

PUBLIC SAFETY & GLOBAL HEALTH CONGRESS

April 27-28, 2026
SINGAPORE



Book of Abstracts



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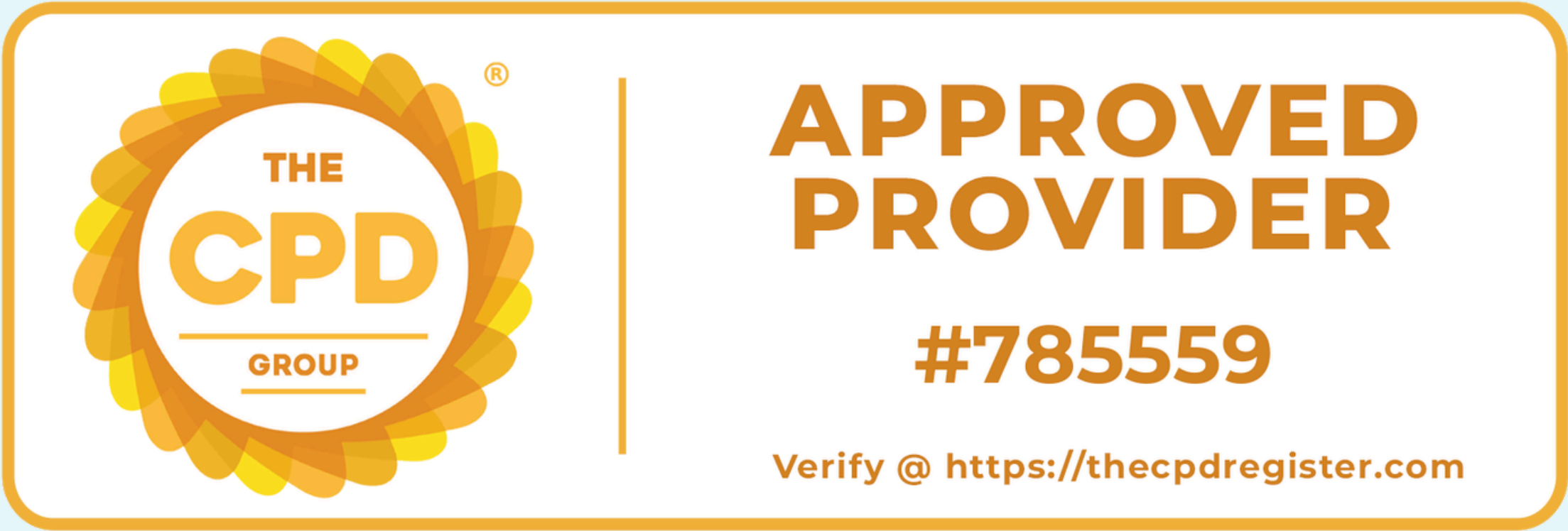
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Conference Programme



April 27 th 2026 (Day 1)	
09:00-09:30	Registrations
09:30-10:00	Opening Ceremony
Session 1: Public Health Education Public Health Nursing Women leadership and Women help in Healthcare Advanced Healthcare Technologies Hospital Management and Administration Patient Safety and Quality Care Medical Ethics and Legal Aspects Healthcare Policy and Regulation	
10:00-10:25	Title: Exploring the Potential of Oral Nicotine Pouches on Oral Health and as a Region- and Gender-Sensitive Harm Reduction Tool Delon Human, Tobacco Harm Reduction, UK
10:25-10:50	Title: The Effect Of Oral Facial Facilitation Therapy On Drooling: A Single Case Study New analytical methodology for cadmium quantification by solid surface fluorescence in biological samples. Reeny Roy, Professor, Speech and Hearing, Father Muller College, India
Coffee Break 10:50-11:10	
11:10-11:35	Title: Impact of muscle mass, muscle density and obesity on clinical outcomes in critically ill patients with COVID-19 Paulo Cesar Ribeiro , Sirio Libanes hospital in Sao Paulo Brasil
11:35-12:00	Title: Benzene Exposure Induces Hematotoxicity via Triggering Ferroptosis: Novel Implications for Public and Occupational Health Renjun Bao, Shidong Hospital of Shanghai Yangpu District, China
12:00-12:25	Title: Distribution and antibiotic resistance of pathogens in post-earthquake traumatic infections: a systematic review and meta-analysis. Wenxin Xue, U.S.-certified Medication Therapy Management, Pharmacist, China
12:25-12:50	Title: Modernising Acute PE and VTE Management: Meta-Analysis of Newer Anticoagulants Versus Traditional Therapy on Recurrence and Mortality Udvass Kumar Kotokey, National Institute of TB and Respiratory Diseases, India
Lunch Break 12:50-14:00	
14:00-14:25	Title: Determinants of insect repellent use to prevent dengue infection among travelers visiting Lipe island, Thailand: A cross-sectional survey Porncharnok Sabookaew, Institute of Preventive Medicine, Department of Disease Control, Ministry of Public Health, Thailand
14:25-14:50	Title: Sustaining HIV gains towards the UNAIDS 95 95 95 targets amid a shifting funding landscape in Sub Saharan Africa David Olpengs, Health Systems Strengthening Directorate, Amref Health Africa, Nairobi, Kenya
14:50-15:15	Title: Sustaining HIV gains towards the UNAIDS 95 95 95 targets amid a shifting funding landscape in Sub Saharan Africa Jennifer Mamwa, Health Systems Strengthening Directorate, Amref Health Africa, Nairobi, Kenya
Coffee Break 15:15-15:35	
15:35-16:00	Title: Disrupted riboflavin metabolism impairs circadian rhythm in ovarian granulosa cells: a novel mechanism driving DOR Yong Tan, Nanjing University of Chinese Medicine, Nanjing, Jiangsu 210023, China

16:00-16:25	Title: Disrupted riboflavin metabolism impairs circadian rhythm in ovarian granulosa cells: a novel mechanism driving DOR Yao Peng, Nanjing University of Chinese Medicine, Nanjing, Jiangsu 210023, China
16:25-17:50	Title: Trigger Factors of Primary Cerebral Hemorrhage Onset: A Case-Crossover Study Yun-Tao Pu, Chongqing Medical University Chongqing China
17:50-18:15	Title: Healing mechanism of PSO on deep second-degree burn wounds in a porcine model Yingnian Lu, Guangdong Medical University, Zhanjiang, 524023, China
18:15-18:40	Title: Investigating the Relationship Between Renal Fat Fraction and Biomarkers of Kidney Injury in Type 2 Diabetes Eisha Adnan, The First Affiliated Hospital of Chongqing Medical University, Chongqing, China

Closing Ceremony

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SESSIONS



BEST POSTER
AWARDS



B2B
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World Congress on Chemistry and Chemical
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Virtual Session

Public Health Education | Public Health Nursing | Women leadership and Women help in Healthcare | Advanced Healthcare Technologies | Hospital Management and Administration | Patient Safety and Quality Care | Medical Ethics and Legal Aspects | Healthcare Policy and Regulation

11:00-11:25	Title: Comparative study of corneal endothelial morphology and central corneal thickness in diabetic and non-diabetic patients at tertiary care centre Surbhi Sharma, D. Y. Patil Institute of Optometry and Visual Sciences, India
11:25-11:50	Title: To die or not to die – it’s a matter of your home district: An analysis of all Austrian political districts regarding COVID-19 mortality Stefanie Grötz, Martin Fieder and Harald Wilfing, Department of Evolutionary Anthropology, University of Vienna, Austria
11:50-12:15	Title: Four-Dimensional Continuity Gaps in Volunteer-Integrated Services for Older Adults: A Mixed-Methods Study in Urban China Mingzhu Yang, Shanghai Jiao Tong University School of Medicine, China
12:15-12:40	Title: Trends in Mortality from High-Risk Surgical Procedures: National Burden of Transplants, Implants, and Organ Removal from 1999-2024 in United States Ali Elkarouri, University of Medical Sciences and Technology, Khartoum, Sudan
12:40-13:05	Title: Improving staff awareness of sensory aid needs and dementia status in an old age ward. Bekim Arifaj , Princess Alexandra Hospital, Harlow, UK
13:05-13:30	Title: A way to Measure Acceptability for LLMs Usage in Project Management Teams Murilo Zanini de Carvalho , Engenharia de Computação, Inteli – Instituto de Tecnologia e Inovação, Brazil
13:30-13:55	Title: Resuscitation of a patient with progressive AIDS-related opportunistic infections complicated by MODS through multidisciplinary collaboration:Case Report Shaowei Huang,Yunnan Provincial Hospital of Infectious Disease/Yunnan AIDS Care Center/Yunnan Mental Health Center, China
13:55-14:20	Title: Neuromelioidosis Causing Rapidly Progressing Neurological Syndromes Mimicking Stroke and Demyelination: Insights from a Case Series Sindhu V Nambiar, St. John's Medical College Hospital, Bengaluru, India
14:20-14:45	Title: Dental Students’ Perception of Objective Structured Clinical Examination (OSCE): A Cross-Sectional Study Nissaf Daoauahi, Department of Fixed Prosthodontics, Faculty of Dentistry, University of Monastir, Tunisia
14:45-15:05	Title: Occupational noise induced hearing loss in orthopaedic theatre nurses: Exposing the silent threat and outlining interventions to prevent it Thomas Dean, St Michael's Hospital, Bristol, UK
15:05-15:30	Title: Oral and Maxillofacial Manifestations of Systemic Sclerosis: Clinical Insights and Implications for Early Diagnosis Saeed Almurait, Executive heath informatics: Dalla Lana School of Public Health, University of Toronto, Canada
15:30-15:55	Title: Exploring the Potential of Oral Nicotine Pouches on Oral Health and as a Region- and Gender-Sensitive Harm Reduction Tool Delon Human, Tobacco Harm Reduction, UK

April 27 th 2026	
15:55-16:20	Title: A gastrointestinal to cardiac redirection: acute pancreatitis and h. Pylori gastritis Unveiling a life-threatening right atrial myxoma nearly obstructing right Ventricular inflow in a 51-year-old woman Shelley Cham, Makati Medical Center, Makati, Philippines
16:20-16:45	Title: A Buffering Role of Perceived Social Support and Resilience between Caregiver Burden and Perceived Stress among Informal Caregivers of Dementia Elderly Patients Saba Zahid Hayat, Professional School of Psychology, Bahria University, Islamabad, Pakistan
16:45-17:05	Title: Effects of Electron Beam Irradiation on the Physicochemical, Functional, Nutritional Properties, and Microstructure of Millet Flour (Pennisetum Glaucum L.R.Br.) Dely Maissa, University of Carthage,Higher Institute of Food Industries of Tunisia (ESIAT) , Tunis, Tunisia.

April 28th 2026 (Day 2)

Virtual Session

08:30-08:55	Title: Non-Union after Bisphosphonate-Associated Atypical Femoral Fractures: A Review of the Current Literature Sam Marsh, Royal Perth Hospital, Wellington Street, Perth, Western Australia, Australia
08:55-09:20	Title: Bridging Technologies: How Chromosomal Microarray Complements Optical Genome Mapping in Detecting Copy-Neutral Genomic Alterations Shivani Golem, Department of Pathology & Laboratory Medicine, University of Kansas Medical Center, USA
09:20-09:45	Title: Human YTHDC2 mutations disturb RNA homeostasis of oocytes and early embryos Honghui Zhang, Shandong University, China
09:45-10:10	Title: Barriers to accessing sexual and reproductive healthcare services for brothel-based female sex workers in rural Bangladesh and their potential solutions: A mixed methods study Sanjoy Kumar Chanda, Faculty Member, Sociology Discipline, Khulna University, Bangladesh
10:10-10:30	Title: Effects of an Asynchronous, Online Training Program for Caregivers of Children with Autism Using Augmentative and Alternative Communication Meghan Wendelken, Adelphi University, USA
10:30-10:50	Title: Perceptions of Nurses on the Current Nursing Care of Patients with Dual Diagnosis in Ghana: A Qualitative Study Frederick Nsatimba, University of Cape Coast, Ghana
10:50-11:15	Title: Quality of reports on drug toxicity in Eudravigilance. A safety physician’s perspective Jana Brajdih Čendak, Billev Pharma East Ltd., Slovenia
11:15-11:40	Title: Shaped association between cardiometabolic index and depressive symptoms: a population-based cross section study of U.S. adults Chao Yu, Jiangxi Medical College, Nanchang University, China
11:40-12:05	Title: Longitudinal Impact of the COVID-19 Pandemic on the Weight Status of Brazilian Children: A Warning for Global Health and Sustainable Development (2020–2025) Sandro Lucas Sofiati, Health Sciences Center, State University of Northern Parana, Brazil

12:05-12:30	Title: Mobilization with Movement Enhances Early Rehabilitation Outcomes In Knee Osteoarthritis: A Six-Week Randomized Controlled Trial Amir Iqbal, College of Applied Medical Sciences, King Saud University, Saudi Arabia
12:30-12:55	Title: Exposure to Biomedical Research in Jewish American Education in the New York City Metropolitan Area, United States: A Halachic Imperative Nicole Muravsky, University of Pennsylvania, USA
12:55-13:20	Title: Design of a Cholic Acid-based Triarmed Star Polymer Network for Targeted and Sustained Drug Delivery for Melanoma Treatment Souvik Chowdhury, SMST, IIT BHU, India
13:20-13:55	Title: Emotional contagion in virtual leadership: A webcam-based study of expressivity, psychological safety, and team output Vidhu Gaur, Management Development Institute Gurgaon, India
13:55-14:20	Title: The Economic Burden of Managing Diabetes Mellitus in Children in Sudan: A Cross-Sectional Study Hiba Ali Elzaki Hajomer, College of Medicine, Gulf Medical University, Ajman, UAE
14:20-14:45	Title: Neo-BCV: A Novel Bacterial Complex Vaccine Reshaping the Gut Microbiota to Enhance the Antitumor Immune Response Kecheng Xu, Fuda Cancer Hospital Guangzhou, China
14:45-15:05	Title: Prevalence of quorum sensing luxS gene in multidrug resistant uropathogen Shilpa Pradhan, Microbiology Division, Mamata Academy of Medical Sciences, Hyderabad, India
15:05-15:30	Title: Bioinductive xeno-derived collagen implant in arthroscopic rotator cuff repair: 24-Month MRI and Clinical Evaluation Francesco Raffelini, Istituto Fiorentino di Cura e Assistenza, 50139 Florence, Italy



PUBLIC SAFETY & GLOBAL HEALTH CONGRESS

April 27-28, 2026

SINGAPORE

Day 1 April 27, 2026

Speaker Abstracts



Exploring the Potential of Oral Nicotine Pouches on Oral Health and as a Region- and Gender-Sensitive Harm Reduction Tool

Delon Human, Tobacco Harm Reduction, UK

Abstract

Oral Nicotine Pouches (ONPs) have emerged as an unexpected breakthrough amidst the persistent public health crisis caused by tobacco smoking. With 1.27 billion smokers worldwide and 3.7 billion people affected by oral diseases, ONPs offer a risk-reduced solution that helps mitigate harm on both fronts. ONPs deliver nicotine without combustion and without tobacco – earning them a low spot on the relative risk scale, which sees tobacco smoking as 100% harm and complete cessation at 0%. Increasingly, evidence also demonstrates that ONPs may be one of the most effective smoking cessation tools available today. This research explores such claims by tracing the origins and growth of ONPs, with a particular focus on their potential in lower- and middle-income countries (LMICs) and their already-proven benefits for women in providing a gender-sensitive solution. LMICs disproportionately bear 84% of the burden caused by the oral health crisis – a burden largely caused by smoking and high-risk smokeless tobacco use. This remains true despite decades of tobacco control efforts. While these efforts focus on a cessation-only approach, complementing them with tobacco harm reduction in general and ONPs in particular can help increase the rate of success. Similarly, this research explores how ONPs have helped account for gendered differences in cessation choices in countries such as Sweden – citing evidence of success and hopes of replication. Finally, the research also examines common myths and misconceptions regarding tobacco harm reduction and ONPs, providing evidence of their incorrect or outdated nature in order to accurately understand the potential and power of ONPs in addressing the tobacco epidemic today for a healthier tomorrow. Keywords : tobacco, oral nicotine pouches, tobacco harm reduction, LMIC, Sweden

Keywords

tobacco, oral nicotine pouches, tobacco harm reduction, LMIC, Sweden

Biography

Dr. Delon Human is a Physician, Global Health Advocate, Founder of THR.net

Dr. Delon Human, M.B.Ch.B., M.Prax.Med, MFGP, DCH, MBA serves as President and CEO of Health Diplomats, a specialized health, nutrition and wellness consulting group operating worldwide. He has acted as adviser to three WHO Directors-General and to the UN Secretary-General on global public health strategies.

Up to 2014 he served as Secretary-General, CEO and Special Envoy to WHO / UN of the International Food and Beverage Alliance (IFBA), a group of leading food and non-alcoholic beverage companies with a global presence (including Unilever, Nestlé, McDonald's, Coca-Cola, PepsiCo, Ferrero, Mars, General Mills, Mondeléz and the Bel Group). He has served on the Board of Directors / Advisory Boards of selected health, wellness and medical diagnostics companies.



The Effect of Oral Facial Facilitation Therapy On Drooling: A Single Case Study

Reeny Roy, Father Muller College of Speech and Hearing, India

Reeny Roy^{1*}, Fathima Ashiq², Nainika Thomas², Jesmin Paul², Namitha Binu & Ann Treesa Sajayan²

¹Department of Speech and Hearing, Father Muller College of Speech and Hearing, Mangalore, India

²Undergraduate Students of Father Muller College of Speech and Hearing, Mangalore, India

Abstract

To evaluate the effectiveness of Oral Facial Facilitation (OFF) therapy in reducing drooling severity and improving oral motor control, swallowing, and facial tone in adults with neurological impairment. The study aims to address the limited evidence supporting OFF's role in sialorrhea management within the Indian context. A single-case design was utilized, involving a 56-year-old adult referred for speech assessment and therapy. A comprehensive assessment was conducted, that included cognitive, speech and language, intelligibility rating scales as well as drooling severity/frequency scales. The patient underwent a six-day regimen of Oral Facial Facilitation therapy (icing, brushing, manipulation, and oral-motor sensory exercises), with daily sessions lasting 45–60 min. Baseline evaluation indicated poor oral sensory-motor coordination, weak swallow reflex, and severe drooling. Notable gains were documented in oral motor control, lip strength, tongue retraction, jaw stability, swallowing, and facial tone, indicating effective reduction in sialorrhea. Oral Facial Facilitation therapy, comprising four therapeutic methods, proved effective in controlling excessive saliva production and enhancing neuromuscular learning and sensorimotor control. The outcomes highlight OFF therapy as a practical, evidence-based intervention for adult neurological drooling, expanding its utility for speech-language pathologists and swallowing therapists.



Impact of muscle mass, muscle density and obesity on clinical outcomes in critically ill patients with COVID-19

Paulo Cesar Ribeiro , Sirio Libanes hospital in Sao Paulo Brasil

**Paulo Ribeiro^{a,b}, Eduardo Leite Vieira Costa^{b,c}, Davi Romão^d, Naiara Lima Matos^e
 Montserrat Montes Ibarra^f, Carla M. Prado^f**

a- Multidisciplinary Nutrition Team Sirio Libanês Hospital São Paulo, Brazil, b- Research and Education Institute, Sirio Libanês Hospital, São Paulo, Brazil

c- Divisão de Pneumologia, Faculdade de Medicina, Instituto do Coração, Hospital das Clinicas Faculdade de Medicina, Universidade de São Paulo, São

Paulo, Brazil, d- Department of radiology of Sirio Libanês Hospital São Paul, Brazil, e- Department of Intensive Care of Sirio Libanês Hospital São Paulo, Brazil, f- Human Nutrition Research Unit, Department of Agricultural, Food, & Nutritional Science, University of Alberta, Edmonton, Alberta, Canada

Abstract

Objective: Obesity is generally recognized as an independent risk factor for poor outcomes in Coronavirus Disease 2019 (COVID-19); however, some studies report a paradoxical protective effect. Findings may be mediated by low muscle mass, a relevant predictor of poor clinical outcomes in critically ill patients. We aimed to investigate the association of body mass index (BMI), baseline low muscle mass index (SMI) and low muscle density (SMD) with clinical outcomes in critically ill patients with COVID-19.

Design: This retrospective cohort study was conducted at a tertiary care center in Sao Paulo, Brazil. We included all consecutive patients admitted to the intensive care unit (ICU) from March 1st, 2020, to May 31st, 2021, with a confirmed diagnosis of COVID-19 and who had a measured SMI and SMD by thoracic computed tomography (CT) at admission. SMI and SMD were assessed from a transverse image at the level of the 12th thoracic vertebra (T12), and BMI at admission was calculated. The association between coprimary exposures BMI, low SMI, low SMD and hospital mortality was assessed through multivariable analysis accounting for confounding factors such as age, sex, Simplified Acute Physiology Score 3 (SAPS 3) and comorbidities.

Results: A total of 962 patients were included; 63.7 (± 15.3) years; 75.8% males. SMI was assessed in all patients; however, 33 with contrast CTs were excluded from the SMD analysis. The prevalence of low SMI was 21.6 % (208/962). The prevalence of low SMD was 22.7% (211/929). A total of 391 (40.6%) patients were classified as overweight, and 393 (40.8%) as having obesity. Hospital mortality was 14.3%, increasing to 26.2% for patients aged greater than or equal to 65 years. We found no significant association between BMI, SMI or SMD and hospital mortality.

Patients with low SMI were more likely to undergo extracorporeal membrane oxygenation ($P = 0.045$), required longer duration of mechanical ventilation (MV) ($p < 0.001$), and had prolonged ICU and hospital stays ($p < 0.001$). Low SMD was independently associated only with ICU readmission ($p=0.034$) and longer hospital stay ($p < 0.001$). Patients with a higher BMI were more likely to be intubated and placed under MV ($p < 0.001$). Higher BMI was also associated with longer ICU ($p = 0.001$) and hospital stays ($p = 0.049$).

Patients with obesity and low SMI had longer ICU ($p = 0.033$), and hospital ($p < 0.001$) stays, and extended MV duration compared to those with obesity and normal SMI ($p = 0.003$).

Conclusions: BMI, low SMI, and low SMD were not associated with in-hospital mortality in this cohort. However, these parameters were important predictors of morbidity, including longer ICU and hospital stays, greater need for mechanical ventilation, and ICU readmissions. These findings highlight the importance of assessing body composition parameters in critically ill patients with COVID-19.



Benzene Exposure Induces Hematotoxicity via Triggering Ferroptosis: Novel Implications for Public and Occupational Health

Renjun Bao, Shidong Hospital of Shanghai Yangpu District, China

Abstract

Benzene, a ubiquitous industrial and environmental pollutant, is a well-established hematotoxicant associated with severe disorders such as myelodysplastic syndromes and leukemia. However, the precise cellular mechanism linking benzene exposure to hematopoietic damage remains incompletely understood. Our study identifies ferroptosis—an iron-dependent form of regulated cell death—as a critical pathway in benzene-induced hematotoxicity. Using murine models and primary bone marrow CD34+ cells, we demonstrate that benzene exposure triggers lipid peroxidation, disrupts iron homeostasis, and significantly downregulates glutathione peroxidase 4 (GPX4), a key ferroptosis regulator. Genetic knockout of GPX4 exacerbated benzene-induced bone marrow hypocellularity and hematopoietic stem cell loss, whereas GPX4 overexpression conferred protection. Importantly, ferroptosis inhibitors (deferrioxamine and ferrostatin-1) effectively mitigated benzene-induced cytotoxicity, restored colony-forming capacity, and reduced oxidative damage. These findings reveal a previously unrecognized mechanistic link between environmental benzene exposure and ferroptosis-driven hematopoietic injury. Our work highlights the potential of targeting ferroptosis as a novel therapeutic strategy and underscores the urgent need for strengthened environmental and occupational safety measures to protect public health from benzene-related risks.

Biography

Dr. Renjun Bao is an Attending Physician in the Department of Hematology at Shidong Hospital, Yangpu District, Shanghai. A graduate of Shanghai Jiao Tong University School of Medicine, she further pursued postgraduate medical training and holds a Master's degree. Her clinical and research expertise lies in the diagnosis and treatment of hematological diseases, with a focused investigation into the mechanisms of hematotoxicity induced by environmental pollutants such as benzene. Dr. Bao has authored several peer-reviewed publications and is committed to translating research insights into clinical and public health applications.



Distribution and antibiotic resistance of pathogens in post-earthquake traumatic infections: A systematic review and meta-analysis

Wenxin Xue, U.S.-certified Medication Therapy Management, Pharmacist, China

Abstract

Objective: Following an earthquake, differences in antibiotic resistance of pathogens may arise due to environmental changes, human activities, and the inherent characteristics of pathogens. To systematically analyze the incidence and resistance profiles of pathogens following earthquakes, aiming to provide a basis for the rational use of antimicrobial agents aimed at drug-resistant pathogens in earthquake-affected patients.

Methods: A comprehensive literature search was conducted using PubMed, Web of Science, Embase, CNKI, and Wanfang databases from January 1, 2002, to May 10, 2025. Data were extracted on earthquake locations, mean age of patients, number of isolated strains, and types of strains. Two researchers independently conducted the literature search and data extraction. The quality of the included studies was assessed using the JBI Case Series Appraisal Tool. Data analysis was performed using Stata 17.0 software to calculate the incidence rates of pathogens and their 95% confidence intervals (CIs), as well as the resistance rates and their 95% CIs for the five most prevalent pathogens.

Results: Sixteen single-arm studies involving 2974 pathogen strains were included. The meta-analysis revealed that the five most prevalent pathogens were *Escherichia coli*, *Acinetobacter baumannii*, *Pseudomonas aeruginosa*, *Enterobacter cloacae*, and *Staphylococcus aureus*, with detection rates of 14.5% [95% CI (10.8%, 18.9%)], 12.1% [95% CI (6.4%, 19.7%)], 10.5% [95% CI (7.6%, 13.8%)], 9.6% [95% CI (4.6%, 16.3%)], and 7.4% [95% CI (5.2%, 9.9%)] respectively. The highest resistance rates were found against Imipenem in *Escherichia coli* (79.8% [95% CI (29.6%, 99.5%)]), Cefazolin in *Acinetobacter baumannii* (85.1% [95% CI (30.0%, 95.9%)]), Piperacillin in *Pseudomonas aeruginosa* (45.5% [95% CI (25.1%, 66.2%)]), Cefazolin in *Enterobacter cloacae* (85.8% [95% CI (30.0%, 95.5%)]), and Ceftriaxone in *Staphylococcus aureus* (87.9% [95% CI (55.0%, 99.9%)]).

Conclusion: This study shows that there is limited research on the pathogens and their drug resistance after the earthquake disaster, and the data is concentrated in one region. The distribution of pathogens in earthquake-affected patients shows specific patterns, with a higher incidence and common resistance observed in Gram-negative rods. These pathogens exhibited the lowest resistance to Imipenem/Cilastatin and were less likely to develop resistance to quinolone antibiotics such as Netilmicin and Amikacin.

Keywords: Antimicrobial agents; Earthquake; Meta-analysis; Pathogens; Resistance



Modernising Acute PE and VTE Management: Meta-Analysis of Newer Anticoagulants Versus Traditional Therapy on Recurrence and Mortality

Udvass Kumar Kotokey, National Institute of TB and Respiratory Diseases, India

Abstract

Background: Venous thromboembolism (VTE), encompassing deep vein thrombosis and pulmonary embolism (PE), is a leading cause of cardiovascular morbidity and mortality. While vitamin K antagonists (VKAs) and low molecular weight heparins (LMWHs) have long served as the standard of care, non-vitamin K antagonist oral anticoagulants, particularly factor Xa inhibitors, have emerged as promising alternatives due to their favourable pharmacokinetic profiles and ease of use. This meta-analysis aimed to evaluate the efficacy and safety of factor Xa inhibitors (apixaban, rivaroxaban, and edoxaban) compared with VKAs or LMWHs in treating acute VTE and PE, including recurrence prevention and mortality outcomes.

Method: A systematic review and meta-analysis were conducted in accordance with PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analyses) 2020 guidelines. Seven randomised controlled trials comprising 25,510 patients were included. Outcomes assessed included VTE recurrence, PE recurrence, and all-cause mortality. Subgroup analyses examined effects in cancer and non-cancer-associated VTE, VTE in renal impairment, VTE-related mortality, bleeding-related mortality, and major bleeding in cancer, non-cancer, and solid tumours. Statistical analyses were performed using a random-effects model.

Results: Factor Xa inhibitors were associated with a statistically significant 15% reduction in VTE recurrence (hazard ratio [HR] 0.85; 95% confidence interval [CI] 0.72-0.99; $p=0.04$). In cancer-associated VTE, they significantly reduced recurrence risk by 24% (HR 0.76; 95% CI 0.59-0.98). In patients without cancer, a non-significant 10% reduction was observed (HR 0.90; 95% CI 0.76-1.06). Major bleeding was significantly lower in patients without cancer (HR 0.76; 95% CI 0.58-0.99), while no significant difference was noted in cancer-associated VTE or solid tumour subgroups. Factor Xa inhibitors significantly reduced bleeding-related mortality by 49% (HR 0.51; 95% CI 0.26-0.99), but showed no difference in VTE-specific or all-cause mortality.

Conclusions: Factor Xa inhibitors are effective and safe alternatives to traditional anticoagulants for most patients with acute VTE. They significantly reduce VTE recurrence, particularly in patients with cancer and bleeding-related mortality. Major bleeding was significantly less in the non-cancer subgroup. These findings support their use as first-line therapy in appropriately selected patients, with consideration of individual bleeding risk, cancer type, renal function, and treatment setting.

Keywords: Deep vein thrombosis; Non-vitamin K antagonist oral anticoagulants; Pulmonary embolism; Venous thromboembolism.



Determinants of insect repellent use to prevent dengue infection among travelers visiting Lipe island, Thailand: A cross-sectional survey

Porncharnok Sabookaew, Institute of Preventive Medicine, Department of Disease Control, Ministry of Public Health, Thailand

Porncharnok Sabookaew^a, Punyavee Srikin^{a,b}, Amornphat Kitro^c, Ameenuddeen Hayeeyawa^d, Kanittha Chamroonsawasdi^{e,*}

^aInstitute of Preventive Medicine, Department of Disease Control, Ministry of Public Health, Thailand

^bBamrasnaradura Infectious Diseases Institute, Department of Disease Control, Ministry of Public Health, Thailand

^cDepartment of Community Medicine, Environmental and Occupational Medicine Excellence Center, Faculty of Medicine, Chiang Mai University, Thailand

^dSubdistrict Health Promoting Hospital Ban Koh Lipe, Satun province, Thailand

^eDepartment of Family Health, Faculty of Public Health, Mahidol University, Thailand

Abstract

Background: Dengue infection is a mosquito-borne disease affects many regions of the world, including Lipe islands that are popular tourist destinations with high Aedes larval density by house index. The Protection Motivation Theory (PMT) is applied to determine relationships among knowledge, perception and preventive practice of dengue infection by using insect repellent among island travelers.

Methods: A cross-sectional study was conducted using a self-administered questionnaire among travelers aged 18 years or older between October 2024 and January 2025. The insect repellent use was obtained from self-reports during staying on the Lipe Island. Data was analyzed by descriptive statistics, the Chi-square test, and logistic regression, with a significance level set at p-value <0.05.

Results: Among 419 respondents, 206 and 213 were Thais and international travelers. With a median age in each group as 35 and 32 years old respectively. The proportion of insect repellent use was 69.2%. The determinants influencing the use of insect repellent for Dengue prevention were international travelers (aOR: 3.151, 95% CI = 1.710-5.806), staying in Lipe Island for 6-7 days (aOR:4.941, 95%CI = 1.501-16.265), high perceived response efficacy (aOR: 2.004, 95%CI = 1.203-3.338), high perceived self-efficacy (aOR: 2.259, 95%CI = 1.377- 3.706) and low perceived response cost (aOR = 1.712, 95%CI = 1.033-2.838), All factors were able to predict the preventive practices at 72%.

Conclusion: About two-thirds of travelers use insect repellent in the island. Improvement in perceive self-efficacy, response efficacy and response cost among this group can increase the efficacy of dengue prevention in the island setting.



Sustaining HIV gains towards the UNAIDS 95 95 95 targets amid a shifting funding landscape in Sub Saharan Africa

David Ompengs, Health Systems Strengthening Directorate, Amref Health Africa, Nairobi, Kenya

David Ompengs^{*1}, Jennifer Mamwa¹

¹Health Systems Strengthening Department, Amref Health Africa

Abstract

Introduction Over the past two decades, Sub-Saharan Africa has achieved remarkable progress toward the UNAIDS 95-95-95 targets through sustained donor investment, community leadership, and political commitment. However, in early 2025, abrupt funding contractions including the suspension of PEPFAR disbursements by the United States and significant cuts by other major donors, threaten to reverse gains. This study examines the potential implication of these funding shifts on the HIV response and explores strategies to sustain progress in a changing financing landscape.

Methodology: This review employed a structured narrative synthesis approach. A comprehensive search was conducted across peer-reviewed journals, grey literature, and institutional reports published between 2020 and 2025. Databases searched were PubMed, Google Scholar, and institutional repositories using terms such as “HIV/AIDS,” “Sub-Saharan Africa,” “95-95-95 targets,” “donor funding cuts,” and “health system resilience.” Of 99 records identified, 15 articles and reports met inclusion criteria. Data were thematically analyzed along the three pillars of the 95-95-95 framework. Findings Funding cuts have led to immediate service delivery challenges. HIV testing programs in East and Southern Africa report supply chain interruptions, staff shortages, and reduced outreach, particularly in marginalized communities. ART initiation has slowed due to clinic budget constraints and inadequate safety nets, leading to declines in patient retention and treatment uptake. Viral load monitoring systems are increasingly strained, with insufficient resources for reagents, equipment, and logistics. These disruptions are projected to cause a sixfold increase in new infections and a surge in AIDS-related mortality by 2029 if unaddressed. Furthermore, funding disparities are exacerbating inequities, with countries like Botswana and Eswatini maintaining progress due to better ability to absorb shocks, while conflict-affected and resource-poor regions face greater setbacks Conclusion: Sustaining HIV gains will require urgent financing adaptation, stronger domestic investment, and deeper integration of HIV services within resilient systems to prevent reversal of hard-won progress.

Biography

David Ompengs is a Health Economist and Policy with three years of multidisciplinary experience supporting health financing reforms, primary healthcare (PHC) strengthening, digital health innovation, multisectoral policy analysis and pharmaceutical practice and management in several Sub-Saharan Africa Countries. His career roadmap reflects a deep commitment to strengthening systems for health in Africa, with a demonstrated ability to support national governments and development partners through strategic policy analysis, transition readiness assessments, stakeholder engagement, and evidence generation for decision-making intervention design. He has a growing track record contributing to PHC infrastructure strengthening, sustainable health financing reforms, and regional health governance dialogues aligned with on human capital development, resilient systems, and inclusive growth goals. He is a published researcher and capacity-building advocate with demonstrated leadership in coordinating research training and mentorship hub.



Sustaining HIV gains towards the UNAIDS 95 95 95 targets amid a shifting funding landscape in Sub Saharan Africa

Jennifer Mamwa, Health Systems Strengthening Directorate, Amref Health Africa, Nairobi, Kenya

Jennifer Mamwa¹, David Olpengs^{*1}

¹Health Systems Strengthening Department, Amref Health Africa

Abstract

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Biography

Dr. Jennifer Chepkorir is an experienced programme and project management professional with over 15 years of leadership in health systems strengthening, strategy execution, and multi-country programme implementation across Africa. She currently serves as Strategy Execution Lead at Amref Health Africa, where she supports the strategic coordination of health systems strengthening initiatives across several African countries. Her work focuses on strategic planning, partnership development, resource mobilization, and translating complex health reforms into actionable programmes that improve primary health care delivery. She has extensive experience working with governments, multilateral agencies, and global donors.

Dr. Chepkorir has led several regional initiatives aimed at strengthening leadership, governance, and health financing systems across Africa. She holds a PhD in Business Administration (Finance and Strategy) from Jomo Kenyatta University of Agriculture and Technology and an Executive MBA from Copenhagen Business School. Her professional interests include health systems transformation, strategic partnerships, and the emerging use of artificial intelligence to strengthen decision-making and service delivery in health systems.



Disrupted riboflavin metabolism impairs circadian rhythm in ovarian granulosa cells: a novel mechanism driving DOR

Yong Tan, Nanjing University of Chinese Medicine, Nanjing, Jiangsu 210023, China

Yao Peng^a; Jie Chen^b; Yong Tan^{a,b*}

a. Nanjing University of Chinese Medicine, Nanjing, Jiangsu 210023, China

b. Affiliated Hospital of Nanjing University of Chinese Medicine, Nanjing, Jiangsu 210023, China

Abstract

Diminished ovarian reserve (DOR) is a major cause of female infertility and a significant indicator of reproductive aging, yet its underlying pathogenesis remains poorly understood. In this study, we initially assessed the expression of core circadian genes in ovarian granulosa cells from DOR patients and in ovaries from cyclophosphamide (Cy)-induced DOR model rats. We observed dysregulated expression of circadian genes in DOR ovaries. Proteomic analysis further revealed a significant decrease in riboflavin kinase (RFK) expression in DOR rat ovaries, concomitant with abnormal elevation of the clock proteins BMAL1. RFK deficiency impairs riboflavin metabolism, thereby inhibiting the synthesis of flavin adenine dinucleotide (FAD). FAD competes with CRY proteins for binding to the E3 ubiquitin ligase substrate receptor, thereby reducing CRY degradation, while the CRY inhibits the transcriptional activity of BMAL1. Subsequent molecular experiments demonstrated that RFK knockdown not only reduced FAD synthase (FADS) levels but also exacerbated CRY1/2 degradation, disrupted circadian regulation, impaired ovarian granulosa cell function, and accelerated ovarian aging. Our findings indicate that aberrant riboflavin metabolism may accelerate ovarian functional decline by compromising circadian regulation. Collectively, this study elucidates a pivotal role for RFK in DOR pathogenesis and provides a theoretical foundation for developing novel therapeutic strategies targeting circadian pathways.

Keywords: diminished ovarian reserve; riboflavin metabolism; circadian rhythm; granulosa cells; flavin adenine dinucleotide (FAD); cryptochrome 1/2 (CRY1/2)

Funding: This study was supported by the National Natural Science Foundation of China (82330125).



Healing mechanism of PSO on deep second-degree burn wounds in a porcine model

Yingnian Lu, Guangdong Medical University, Zhanjiang, 524023, China

Ming Chen ^{a 1}, Zhixian Wu ^{b 1}, Rujie Yuan ^a, Qingyan Deng ^a, Gangqing Lu ^a, Jinyan Chen ^a, Kaolin Li ^a, Lizhong Liang ^a, Yingnian Lu ^a

^a School of Ocean and Tropical Medicine, Guangdong Medical University, Zhanjiang, 524023, China

^b Guangdong Medical University Affiliated Hospital, Zhanjiang, 524023, China

Abstract

Ethnopharmacological relevance: PSO (Plant burn ointment) is a widely used traditional Chinese medicine formula. PSO is known for detoxifying, reducing swelling, promoting tissue regeneration, and relieving pain.

Aim of the study: This study aimed to identify the active constituents of PSO and investigate its anti-inflammatory and burn wound healing activities.

Materials and methods: The effects of PSO on burns were evaluated using a burn-injured Bama minipig model. UHPLC-MS was employed to identify its active components. Tissue staining and immunohistochemistry were used to observe structural changes during the healing process. ELISA kits and the WST-8 assay were used to measure the levels of oxidative stress markers, inflammatory cytokines, and growth factors.

Results: UHPLC-MS analysis identified seven potential active constituents in PSO: oxymatrine, aloesin, chlorogenic acid, resveratrol, baicalin, berberine, and osthole. Burn wounds in all groups were observed and recorded. The PSO group showed the fastest wound healing rate. Histological analyses confirmed that PSO accelerated skin healing. In the wound tissue of the PSO group, the levels of TGF- β , VEGF, EGF, and SOD remained consistently elevated. In contrast, the levels of TNF- α , IL-1 β , and IL-6 were significantly reduced.

Conclusions: UHPLC-MS analysis identified potential active constituents in PSO. PSO improved burn wound healing, as shown by wound closure rates, histological staining, immunohistochemistry, ELISA, and WST-8 assays. It reduced inflammation and oxidative stress. It also supported skin tissue regeneration. The study identifies both the active components of PSO and its pharmacological actions in burn wound healing.



Disrupted riboflavin metabolism impairs circadian rhythm in ovarian granulosa cells: a novel mechanism driving DOR

Yao Peng, Nanjing University of Chinese Medicine, Nanjing, Jiangsu 210023, China

Yao Peng^a; Jie Chen^b; Yong Tan^{a,b*}

a. Nanjing University of Chinese Medicine, Nanjing, Jiangsu 210023, China

b. Affiliated Hospital of Nanjing University of Chinese Medicine, Nanjing, Jiangsu 210023, China

Abstract

Diminished ovarian reserve (DOR) is a major cause of female infertility and a significant indicator of reproductive aging, yet its underlying pathogenesis remains poorly understood. In this study, we initially assessed the expression of core circadian genes in ovarian granulosa cells from DOR patients and in ovaries from cyclophosphamide (Cy)-induced DOR model rats. We observed dysregulated expression of circadian genes in DOR ovaries. Proteomic analysis further revealed a significant decrease in riboflavin kinase (RFK) expression in DOR rat ovaries, concomitant with abnormal elevation of the clock proteins BMAL1. RFK deficiency impairs riboflavin metabolism, thereby inhibiting the synthesis of flavin adenine dinucleotide (FAD). FAD competes with CRY proteins for binding to the E3 ubiquitin ligase substrate receptor, thereby reducing CRY degradation, while the CRY inhibits the transcriptional activity of BMAL1. Subsequent molecular experiments demonstrated that RFK knockdown not only reduced FAD synthase (FADS) levels but also exacerbated CRY1/2 degradation, disrupted circadian regulation, impaired ovarian granulosa cell function, and accelerated ovarian aging. Our findings indicate that aberrant riboflavin metabolism may accelerate ovarian functional decline by compromising circadian regulation. Collectively, this study elucidates a pivotal role for RFK in DOR pathogenesis and provides a theoretical foundation for developing novel therapeutic strategies targeting circadian pathways.

Keywords: diminished ovarian reserve; riboflavin metabolism; circadian rhythm; granulosa cells; flavin adenine dinucleotide (FAD); cryptochrome 1/2 (CRY1/2)

Funding: This study was supported by the National Natural Science Foundation of China (82330125).

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Speaker Abstracts

Comparative study of corneal endothelial morphology and central corneal thickness in diabetic and non-diabetic patients at tertiary care centre

Surbhi Sharma, D. Y. Patil Institute of Optometry and Visual Sciences, India

Surbhi Sharma, Veshal Vinod Madan & Susmita Banerjee
D. Y. Patil Institute of Optometry and Visual Sciences, India

Abstract

Background: Diabetes mellitus is a chronic condition that affects various organs, including the eyes. Corneal endothelial dysfunction, a key factor in ocular health, can be influenced by long-term diabetes. Early detection of corneal changes, such as central corneal thickness (CCT), endothelial cell density (CD), coefficient of variation (CV), and hexagonality (HEX), may provide insights into diabetic ocular complications. This study evaluates the differences in corneal endothelial parameters between diabetic and non-diabetic individuals.

Aim: To compare the corneal endothelial parameters, including CCT, CD, CV, and HEX, in diabetic patients and non-diabetic controls, and assess the correlation between these parameters and the duration of diabetes.

Methodology: This cross-sectional comparative study was conducted at a tertiary eye care hospital with 100 eyes from 50 diabetic patients and 100 eyes from 50 age-matched non-diabetic controls. All participants underwent a comprehensive ophthalmological evaluation, including intraocular pressure measurement, refraction, best corrected visual acuity, and slit-lamp biomicroscopy. Corneal endothelial imaging was performed using non-contact specular microscopy to assess CCT, CD, CV, and HEX. Statistical analysis was performed using SPSS, with a p-value of < 0.05 considered statistically significant.

Results: In our study, diabetic patients had significantly higher central corneal thickness (CCT) in both eyes (OD: $593.9 \pm 60.2 \mu\text{m}$; OS: $610.5 \pm 60.7 \mu\text{m}$) compared to non-diabetics (OD: $550.9 \pm 66.1 \mu\text{m}$; OS: $593.9 \pm 60.2 \mu\text{m}$). Hexagonality (HEX) was lower in diabetics (OD: $43.2 \pm 12.5\%$; OS: $42.3 \pm 15.8\%$) vs. non-diabetics (OD: $52.1 \pm 10.5\%$; OS: $41.7 \pm 11.9\%$). HbA1C was significantly higher in diabetics ($7.31 \pm 1.13\%$) than non-diabetics ($5.48 \pm 0.67\%$; $p = 0.012$). Cell density (CD) and coefficient of variation (CV) showed no significant differences.

Conclusion: Diabetic patients exhibit significant changes in corneal endothelial parameters, which may indicate early endothelial dysfunction. Regular monitoring of these parameters could provide valuable insights into the ocular health of diabetic individuals.

To die or not to die – it's a matter of your home district: An analysis of all Austrian political districts regarding COVID-19 mortality

Stefanie Grötz, Department of Evolutionary Anthropology, University of Vienna, Austria

Stefanie Grötz, Martin Fieder & Harald Wilfing

Department of Evolutionary Anthropology, University of Vienna, Austria

Abstract

Background: Coronavirus disease 2019 (COVID-19), first identified in Wuhan in 2019, rapidly escalated into a global pandemic. Austria reported its initial cases in February 2020, resulting in millions of infections and thousands of deaths. This study investigates COVID-19 mortality across Austrian districts, analyzing factors such as age, sex, immigrant background, household size, education and vaccination status.

Methods: We analyzed data from the Austrian National Public Health Institute, comprising 4,591,739 confirmed cases and 20,123 deaths as of July 2022. We used a linear mixed model to examine whether individuals died from COVID-19. Furthermore, we created three interaction models: (i) vaccination status and consecutive month, (ii) age and consecutive month and (iii) sex and consecutive month. Additional linear models examined household size, education, and citizenship at the district level.

Results: Our findings highlight several determinants of COVID-19 mortality in Austria. Advanced age significantly increases mortality risk, while vaccination is strongly protective. Female sex is also associated with reduced mortality. District of residence influences the case fatality ratio, with notable geographic variation. Larger household sizes correlate with increased infection risk. Districts with higher proportions of residents with tertiary education exhibit lower infection and mortality ratio. Districts with a greater percentage of non-Austrian citizens have lower case fatality ratio, likely reflecting a younger population demography.

Conclusion: Key determinants of COVID-19 mortality include age, vaccination status, and sex. Districts with larger households experience higher infection ratios, while those with more highly educated residents have lower infection and mortality ratios. Districts with more non-Austrian citizens show lower case fatality ratios, likely due to younger populations. Further research into district-level age structures is warranted to refine these models. These findings underscore the importance of vaccination, particularly among older adults, and the need for accessible public health education to reduce infection and mortality ratio, especially in less-educated populations; however, district age structure (proportion of older individuals) substantially influences these associations.

Four-Dimensional Continuity Gaps in Volunteer-Integrated Services for Older Adults: A Mixed-Methods Study in Urban China

Mingzhu Yang, Shanghai Jiao Tong University School of Medicine, China

Mingzhu Yang^{*12}, Shuang Chai³, Jinsong Pan⁴, Junxin Li⁵, Linnan Li⁶, Janiece L. Taylor^{7*}

¹Shanghai General Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai, China

²Johns Hopkins University School of Nursing, Baltimore, MD, USA

³Shanghai General Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai, China

⁴Shanghai General Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai, China

⁵Johns Hopkins University School of Nursing, Baltimore, MD, USA

⁶Shanghai General Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai, China

⁷Johns Hopkins University School of Nursing, Baltimore, MD, USA

Abstract

Background: China's rapid urban aging has created an urgent demand for sustainable community-based eldercare, with volunteer-supported eldercare services increasingly acting as a critical complement to formal care systems. However, their role in sustaining the four core dimensions of care continuity—functional, relational, informational, and managerial—remains understudied. Existing care continuity frameworks are almost exclusively applied in clinical settings, leaving a key research gap for non-clinical volunteer-supported eldercare, especially in super-aged urban China where eldercare pressure is acute. This study aims to systematically identify systemic barriers to care continuity in these services and propose targeted optimization strategies, while extending clinical care continuity frameworks to non-clinical community contexts.

Methods: An explanatory sequential mixed-methods (QUAN→QUAL) design was used in Hongkou and Huangpu—two of Shanghai's most aged districts (aging rate >44%), representative of super-aged urban communities in China.

Quantitative phase: A cross-sectional survey of 880 community-dwelling older adults (92.9% response rate) was conducted, with binary logistic regression used to analyze predictors of service willingness, utilization, and dissatisfaction.

Qualitative phase: 21 in-depth semi-structured interviews were carried out with three key stakeholders (older adult service users, Red Cross coordinators, long-term community volunteers) to explore the underlying mechanisms of care discontinuity.

Integration: Findings were synthesized via the Pillar Integration Process (PIP) and mapped onto Haggerty's four-dimensional continuity framework—extending this classic clinical framework to volunteer-supported eldercare services.

Results

Quantitative findings: A striking willingness-utilization gap emerged: 96.3% of respondents expressed willingness to use volunteer-supported eldercare services, yet only 46.5% had utilized them. Frequent volunteer turnover (aOR=2.31, 95% CI:1.83–3.14) was the strongest predictor of service dissatisfaction, and digital illiteracy reached 89.3% among adults aged ≥80 years.

Qualitative findings: Thematic analysis of 21 interviews revealed multilevel barriers to continuity. At the policy level, restrictive LTCI eligibility excluded moderately disabled older adults. At the organizational level, absence of standardized procedures and siloed governance undermined coordination. At the service level, task-focused offerings neglected psychosocial needs. At the individual level, digital illiteracy and frequent volunteer turnover eroded trust and safety.

Integrated findings: Through PIP integration, four interrelated systemic continuity gaps were identified: (1) Policy gap—restrictive LTCI eligibility creates a "grey zone" of unmet needs; (2) Relational gap—high volunteer turnover and lack of standardized roles disrupt trust; (3) Informational gap—digital illiteracy and disconnected communication pathways compromise coordination; (4) Managerial gap—fragmented governance limits cross-sector collaboration. These gaps interact and reinforce each other, forming self-perpetuating cycles of discontinuity.

Conclusions: Sustaining high-quality volunteer-supported eldercare services in super-aged urban China requires multi-level systemic reforms aligned with Haggerty's four continuity dimensions. Priorities include: expanding LTCI eligibility to cover moderate disability; formalizing volunteer roles within interdisciplinary teams and establishing retention mechanisms; building dedicated care navigation systems for unmet "grey-zone" needs; and developing hybrid digital-information systems with community-based digital literacy programs for the oldest-old. This study extends Haggerty's continuity framework to non-clinical volunteer-supported contexts, offering empirical evidence and actionable strategies for person-centered community eldercare with transferable lessons for rapidly aging societies worldwide.

Biography

Mingzhu Yang, MSN, BSN, CNS, RN, PhD Candidate, is a global health scholar at Shanghai Jiao Tong University School of Medicine, whose work integrates geriatric care, health equity, and cardiovascular nursing. As Johns Hopkins University Senior Visiting Scholar (2025-2026), she specialized in aging research & health equity, completing doctoral-level coursework. She led 11 provincial/ministerial PI projects, including a global scoping review of eldercare policies across 18 countries, with 37 peer-reviewed publications (e.g., BMC Geriatr). A member of APHA, GSA & ESC, she presents at top international conferences and won AGHE Paper Award & JHU CGI Funding Award. With 21 years of clinical nursing (12 in cardiac ICU), she also serves as a Red Cross emergency training instructor and leads global health volunteer programs. Her honors include the AGHE Graduate Student Paper Award and the JHU CGI Funding Award. She also received multiple research project grants from Shanghai Municipal Education Commission.

Trends in Mortality from High-Risk Surgical Procedures: National Burden of Transplants, Implants, and Organ Removal from 1999-2024 in United States

Ali Elkarouri, University of Medical Sciences and Technology, Khartoum, Sudan

Ali Elkarouri¹, Almunthir Alyahya², YousefAlbegamy³

¹College of Medicine, University of Medical Sciences and Technology, Khartoum, Sudan

²College of Medicine, Qassim University, Saudi Arabia

³College of Medicine, Imam Mohammed Bin Saud Islamic University, Saudi Arabia

Abstract

Background: Surgery accounts for a substantial proportion of healthcare costs and remains a leading cause of mortality due to perioperative complications. Despite advances in surgical safety, national long-term mortality trends have not been fully characterized.

Methods: We conducted a population-based analysis of U.S. mortality data from 1999–2024 using the CDC WONDER database. High-risk surgical deaths were identified with ICD-10 code Y83. Age-adjusted mortality rates (AAMRs) per 100,000 were calculated across demographic, geographic, and temporal strata. Joinpoint regression estimated annual percentage changes (APCs).

Results: A total of 470,098 deaths were attributed to high-risk surgical procedures. Men accounted for 54.7% of deaths, and most occurred in medical facilities (76.0%). National AAMR declined from 8.1 in 1999 to 3.4 in 2015 (APC –5.56), rose sharply to 7.9 by 2021 (APC 16.20), and then fell to 3.2 in 2024 (APC –31.85). Mortality was consistently higher among men, non-Hispanic Black and American Indian/Alaska Native populations, and residents of non-metropolitan, Midwestern, and Southern regions. State-level AAMRs varied more than twofold, with Mississippi and New Mexico reporting the highest and Massachusetts the lowest rates.

Conclusions: Over 26 years, U.S. surgical mortality followed a three-phase trajectory of decline, sharp rise, and subsequent steep reduction. Persistent disparities by race, sex, geography, and urbanization highlight inequities in access, quality, and outcomes of surgical care. Targeted health system and policy interventions are essential to ensure equitable surgical survival benefits nationwide.

Improving staff awareness of sensory aid needs and dementia status in an old age ward

Bekim Arifaj, Princess Alexandra Hospital, Harlow, UK

Bekim Arifaj¹, Abdullah Shakeel², Limaro Nyam³, Karen Sansom-Ninnes³

¹Princess Alexandra Hospital, Harlow, UK

²Princess Alexandra Hospital NHS Trust, Harlow, UK

³King's College London, London, UK

Abstract

Background: Having initially done our critical appraisal of various studies, we found that geriatric wards have a higher prevalence of delirium and dementia. Among this older population, sensory aids were found to be important in orientating delirious patients, and deficits in vision/hearing were associated with an increased risk of delirium. Delirium and dementia are associated with increased morbidity and mortality. This quality improvement project aimed to increase staff awareness of patient sensory aid needs and thus improve patient care as a result.

Methods: We started off with a driver diagram to identify what the primary and secondary drivers are for improving the quality of care for patients with sensory impairment. Of the drivers discussed, we believed that we could have a meaningful impact on improving sensory impairment awareness among the multidisciplinary team (MDT) on the ward. We then went through our Plan, Do, Study, Act (PDSA) cycles, which were as follows: PDSA cycle 1, where I and my two colleagues educated the MDT on how to use the electronic patient records property form checklist, which was being underused. This form tracks whether patients require sensory aids. We did three teaching sessions during board rounds and audited the use of this form over time. PDSA cycle 2 used a laminated bedside checklist that is filled in by the MDT and is used as a visual reminder of the patient's sensory impairment status.

Results: The EPR form completion rate increased by 14% over a period of 4 weeks, although this was not statistically significant. 18% of the bedside checklists were filled in, which was statistically significant. Both interventions in combination led to a statistically significant increase in sensory impairment awareness, with a 32% decrease in sensory aid unknown rates, a 40% decrease in dementia unknown rates and a 56% decrease in both sensory and dementia unknown rates. Delirium status was not formally assessed in this QIP due to documentation inconsistencies; however, its relevance remains acknowledged.

A way to Measure Acceptability for LLMs Usage in Project Management Teams

Murilo Zanini de Carvalho, Engenharia de Computação, Inteli – Instituto de Tecnologia e Inovação, Brazil

Murilo Zanini de Carvalho^{1,*}, Renato Penha¹, Leonardo Vils¹, Flávio Santino Bizarrias² and Fernando Antonio Ribeiro Serra¹

¹Programa de Pós Graduação em Gestão de Projetos, Universidade Nove de Julho, Sao Paulo 01156-050, Brazil

²ESPM—Escola Superior de Propaganda e Marketing, Sao Paulo 04018-010, Brazil

Abstract

The use of Large Language Models (LLMs) in organizational contexts has grown rapidly, particularly in project management activities. Despite this expansion, a relevant methodological gap can be observed in the literature: the absence of psychometrically validated instruments capable of measuring the acceptability of these technologies prior to their effective adoption, especially in project-oriented governance contexts. Traditional technology adoption models predominantly focus on a posteriori assessment of individual use, providing limited support for prospective analyses that inform strategic decision-making and organizational coordination mechanisms. In response to this gap, this study aims to develop and validate a psychometric scale to indirectly measure the acceptability, through outcome beliefs and with behavioral predispositions serving as structural proxies of the latent construct of LLM use by project management teams, with a focus on a priori judgments that precede the effective adoption of the technology. The initial scale, composed of 17 items, underwent content validation and was administered to a sample of 154 project management professionals. The latent structure was examined through Exploratory and Confirmatory Factor Analyses, resulting in the refinement of the instrument to 13 items distributed across two correlated factors. The results indicate that LLM acceptability is adequately represented by a bidimensional structure comprising the dimensions Intention/Predisposition and Trust/Perceived Benefit, both demonstrating high internal consistency and good statistical fit, and nomological validity evidenced by significant associations with respondents' self-reported LLM usage frequency. These findings reinforce the conceptualization of acceptability as a prospective and multidimensional construct, relevant for supporting governance decisions and the adoption of artificial intelligence-based technologies in project-oriented organizational systems. The indirect measurement approach adopted here is theoretically grounded in the premise that a priori acceptability is not directly observable but is constituted by cognitive and dispositional beliefs formed prior to use.

Keywords: large language models; technology acceptability; project governance; scale development

Resuscitation of a patient with progressive AIDS-related opportunistic infections complicated by MODS through multidisciplinary collaboration: Case Report

Shaowei Huang, Yunnan Provincial Hospital of Infectious Disease/Yunnan AIDS Care Center/Yunnan Mental Health Center, China

Shaowei Huang¹ & Xiaofeng Wei²

¹Yunnan Provincial Hospital of Infectious Disease/Yunnan AIDS Care Center/Yunnan Mental Health Center, China

²Central Sterile Supply Department, Kunming Maternal and Child Health Hospital, Kunming, 650031, Yunnan, China

Abstract

Background: Globally, AIDS-related opportunistic infections complicated by multiple organ dysfunction syndrome (MODS) are associated with high mortality and are difficult to treat. This article summarizes the resuscitation experience of a patient with AIDS-related opportunistic infections-induced multiple MODS and explores the multidisciplinary collaborative treatment strategies.

Methods: A retrospective analysis was conducted on a 37-year-old female patient with Immune Deficiency Syndrome (AIDS) who was admitted to the hospital due to “oliguria for 2 months and fever accompanied by dyspnea for 4 days”. She had a 10-year history of HIV infection without regular antiretroviral therapy. Complications such as renal failure, Co-infection of the lungs, respiratory failure, heart failure, liver injury, and cardiac arrest occurred. Multidisciplinary collaboration was carried out to promptly initiate comprehensive treatments including advanced life support and targeted anti-infection therapy. Rapid initiation of Antiretroviral Therapy (Rapid ART) was started after the patient’s condition stabilized.

Results: After 2 months of comprehensive treatment, the patient regained consciousness, was weaned off the ventilator, and showed improvement in liver and kidney functions and inflammatory markers, achieving clinical cure.

Conclusion: Early recognition, strong advanced life support, targeted anti-infection therapy, and timely initiation of Rapid ART are the keys to the successful treatment of MODS caused by AIDS-related opportunistic infections. It suggests that for patients with AIDS-related opportunistic infections complicated by multiple organ failure, active comprehensive treatment can still lead to a good prognosis.

Neuromelioidosis Causing Rapidly Progressing Neurological Syndromes Mimicking Stroke and Demyelination: Insights from a Case Series

Sindhu V Nambiar, St. John's Medical College Hospital, Bengaluru, India

**Sindhu V. Nambiar¹, Thomas Mathew², Vimal Chacko Mondy³, Jackson Thomas⁴,
Raghunandan Nadig², Priyadarshini Padakki⁵, GG Sharath Kumar³, Sunitha Palasamudram³,
John Abraham⁶, Pritam Majumdar², Shagun Bhardwaj², Jayanthi Savio⁵, G.R.K. Sarma²**

¹Department of Neurology, Manipal Hospitals, 9 th block jayanagar, Bengaluru, 560041, Karnataka, India

²Department of Neurology, St.John's Medical College Hospital, Sarjapur Road, Bengaluru, 560034, Karnataka, India

³Department of Radiology, St.John's Medical College Hospital, Sarjapur Road, Bengaluru, 560034, Karnataka, India

⁴Department of General Medicine, St.John's Medical College Hospital, Sarjapur Road, Bengaluru, 560034, Karnataka, India

⁵Department of Microbiology, St.John's Medical College Hospital, Sarjapur Road, Bengaluru, 560034, Karnataka, India

⁶Department of Family Medicine, St.John's Medical College Hospital, Sarjapur Road, Bengaluru, 560034, Karnataka, India

Abstract

Melioidosis (Whitmore's disease) is caused by *Burkholderia pseudomallei*, a Gram-negative saprophytic bacterium. In addition to systemic involvement, this neurotropic pathogen can invade the meninges, cranial nerves, brain, and spinal cord, resulting in diverse neurological manifestations. We describe four cases of neuromelioidosis encountered at our urban tertiary institute over a one-year period. All presented with rapidly progressive neurological symptoms mimicking stroke and acute disseminated encephalomyelitis (ADEM). The case series included three males and one female, aged between 32 and 65 years. Two were farmers, and three had diabetes mellitus. The diagnosis was not initially suspected and features like endemicity and atypical features like fever, facial pain and ulcer led to suspicion of an alternative diagnosis which was confirmed later through blood or pus culture. Two patients achieved complete recovery, one had partial recovery, and one patient succumbed to the illness. This report aims to raise awareness among the medical community regarding the neurological presentations of melioidosis. Also, with recent increase in travel across the world, neuromelioidosis may be considered even in nonendemic areas in the appropriate clinical setting.

Dental Students' Perception of Objective Structured Clinical Examination (OSCE): A Cross Sectional Study

Nissaf Daoauahi, Department of Fixed Prosthodontics, Faculty of Dentistry, University of Monastir, Tunisia

Nissaf Daouahi¹ Sarra Nasri¹, Yosra Gassara¹, Rim Kallala² & Jilani Saafi¹

¹Department of Fixed Prosthodontics, Faculty of Dentistry, University of Monastir, Monastir, Tunisia

²Department of Fundamental Sciences, Faculty of Dentistry, University of Monastir, Monastir, Tunisia

Abstract

Background: The Objective Structured Clinical Examination (OSCE) is increasingly used to assess clinical competence in dental education. Understanding students' perceptions of this assessment method is essential for improving its design and educational impact, particularly in fixed prosthodontics.

Objective: To assess dental students' perceptions of OSCEs in Fixed Prosthodontics.

Materials and methods: A cross-sectional study was conducted in May 2025 at the Department of Fixed Prosthodontics, Faculty of Dentistry, Tunisia. Final-year dental students (n = 144) who completed a fixed prosthodontics OSCE were invited to participate. Data were collected anonymously using a structured online questionnaire administered via Google Forms and QR code. The questionnaire assessed students' perceptions of the OSCE in terms of clarity of instructions, organization, and stress level. Participation was voluntary.

Results: A total of 144 final-year dental students completed the questionnaire. The response rate was 100%. The majority of respondents (87%) reported that the OSCE content and instructions were clearly explained. Similarly, 87.5% indicated that they felt comfortable with the examiners before the examination. Regarding time allocation, 36.1% of students reported a neutral perception, while 11.8% indicated that the time available at certain stations was insufficient. In terms of stress, 65.9% of respondents described the OSCE as moderately stressful. With respect to perceived difficulty, most students reported greater difficulty in the cognitive station (43.1%), followed by the communication and behavioural station (33.3%). Finally, 93% of respondents reported that the competencies assessed during the OSCE were aligned with the objectives of their clinical training.

Conclusion: This study shows that students perceived the OSCE as an appropriate assessment method for clinical skills in fixed prosthodontics. They were generally satisfied with its clarity and organisation. However, they reported that some aspects should be improved, such as the timing and stress management.

Occupational noise induced hearing loss in orthopaedic theatre nurses: Exposing the silent threat and outlining interventions to prevent it

Thomas Dean, St Michael's Hospital, Bristol, UK

Thomas Dean¹, Olivia Crannage²

¹Department of Ear, Nose and Throat surgery, St Michael's Hospital, Bristol, BS2 8EG, United Kingdom

²Department of Medical Education, Bristol Royal Infirmary, Upper Maudlin Street, Bristol, BS2 8HW, United Kingdom

Abstract

Excessive and prolonged exposure to loud noises can lead to an irreversible reduction in hearing known as noise induced hearing loss (NIHL). Orthopaedic theatre nurses spend a significant amount of their career surrounded by noisy orthopaedic theatre equipment, yet the risks posed to them by excessive occupational noise and the rates of NIHL in this group remain relatively unknown. Sound levels in orthopaedic theatres have been shown to exceed UK Health and Safety Executive action values with surgical instruments such as saws and rasping systems all exceeding 100 dB. Theatre nurses are therefore at risk of developing NIHL and multiple other complications associated with hearing loss, such as higher rates of loneliness and depression. Noisy theatre environments have also been shown to degrade communication, increase total errors and result in longer times to complete tasks, all leading to reductions in patient safety.

This practice development article aims to raise awareness of occupational NIHL and empower theatre nurses to implement protective interventions for their hearing. The article outlines a range of measures to reduce excessive noise exposure to theatre staff and proposes the implementation of a nurse-led 'noise-safe theatre'. These recommendations encourage the use of engineering and administrative controls in combination with NIHL education and PPE within theatres to improve safety for both staff and patients.

Oral and Maxillofacial Manifestations of Systemic Sclerosis: Clinical Insights and Implications for Early Diagnosis

Saeed Almurait, University of Toronto, Ministry of Health, Abha, Saudi Arabia

Saeed Almurait¹, Hanan Alqahtani², Savithiri Ratnapalan³, Sindhu R. Johnson⁴

¹Maxillofacial Surgery Specialist, Health Systems Leadership and Innovation Program, Institute of Health Policy, Management and Evaluation, Dalla Lana School of Public Health, University of Toronto, Ministry of Health, Abha, Saudi Arabia

²Department of Rheumatology, King Faisal Medical City, Abha, Saudi Arabia

³Health Systems Leadership and Innovation Program, Institute of Health Policy, Management and Evaluation, Dalla Lana School of Public Health, University of Toronto, Department of Pediatrics, The Hospital for Sick Children, Toronto, Ontario, Canada

⁴Professor of Medicine, Clinical Epidemiology & Health Care Research Program, Institute of Health Policy, Management and Evaluation, Dalla Lana School of Public Health, University of Toronto, Toronto Scleroderma Program, Toronto Western Hospital, Schroeder Arthritis Institute, Toronto, Ontario, Canada

Abstract

Systemic sclerosis (SSc) is a systemic autoimmune rheumatic disease characterized by fibrosis, microvascular damage, and immune dysregulation. Although its cutaneous and systemic features have been extensively delineated, its oral and maxillofacial features are not well studied. Microstomia is one of the most incapacitating oral symptoms in SSc, hampering oral hygiene, and dental treatment. Xerostomia leads to increased caries susceptibility, whereas periodontal disease and vascular insufficiency hasten tissue breakdown, leading to attachment loss and bone resorption. Temporomandibular joint involvement undermines jaw mobility, leading to discomfort, and a reduction in food intake. Scleroglossus and frenum fibrosis impair clear speech. Orofacial exercises can strengthen mouth opening. Dental implants and regenerative procedures appear promising but need to be undertaken with careful patient selection. This review synthesizes current evidence on the prevalence, pathogenesis, and clinical management of SSc oral and maxillofacial manifestations and their complications.

A gastrointestinal to cardiac redirection: acute pancreatitis and h. Pylori gastritis Unveiling a life-threatening right atrial myxoma nearly obstructing right Ventricular inflow in a 51-year-old woman

Shelley Lauren Cham, Makati Medical Center, Makati, Philippines

Shelley Lauren Cham*, Saturnino Perez Javier, Avenilo Aventura, Jr., Raul Lontoc Lapitan, Gerardo Pedregosa, and Christopher Bernard Javier

Makati Medical Center, Makati, Philippines

Abstract

Background: Right atrial myxomas are rare tumors whose incidental discovery provides a crucial opportunity for life-saving intervention.

Case: A 51-year-old Filipino woman presented with severe epigastric pain, initially diagnosed as acute pancreatitis and *Helicobacter pylori* gastritis. She later developed recurrent chest pain. ECG showed sinus rhythm with low voltage QRS and right axis deviation. Echocardiography revealed a large right atrial mass (7.6 × 4.1 cm) nearly obstructing right ventricular inflow, extending into the ventricle, consistent with myxoma. Laboratory tests showed bicytopenia, and abdominal imaging demonstrated nutmeg liver, indicating venous congestion. On hospital day two, she underwent successful excision of an 8.0 × 5.0 cm right atrial myxoma with pericardial patch repair.

Decision-Making: This case highlights the diagnostic challenge of right atrial myxoma presenting with misleading gastrointestinal complaints. Rare associations such as bicytopenia and nutmeg liver reflected venous congestion from inflow obstruction. Multimodal evaluation, particularly echocardiography, was pivotal in establishing the diagnosis, guiding urgent surgical intervention and enabling a life-saving outcome.

Conclusion: Right atrial myxomas, though rare, can mimic systemic disease, making timely recognition vital for life-saving surgery.

A Buffering Role of Perceived Social Support and Resilience between Caregiver Burden and Perceived Stress among Informal Caregivers of Dementia Elderly Patients

Saba Zahid Hayat, Department of Psychology, Bahria University, Islamabad, Pakistan

Saba Zahid Hayat^{1,3*}, Muhammad Saad², Syeda Razia Bukhari² & Naila Naz³

¹Department of Psychology, Bahria University, Islamabad, Pakistan

²Department of Social Sciences, Iqra University, Islamabad, Pakistan

³Department of Professional Psychology, Bahria University, Islamabad, Pakistan

Abstract

Background: The psychological health of caregivers of dementia patients is at risk due to excessive burden, stress, and emotional strain. The study aimed to investigate the relationship between caregiver burden, perceived stress, resilience, and perceived social support among informal caregivers of dementia patients.

Method: A purposive and snowball sampling technique was used to recruit a sample of 101 adult informal caregivers (immediate family members) of dementia patients, ranging in age from 18 to 60 years. Data were collected using English versions of the Caregiver Burden Scale (Gerontologist 20:649-655, 1980), the Brief Resilience Scale (Int J Behav Med 15:194-200, 2008), the Perceived Stress Scale (J Health Soc Behav 24:385-396, 1983), and the Multidimensional Scale of Perceived Social Support (J Pers Assess 52:30-41, 1988). SPSS –27 and PROCESS Macro (Model 6) by Hayes (2022) were employed for data analysis.

Result: The findings supported the hypothesized relationships among all tested variables. Serial mediation revealed that perceived social support and resilience partially mediated the relationship between caregiver burden and perceived stress. However, no significant interaction was found between perceived social support and resilience in predicting perceived stress. The results suggest that both perceived social support and resilience are important buffers between caregiver burden and perceived stress. Additionally, sociodemographic analyses indicated that the caregiver burden varied according to the type of caregiving responsibilities informal caregivers provided.

Conclusion: The study expands existing caregiving models by testing the buffering roles of social support and resilience among Pakistan informal dementia caregivers. The study highlights that, alongside elderly patients, their informal caregivers also require psychological support and intervention. It emphasizes the importance of developing intervention-based programs to reduce excessive burden and perceived stress among informal caregivers of dementia patients in Pakistan.

Effects of Electron Beam Irradiation on the Physicochemical, Functional, Nutritional Properties, and Microstructure of Millet Flour (*Pennisetum Glaucum* L.R.Br.)

Dely Maissa^{1*}, Zaouak Amira², Essafi Wafa³, Mnasser Hassouna¹, Mankai Melika¹

Corresponding author: **Dely Maissa**, University of Carthage, Higher Institute of Food Industries of Tunisia (ESIAT), Tunis, Tunisia

¹University of Carthage, Research Laboratory: Technological Innovation and Food Security (LR22-AGR01), Higher Institute of Food Industries of Tunisia (ESIAT), Tunis, Tunisia.

² Research Laboratory on Energy and Matter for Nuclear Science Development (LR16CNSTN02), National Center for Nuclear Science and Technology, Sidi Thabet Technopark 2020 Ariana Tunisia.

³Materials, Treatment and Analysis Laboratory (LR15INRAP03), National Institute of Research and Physico-Chemical Analysis 'INRAP', Sidi Thabet Technopark 2020 Ariana Tunisia Tunisia.

Abstract

The study investigates the impact of electron beam irradiation at doses ranging from 1 to 4 kGy on the physicochemical, functional, proximate, and microstructural characteristics of pearl millet flours. The findings revealed that with increasing irradiation dose, there was a significant reduction in several parameters, including swelling index, pH, lipid content, fiber content, total tannins, and lightness (L^* value). Conversely, solubility index, total flavonoid content, polyphenol content, antioxidant activity, and color parameters (redness a^* and blueness b^*) exhibited a significant increase compared to control samples. However, E-Beam irradiation did not significantly affect water and oil absorption capacity, moisture content, carbohydrate content, or gross energy value of millet flour. Additionally, irradiation at different doses (1 to 4 kGy) significantly improved the microbiological quality of the flours by reducing total aerobic mesophilic flora, yeasts and molds, total coliforms, and fecal coliforms compared to non-irradiated samples. Fourier Transform Infrared (FTIR) spectroscopy analyses indicated changes in the molecular structure of millet flour following irradiation. Furthermore, irradiated flours exhibited lower crystallinity compared to non-irradiated samples. Overall, the reduction in antinutritional factors and the enhancement of functional properties suggest that electron beam irradiation could serve as an effective pretreatment for the development of value-added millet-based food products.

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Speaker Abstracts

Non-Union after Bisphosphonate-Associated Atypical Femoral Fractures: A Review of the Current Literature

Sam Marsh, Royal Perth Hospital, Wellington Street, Perth, Western Australia, Australia

Jack Dowling¹, Samuel Marsh¹, Jamie O’Grady¹

¹Royal Perth Hospital, Wellington Street, Perth, Western Australia Australia

Abstract

Background: This article explores the mechanism of action of atypical femoral fractures (AFF), specifically focussing on osteoporosis, management challenges, and the implications for clinical practice. Non-union of AFF can result in severe pain, deformity and restricted mobility—all of which will have a detrimental impact on the patients’ quality of life.

Purpose: This review consolidates the current literature regarding non-union after bisphosphonate-associated atypical femoral fractures, providing a revision tool for higher examinations.

Method/findings: An extensive search strategy was conducted for relevant studies up to April 2025 using several online databases including Cochrane Library, Embase, National Library of Medicine and PubMed.

Conclusion: Although this topic is prominent among surgical colleagues and in higher level examinations, we identified that persistent gaps in knowledge exist in this area. Our review compiles the available knowledge as a revision tool for our colleagues.

Keywords: Atypical femoral fractures, Bisphosphonates, Non-union, Management options, Revision

Bridging Technologies: How Chromosomal Microarray Complements Optical Genome Mapping in Detecting Copy-Neutral Genomic Alterations

Shivani Golem, Department of Pathology & Laboratory Medicine, University of Kansas Medical Center, USA

Alexander R. Marr, Patrick R. Gonzales and Shivani Golem*

Department of Pathology & Laboratory Medicine, University of Kansas Medical Center, USA

Abstract

Simple Summary: Cytogenetic testing plays a key role in diagnosis and treatment selection for many blood cancers. Several laboratory methods are currently used, each with different strengths and limitations. A new technology called optical genome mapping has the potential to replace older methods by providing a comprehensive and streamlined view of complex genetic changes. However, it may miss smaller but clinically important alterations that can affect treatment decisions. In our study, we reviewed patient cases performed at our institution to determine how frequently these small changes occur and whether they remain clinically important. We found many of these alterations to involve key cancer genes and often occur alongside other mutations that influence disease behavior. Our findings suggest that combining multiple testing methods provides the most complete and reliable genetic assessment for cancer patients until technology improves.

Abstract: Background/Objectives: Chromosomal microarray analysis (CMA) is an essential tool in modern cytogenetics for detecting copy number alterations and copy-neutral loss of heterozygosity (CN-LOH). As optical genome mapping (OGM) emerges as a potential replacement for traditional cytogenetic methods, the extent to which CMA remains necessary in routine diagnostic workflows remains to be elucidated. Methods: We retrospectively reviewed 53 primary neoplastic cases, selected from a larger cohort of 327 hematologic malignancy specimens, in which CMA identified one or more CN-LOH events. Event size, genomic content, and correlation with next-generation sequencing (NGS) findings were assessed. A separate cohort of newly diagnosed B-cell acute lymphoblastic leukemia (B-ALL) was analyzed to evaluate disease-specific CN-LOH frequency. Results: Nearly half of CN-LOH events detected were <25 Mb, below the current detection threshold of OGM inferred from published benchmarks and validated workflows. Many encompassed clinically relevant genes, including FLT3, JAK2, TET2, TP53, and RUNX1. Additionally, two-thirds of cases harbored pathogenic or likely pathogenic variants by NGS within the corresponding CN-LOH regions, further underscoring the clinical value of detecting these copy-neutral events. In contrast, CN-LOH was uncommon in B-ALL, and most alterations identified by CMA would be detectable by OGM. Many of these patients also harbored complex structural rearrangements that required multiple conventional assays for full characterization; these could be resolved by OGM in a single analysis. Conclusions: Our findings indicate that although OGM excels at resolving complex structural variants, CMA remains essential for detecting copy-neutral events. Until OGM achieves improved sensitivity for CN-LOH, an integrated approach utilizing conventional cytogenetics, CMA, NGS, and OGM provides the most reliable framework for comprehensive genomic assessment across cancer types.

Keywords: cytogenetics; optical genome mapping; chromosomal microarray; copy-neutral loss of heterozygosity; karyotype; genomics

Human YTHDC2 mutations disturb RNA homeostasis of oocytes and early embryos

Honghui Zhang, Center for Reproductive Medicine, Shandong University, China

Honghui Zhang*^{1,2}

¹State Key Laboratory of Reproductive Medicine and Offspring Health, Center for Reproductive Medicine, Institute of Women, Children and Reproductive Health, Shandong University, 250012, Jinan, China

²National Research Center for Assisted Reproductive Technology and Reproductive Genetics, Key Laboratory of Reproductive Endocrinology of Ministry of Education, Shandong Technology Innovation Center for Reproductive Health, Shandong Provincial Clinical Research Center for Reproductive Health, Jinan, 250012, China

Abstract

Oocyte and early embryo competence defects (OECD) are a kind of Mendelian genetic disorder. Although many disease-associated pathogenic genes have been identified, the underlying genetic mechanisms are not fully understood. In this study, through whole-exome sequencing of infertile patients in our OECD cohort, we identified five novel biallelic mutations in YTHDC2—a gene previously associated with primary ovarian insufficiency (POI)—in four families with OECD. Notably, two affected individuals exhibited diminished ovarian reserve (DOR). To investigate the functional impact of these mutations, we, overexpressed human mutant YTHDC2 in growing oocytes at the G02 stage (50–55 µm in diameter) with high Ythdc2 expression, and performed transcriptomic profiling. In parallel, we conducted single-cell RNA sequencing of human preimplantation embryos carrying YTHDC2 mutations. By integrating mouse Ythdc2 iCLIP-seq data, transcriptomes of G02 oocytes, and human embryonic single-cell data, we demonstrate that YTHDC2 mutations disrupt RNA homeostasis, leading to progressive functional abnormalities during oocyte and early embryonic development. Furthermore, mutant YTHDC2 overexpressed in mouse zygotes significantly impaired early embryonic development, as evidenced by reduced blastocyst formation rates. Our study identifies YTHDC2 as a critical regulator of oocyte and early embryonic development and provides a novel target for clinical genetic diagnosis.

Biography

Dr. Zhang Honghui is an Associate Research Professor at the Institute of Women, Children and Reproductive Health, Shandong University. Her research focuses on the mechanisms and intervention strategies for oocyte and early embryonic developmental abnormalities. She has published a series of high-impact studies in leading journals including Nature Medicine, Cell Research, EMBO Reports, Science China Life Sciences. As a principal investigator, she has led six national and provincial research projects. Her work has resulted in two authorized Chinese invention patents and one international PCT patent. Dr. Zhang has received several prestigious awards, such as the Huaxia Medical Science and Technology Award (First Prize), the National Postdoctoral Innovative Talent Support Program (Grade A), and the Shandong Outstanding Doctoral Dissertation Award. His current research aims to translate these findings into novel targets for clinical genetic diagnosis.

Barriers to accessing sexual and reproductive healthcare services for brothel-based female sex workers in rural Bangladesh and their potential solutions: A mixed methods study

Sanjoy Kumar Chanda, Faculty Member, Sociology Discipline, Khulna University, Bangladesh

Sanjoy Kumar Chanda

Faculty Member, Sociology Discipline, Khulna University, Bangladesh

Abstract

Barriers to accessing sexual and reproductive healthcare services for brothel-based female sex workers in rural Bangladesh and their potential solutions: A mixed methods study

Effects of an Asynchronous, Online Training Program for Caregivers of Children with Autism Using Augmentative and Alternative Communication

Meghan Wendelken¹, Adelphi University, USA

Meghan E. Wendelken¹ & Diane L. Williams²

¹Department of Communication Sciences and Disorders, Adelphi University

²Department of Communication Sciences and Disorders, The Pennsylvania State University

Abstract

Individuals with autism who are minimally speaking often use augmentative and alternative communication (AAC). Communication partner training is an integral element of AAC intervention, and caregivers are ideal communication partners for supporting their child's language development. Asynchronous, online trainings may offer caregivers an accessible and flexible medium to learn to support their child's AAC communication. The current study used a single-case randomized multiple-probe design to evaluate the effects of an asynchronous, online caregiver training on caregiver's AAC strategy use in the context of shared book reading. Visual and statistical analyses were used to determine the presence and magnitude of effects. Four out of five caregivers acquired the target strategy. A functional relation was observed between the online training and caregiver strategy use in addition to individual components of the strategy (e.g., modeling). Tau-U nonoverlap calculations suggested medium to large effects of the intervention on caregiver strategy use. Asynchronous, online trainings may offer a valuable resource to caregivers of children who use AAC for communication, and caregivers may prefer the flexibility and accessibility that is associated with asynchronous trainings. Future research should work toward identifying how online programs can most effectively support widespread parent training and improve outcomes for children who require AAC.

Keywords:

AAC, augmentative and alternative communication, autism, caregiver training

Perceptions of Nurses on the Current Nursing Care of Patients with Dual Diagnosis in Ghana: A Qualitative Study

Frederick Nsatimba, University of Cape Coast, Ghana

Frederick Nsatimba¹, Leepile Sehularo² & Miriam Moagi³

¹NuMIQ Research Entity, Faculty of Health Sciences, North-West University, Potchefstroom, South Africa

¹Department of Mental Health, School of Nursing and Midwifery, College of Health and Allied Sciences, University of Cape Coast, Cape Coast, Ghana

²Lifestyle Diseases Research Entity, Faculty of Health Sciences, North-West University, Mafikeng, South Africa

³Department of Nursing, Faculty of Health Sciences, University of Limpopo, Polokwane, South Africa

Abstract

Background: Dual diagnosis accounts for about 50% of the population of persons with mental disorders. Research on nurses caring for inpatients detected with dual diagnosis is limited and the perceptions on the current nursing care of patients identified with dual diagnosis in psychiatric hospitals in Ghana is unknown. The purpose of this study was to explore and describe the perceptions of nurses on the current nursing care of patients classified with dual diagnosis in psychiatric hospitals in Ghana.

Methods: An exploratory-descriptive qualitative research design was used. Twenty-three participants working at the three public psychiatric hospitals of Ghana were recruited using purposive sampling technique. Individual, semi-structured interviews were used to collect data which was analysed through thematic analysis.

Results: Three main themes emerged namely: (1) Current nursing care of patients with dual diagnosis (2), Challenges in caring for patients with dual diagnosis (3), Support for improving caring for patients with dual diagnosis.

Conclusion: This study highlights the challenges and potential solutions in caring for patients with dual diagnosis in Ghana. It emphasises the need for improved training, collaboration, infrastructure, and policy support for nurses. Addressing these gaps are essential for better patient outcomes and nurses' well-being, offering important insights for global mental health care in resource-constrained settings.

Quality of reports on drug toxicity in Eudravigilance. A safety physician's perspective

Jana Brajdih Čendak, Billev Pharma East Ltd., Slovenia

Abstract

Background: European legislation requires Marketing Authorization Holders (MAHs) to continuously monitor Eudravigilance (EV) data and inform the European Medicines Agency and national competent authorities of validated safety signals. The process follows the Good Pharmacovigilance Practice Module IX and is based on the review of individual case safety reports (ICSR) both from the MAH's internal database and from EV. The data is reviewed and evaluated by a medically trained person, who should, based on the information provided in the case, determine the causal relationship between the suspect drug and the reported event. In order to do this with a certain degree of confidence, the case needs to report enough high-quality information on the drug, patient and adverse event, without significant confounders.

Methods: For this purpose, we performed an evaluation of data quality of ICSRs within the Eudravigilance database, focusing on drug toxicity cases for five commonly implicated substances: paracetamol, diazepam, fentanyl, quetiapine, and fluoxetine. A medically driven review was conducted on 500 randomly selected ICSRs from 2015 to 2024. A detailed quality assessment framework was developed and applied, scoring cases across several criteria (including data on suspect drugs, patient demographics, adverse event description, time to event, and case narratives), resulting in a maximum quality score of 25.

Results: Main study findings revealed a generally low data quality, with an average score of 11.57 out of 25. Key quality deficiencies included improper classification of drugs as suspects (e.g., reporting concomitant medications or treatments as suspects), reporting of underlying diseases and indications as adverse events, lack of information on patients' medical history and missing time-to-event information. Cases from non-European Economic Area (non-EEA) countries and consumer-reported cases exhibited the lowest quality, while regulatory agency-reported cases were of higher quality. The study also identified a frequent misclassification of non-prescription or illicit substances (e.g., fentanyl) as prescription products, complicating signal detection and causality assessments. The analysis highlights a very important gap in pharmacovigilance signal detection and evaluation processes, underscoring risks for misleading results, increased workload, and potential misinterpretation of product safety profiles. The results highlight the need for enhanced case reporting trainings, improved quality control, better follow-up processes, and a collective mindset shift across stakeholders to prioritize data quality.

Conclusion: In conclusion, significant improvements in the completeness, accuracy, and clinical relevance of ICSRs are essential to support effective safety signal detection and benefit-risk assessment in the post-marketing surveillance of medicinal products.

Shaped association between cardiometabolic index and depressive symptoms: a population-based cross section study of U.S. adults

Chao Yu, Jiangxi Medical College, Nanchang University, China

Zhihong Yu, Wei Li, Meng Wang, Shu Wang & Chao Yu*

Department of Critical Care Medicine, the Second Affiliated Hospital of Nanchang University, Jiangxi Medical College, Nanchang University, Nanchang, Jiangxi, China

Abstract

Background: Research reports on the relationship between cardiometabolic index (CMI) and depressive symptoms are limited. This study aimed to evaluate the possible relationship between CMI and depressive symptoms.

Methods: We conducted a cross-sectional analysis of adults from the National Health and Nutrition Examination Survey (NHANES). Participants aged ≥ 18 years with complete data on CMI and depressive symptoms from the 2007–2018 cycles were included ($n = 7965$). Depressive symptoms were assessed using the Patient Health Questionnaire-9 (PHQ-9) with a score ≥ 10 as the cut-off. Multivariable logistic regression models were used to assess the association. Restricted cubic splines (RCS) and logistic regression were employed to explore nonlinearity and identify inflection points. Subgroup analyses were performed to examine effect modification.

Results: Of 7965 individuals, 637 (8%) had depressive symptoms, while hypertension and stroke are present in 3039 (38.15%) and 216 (2.71%), respectively. A multivariable logistic regression model observed that When LnCMI is employed as a classification variable, no significant association between them can be observed. A dose–response fitting curve find that there is a nonlinear J-shaped association between LnCMI and depressive symptoms. A two-piecewise logistic regression model to analyze their relationship, which we observed that CMI on the left side of the cut-off point was not associated with depressive symptoms prevalence. However, among patients with $\text{LnCMI} \geq -2$, there was a positive association between LnCMI and depressive symptoms prevalence (OR 1.92; 95% CI 1.40–2.64). Subgroup analysis revealed that only BMI had a moderating effect on the association between CMI and depressive symptoms (OR:2.37, 95% CI 1.53–3.67; P for interaction = 0.017).

Conclusion:

Our research findings suggest a strong association between higher CMI levels and increased prevalence of depressive symptoms, particularly among American adults with $\text{BMI} \geq 25 \text{ kg/m}^2$. We further revealed a turning point by threshold effect analysis.

Longitudinal Impact of the COVID-19 Pandemic on the Weight Status of Brazilian Children: A Warning for Global Health and Sustainable Development (2020–2025)

Sandro Lucas Sofiati, Health Sciences Center, State University of Northern Parana, Brazil

Dartagnan Pinto Guedes*, Sandro Lucas Sofiati and Alessandro Bressan Godoy

Health Sciences Center, State University of Northern Parana, Jacarezinho 86400-000, Brazil

Abstract

Previous studies have suggested that the COVID-19 pandemic exposed children to an increased risk of greater body weight accumulation; however, the evidence found is limited to examining relatively short periods in children from Asian, European, and North American countries and, in most cases, using cross-sectional designs, while studies with longitudinal designs are scarce. To our knowledge, to date, no study involving Brazilian children has examined temporal trends in body weight during the pandemic period using a longitudinal approach. Objective: To report the weight status of children aged 6 to 11 years pre-, during, and post-school closures in response to restrictions imposed by the COVID-19 pandemic, using a six-year school-based longitudinal cohort design (2020–2025). Method: Weight status was analyzed using the body mass index and diagnostic criteria proposed by IOFT. Initial data collection took place in 2020 (baseline—pre-school closures), in 2021 and 2022 (pandemic period—school closures), and in 2023, 2024, and 2025 (post-pandemic period—after the reopening of schools). Results: The data collected confirmed that restrictions imposed to mitigate the adverse impact of the COVID-19 pandemic, including the full or partial closure of schools, substantially increased children's weight above what would be expected for their gender and age. After two years of the pandemic period, 23% of children identified in the baseline pre-school closures with normal body weight migrated to overweight, while 34% of overweight children became obese. Data equivalent to the post-pandemic period showed signs of a reduction in the excess body weight accumulated during the pandemic; however, the prevalence rates of overweight and obesity remained significantly higher than pre-school closures. Conclusions: The findings suggest that the harmful effects contributing to the greater accumulation of body weight during the COVID-19 pandemic tended not to reverse spontaneously, even five years after its onset. Therefore, specific actions to prevent, combat, and control overweight and obesity are essential to avoid present and future adverse consequences for children's health.

Keywords: COVID-19; pandemic; health behavior; cohort studies; overweight; obesity; Brazil

Mobilization with Movement Enhances Early Rehabilitation Outcomes In Knee Osteoarthritis: A Six-Week Randomized Controlled Trial

Amir Iqbal, College of Applied Medical Sciences, King Saud University, Saudi Arabia

Shahnaz Hasan¹, Amir Iqbal², Abeer Ramadan Ibrahim³, Reham H Diab⁴, Zaheen A Iqbal⁵, Tabinda Hasan⁶, Shahnawaz Anwer⁷, Ahmad H Alghadir²

¹Department of Physical Therapy and Health Rehabilitation, College of Applied Medical Sciences, Majmaah University, Al-Majmaah, 11952 Saudi Arabia

²Rehabilitation Research Chair, Department of Rehabilitation Health Sciences, College of Applied Medical Sciences, King Saud University, P.O. Box. 10219, Riyadh, 11433 Saudi Arabia

³Medical Rehabilitation Sciences Department, Faculty of Applied Medical Sciences, Umm Al-Qura University, Mecca, Saudi Arabia

⁴Department of Physical Therapy, College of Medical Rehabilitation Science, Taibah University, Madina, Saudi Arabia

⁵Department of Physiotherapy, School of Allied Health Sciences, Manav Rachna International Institute and Studies (MRIIRS), Faridabad, India

⁶Department of Basic Sciences, College of Medicine, Princess Nourah Bint Abdulrahman University, P.O. Box. 84428, Riyadh, 11671 Saudi Arabia

⁷Department of Rehabilitation Sciences, The Hong Kong Polytechnic University, Hong Kong, China

Abstract

Background: Exercise is a first-line approach for knee osteoarthritis (KOA), yet pain during movement may limit adherence. Mulligan's mobilization with movement (MWM) is proposed to facilitate pain-free exercise and hasten early clinical gains.

Objective: To determine whether adding MWM to isometric training (IT) improves pain, quadriceps strength, and disability over six weeks compared with IT alone.

Methods: Two-arm, double-masked RCT in adults with radiographic KOA (Kellgren–Lawrence grade 2–3). Participants were randomized to MWM + IT or IT-only (n = 25/group), 5 supervised sessions/week for 6 weeks. Outcomes: pain (VAS), quadriceps strength (strain-gauge dynamometry), disability (WOMAC) measured at baseline, weeks 1, 3, and 6. Primary analyses used linear mixed-effects models with fixed effects for Group, Time, and Group × Time and a random intercept for Subject; joint Wald tests evaluated factor significance.

Results: Significant Time effects indicated improvement across outcomes (VAS $\chi^2(3) = 456.338$, $p < 0.0001$; STN $\chi^2(3) = 186.876$, $p < 0.0001$; WOMAC $\chi^2(3) = 1515.459$, $p < 0.0001$). Group×Time interactions were significant for VAS ($\chi^2(3) = 170.550$, $p < 0.0001$), STN ($\chi^2(3) = 204.327$, $p < 0.0001$), and WOMAC ($\chi^2(3) = 71.041$, $p < 0.0001$), demonstrating faster and larger six-week gains with MWM + IT. The Group main effect was significant for VAS ($\chi^2(1) = 42.599$, $p < 0.0001$) and non-significant for STN ($\chi^2(1) = 0.613$, $p = 0.4336$) and WOMAC ($\chi^2(1) = 0.019$, $p = 0.8901$).

Conclusion: Adding MWM to IT accelerated and amplified six-week improvements in pain, strength, and function compared with IT alone. Early integration of MWM may enhance pain-free exercise and short-term rehabilitation outcomes in KOA. Larger multicentre trials with extended follow-up and economic evaluation are warranted.

Exposure to Biomedical Research in Jewish American Education in the New York City Metropolitan Area, United States: A Halachic Imperative

Nicole Muravsky, University of Pennsylvania, USA

Nicole L. Muravsky^{1,2} & Rozalina G. McCoy²

¹University of Philadelphia, Philadelphia, PA, USA

²University of Maryland Institute for Health Computing, North Bethesda, MD, USA

Abstract

In light of ongoing budget cuts curtailing biomedical research within and beyond the federal government, understanding the importance of scientific innovation and rigorous research is paramount. This paper advocates for increased dedication to pursuing scientific inquiry—particularly biomedical research—reflecting the Jewish moral responsibility to advance knowledge and contribute to improving health. Using a narrative and qualitative approach, the paper draws on an analysis of Jewish religious texts—identified through recommendations from scholars and online queries—and unstructured telephone interviews with six students from Modern Orthodox Yeshivahs in the New York City Metropolitan area. Participants were selected based on their involvement in academic extracurricular activities and were purposefully sampled to represent different schools and grade levels. These firsthand accounts help inform recommendations for reform and highlight how early exposure to research can be tangibly implemented, emphasized further as the paper discusses successful initiatives already in place nationwide. Findings revealed significant variation in access to research experiences and showcased the benefits of early exposure, mentorship, and access to opportunities in cultivating high school students’ interest in research.

Design of a Cholic Acid-based Triarmed Star Polymer Network for Targeted and Sustained Drug Delivery for Melanoma Treatment

Souvik Chowdhury, SMST, IIT BHU, India

Souvik Chowdhury¹, Swapan Maity¹, Hitesh Harsukhbhai Chandpa², Alok Kumar¹, Rohan Chand Sahu², Jairam Meena², Ashish Kumar Agrawal², Pralay Maiti¹

¹School of Materials Science and Technology, Indian Institute of Technology (Banaras Hindu University), Varanasi 221005, India

²Department of Pharmaceutical Engineering and Technology, Indian Institute of Technology (Banaras Hindu University), Varanasi 221005, India

Abstract

The growing challenge of therapy resistance in cancer remains a major obstacle in clinical oncology, limiting the long term success of conventional chemotherapeutics such as doxorubicin (Dox). Although Dox exhibits strong antitumor efficacy, its therapeutic potential is often compromised by biological barriers and systemic toxicity. To overcome these limitations, we developed a novel polyurethane (PU) based drug delivery platform utilizing a prepolymer (PP) and its cholic acid modified derivatives with varying graft densities for sustained and targeted cancer therapy. These systems exhibit structural flexibility. Among them, the highly grafted PU is found to exhibit superior mechanical resilience, biocompatibility, and greater drug loading efficiency, making it ideal for injectable applications. In vitro cytotoxicity and intracellular trafficking studies in cancer cells, along with biocompatibility evaluations in normal fibroblasts, confirm the therapeutic efficacy and safety of the formulations. Furthermore, in vivo studies in melanoma bearing mice reveal that the Dox-loaded injectable hydrogel, administered subcutaneously near the tumor site, achieves enhanced tumor suppression with markedly reduced systemic toxicity. This formulation maintains therapeutic drug levels for up to 72 hours, due to its network structure and durability, thereby, minimizing the need for frequent dosing. Overall, this study presents a multifunctional and biocompatible drug delivery strategy based on various formulations, offering a promising approach for precise, prolonged, and effective melanoma therapy-bridging material innovation with clinical potential.

Emotional contagion in virtual leadership: A webcam-based study of expressivity, psychological safety, and team output

Vidhu Gaur, Management Development Institute Gurgaon, India

Vidhu Gaur¹, Priyanka Vallabh²

¹Associate Professor, Business Communication, Management Development Institute Gurgaon, India

²Associate Professor, OBHRM, Management Development Institute Gurgaon, India

Abstract

Drawing on theories of emotional contagion, psychological safety, emotional intelligence, and e-leadership, this study investigates how leaders' expressive behaviours over webcams impact emotional dynamics and team performance in virtual settings. While emotional contagion has been widely studied in co-located teams, its digital transmission via video conferencing remains underexplored, especially in high power-distance, tech-forward cultures like India. This research fills that gap by analyzing how leader expressivity shapes affective climates and output in remote teams.

Using a sequential mixed-methods design, the study combined a three-wave survey of 400 professionals across IT, finance, and consulting sectors in India with behavioural observations of 20 virtual meetings. Validated instruments (WLEIS, ECS, Edmondson's scale) were analyzed via CFA, SEM, bootstrapping, moderation analysis, and random forest regression. Findings showed leader expressivity significantly predicted emotional contagion ($\beta = 0.49$), which enhanced psychological safety ($\beta = 0.54$) and team output ($\beta = 0.61$). Emotional intelligence ($\beta = 0.21$) and camera-on culture ($\beta = 0.18$) moderated these relationships. Observations confirmed that expressive leaders triggered higher engagement and team mood alignment.

The study positions webcam expressivity as a measurable, culturally grounded lever for emotional leadership, extending traditional leadership models into digitally mediated workspaces.

Keywords: Emotional contagion, Virtual leadership, Webcam expressivity, Psychological safety, Team output, Emotional intelligence, Transformational leadership, Remote work, Social presence, E-leadership

The Economic Burden of Managing Diabetes Mellitus in Children in Sudan: A Cross Sectional Study

Hiba Ali Elzaki Hajomer, College of Medicine, Gulf Medical University, Ajman, UAE

Hiba Hajomer^{1,5}, Osama Elkhidir¹, Kamil Ali², Tahani Mahmoud¹, Sara Mohamed Kheir³, Hamid Magzoub⁴, Khlood Sheikh Mohammed^{4*}, Maaza Osman⁴, Mawada Abuzaid⁴, Tayseer Hassan⁴

1. Department of Community Medicine, National University, Khartoum, Sudan. 2. Department of Community Medicine, University of Khartoum, Khartoum, Sudan. 3. Member of Royal College of Physician UK, Isle of Wight, England. 4. Faculty of Medicine, University of Khartoum, Khartoum, Sudan. 5. College of Medicine, Gulf Medical University, Ajman, United Arab Emirates.

Abstract

Background: Diabetes mellitus is highly prevalent in Sudan and requires long-term management, placing a considerable demand on healthcare resources. This study estimates the direct and indirect costs of managing diabetes mellitus in children in Khartoum State, Sudan, and identifies factors influencing these costs.

Methods: A cross-sectional study was conducted with 138 children with diabetes across three public diabetes clinics in Khartoum State. Data were collected through face-to-face interviews with caregivers via a standardized questionnaire adapted from the KNCV Tuberculosis Foundation. Direct costs included laboratory tests, medications, provider fees, food, transportation during diagnosis, follow-up visits, and hospitalizations. Indirect costs were estimated through productivity loss, whereas intangible costs were measured via the willingness-to-pay method. Regression analysis in SPSS was employed to identify factors affecting total costs.

Results: The median annual cost of managing diabetes was 314 USD, with direct costs accounting for 74% of this total. Major cost drivers included food, lab tests, medications, and hospitalizations, with families spending 41% of their household income on diabetes care. Regression analysis indicated that male sex, combined therapy, and recent hospitalizations were associated with higher costs, whereas longer disease duration was associated with reduced costs.

Conclusion: Diabetes imposes a substantial financial burden on families in Khartoum, consuming a significant portion of household income and straining resources. Targeted policy interventions are essential to improve healthcare access, expand insurance coverage, and provide financial support for families managing diabetes in resource limited settings.

Neo-BCV: A Novel Bacterial Complex Vaccine Reshaping the Gut Microbiota to Enhance the Antitumor Immune Response

Kecheng Xu, Fuda Cancer Hospital Guangzhou, China

Hairu Yang¹, Huiqin Zhu¹, Zilong Zhu¹, Lingyun Man², Qingfeng Pang², Tao Lu³, Kecheng Xu⁴, Zhenyi Wang⁵ and Peihua Lu^{1,*}

¹Department of Oncology, Wuxi People's Hospital Affiliated to Nanjing Medical University, Wuxi Medical Center, Nanjing Medical University, Wuxi 214023, China

²School of Medicine, Jiangnan University, Wuxi 214122, China

³School of Life Science, Beijing University of Chinese Medicine, Beijing 100029, China

⁴Oncology Department, National Key Clinical Specialty (Oncology), Biomedical Translational Research Institute, Fuda Cancer Hospital, Jinan University, Guangzhou 510632, China

⁵National Research Centre for Translational Medicine at Shanghai, State Key Laboratory of Medical Genomics, Research Unit of Hematologic Malignancies Genomics and Translational Research of Chinese Academy of Medical Sciences, Shanghai Institute of Hematology, Ruijin Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai 200025, China

Abstract

Background: Lung cancer is the most common malignancy worldwide and has the highest mortality rate. Although therapeutic approaches have improved over recent years, the clinical efficacy of lung cancer treatment remains limited. Therefore, there is an urgent need to develop novel and effective immunotherapeutic strategies for lung cancer.

Methods: In this study, we constructed a novel bacterial complex vaccine (Neo-BCV, hereafter referred to as BCV) and investigated its anti-tumor effects and underlying mechanisms in a murine lung cancer model. We further explored the role of the gut microbiota, bile acid metabolism, and T-cell function in BCV-mediated anti-tumor immunity. In addition, we performed a preliminary evaluation of the clinical safety of BCV in human subjects.

Results: BCV treatment significantly enhanced the infiltration of CD4⁺ and CD8⁺ T cells into the tumor immune microenvironment and promoted the secretion of anti-tumor effector molecules. Mechanistically, BCV markedly increased the abundance of *Lactobacillus reuteri* (L. reuteri) in the gut microbiota and reduced serum levels of taurocholic acid (TCA). Further experiments confirmed that L. reuteri directly degrades TCA, and decreased TCA levels restored the effector functions of CD4⁺ and CD8⁺ T cells.

Conclusions: This study demonstrates that BCV remodels the gut microbiota and enhances anti-tumor immunity by regulating the L. reuteri–TCA axis to restore T-cell function. This mechanism provides a new strategy for improving the tumor immune microenvironment and supports further investigation and development of BCV as a therapeutic candidate for lung cancer.

Keywords: tumor vaccines; non-small cell lung cancer; *Lactobacillus reuteri*; taurocholic acid; tumor immunity

Prevalence of quorum sensing luxS gene in multidrug resistant uropathogen

Shilpa Pradhan, Microbiology Division, Mamata Academy of Medical Sciences, India

Soham Ghosh¹, Shilpa Pradhan¹, Sandeep Kumar Kotturu², Swarajya Lakshmi¹ & Sangita Mukhopadhyay²

¹Microbiology Division, Mamata Academy of Medical Sciences, Bachupally, Hyderabad, 500090, India

²Centre for DNA Fingerprinting and Diagnostics, Inner Ring Road, Uppal, Hyderabad, 500039, India

Abstract

Background: The increasing prevalence of antimicrobial resistance (AMR) among urinary tract infections (UTIs) is making clinical management challenging. Biofilm formation is a key mechanism contributing to antibiotic resistance in uropathogens. Quorum sensing is known to regulate several bacterial processes like bioluminescence, virulence, and biofilm formation which is known to play a role in the development of drug resistance. Out of three major quorum sensing systems, luxS/AI-2 is a universal system used by both Gram-positive and Gram-negative bacteria.

Methods: Community-acquired AMR UTI isolates were analyzed for bacterial species distribution and antibiotic susceptibility patterns. Phenotypic biofilm formation was assessed using Congo Red Agar (CRA) method. The presence of luxS gene, associated with the AI-2 quorum sensing system, was determined by polymerase chain reaction (PCR).

Results: Eight different bacterial species were identified, with *Escherichia coli* (44.1%) being the most prevalent, followed by *Klebsiella* spp. (27.9%). More than 90% of the isolates were resistant to at least 3 antibiotics and resistance to ampicillin was most common (67.6%), followed by cefazolin (54.4%), amoxycylav (53.4%), aztreonam (52.9%), and ciprofloxacin (48.52%). Phenotypic biofilm formation was observed in 35.29% of the AMR isolates which produced characteristic black colonies. However, luxS gene was detected in 91.17% of these AMR isolates.

Conclusion: Higher prevalence of luxS gene in AMR isolates indicate a strong association of quorum sensing potential with development of multidrug resistance. Targeting quorum sensing pathways may represent potential adjunct therapy alongside antibiotics for efficient clinical management of multidrug resistant UTI cases.

Bioinductive xeno-derived collagen implant in arthroscopic rotator cuff repair: 24-Month MRI and Clinical Evaluation

Francesco Raffelini, Istituto Fiorentino di Cura e Assistenza, 50139 Florence, Italy

Daniele De Amicis^{1,2}, Aurelio Picchi¹, Luca Andriollo^{3,4}, Francesco Calafiore¹, Michela Saracco⁵, Riccardo Fabiani¹, Andrea Fidanza¹, Giandomenico Logroscino¹, Francesco Raffelini⁶

¹Unit of Orthopaedics Department of Life, Health and Environmental Sciences, University of L'Aquila, 67100 L'Aquila, Italy.

²Val Vibrata Hospital, 64027 Teramo, Italy.

³Robotic Prosthetic Surgery Unit and Sports Traumatology, Fondazione Poliambulanza Istituto Ospedaliero, 25124 Brescia, Italy.

⁴Artificial Intelligence Center, Alma Mater Europaea University, 1090 Vienna, Austria.

⁵Department of Public Health, Orthopaedics and Traumatology, University of Naples "Federico II", 80138 Naples, Italy.

⁶Istituto Fiorentino di Cura e Assistenza, 50139 Florence, Italy.

Abstract

Background/Objectives: Rotator cuff repair (RCR) is a common orthopedic procedure, with healing outcomes strongly influenced by patient-specific factors such as tissue quality, tear characteristics, and biological healing potential. Bioinductive collagen implants have shown great results in enhancing tendon healing and reducing retear rate. This study aimed to evaluate the clinical and imaging outcomes of RCR augmented with a xeno-derived collagen membrane over 24 months and to assess complications or implant failures.

Methods: Patients underwent arthroscopic RCR using anchors (single or double-row) with additional xeno-derived matrix augmentation. The study included patients older than 40 years with full-thickness supraspinatus and/or infraspinatus tendon tears (DeOrio-Cofield grade 3-4) who were candidates for arthroscopic rotator cuff repair and provided informed consent. Clinical outcomes were assessed using the Constant-Murley Score (CMS), Disabilities of the Arm, Shoulder and Hand score (DASH), and Visual Analogue Score (VAS) at baseline, 3, 6, 12, and 24 months. MRI was performed preoperatively and at 24 months to assess tendon thickness.

Results: All scores improved significantly. CMS increased from 16.3 ± 4.1 to 82.9 ± 5.8 , VAS decreased from 7.8 ± 1.0 to 1.5 ± 0.8 , and DASH improved from 70.3 ± 6.4 to 12.4 ± 4.5 ($p < 0.05$). Tendon thickness in the supraspinatus (T3) increased from 4.2 ± 0.9 mm to 6.8 ± 1.2 mm ($p < 0.05$). Retear rate was 7.55%, with no major complications.

Conclusions: The bioinductive collagen implant showed notable results in improving tendon thickness, healing, and excellent clinical outcomes in RCR, without membrane-related complications. The study was designed as a prospective single-arm case series without a control group and that was the main limitation; The absence of adverse reactions in this cohort further supports the favorable safety profile of this implant in the present study population.

Keywords: bioinductive implant; collagen membrane; full-thickness tears; rotator cuff repair.

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