Hospital, Fudan University and specialized in brain tumour surgery. He is also designated as PI in National Neurology Disorder Center, focused on research in the field of “molecular pathology of gliomas”, “AI-based radiomics study on precision medicine in gliomas”and “Immunotherapy for gliomas”. He published several major papers on NEJM, Radiology, Brain Pathology, Neuro-oncology, J Immunother Cancer etc. He was nominated as Changjiang Young Scholar of Education Ministry, awarded as YNS award of World Federation of Neurosurgical Society and first prize of Shanghai Silver Snake Award.

Legal and Compliance Implications for AI Systems using Medical Data under the EU AI Act

Nimród Mike

Corvinus University of Budapest, Hungary

The European Union's Artificial Intelligence (AI) Act establishes a tiered framework for regulating AI systems, based on their potential risks to safety and fundamental rights. This paper examines the categorization of AI systems that process medical data within the Act's risk pyramid, focusing on the legal and compliance requirements for high-risk applications in healthcare. Using a rule-based classification approach, the study assigns AI systems to one of four risk levels—unacceptable, high, limited, or minimal—based on their impact and use case.

Additionally, the paper presents a comparative overview of alternative regulatory frameworks for AI in healthcare, highlighting how they differ from the EU AI Act in addressing transparency, data protection, and ethical concerns. The comparison emphasizes the challenges and benefits of the Act's stringent requirements, particularly for high-risk systems employed in diagnostics, predictive analytics, and personalized medicine.

The study concludes by underscoring the need for a robust classification system that ensures AI systems in healthcare comply with the AI Act's regulatory framework, thereby protecting individuals' rights and promoting ethical AI deployment. This analysis provides key insights for developers and stakeholders aiming to meet the legal and compliance standards required for AI-driven medical applications.

Biography

Nimrod Mike is a seasoned expert in Data Protection and IT Law, with eight years of experience specializing in legal and compliance issues surrounding data privacy, cybersecurity, and emerging technologies. He is an assistant lecturer at the Institute of Data Analytics and Information Systems at Corvinus University of Budapest, where he teaches and contributes to academic research on the intersection of law, technology, and data governance. His work focuses on regulatory frameworks such as the EU AI Act, ensuring the ethical and lawful use of AI and data-driven technologies in various sectors.

Vietnamese Herbal Product (TD0019 – Vai Gay Sao Thai Duong) in the Treatment of Cervical Radiculopathy

Nguyen Thi Huong Lien[1], Nguyen Huu Thang[1], Nguyen Thi Thu Ha[2], Pham Thi Van Anh[3], Nguyen Thi Hong Van[2] and **Bui Thi Song Son[3]**

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[2]Faculty of Traditional Medicine, Hanoi Medical University, Vietnam
[3]Centre of Clinical Pharmacy, Hanoi Medical University, Vietnam

Introduction: Cervical radiculopathy causes chronic pain and reduces patients' quality of life. Oral analgesics are commonly used but only after careful consideration due to their complications. Vai gay Sao Thai Duong, a Vietnamese herbal medicine, composed of Duhuo Jisheng decoction, nattokinase and an extract of Salix alba cortex was evaluated analgesic and anti-inflammatory effects and safety in 04 pre-clinical studies. A phase II study was conducted to provide evidence about the efficacy and safety of TD0019 – Vai gay Sao Thai Duong in the treatment of cervical radiculopathy.

Methods: In pre-clinical studies, analgesic effects of TD0019 were evaluated by Hot Plate model, Dynamic Plantar Aesthesiometer model and Acetic Acid Induced Writhing model, anti-inflammatory activities were evaluated by Carrageenan-induced rat paw edema model and carrageenan-induced peritonitis model.

In the double-blind phase-2 trial, 180 patients with symptomatic cervical radiculopathy were randomized to either group 1 with intended dose of TD0019 – Vai gay Sao Thai Duong, group 2 with a higher dose (1.5 times the intended dose), or group 3, a placebo. The primary efficacy endpoint was the neck-specific disability score according to the Neck Disability Index (NDI) questionnaire. The safety endpoint included adverse events (AEs) and serious adverse events (SAEs). All patients received the drugs for 30 days and were followed for 60 days.

Results: In pre-clinical studies, oral administration of TD0019 at the intended dose and higher dose (3 times the intended dose) had analgesic and anti-inflammatory effects on rats.

In clinical trial, baseline characteristics were similar for the three groups. The reduction of NDI score from baseline to the end of study was greatest for group 2 (from 17.6 ± 7.2 to 4.8 ± 5.1), followed by group 1 (from 16.1 ± 6.9 to 5.4 ± 5.1) and placebo group (from 15.6 ± 6.2 to 7.8 ± 6.8), with a significant decrease for both groups compared to placebo. The percentage of AEs was comparable among three groups and no SAEs occurred.

Conclusions: TD0019 – Vai gay Sao Thai Duong has analgesic and anti-inflammatory effects on rats and was superior to placebo for the reduction of symptoms with similar rates of side effects. The higher dose is more beneficial than the intended dose. This herbal medicine may be a potential alternative analgesic in the treatment of cervical radiculopathy.

Biography

Ms. Nguyen Thi Huong Lien, M.Sc. Pharm., a Distinguished Physician, was born in 1973, in Vietnam. She has been honored with the title of Honorary Doctorate from Apollo University, USA and Honorary Professor at IAU University, USA.

She serves as the Co-founder and Vice President of Sao Thai Duong Joint Stock Company, Vice President of the Vietnam Association of Science and Technology Enterprises, and Vice President of the Vietnam Association of Fragrance, Essential Oils, and Cosmetics.

After graduating from Hanoi University of Pharmacy with a Master's degree in pharmaceutical formulation, she further expanded her expertise in traditional medicine, cosmetics, and management.

As a co-founder of Sao Thai Duong, a brand renowned for its high-quality herbal products, Ms. Lien has played a pivotal role in establishing the company's reputation for an internationally standardized management system and its commitment to scientific and technological innovation. Currently, the company offers over 150 herbal products developed through advanced research and technology. These products are distributed across more than 80,000 sales points in Vietnam and exported to 14 countries.

Ms. Lien is the author of numerous inventions and has received prestigious awards in innovation competitions at both national and international levels. In the field of herbal product research and development, she and her team have conducted 304 studies, including 286 preclinical and 18 clinical trials. Six of these studies have been published in international journals. Notably, she successfully developed SUNKOVIR, Vietnam's first and only herbal medicine for the treatment of COVID-19. This groundbreaking product is recognized on the World Intellectual Property Organization (WIPO) and World Health Organization (WHO) websites for its innovative approach to traditional medicine.

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Integrated Spherical Fuzzy-CRITIC and Spherical Fuzzy–TOPSIS Method in Prioritizing Earthquake Risks and Planning: An Overview in Disaster Management

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Disaster management is a critical field that plays a pivotal role in assessing and planning for earthquake risks to enhance community resilience. In this context, spherical fuzzy method has emerged as an effective tool for improving decision-making processes in complex and uncertain environments. In this study, SF-Critic fuzzy TOPSİS methods are used for the optimization of expert opinions in prioritizing major post-earthquake risks.

The case study consists of three main and nine sub-criteria and five decision makers for prioritizing earthquake risks and necessary planning studies. In the evaluation of these criteria, various parameters ranging from urban landscape, road planning, industrial settlements, evacuation plans, energy and communication networks and infrastructure are used.

Biography

Dr. Emin TARAKÇI is an Industrial Engineer. For more than 13 years, he has worked and continues to work in the fields of pharmaceuticals, chemical industry, energy sector, heavy industry, transportation industry, defense industry. He has provided Engineering Consultancy services to the Ministry of Transport and Infrastructure in Build-Operate-Transfer Projects. Yavuz Sultan Selim Bridge, Northern Marmara Motorway Project and Galata Port projects are among these successful projects. He has worked and continues to work as a senior management consultant, ISO management systems consultant and auditor in various organizations.

In the 50th year of Tarakçıoğlu A.Ş., a family company from the third generation, it has moved its manufacturing factory and all its components to the end-to-end ERP System within the digital transformation project and has switched to renewable energy consumption with solar energy source.

He has been involved in and completed many successful projects such as the Digital Transformation Office of the Presidency, Information and Communication Harmonization Project, 5G, Mobility, Hamle in the Quality and Product Assurance Directorate of Ulak Communication Inc. He has articles, book chapters and conference papers in many reputable journals in national and international literature. He is a scientific referee in the natural and international natural and engineering fields.

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Technology as a Tool to Enhance Development of Skillset in Autistic Individuals: Specific to Female Gender

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[2]School of Information Sciences, University of Illinois at Urbana-Champaign, USA

Engagement of autistic women with their environment as students motivates and ameliorates their integration into the society as self-sufficient individuals. Female gender in general, are striving the battle against gender domination and being differently abled is a further impede to their independence. To thrive independently, they would require empirical education and skill development which would equip them appropriately to live their lives on their own terms, satisfactorily. The underlying in-field research for this paper includes identifying problems which female autistic children and teenagers face while learning, and what could be done to enhance their interest in the same, which would be their first step to an independent life. Upon interaction with the demographic, it was determined, that the autistic students find it most difficult to understand ethical conundrums, social interactions, and honing their fine motor skills which can be overcome by using technology as a tool. Learning support assistants are of the understanding that while autistic students benefit from the use of technology with rapid improvement in their learning speed, they tend to develop a quick attachment to the device being used. Thus, beginning to shun the outer world, which hampers their speed of learning and removes the monitor that teachers need to hold over their learning, essential to their development. Hence, the authors propose a COACH model with a purpose to find a moderate middle-way to use technology to help autistic females enhance their learning capacity thereby influencing their chances of living an autonomous life.

Biography

Dr. Sophia Rahaman, Program Director, Computer Science and IT, School of Engineering & IT, Manipal Academy of Higher Education Dubai, UAE. A researcher and an academician, committed to Quality teaching with a continuing interest in the pedagogy of Computing Education with an experience of 18 + years in academia. Her research interest lies in the field of data mining particularly to e- health, Well Being and Knowledge Management. Her innovative project titled “VI Brain” received a grant from Expo 2020 under the University Innovation Program. Besides this, She has collaborated with Flinders University for projects funded by Council of Australian Arab Relations. She is passionate about women-oriented initiatives and EDI related studies and projects.

Studying Ecotoxicology of the Fungal Culture Filtrates from *Aspergillus Terreus* and *Aspergillus Sydowii* under Polythene Degradation Process

Avinash B. Ade

Department of Botany, Savitribai Phule Pune University, India

Plastic is a routine material extensively used in daily life because of its unique properties of durability, lightness and inertness against the reactive substances. Due these popular properties the usage is tremendous and went beyond the maximum limit which led to accumulation in the ecosystem. The manufacture and disposal balance have not been recovered yet that ultimately lead to the environmental pollution. It not only pollutes the soil but also air and water too. Majority of the plastic waste is naturally mixed with the soil which is circulated in the water with the help of small streams and then deposited in the rivers and the oceans. Thus, from the manufacturing it is being handled by human at every step. After usage the plastic is being dumped in the soil as garbage. After collection in the garbage it is sorted and recycled in various ways. Still the remnants are buried under the soil. These under soil pieces of polythene come in contact with the soil dwelling organisms such as microbes, root systems of the plants and the animals which are residing in the burrows in the soil. Due to various environmental factors such as light, temperature and moisture the strength of the polythene pieces is depleted which are further degraded due to microbial action. It leads to the production of smaller products, which are released in the environment. In order to observe the bioactivity of these products the testing was done on animal and plant system. For animal system the fish Tiger shark was selected. The mortality of these organisms was assessed where it was found that these are safe significantly.

Biography

Avinash B. Ade is working as Senior Professor in the Department of Botany, Savitribai Phule Pune University, Pune. He is working in the field of Bioremediation and Biodegradation of the waste.

Polyethylene & Polypropylene Degradation using Marine Fungi

Rajkumar Kherdekar and **Avinash Ade**

Department of Botany, Savitribai Phule Pune University, India

Plastic is a challenging problem in the world, and its use is increasing daily. Every day plastic is used for packaging food and utensils. Moreover, plastics are also used for the wrapping of solid and filling of liquid materials by various industries. In the present situation, plastics are available in various forms, however, polyethylene and polypropylene are abundantly used. Annually millions to trillions of polyethylene carry bags are utilized in the world. These single-use carry bags accumulate in the environment so pollution occurs. As per the research polyethylene and polypropylene are resistant to environmental factors by natural degradation and therefore need several years. Various physical and chemical methods can carry out plastic degradation, however, these methods are not cost-effective and create environmental pollution by releasing hazardous gases and byproducts. Bio-degradation is the only natural method for plastic degradation. Current investigation deals with the study of polyethylene and polypropylene degradation by treating salt, heat, and acids followed by marine fungi. The fungal spores' adherence and corrosion of the surface indicated the degradation of polyethylene and polypropylene.

Biography

Rajkumar Kherdekar is a research student of the Department of Botany, Savitribai Phule Pune University, Pune, working on the biodegradation of plastic under the supervision of Avinash Ade, Senior Professor, from the same department.

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Nanorobotics in Neurosurgery: Precision, Therapeutic Potential and Future Directions

Mihit Kalawatia

Rajarshi Chhatrapati Shahu Maharaj Government Medical College and Chhatrapati Pramila Raje General Hospital Kolhapur, India

Nanorobotics offers immense potential in transforming neurosurgery, particularly in stereotactic procedures. The objective of this correspondence is to explore the role of nanorobotics in enhancing precision, reducing invasiveness, and targeting therapeutic interventions at the molecular level. The scope of this study includes applications such as targeted drug delivery, microscale ablation, neural regeneration, and real-time intraoperative monitoring.

Recent advancements in material sciences and control systems have led to the development of magnetically controlled and biosensor-equipped nanorobots. These innovations enable nanorobots to navigate complex biological environments like neural tissues and the bloodstream. Methods discussed include the use of nanorobots for crossing the blood-brain barrier, delivering chemotherapeutics, and performing microsurgical interventions. Moreover, nanorobots equipped with sensors allow real-time monitoring of neural activity and biochemical changes during surgery.

Results from previous studies indicate that nanorobots can significantly improve the precision of neurosurgical procedures while minimising damage to surrounding healthy tissues. In addition, nanorobotics has shown promise in stimulating neural regeneration and restoring disrupted neural circuits in neurodegenerative diseases.

Despite these advancements, several challenges remain, including biocompatibility, precise navigation, and regulatory hurdles. Addressing these challenges through interdisciplinary collaboration and further research is crucial for clinical integration.

In conclusion, nanorobotics presents a revolutionary approach to neurosurgery with the potential to overcome current limitations and offer novel therapeutic strategies. Future di-

rections should focus on improving control mechanisms, ensuring safety, and conducting clinical trials to validate efficacy.

Area of Application	Description	Challenges
Targeted Drug Delivery	Nanorobots carry drugs across the blood-brain barrier to deliver them directly to target sites, minimizing systemic side effects.	Overcoming the blood-brain barrier, ensuring precise delivery to target sites.
Microscale Ablation	Precise removal of pathological tissues in diseases like Parkinson's without causing collateral damage to healthy tissues.	Avoiding damage to surrounding healthy tissue, ensuring precision.
Neural Regeneration	Delivery of bioactive substances to stimulate repair and regeneration of neural tissues, useful in neurodegenerative diseases and strokes.	Effective integration of nanorobots with damaged neural tissues, biocompatibility concerns.
Intraoperative Monitoring	Real-time tracking of neural activity, intracranial pressure, and biochemical signals to aid in precision surgery and provide diagnostic insights.	Accurate sensor integration and real-time data transmission during surgery.

Biography

Mihit Kalawatia is currently a medical student at Rajarshi Chhatrapati Shahu Maharaj Government Medical College, Kolhapur, India. He has a strong interest in neurosurgery and is particularly passionate about integrating cutting-edge technologies, such as nanorobotics and artificial intelligence, into neurosurgical practices. Mihit's academic pursuits focus on understanding how nanotechnology can revolutionise minimally invasive procedures, enhance precision, and improve patient outcomes in neurosurgery. He is actively involved in research and has contributed to innovative approaches in targeted therapeutics and neural regeneration. Mihit aims to further his education and contribute to the future of neurosurgical advancements.

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A Comparison of Clinical Profile and Treatment Outcome of Hodgkin's Lymphoma in Tanzania According to HIV Status During the HAART era

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[3]Rabininsia Memorial Hospital, Tanzania
[4]Academic, Research and Consultancy Unit, Ocean Road Cancer Institute, Tanzania

Background: The incidence of Hodgkin's lymphoma (HL) in people living with HIV (PLWHIV) is approximately 19X more than in HIV-negative persons. Most HIV-HL patients present at an advanced stage (Ann Arbor stage III-IV), have "B" symptoms and extranodal involvement. HAART's development has led to a significant change in the natural history and risk stratification of HIV-HL. Therefore, this study aimed to determine differences in clinicopathological and survival patterns of HL among individuals with and without HIV disease in Tanzania in the HAART era.

Methodology: This hospital-based retrospective cohort study was conducted at the ORCI, Dar-Es-Salaam, Tanzania. Chi-square and Fisher's exact tests were used to compare proportions. Student t-test was used to compare means. The log-rank test was applied to the variables in univariate analysis to identify factors that predict survival. The factors that were significant in univariate analysis were then analyzed in multivariate fashion using a Cox regression model.

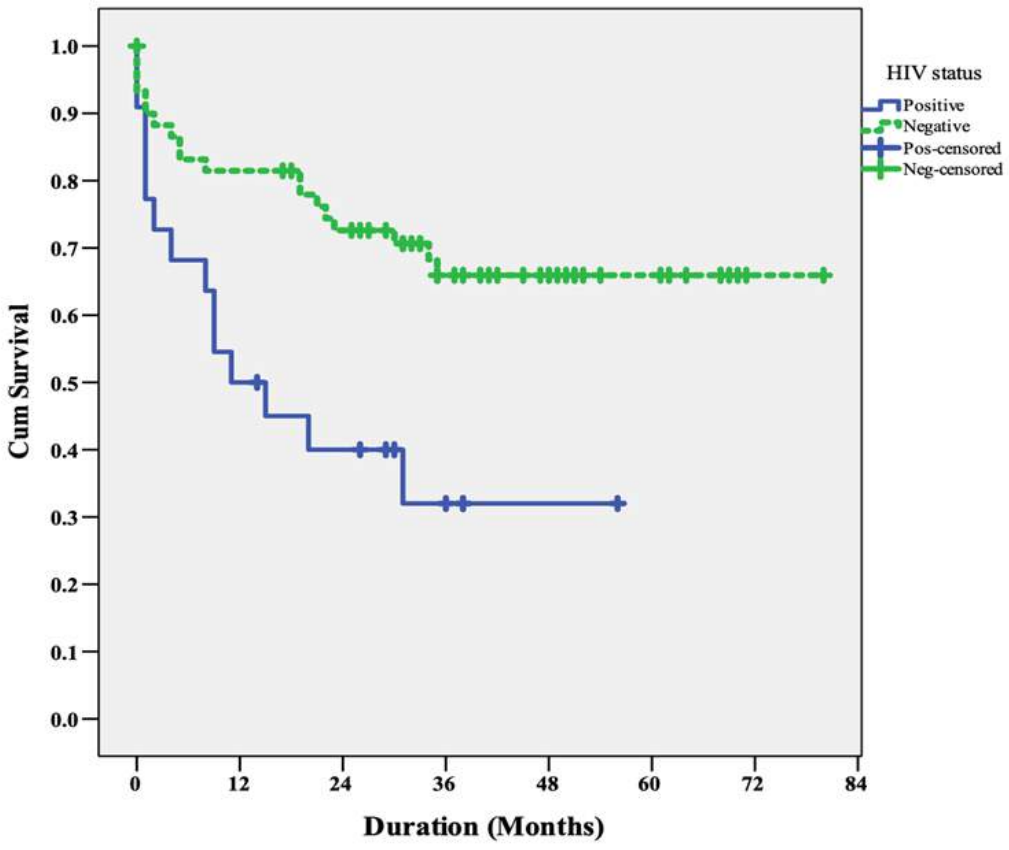
Results: Out of 121 patients, 83 patients who met the eligibility criteria were included in this study, and the prevalence of HIV-positive status was 27.7%. Most of the patients with HIV-HL had an age of more than 30 years (73.9%), while most of the non-HIV-HL patients had an age of less than 30 years (63.3%) (P=0.02). The 2-year OS rate for HIV-HL was 34%, while that for non-HIV-HL was 67%. Among the HIV-HL patients, predictors of a poorer outcome were a CD4 count ≤ 200 cells/mm3 (P=0.05), lack of HAART use (P=0.00), and the use of HAART for ≤10 months (P=0.00).

Table 1: Patient characteristics N=83

		HIV-HL Number n(%)	Non-HIV-HL Number n(%)	P-Value
Gender	**Male**	13 (56.50)	40 (66.7)	0.2
	Female	10 (43.5)	20 (33.3)	
Age (Years)	**≤30**	6 (26.1)	38 (63.3)	0.02
	>30	17 (73.9)	22 (36.7)	
Insurance	**Yes**	5 (20.8)	19 (31.7)	0.3
	No	18 (78.2)	41 (68.3)	
CD4 Count (N=13)	**≤200**	5 (38.5)		
	>200	8 (61.5)		
Histology	**Nodular sclerosis**	10 (43.5)	12(20.2)	0.1
	Mixed cellularity	8 (34.8)	22 (36.7)	
	Lymphocyte rich	2 (8.7)	5 (8.3)	
	Lymphocyte depleted	2 (8.7)	5 (8.2)	
	Unknown	0 (0)	13 (21.7)	
	Nodular lymphocyte-predominant	1 (4.3)	3 (5.0)	
Primary site	**Neck Nodes**	16(69.6)	49 (81.7)	0.1
	Mediastinum	0 (0)	2 (3.3)	
	Abdomen	7 (30.4)	3 (5.0)	
	Disseminated	0 (0)	6 (10.0)	
B Symptoms	**Yes**	17 (73.9)	45 (75.0)	0.8
	No	6 (26.1)	15 (25.0)	
Stages	**1&2**	10 (43.5)	33 (55.0)	0.3
	3&4	13 (56.5)	27 (45.0)	

Hemoglobin	**≤9** **>9**	11 (45.8) 12 (54.2)	21 (35) 39 (65)	0.3
LDH Level (IU/L) (N=72)	**≤500** **>500**	5 (23.8) 16 (76.2)	30 (58.8) 21 (41.2	0.007
ECOG	**1** **2** **3**	10(43.5) 9 (39.1) 4 (17.4)	37 (61.7) 17 (28.3) 6 (10.0)	0.3
CD20	**Positive** **Negative** **Unknown**	0 (0) 3 (12.5) 21 (87.5)	4 (6.8) 7 (11.9) 48 (81.4)	0.5

Fig 1: The Comparison of OS Between HIV-HL and Non-HIV-HL



P=0.03

Conclusion: The prevalence of HIV-HL was 27.7% among HL patients. HIV positivity is still a poor prognostic factor in our setting, especially for patients not on HAART, on HAART for less than ten or ten months, or with a low CD4 count below 200 cells/mm3.Patients with HIV-HL were older and had higher LDH levels, whereas patients with non-HIV-HL were younger and had low LDH levels.

Biography

Dr. Mercy Mbai is a dedicated clinical/radiation oncologist with extensive experience in both public and private healthcare settings in Kenya. Born and raised in Kenya, Dr. Mbai has established herself as a leading figure in oncology, currently serving as the head of the oncology department at a regional hospital. Her expertise extends into consultancy roles at prominent private hospitals such as HCG-CCK cancer centre. With a passion for preventive medicine and integrative oncology, Dr. Mbai is committed to advancing cancer care by combining traditional and holistic approaches. Her contributions to the field are recognised internationally, with her research published in the prestigious BMC cancer journal. Dr. Mbai is also an active member of esteemed professional bodies, including American Society of Clinical Oncology and European Society of Medical Oncology(ESMO) where she continually engages with the latest advancements and collaborations in oncology.

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Development of Valid and Reliable Questionnaire to Evaluate Knowledge, Attitude, and Practices (KAP) of Lifestyle Medicine Domains

Nesrain Mubarak Alhamedi[5], Abeer Salman Alzaben[1], Mohammed Almansour[2], Hayat Saleh Alzahrani[3], Nouf Adnan Alrumaihi[4], Nawaf Abdulaziz Albuhayjan[6] and **Sadeem Abdulaziz Aljammaz[7]**

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[7]Department of Community Health Sciences, College of Applied Medical Sciences, King Saud University, Saudi Arabia

Lifestyle medicine (LM) should be incorporated as part of routine clinical work and medical education programs.

Objective: To develop and test the validity and reliability of a questionnaire that measures the level of knowledge, attitude, and practice (KAP) of LM domains among medical trainees through practicing physicians.

Methods: The KAP questionnaire sections covered the nine domains of LM. The validation process included face and content validity. A total of 151 individuals from the medical field residing in Saudi Arabia were recruited through a convenient sampling technique to participate in the study. Item response theory (IRT) was applied to validate the knowledge domain, while exploratory factor analysis (EFA) was used to assess attitude and practice. Cronbach's alpha was performed to test the reliability of the three sections.

Results: The questionnaire contained 37 items of knowledge, 45 attitudes, and 28 practice items. According to the IRT analysis, 27 items of knowledge were within the acceptable range of difficulty and discrimination. The EFA analysis resulted in 6 factors, including all the items in the attitude domain, and 4 factors, for a total of 27 items in the practice domain, with satisfactory factor loading (>0.4). The Cronbach's alpha for the three domains was very high (≥0.88).

Conclusions: The KAP questionnaire for LM is valid and reliable across a spectrum, from medical trainees to practicing physicians. This tool could serve as an instrument to evaluate and develop adequate educational programs for medical doctors.

Biography

Nesrain Alhamedi, acting as Family Medicine Consultant at King Abdulaziz University Hospital, Jeddah, Saudi Arabia since 2016. Also, certified as lifestyle medicine consultant. Recently accomplished the medical education master to empower her research and teaching skills certified as International breastfeeding consultant, smoking cessation trainer, Life coach and EQ assessor. Had many researches about obesity, fatty liver, lifestyle medicine domains and breastfeeding knowledge and practice shared in many international conferences as oral presentations.

Understanding the Dynamic Process of Human Behavior Changes Towards Disaster Preparedness: Integrating Theoretical Perspectives

Dennis P. Culhane, Chenyi Ma and **Sara S. Bachman**

University of Pennsylvania, School of Social Policy & Practice, USA

Objectives: Disaster preparedness is essential for mitigating risks associated with natural hazards. This study aims to examine how individuals transition through three behavioral stages—Not Prepared (NP), Intention to Prepare (IP), and Already Prepared (AP)—in response to disaster risks. By integrating the Transtheoretical Model (TTM), Social Cognitive Theory (SCT), and Protection Motivation Theory (PMT), we assess the key drivers influencing movement across preparedness stages.

Scope: The study explores demographic, socioeconomic, and psychological factors influencing preparedness behaviors in the U.S. population. Special emphasis is placed on racial/ethnic disparities, financial constraints, disaster experience, risk perception, and self-efficacy.

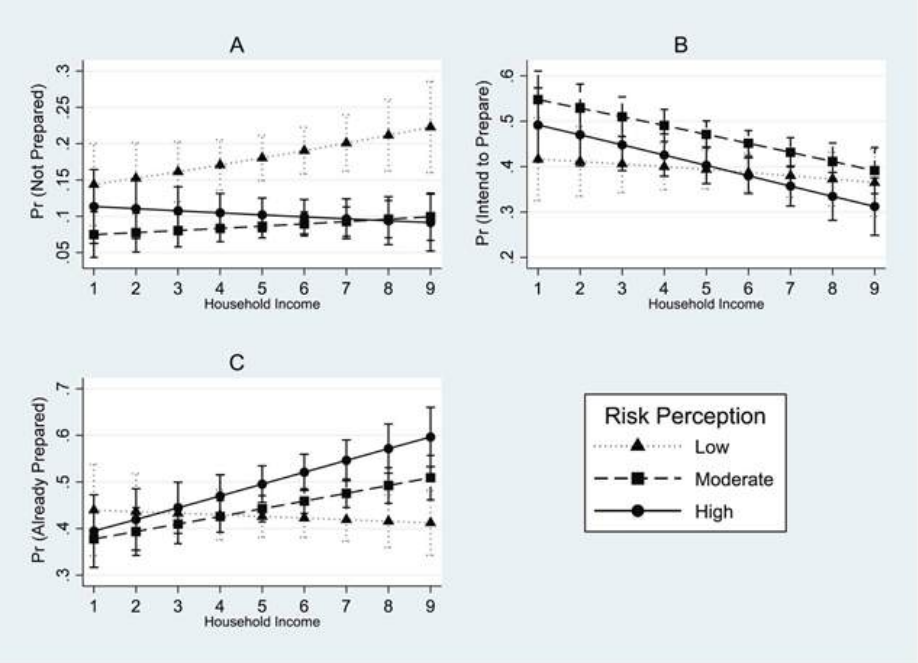
Methods: We analyze 2021 National Household Survey (N = 6,180, FEMA) data using weighted generalized ordered logistic regression models. The study examines how income, education, disaster experience, and risk perception impact individuals' ability to progress from NP to IP and ultimately to AP.

Results and Discussion: Findings reveal that Hispanics are more likely than non-Hispanic Whites to intend to prepare but less likely to become fully prepared. Higher income levels significantly influence the transition to preparedness, particularly among individuals with high-risk perceptions.

Conclusions: This study highlights the importance of income, risk perception, and awareness in disaster preparedness. Targeted policy measures, such as cash-transfer programs, disaster training, and public awareness campaigns, are essential for increasing prepared-

ness, particularly among under-resourced communities. The findings contribute to a theoretical understanding of behavioral transitions in preparedness and provide actionable insights for disaster risk reduction policies.

The figure below illustrates key findings from the study:



Biography

Dr. Dennis P. Culhane is the Dana and Andrew Stone Chair in Social Policy at the University of Pennsylvania, School of Social Policy and Practice. His primary area of research is homelessness and assisted housing policy. His research has contributed to efforts to address the housing and support needs of people experiencing housing emergencies and long-term homelessness.

Dr. Culhane's recent research includes studies of vulnerable youth and young adults, including those experiencing homelessness, and transitioning from foster care or juvenile justice. His recent work also includes studies of the aging of the adult homeless population in the US, and the potential for increasing housing and support services by strengthening federal entitlements.

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HL7 FHIR Platform, Scalable, Reliable and Comprehensive of Clinical Databases Analyzed with Machine Learning for ICU Public Healthcare Center

Bernardo Chávez Plaza[1,2], Jaime Briggs Luque[2], Luis Chicuy Godoy[2], Boris Cuevas Figueroa[2], Rodrigo Covarrubias Ganderats[2,3] and **Manuel Ramírez Izquierdo[1,2]**

[1]ICU, Critical Care Service, Hospital El Salvador, Chile
[2]Artificial Intelligence Hub in Health, Chile
[3]Neurosurgery, Navy Hospital, Chile

Hospital facilities today have to deal with exponentially increasing volumes of batch and streaming data, comprising a variety of structured, unstructured, and semi-structured data types, originating from an ever-increasing number of sources and disparate devices located in healthcare facilities, such as intensive care units.

At the same time, doctors demand faster and easier access to reliable and up-to-date data to make accurate decisions. Finding the right data sets and making them available for analysis is often a complicated process that further slows down clinical decisions. That is compounded by regulatory compliance and security controls that must be manually applied at every step of the data lifecycle, from data generation to analytics. Smart UPC is an interoperable solution that has emerged as an architecture for managing data with machine learning (ML) to overcome these challenges.

The layered architecture focuses on making data readily available in a dashboard for Intensive Care Unit users, improving insights based on the use of AI and leveraging automation to simplify administration, the safety and quality of healthcare, complying with cybersecurity requirements and under very strict ethical standards.

Smart UPC, based on a proprietary HL7 FHIR platform offers a unified, scalable, reliable and comprehensive view of ICU clinical data. It is a solution to support applications in decision making in a complex environment, with high critical demand. should give clear indication of the objectives, scope, results, methods used, and conclusion of your work.

Biography

Bernardo Chávez Plaza is a Neurosurgery, Neurointensive and Neurotrauma subspecialist (more than 25 years of experience). Professor of Intensive Medicine at the west campus of U de Chile, Santiago. MBA in Health Management.

Since 2017, member of the *Santiago Artificial Intelligence Hub* (HIAS), where they have developed ML projects in neuroimaging and Data Science and Artificial Intelligence protocols applied to the health sector. He has several publications in international journals and is the author of several books.

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Comparison of Sensitivity of the Fecal Immunochemical Test (FIT) and the Guaiac Fecal Occult Blood Test (gFOBT)

Antonia Šoić, Sanja Langer, Zvjezdana Špacir Prskalo, Mihaela Gaće and **Ljiljana Mayer**

Department of Medical Biochemistry in Oncology, University Hospital for Tumors, Sestre Milosrdnice University Hospital Center, Croatia

Introduction: Organized screening programs for the detection of colorectal cancer (CRC) in the Republic of Croatia include testing for occult blood in stool samples. The traditionally used guaiac-based fecal occult blood test (gFOBT) is a qualitative method evaluated organoleptically, but it is prone to various interferences. An alternative method is the fecal immunochemical test (FIT), which is automated, quantitative, and not affected by such interferences.

Materials and Methods: We compared the results of occult blood detection from 56 adjusted samples using the FIT and gFOBT methods. For gFOBT, HemoGnost® (BioGnost, Croatia) cards were used, while the OC-SENSOR Ceres® (Eiken Chemical, Japan) device was used for FIT. The cut-off value for FIT was set at 100 ng/mL (20 µg/g).

Results: Negative results, defined as hemoglobin concentrations below 100 ng/mL by the FIT method and the absence of blue staining by the gFOBT method, were obtained in 13 samples, meaning 23% of the samples analyzed by gFOBT were true negatives. In 21 samples, the measured hemoglobin concentration by FIT was above 100 ng/mL, indicating positive results, while gFOBT yielded negative results. This resulted in 38% of false negatives for the gFOBT method. Both methods produced positive results in 22 samples, meaning 39% of gFOBT samples were true positives. The sensitivity of gFOBT compared to FIT was 51%, its specificity was 100%, the positive predictive value was 100%, and the negative predictive value was 38%.

Conclusion: A higher sensitivity for CRC detection can be achieved using the FIT compared to the gFOBT. The implementation of FIT-based screening is expected to result in an increased detection rate and a subsequent reduction in the incidence of CRC.

Biography

Antonia Šoić, is a medical biochemistry intern at the University Hospital for Tumors, part of the Sestre Milosrdnice University Hospital Center in Zagreb, Croatia. She has earned her degree in medical biochemistry from the Faculty of Pharmacy and Biochemistry in 2023. At the start of her professional journey, She was eager to expand her knowledge and gain valuable hands-on experience in the field. As an intern, she focused on mastering the fundamentals of her role to earn a professional license. In the future, she aspire to specialize in medical biochemistry, with a particular interest in advancing diagnostic techniques and exploring the role of biochemistry in oncology. she is a proud member of the Croatian Society for Medical Biochemistry and Laboratory Medicine and look forward to contributing to breakthroughs that improve patient outcomes.

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Does the Concentration of Hemoglobin in the Stool Depend on the Temperature and Exposure Time in the Fecal Immunochemical Test (FIT) on the OC-SENSOR CERES Device?

Sanja Langer, Antonia Šoić, Zvjezdana Špacir Prskalo, Mihaela Gaće and **Ljiljana Mayer**

Department of Medical Biochemistry in Oncology, University Hospital for Tumors, Sestre Milosrdnice University Hospital Center, Croatia

Introduction: Testing for occult bleeding in the stool in an asymptomatic population has been shown to be a suitable method for early detection of colorectal cancer. Screening programs for colorectal cancer must consider, among other things, the way of sample collection, shipping to the laboratory for analysis, and storage until analysis. The impact of temperature and time from sample collection to analysis on test result must be known and examined.

Materials and Methods: The initial hemoglobin concentration was determined in 14 samples in each of the three group on OC-SENSOR Ceres® (Eiken Chemical, Japan). One group of 14 samples was stored at room temperature, the second at 2-8°C and the third at +35°C (Instrumentaria ST-01/02 sterilizer). Hemoglobin concentrations from the samples were determined again after 24 hours, 72 hours, 7 days and 10 days. The percentage deviation at different time intervals from the initial concentration was calculated for each sample. The acceptable criteria were 10% or 12%.

Results: The mean deviation of the absolute deviation values of the samples in group at room temperatures was 5,17% after 24 hours, 7,13% after 3 days, 7,85% after 7 days and 9,57% after 10 days. In group at 2-8°C the mean deviation was 4,40% after 24 hours, 5,10% after 3 days, 6,47% after 7 days and 4,95% after 10 days. The mean deviation in group at +35°C was 6,27% after 24 hours, 10,54% after 3 days, 14,39% after 7 days and 21,83% after 10 days.

Conclusion: The hemoglobin in samples was stable up to 10 days at room temerature and in refrigerator at 2-8°C. Special attention should be taken if the screening program samples

are sent by post in the summer months, because after 3 days the hemoglobin concentration in such a sample is not stable (deviation greater than 10%).

Biography

Sanja Langer is a specialist in medical biochemistry and laboratory medicine in University Hospital Centre Sestre milosrdnice from Croatia. She graduated from the Faculty of Pharmacy and Biochemistry, University of Zagreb, in 2010 with a degree in medical biochemistry. While in faculty, she earned the 2009. Dean price for her exemplary academic performance. In 2018 after 4 years of specialization she became specialist. In 2021, she returned to school again and enrolled Postgraduate university PhD study Biomedicine and Health in School of Medicine, The University of Zagreb. she coauthor 6 academic papers in journals indexed in Web of Science Core Collection and even more papers in other journals. And last but not least, she has the mother of 3 children, boys Pavel and Karl and girl Mila.

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A Seed Extract of *Mucuna Pruriens* Reduced Male Reproductive Endocrine Disruptions in Rats Induced by Chlorpromazine

Sahar Mohammed Ahmed[1], Yassir M.K.Al-Mulla Hummadi[2] and **Huda Jaber Waheed[3]**

Department of Pharmacology and Toxicology, Mustansiriyah University, College of Pharmacy, Iraq

The human body is susceptible to various toxins that can disturb endocrine homeostasis. These toxins, known as endocrine-disrupting chemicals (EDCs), can interfere with hormone regulation and negatively impact male fertility; one of these EDCs is chlorpromazine, which develops infertility problems.

Current research aims to assess the therapeutic impact of *Mucuna pruriens* seed extract on PROTAMIN (PRM) I and II gene expression and hormones in chlorpromazine-induced endocrine disruptions and reproductive toxicity in male rats. Thirty male Wistar rats were categorized into five groups: the negative control group, rats that received distilled water for 52 days; the induction group, rats that received (20 mg/kg) of chlorpromazine once daily for 52 days; and three treatment groups that were pretreated with chlorpromazine (similar to the induction group) for 22 days, then from days 23 to 52, rats were treated with *Mucuna Pruriens* seed extract in doses of (500,1000,2000 mg/kg, respectively) with continued daily doses of chlorpromazine. Serum samples were collected to measure testosterone, FSH (follicular stimulating hormone), LH (luteinizing hormone), and prolactin serum levels using the ELISA technique. Tissue samples were collected to measure PRM I and II gene expression and for histopathological study. The PRM I and II genes were significantly downregulated in the chlorpromazine-treated group. These genes were also significantly upregulated in *Mucuna Pruriens*-treated groups. The *Mucuna Pruriens*-treated groups revealed a significant rise in serum LH, testosterone, and FSH concentrations, decreased serum prolactin, and improved histology of testicular damage compared to the induction group. In conclusion, the endocrine disruption, hormonal changes, and reproductive toxicity induced by chlorpromazine improved when *Mucuna Pruriens* was administered,

improving hormonal disruption, gene expression during spermatogenesis, and antioxidant activity, ending with improving the testicular histomorphology.

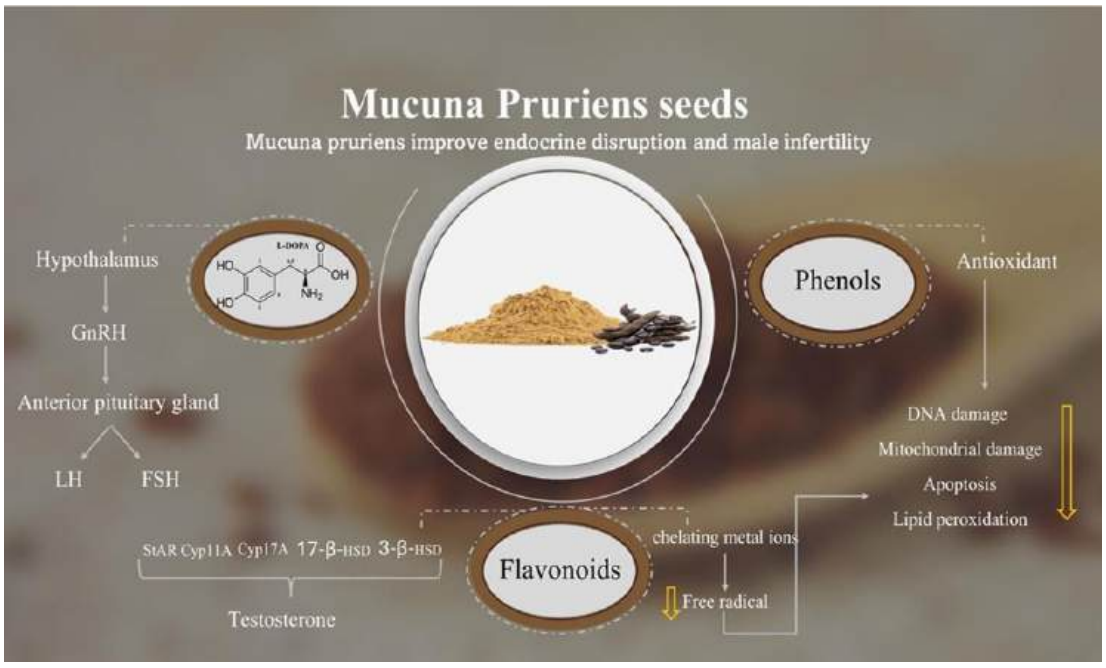

Fig 1: Role of Mucuna pruriens seed extract in male infertility and endocrine disruption.

Table (1): Effect of *Mucuna Pruriens* seeds extract on sex hormones of rats exposed to chlorpromazine.

Groups	PRM I (Folds)	PRM II (Folds)	FSH (IU/L)	LH (IU/L)	Testosterone (nmol/L)	Prolactin (IU/L)
Control	1.29±0.20a	1.83±0.10a	0.80±0.01a	1.31±0.05a	13.55±0.66ab	1.37±0.05
Induction	0.75±0.11c	0.60±0.11b	0.37±0.02d	0.85±0.03c	9.53±0.33c	1.63±0.01
Treatment with 500mg of *Mucuna pruriens*	1.05±0.24b	1.12±0.22a	0.65±0.02c	1.13±0.05b	12.64±0.58b	1.41±0.02
Treatment with 1000mg of *Mucuna pruriens*	1.23±0.23ab	1.80±2.05a	0.71±0.01b	1.34±0.04a	12.73±0.24b	1.39±0.02b
Treatment with 2000mg of *Mucuna pruriens*	1.31±0.49a	1.82±6.35a	0.75±0.01ab	1.42±0.02a	14.55±0.29a	1.36±0.01b
LSD	0.24	0.94	0.05	0.12	1.36	0.07

Data were expressed as Mean ± SEM. Different lowercase letters show statistically significant differences through groups. P-value ≤ 0.05 is considered a statistically significant differenceThe statistical analysis was conducted using one-way ANOVA and the Least Significant Differences (LSD) method.

https://pharmacia.pensoft.net/article/132062/download/pdf/

Biography

Sahar Mohammed Ahmed was graduated from Baghdad College of Pharmacy in 2016 and she got a master's degree in pharmacology and Toxicology from the College of Pharmacy /Mustansiriyah University in 2024. That gave her a strong foundation in studying drugs and their effects on biological systems, she dedicated to advancing the field of Pharmacology and toxicology through research and innovation. Throughout her academic career, she has developed expertise in (how drugs affect biological systems and the adverse effects and toxicity of drugs on human health) and participated in various research projects and several medical conferences that contribute to scientific development.

After her academic undergraduate career, she has worked in different hospitals and pharmacies for five years, and she is currently working as a lecturer at the university.

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Estimating the Risk of Cancer Incidence and Radiation-Induced Cancer Death of Children Patients Undergoing Digital Radiology X-Ray Examinations

Khatereh Shamsi[2] and **Behzad Mohsenzadeh**[1]

[1]Department of Biomedical Engineering and Medical Physics, School of Medicine, Shahid Beheshti University of Medical Sciences, Iran

[2]Department of Medical Physics, Radiobiology and Radiation Protection, School of Medicine, Babol University of Medical Sciences, Iran

Background: It is generally accepted that children are more sensitive to radiation than adults and have a higher relative risk of cancer. The longer life expectancy after exposure increases the risk of developing radiation-associated malignancies.

Purpose: This study aims to estimate the risk of cancer incidence and radiation-induced cancer death of children patients undergoing digital radiology X-ray examinations.

Material and methods: In this study, data were collected retrospectively from 15 radiography rooms in the major radiology centers in Mazandaran province (Iran). The information of 12 common digital radiography examinations including pelvis (in the anteroposterior projection (AP)), skull (in the two-lateral projection (LAT) and posteroanterior projection (PA)), abdomen (AP), cervical vertebra (AP and LAT), chest (PA and LAT), lumbar vertebra (AP and LAT), thoracic vertebra (AP and LAT) examinations which was recorded from 10 to 15 years old patients. The Entrance Surface Air Kerma (ESAK), Entrance Skin Dose (ESD), and Organ Effective Dose (ED) were measured. Finally, the risk of cancer incidence and Risk of Exposure-Induced cancer Death (REID) values were estimated for these patients.

Results: In total, 1800 (983 females and 817 males) patients (10–15 years old) were included in this study. Across all procedures, the lowest ED belonged to the skull (PA) examination (10.40 μSv), and the highest ED belonged to the AP abdominal imaging technique (378.46 μSv). The highest ESD was related to the lumbar spine (LAT) projection (3.62 ± 1.38 mGy) and the least to the cervical vertebra (AP) view (0.97 ± 0.21). It was also shown that the

differences in cancer incidence and radiation-induced cancer death values in male and female patients were not statistically significant.

Conclusion: The result showed that ESDs are influenced by various factors that affect patients' dose distributions, so through the optimization of imaging parameters, image quality can be increased and the patient dose reduced. These actions will necessarily decrease the risk of cancer incidence and radiation-induced mortality risk. Further studies are recommended to assess the workplace environment and practical training in radiology institutions, along with the quality control tests of radiology devices.

Biography

Khatereh Shamsi is a graduate with a Master's degree in Radiobiology from Babol University of Medical Sciences in 2019. She has worked in the fields of dose calculation, DRL, and estimating various types of cancer for different age groups using the Barracuda X-ray analyzer RTI. Since 2020, she has been working at the Nuclear Medicine Research Center in Bushehr in the areas of dosimetry, calibration, radiation protection, and cancer. Currently, her interests are in the field of protection, and estimation of secondary cancers in medical imaging using artificial intelligence.

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Ameliorative Effects of *Sesamum Indicum* Aqueous Extract on Letrozole-Induced Polycystic Ovary Syndrome in Adult Female Rats and Formulation of Sesame Syrup

Zeynab Khosrowpour[1], Shamim Sahranavard[1], Fatemeh Jafari[1], Mojgan Tansaz[2], Shirin Fahimi[1,3] and **Mehrdad Faizi[4]**

[1]Department of Traditional Pharmacy, Traditional Medicine and Materia Medica Research Center School of Traditional Medicine, Shahid Beheshti University of Medical Sciences, Iran
[2]Department of Traditional Medicine, School of Traditional Medicine, Shahid Beheshti University of Medical Sciences, Iran
[3]Faculty of Pharmacy and Pharmaceutical Sciences, Department of Traditional Pharmacy and Persian Medicine,Tehran Medical Sciences, Islamic Azad University, Iran
[4]Department of Pharmacology and Toxicology, School of Pharmacy, Shahid Beheshti University of Medical Sciences, Iran

Background and Aim: Polycystic ovary syndrome (PCOS) is one of the most common hormonal disorders affecting women of reproductive age. The present study was to examine the effect of *Sesamum indicum* L. aqueous extract as in the treatment of PCOS in female rats and formulate an appropriate medicinal syrup from it.

Experimental procedure: 42 adult female rats were divided randomly into six groups; the control group received carboxy methyl cellulose 1% as a vehicle and the five other groups first received letrozole orally at 1 mg/kg for 21 days and next were administered by *S.indicum* aqueous extract (100,200,400 mg/kg), metformin (200 mg/kg) and distilled water 28 days after PCOS induction. Physical parameters (body weight, estrous cycle determination, ovary weight), steroidal hormone profile, and histopathology of ovary were studied. Fifteen different formulations were made with different percentages of additive components. Quality control tests were performed on the selected formulation.

Results: After 21 days of letrozole administration, induction of PCOS was confirmed by the irregularities in estrous cycles and an increase in LH and testosterone levels. The aqueous extracts of *S.indicum* and metformin increased the percentage of the rats with regular

estrus cyclicity compared to the PCOS group. In the *S.indicum* and metformin receiving groups, LH levels and LH/FSH ratio were significantly reduced in all doses compared to the PCOS group. *S.indicum* extract (400 mg/kg) treatment significantly declined testosterone levels whereas increased estradiol levels compared to PCOS group. Histological studies of metformin and *S.indicum* receiving groups exhibited normal follicular development with fewer and smaller cystic follicles compared to the PCOS group.

Conclusion: It can be concluded that *Sesamum indicum* aqueous extract can improve some symptoms of PCOS because of its phytochemical contents such as β-sitosterol, campesterol, and stigmasterol, and sesquiterpenes with phytoestrogenic, androgenic and anti-inflammatory effects.

Biography

Dr. Zeynab Khosrowpour is a dedicated pharmacist with a Ph.D. in traditional pharmacy from Shahid Beheshti Medical Science University in Tehran, Iran. Over a decade of pharmacy experience has allowed her to engage with patients dealing with polycystic ovary syndrome, sparking her interest in exploring alternative approaches. Her research focuses on potent plant-based remedies for this condition, drawing from Iranian traditional medicine. This work has broadened her understanding of herbal medicine and drives her commitment to advancing holistic healthcare solutions that bridge traditional and modern medicine.

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Prevention of Cervical Cancer Related to HPV Infections

Melika Ziaoddini[1], Ahmad Ziaoddini[2], Sara Zamani[3] and **Hassan Ziaoddini[4]**

[1]Pharmaceutical Sciences Branch, Azad University, Iran
[2]University of Medical Sciences, Iran
[3]Faculty of Life Sciences and Biotechnology, Department of Microbiology and Microbial Biotechnology, Shahid Beheshti University, Iran
[4]Health Psychology Department, Research Centre of Education Ministry Studies, Iran

Background and Aim: Human papillomavirus (HPV) infection is an important sexually transmitted infection worldwide. HPVs are divided into high-risk and low-risk genotypes. High-risk types are responsible for cancers like cervical cancer. Cervical cancer is one of the most common cancers in women in the world. Despite the introduction of the Pap smear test many years ago, cervical cancer still has a high mortality rate worldwide. Until now, three HPV vaccine types have been produced globally. This study reviews the immunogenicity, safety, efficacy, and cost of HPV vaccines, which are useful for preventing cervical cancer worldwide and in Iran.

Methods: We reviewed papers without a time limitation on cervical cancer prevention. Relevant keywords such as cervical cancer, HPV vaccine, Gardasil, Cervarix, and Gardasil 9 were used. The databases Science Direct, Medline, Scopus, and Google Scholar were searched. The titles and abstracts of the papers were reviewed. Some papers investigating cervical cancer prevention were used in this study.

Results: The studies show that Gardasil 9 improves protection against cervical cancer precursor lesions and high-grade cervical disease. Comparisons between Gardasil 9 and Gardasil demonstrate higher seroconversion rates for HPV 6, 11, 16, and 18 in Gardasil 9. Although a quadrivalent HPV vaccine was added to the Iran Drug List, it has not been included in the national immunization program due to various reasons, including cost and awareness issues. Studies suggest that HPV vaccination can be cost-effective in Iran based on updated WHO methods.

Conclusion: HPV vaccines are part of national immunization programs in some countries, and vaccinating before the first sexual contact is more effective in preventing cervical cancer. In Iran, despite Gardasil's availability, it is not part of the national immunization program, possibly due to low cervical cancer incidence, lack of awareness, and high costs. Cervical cancer screenings like HPV testing and Pap smear tests are emphasized for sexually active women over 21 years of age. We recommend making cervical screening free of charge and fully covered by insurance for Iranian women.

Biography

Melika Ziaoddini is a dedicated pharmacist with experience in biomedical research, This research focuses on HPV-related cervical cancer prevention, with an emphasis on the immunogenicity, safety, and cost-effectiveness of HPV vaccines in Iran. By analyzing both national and international studies, it highlights the critical role of vaccination in reducing cervical cancer incidence. Evaluating the benefits of vaccination and screening programs, it advocates for integrating cost-effective preventive measures into public health policies. Additionally, it addresses barriers to vaccine implementation, aiming to enhance accessibility and awareness. Through evidence-based strategies, this work contributes to improving women's health, promoting early detection, and supporting informed policymaking for more effective cervical cancer prevention.

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An Optimized Deep Focused U-Net Model for Image Segmentation

Haroon Haider and **Majid Iqbal**
COMSATS University, Pakistan

Issues with class imbalance pose a significant challenge in medical segmentation, with lesions often occupying a considerably smaller volume (hard objects) relative to the background (easy objects). Medical image segmentation tasks require the model to pay attention on specific parts of the image rather than the entire image. Models based on CNN and its variants like U-Net have shown promising results in this regard. However, they often suffer from unstable gradient during the training process.

We propose an optimized deep focused U-Net (DF U-Net) model along with a novel learnable optimized focal loss (LOF) function. The DF U-Net is integrated with a novel block that comprises of five subblocks: efficient channel attention, squeeze and excitation, stochastic depth, residual block and dense block, collectively known as (ESSRD) in the decoder layers. This block helps to make the model more robust by improving gradient information flow thus mitigating the vanishing gradient problem throughout the network. As each layer has direct access to gradient from the loss function, it leads to better training of deeper networks with reduced overfitting. The proposed LOF loss optimizes itself during the training of the model and converges to optimal values within few epochs. LOF loss function when embedded with the existing state-of-the-art models, successfully enhanced the prediction of true positive as the loss function is improved throughout each training cycle. The model was successful in detecting the minute polyps which were overlooked by the other state-of-the-art models. We evaluated DF U-Net using four medical imaging data sets: DRIVE, BUS2017, CVC-Clinic and Kvasir-SEG. During the training process, DF U-Net significantly reduced the convergence time by sharply minimizing the loss to 0.001% and achieved an accuracy of 99.5%. The DFU-Net can be investigated on other segmentation tasks like road and face detection.

Biography

Haroon Haider Khan PhD (COMSATS UNIVERSITY Islamabad, Pakistan), Dean Computer Science department Roots IVY College affiliated with University of Bedfordshire UK. His primary scope of research is in Deep Learning and Machine learning algorithms. He is also a speaker at international forums and a member of review committee of various international journals.

Has to his credit a total of 20-year experience of teaching and as a visiting Professor in Higher Education Commission recognized universities like International Islamic University and University of Lahore. Also works in the capacity of an independent consultant and CEO of software firm HPsoft which provides IT solutions to small and medium sized businesses.

5th International Conference on
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An Exploratory Study of Food Waste Management Practices at Consumer and Retailer Level

Lubna Kasim Ali Al Rushdy and **Markus C. Slevogt**
Bahçeşehir University, Turkey

This study seeks to add to the food waste study literature that evaluates and assesses the efficacy of different types of increasing consumers' awareness and responsibility for reducing food waste. A quantitative online consumer survey with Sample (n=247) is representative of adults living in Türkiye. The data collected from the consumers through an online survey showed that poor consumer awareness, and lower sense of responsibility towards food waste has a negative Impact on consumers intention to reduce food waste. Education and age were identified to have an influence on intentions to reduce food waste. A second set of data are also based on a series of observations which were conducted in a retail supermarket located in Türkiye, conducting interviews on how the managers are planning to reduce their day-to-day food waste. The data which was focused on the waste of fresh fruit and vegetables within a three-month observation period concluded that, Grapes; Tomatoes; Potatoes; peaches and cucumbers are the main categories which had the highest amount of wasted quota. The study demonstrated that although retail stores and shareholders are recognizing the food waste problem, it is not seen as a crucial problem that must be addressed in the near future or at least that the waste needs to be processed in a different way that is more sustainable. This study demonstrates the economic and financial impact of avoidable food loss and high waste when it comes to fresh fruits and vegetables.

Biography

As the International Franchise Operations Manager at LC Waikiki, She oversee the commercial product and operational aspects of our stores in North Africa and Central America. Her graduate studies, which include a master's in business with a thesis focused on food waste management in the retail sector, are driven by her passion for improving the quality of human life. Finding consistent and sustainable solutions has been her goal from a young age and mostly during my engineering studies. She has a strong foundation in public speaking and human rights advocacy, developed through her diploma program at the University of Texas at Austin. There, She led a diverse, unified team that presented an innovative idea for our final project, which focused on criminal justice. She thrive on challenges and actively seek opportunities for positive change. Each phase of her life has prepared her for the next, and she is deeply grateful for that.

U.S. 988 "Care Traffic Control" Technologies in Public Behavioral Health Systems: Driving Performance Outcomes That Matter

John Draper

President of Research and Development, Behavioral Health Link, Inc., USA

Data showing that the U.S. National Suicide Prevention Lifeline could reduce distress and suicidality led the federal government to establish a three-digit code in 2022--988—as a means for easily accessing this public health service. With suicide rates continuing to rise across the U.S., how will regional health officials investing in 988 care systems show it's making a difference? This presentation will review how the U.S. envisions 988's potential transformation of community crisis care systems, and how services and technologies must seamlessly interface to assure that anyone in crisis, anywhere at any time has "someone to talk to, someone to respond and a safe place to go."

Dr. Draper will illustrate how "care traffic control technologies" are being used across various state and county crisis systems to better assure efficient, effective coordination of care between crisis contact centers, mobile crisis teams, and crisis receiving facilities. The presentation will show data on how these technologies are effectively reducing gaps in care and wait times, as well as unnecessary encounters with law enforcement and emergency department visits for people in behavioral health crisis. Dr. Draper will also review how these technologies can collect and report on data most essential for determining 988's impact on public health, such as: how services are reducing suicidality and emotional distress in the people they serve; and/or how they are successfully connecting them to care that supports their longer-term recovery.

Biography

Dr. Draper has 35 years of experience in crisis intervention and suicide prevention work and is considered an international expert in behavioral health crisis services. After leading a Brooklyn-based mobile crisis team and establishing New York City's first crisis hotline network, he led the SAMHSA-funded National Suicide Prevention Lifeline (now the 988 Suicide and Crisis Lifeline) as its Executive Director for 18 years. During his years at the Lifeline, Dr. Draper worked alongside a team of independent evaluators and a committee of experts to develop and implement evidence-informed national standards for suicide risk assessment and intervention across the Lifeline network. Shortly after leading the launch of 988 in 2022, Dr. Draper joined Behavioral Health Link as President of Research and Development, where he is continuing his long history of applying research, data and technologies to improve the quality of crisis care systems in communities across the country.

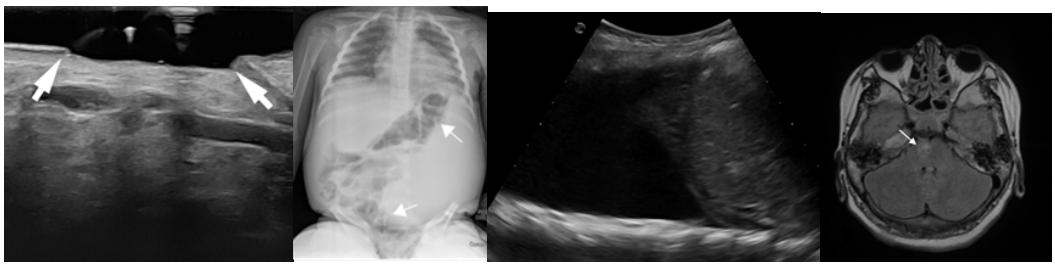
The Role of Imaging in the Diagnosis of Three Endemic Diseases of the Southern Cone Leishmaniasis, Dengue, and Chikungunya

Galeano Monica Alicia, Anoni María Clara and **Gonseski Vivian Carolina**

Garrahan Hospital, Argentina

Neglected diseases such as leishmaniasis, dengue, and chikungunya pose significant public health challenges due to their high prevalence and wide geographic distribution in the Southern Cone region. They are transmitted through insect bites, which serve as natural reservoirs. These diseases affect vulnerable populations in tropical and subtropical regions, exacerbating existing health disparities and hindering socioeconomic development. This calls for immediate visualization to spread knowledge and implement appropriate diagnostic and treatment measures.

This review provides a concise overview of the clinical manifestations, epidemiological context, and imaging findings associated with these diseases. While their imaging findings are not always conclusive, they can be significant in diagnosis and follow-up. The main objective of this work is to share our experience and offer valuable information on the use of imaging for the diagnosis and follow-up of patients suspected of having these diseases. The use of imaging not only facilitates treatment decision-making in endemic areas but also allows referral to more specialized health centers to evaluate possible acute and late complications. In leishmaniasis, although there are no specific imaging findings, ultrasound can play an important role in diagnostic support and patient follow-up. Dengue significantly impacts global public health, for which ultrasound is a valuable diagnostic tool to differentiate mild from cases at risk of poor outcomes. Chikungunya is also a viral disease and has caused epidemics in several countries; ultrasound has proven to be an excellent tool for its diagnosis and follow-up, particularly in the assessment of arthralgia and arthritis with synovitis at any stage of this disease.



Biography

- Medical Doctor. Faculty of Medical Sciences, National University of Córdoba, Argentina. Graduated in 1996
- Pediatric Specialist. University of Buenos Aires. Graduated in 2001
- Pediatric Diagnostic Imaging Specialist. University of Buenos Aires. Graduated in 2004
- Pediatric Diagnostic Imaging Specialist. Ministry of Health of the Nation. Graduated in 2016
- Health Economics and Management Specialist. University ISALUD. Graduated in 2017
- Fellowship in Pediatric Diagnostic Imaging (11/26/2004 -11/01/2006) - Garrahan Academic Unit, School of Medicine, University of Buenos Aires.
- Pediatric Musculoskeletal Radiology Hybrid Fellowship sponsored by the Children's Hospital of Philadelphia, Boston Children's Hospital, National Children's Hospital and the World Federation of Pediatric Diagnostic Imaging. 09/012023 – 06/30/2024.
- Teaching Experience: Supervisor of Practical Works since March 1, 2019, at School of Medicine, University of Buenos Aires in Undergraduate Biomedical Imaging.
- Head of Radiology Service: Garrahan Hospital since 5/30/2023.

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Antibacterial Effect of Ozonated Solutions on Enterococcus Faecalis and Pseudomonas Aeruginosa

Hernán Freddy Ortega Cruz and **Estefany Vanessa Suxo Nina**

National University of the Altiplano, Puno-Perú

Caries is a disease of the hard tissues of the teeth which worldwide reaches high incidence rates; when it is not treated on time, the contamination of the canal system, in direct relation to its chronicity, reaches the dentinal ducts, varying its microbiota between aerobic and anaerobic, depending on the depth, which complicates its neutralization. Within endodontic treatment techniques, one of the main objectives is septic neutralization, for which an ideal substance is still being sought, with a broad spectrum, low toxicity, and free of side effects. Ozone, which is an allotropic form of oxygen, due to its high oxidative capacity stands out as a powerful microbicide, being able to eliminate bacteria, fungi, and viruses effectively; however, its gaseous condition, instability, and high toxicity to respiratory system cells make its use difficult in the dental clinic, which is why ozonated substances such as water, oils and during the SarsCoV-2 pandemic, ozonated serums stood out, which by chemical alteration or simple affinity serve as a vehicle for transporting ozone. To find a substance that would allow us to use ozone in the disinfection of ducts, safely and conveniently, we subjected to ozonation different vehicles for use in intra-duct medication, using as a reference frequent bacteria that are difficult to eliminate from the teeth duct system, such as Pseudomonas aeruginosa (aerobic) and Enterococcus faecalis (facultative anaerobic). After a sequence of tests, both in vitro and in vivo, we found that ozonized propylene glycol, potentiated with camphorated paramonochlorophenol and activated with ultrasound, is an alternative to septic neutralization of the canal system during endodontic treatment, in addition to its storage capacity for more than six months.

Biography

Freddy was born and did his basic education in the city of Puno-Peru, on the shores of the highest navigable lake in the world “Lake Titicaca”, “Dental Surgeon” by the Catholic University of “Santa Maria”, “A Master in Endodontics” by the Universidad Estadual Paulista (Unesp) Sao Paulo-Brazil, completed studies of “Doctorate in Public Health” at the National University of San Agustin Arequipa-Peru and a diplomaed in Ozone Therapy in EDE International Mexico. Professor of Endodontics and Pas Director of the Professional School of Dentistry at the National University of the Altiplano Puno-Peru.

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Longitudinal Patterns of Family Expressed Emotion and their Association with Adolescent Depression Rehabilitation: A Latent Transition Analysis

KODZO Lalit Dzifa, HUANG Huifang, Wang Mengjia and **ZHANG Ruixing**

College of Nursing and Health, Zhengzhou University, China

Background: Expressed Emotion (EE) is a widely studied psychosocial concept in psychiatry. High family EE environments are known to negatively impact mental health outcomes, particularly in vulnerable populations like adolescents recovering from depression. The purpose of this study was to investigate the longitudinal patterns of Family Expressed Emotion (FEE) and their association with adolescent depression rehabilitation.

Methods: A sample of depressed adolescents was assessed at four different time points (T1 to T4) post-discharge from a psychiatric inpatient unit. Family-expressed emotion was measured using established scales, and latent transition analysis was employed to examine the transitions between different FEE levels over time. Demographic variables such as gender and left-behind status were also analyzed to determine their impact on FEE.

Results: The study found that the rate of depression relapse among adolescents six months post-discharge was 24.6%. An increasing trend in high FEE was observed from baseline to three months, followed by a slight decrease. The study identified that adolescent depression scores at discharge, female and left-behind adolescents were more likely to be in high-FEE environments. The three-six months post-discharge had the highest likelihood of transitioning from low to high FEE.

Conclusions: The study highlights the significant role of family-expressed emotion in the rehabilitation of depressed adolescents. Parents need education on effectively managing family dynamics, particularly parents and caregivers of "Left-behind" children. The three-month mark, emerging as a critical transition period between the high and low FEE categories, makes this period crucial for targeted interventions to reduce high levels of family-expressed emotions.

Biography

Kodzo Lalit Dzifa is a dedicated mental health nurse and health tutor with extensive experience in psychiatric care and education. Holding a Master's in Public Health from Southern Medical University and pursuing a PhD in Nursing at Zhengzhou University, Dzifa has a robust academic background. With career-spanning roles as a mental health nurse, health tutor, and research assistant, Dzifa volunteers at the Psychological Hospital of Zhengzhou Ninth People's Hospital, working with adolescents on admission, fostering patient engagement, and providing engaging psychosocial activities and education. Her research focuses on adolescent mental health, depression, and psychosocial rehabilitation. Dzifa's dedication to mental health and education extends beyond clinical practice, as she actively engages in research and community initiatives to enhance mental health awareness and support systems.

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