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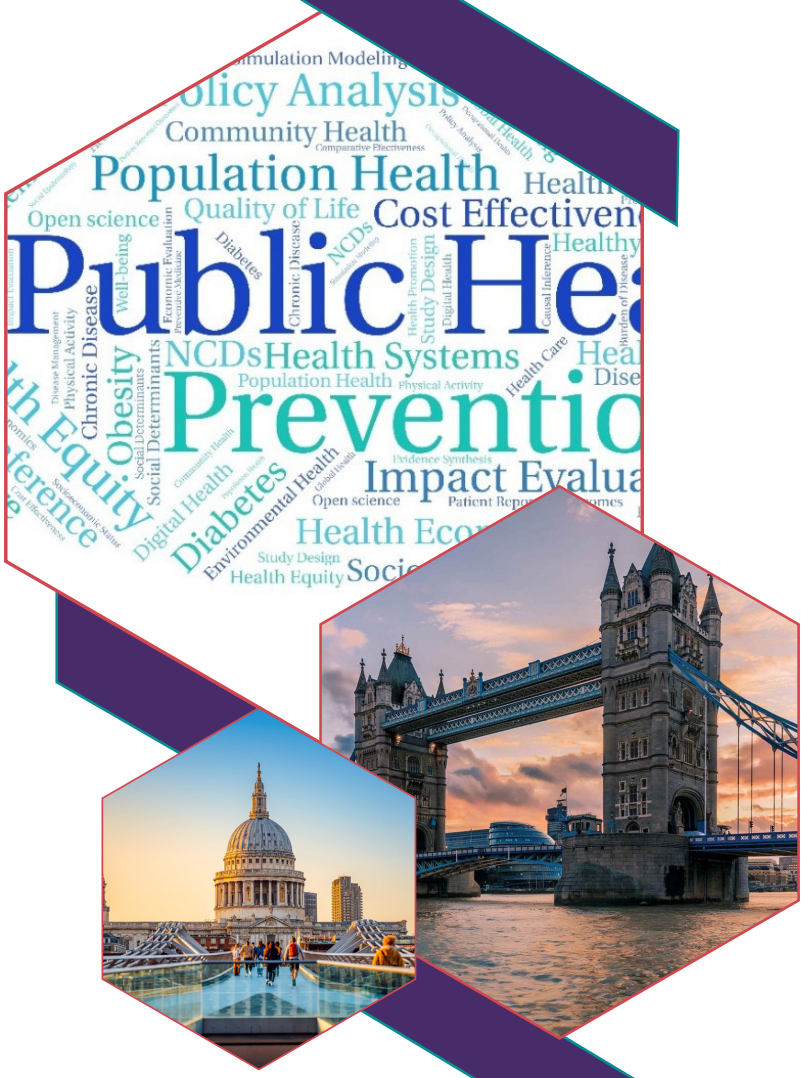
Abstract Book



Abdul Basit

College of Veterinary Medicine, Yangzhou University, Yangzhou 225009, China

Development of Visual Detection of African Swine Fever Virus Using CRISPR/LwCas13a Lateral Flow Strip Based on Gene D11L7

Abstract

African Swine Fever Virus (ASFV) is a lethal double-stranded DNA virus that poses a severe threat to the global swine industry due to its high contagion rate and absence of effective vaccines or treatments. In recent years, ASF outbreaks have caused significant economic damage in multiple regions, particularly across the Caucasus, Eastern Europe, Asia, and sub-Saharan Africa. Rapid and accurate detection of ASFV is critical for effective disease control and prevention. Current molecular diagnostic methods, although sensitive, often require expensive equipment and specialized personnel, making them unsuitable for field-based detection. In this study, we report the development of a novel and portable detection platform for ASFV that utilizes the CRISPR/LwCas13a system in combination with a lateral flow strip (LFS) assay. This approach offers a sensitive, specific, and visual method for ASFV detection, with minimal technical requirements. The detection strategy targets the D11L7 gene segment of ASFV, employing recombinase polymerase amplification (RPA) for isothermal DNA amplification at 37°C. The amplified DNA is then transcribed into RNA and recognized by the LwCas13a-crRNA complex, which activates trans-cleavage of a reporter molecule. The cleaved reporter generates a visible signal on a lateral flow strip, allowing easy interpretation of results within 30 minutes. We validated this CRISPR/LwCas13a-LFS assay using 31 clinical samples and demonstrated 100% consistency with real-time quantitative PCR (qPCR) results. The method showed high specificity, distinguishing ASFV from closely related pathogens, and displayed robust sensitivity even at low viral loads. The entire detection process is user-friendly and does not require sophisticated equipment, making it ideal for use in resource-limited and

field settings. Overall, this study highlights the potential of CRISPR/Cas-based diagnostics in veterinary virology and zoonotic disease surveillance. The proposed method provides a promising tool for the rapid, accurate, and field-deployable detection of ASFV, contributing to more effective disease management and outbreak control.

Biography

Abdul Basit has a diverse and accomplished academic and professional background. From 2013 to 2015, he completed his FSC at PMDC Peshawar, laying a strong foundation in the sciences. He then pursued a Doctor of Veterinary Medicine (DVM) at the University of Veterinary and Animal Sciences (UVAS), Lahore, from 2015 to 2020. His DVM studies were supported by a fully funded scholarship through quota seat for Khyber Pakhtunkhwa (KP). Upon completing his DVM, Abdul Basit worked as a Farm Manager at Sadiq Group of Companies in Pakistan from 2021 to September 2023. In this role, he gained valuable practical experience in managing Poultry (Broiler Breeder) and improving farm operations. In 2023, Abdul Basit embarked on further academic pursuits, enrolling in an MS-PhD program in Preventive Veterinary Medicine with fully funded Scholarship at Yangzhou University in Jiangsu Province, China. This advanced program is scheduled to run from 2023 to 2028 and aims to deepen his expertise in veterinary medicine Research with a focus on prevention and control of Avian Influenza.

Aidan Richards

Cardiff University school of Medicine, UK

Avoidance of Defecation in School Toilets and the Development of IBS in Later Life

Abstract

The prevalence of irritable bowel syndrome (IBS) in the UK is estimated as high as 21.6% with a likely cost of £1.3 billion. Poor school toilet facilities may lead to holding behaviours which can lead to dysfunctional elimination syndrome. We investigated the presence of a link between avoidance of school toilets, exhibiting a holding behaviour and the emergence of IBS in later life. A retrospective cohort study focusing on, but not limited to, previous diagnosis of IBS, ROME-IV criteria symptoms, symptom profile, and recall of school toilet behaviours and quality in childhood and adolescence. Our survey, aimed for those between 18 and 50, was conducted in outpatient clinics, the majority of which had a female population. Eighty two participants (20.7%) had a previous official diagnosis of IBS and a further 46 (11.9%) met the ROMEIV criteria. When comparing the defecation avoidance rates of those with an official IBS diagnosis to those without, 51.2% (n=82) avoided school toilets compared with 26.7% respectively, giving an odds ratio of 2.89 (p0.001). This was mirrored by the ROME-IV criteria group with 37.0% (n=17) avoiding defection at school compared to 24.9% (n= 67) in those that met the ROME-IV criteria compared with those that didn't respectively. The avoidance rates are 57.1% (n=42), 50.0% (n=26) and 41.9% (n=31) in the IBS-constipation, IBS-diarrhoea and IBS-mixed sub-groups respectively. The combined average rating of school toilet facilities in those that avoided was 5.70 compared with 4.59 in those that didn't. There is a statistically significant association between recall of avoidance of defecation in school toilets and the development of IBS in later life. We propose that a public health approach led by the appropriate governing and education bodies to improve school toilet facilities and the attitudes of staff, children and parents towards healthy defecation habits is needed to prevent the development of IBS.

Biography

Dr Aidan Richards studied at Cardiff University School of Medicine and graduated in 2023 with an MBBCh and an iBSC in Psychological medicine with first-class honours. He is currently in foundation year two training in University Hospital Bristol and Weston.
The above project is in collaboration with Dr Caterina Foglia (MBBCh) a foundation Doctor at Salisbury NHS Foundation Trust and Mr Richard Penketh Consultant Gynaecologist (BSc, MB BS, MD, MRCOG).

Ali Alshikh Hasan

National Institute of Technology Goa, India

Strengthening Global Surveillance Systems to Combat Emerging Zoonotic Diseases

Abstract

The increasing incidence of zoonotic diseases—pathogens transmitted from animals to humans—poses a significant threat to global public health. Factors such as climate change, habitat encroachment, and intensified human-animal interactions have heightened the risk of zoonotic spillovers, exemplified by recent outbreaks like mpox and human metapneumovirus (HMPV) in China. To effectively mitigate these threats, it is imperative to enhance global surveillance systems. This entails integrating advanced technologies, fostering international collaboration, and ensuring real-time data sharing to promptly detect and respond to emerging pathogens. Implementing high-reliability principles from industries such as aviation can further bolster public health responses, ensuring continuous improvement and standardized procedures WIRED . By strengthening surveillance infrastructures and adopting innovative practices, the global community can proactively address the challenges posed by zoonotic diseases, thereby safeguarding public health and preventing future pandemics.

Biography

He has finished his PhD at 29 years old years from National Institute of Technology Goa in India. . He has Published in excess of 4 papers in rumored diaries and has been filling in as a publication board individual from notoriety.

Dr Andrew Epaphroditus Tay

Chief Wellbeing Officer National University of Singapore

Whole-of-Organisation (WOO) Approach to Wellbeing – How Does It Work? Lessons Learnt Through the Lens of a Top Asian University

Abstract

Problem

In 2020, the National University of Singapore (NUS) Mental Health Task Force uncovered significant levels of mental distress among staff and students with multiple barriers cited to access mental health resources and services.

Interventions

The NUS Health and Wellbeing unit (HWB) was subsequently set up in 2020 and strategically housed under the "Office of the President" to spearhead wellbeing initiatives, including the signature mental health destigmatisation campaign, to improve resource awareness and drive a culture of psychological safety and empathy for staff and students. Most innovatively, we invested in social media advertising to boost social media posts on services to our staff and students

Strategically, WellNUS mental health framework was developed to systematically identify and close policy gaps to improve wellbeing of staff and students through close collaborations with system owners and stakeholders. In 2024, a Chief Wellbeing Officer (CWO) was appointed to demonstrate unwavering commitment towards wellbeing agenda, a rare appointment in higher education space.

Serial assessments were conducted annually between 2021 to 2024 to assess the impact the programmes had on staff and student wellbeing

Results
In 2021, our per-post campaign survey (n-2577) indicated that PHQ-2 score, Personal Stigma Score and Social Distancing scores improved among staff and students.

In 2022, we invested in social media platform to drive our campaign, garnering 4.6 million impressions, 64,357 engagement and 9,057 likes. We obtained 6048 responses from the survey. 57.3% of respondents were aware of the campaign. From these, 70% reported to know more about mental health and stigma, 73.3% to be more aware of NUS resources available, 53.3% to be more likely to use those services, and 76.5% to be more willing to support a peer struggling with mental health conditions.

Our follow-up Wellbeing Survey among staff in 2023 (n=3468) and 2024 showed positive relationship between departmental outreach and employee engagement, and between workplace relationships and psychological safety.

All results were statistically significant.

Conclusion
Our results concluded that a systematic whole-of-university approach to wellbeing proved to be effective in reducing mental health stigma and promoting a psychologically safe space for staff and students.

Biography

Dr. Andrew Tay, Chief Wellbeing Officer at NUS, leads groundbreaking initiatives at the Health and Wellbeing unit, achieving unprecedented success since 2020. His leadership in innovative programs like "return-to-work case management" and destigmatization campaigns has significantly enhanced the university community's wellbeing.

Pioneering the WellNUS framework, he revolutionizes mental health approaches. Recognized with prestigious awards like the WorkWell Leaders "Wellbeing Organisation of the Year" and the "Global Healthy Workplace Award," Andrew's impact is evident.

With a medical background in tech and pharma, he has shaped employee benefits at Facebook and GSK. An alumnus of NUS and advocate of music and arts, Andrew plays bass guitar and crafts cocktails in his free time.

Aneta Nitsch-Osuch

Medical University of Warsaw, Poland

Plant-Based vs. Animal-Based Diets: Appetitive Traits and Dietary Patterns in Adults Based on Cross-Sectional Surveys

Abstract

Background: Dietary patterns play a crucial role in shaping eating behaviours and influencing health outcomes, such as body weight. Understanding how appetitive traits differ between plant-based and animal-based diets can provide insights into dietary strategies for weight management and improved health.

Objectives: The aim of this study was to analyse the relationships between appetitive traits, as measured by the Adult Eating Behaviour Questionnaire (AEBQ), and dietary patterns in adults consuming plant-based or animal-based diets. It examined how these dietary patterns influence body mass index (BMI) and explored the differences in appetite-related traits between groups with different levels of plant and animal product consumption.

Methods: A cross-sectional survey of 553 Polish adults was conducted using validated questionnaires, including the AEBQ and a food frequency questionnaire (FFQ). The participants were categorised into four dietary groups: high intake of both plant and animal products, low intake of both, plant-based diet, and animal-based diet. The data were analysed using SPSS version 14.0 software.

Results: The participants on a plant-based diet had significantly lower BMIs and slower eating rates than those on an animal-based diet. Positive correlations were observed between 'food approach' traits (e.g., food responsiveness, emotional overeating) and BMI, particularly in individuals with higher animal product consumption. Conversely, 'food avoidance' traits (e.g., food fussiness, slowness in eating) were more prevalent among those on a plant-based diet.

Conclusions: The results suggest that plant-based diets are associated with favourable appetitive traits and a lower BMI. These findings highlight the potential of plant-based diets to support weight control and improve eating behaviours. Further research is warranted to investigate the causal mechanisms underlying these associations.

Keywords: appetite; appetitive traits; behaviour; eating; obesity; plant-based diet; weight.

Dr. Ashish Sinha

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Status of home based care practices and nutritional status of children with Sickle Cell Disease in Raipur, Chhattisgarh, India

Abstract

Background: Because of the nature of Sickle cell disease (SCD), home based care of affected children is crucial. Nutritional challenges impact many chronic health conditions associated with SCD, including chronic inflammation, vaso-occlusive crisis. These are accompanied by frequent pain and greater chances of stroke, particularly in young children. Objectives –To evaluate home-based care practices and nutritional status among SCD affected under five children in Raipur, Chhattisgarh, India.
Methodology- A cross sectional study involving home based interview of parents / caregivers of SCD children during December 2022 – February 2023 was done using predesigned pretested questionnaire.

Results-Out of 93 families with SCD children, 47.3% were mother 46.2% were father and rest were either caretaker or relatives were interviewed. Majority (78%) knew about SCD and 56% knew that SCD cannot be cured. Common symptoms were joint pain (79.1%) for which 63% adopted warm compression at pain sites, 70% were using massage too while 73% participants were using analgesic drugs for pain relief. 56% respondents restricted their children for outdoor activities and 64% didn't allow them to involve in strenuous physical activity. Around 80% people were taking medications (i.e. Hydroxyurea and other supplements) and majority (78%) were benefited. At home level, massage (76%) followed by Hydration (62%) was commonly practiced during vaso-occlusive crisis. Among children, 21.9% were underweight, 12.08% were stunted and 25.27% were wasted. In 58.33% calorie deficit (i.e. RDA < 1010 kcal)

children, 87.9% parents were willing to provide extra nutritional supplement.65% guardians were providing special nutrition and diet for SCD children.
Conclusion- Since massage and hydration were most common home based care practices. Significant proportion of SCD children had malnutrition and didn't consume the daily recommended dietary allowance. Nutritional intervention should be included to strengthen home based care as standard care for children with Sickle Cell Disease.

Biography

Dr ASHISH SINHA Associate Professor, Dr Ashish Sinha in MBBS, MD in Community Medicine working as Associate Professor in Pt JNM Medical College Raipur, Chhattisgarh Province India. He worked in World Health Organization as Surveillance Medical Officer for two years, National AIDAS Control Organization as State Epidemiologist for 1 year and as Senior Resident at Post Graduate Institute of Medical Education and Research Chandigarh. He published 25 Research articles and 5 paper presentation at in International Conferences.

Chizoba Esio-Bassey

School of Health and Well-being, University of the West of England, Bristol, UK

Impact of home food production on nutritional blindness, stunting, wasting, underweight and mortality in children: a systematic review and meta-analysis of controlled trials

Abstract

Vitamin A deficiency is highly prevalent and remains the major cause of nutritional blindness in children in low-and middle-income countries, despite supplementation programmes. Xeropthalmia (severe drying and thickening of the conjunctiva) is caused by vitamin A deficiency and leads to irreversible blindness. Vitamin A supplementation programmes effectively reduce vitamin A deficiency but many rural children are not reached. Home food production may help prevent rural children's vitamin A deficiency. We aimed to systematically review trials assessing effects of home food production (also called homestead food production and agricultural interventions) on xeropthalmia, nightblindness, stunting, wasting, underweight and mortality (primary outcomes). We searched Medline, Embase, Scopus, Cochrane CENTRAL and trials registers to February 2019.

Inclusion of studies, data extraction and risk of bias were assessed independently in duplicate. Random-effects meta-analysis, sensitivity analyses, subgrouping and GRADE were used. We included 16 trials randomizing 2498 children, none reported xerophthalmia, night-blindness or mortality. Home food production may slightly reduce stunting (mean difference (MD) 0.13 (z-score), 95% CI 0.01 to 0.24), wasting (MD 0.05 (z-score), 95% CI 0.04 to 0.14) and underweight (MD 0.07 (z-score), 95% CI 0.01 to 0.15) in young children (all GRADE low-consistency evidence), and increase dietary diversity (standardized mean difference (SMD) 0.24, 95% CI 0.15 to 0.34). Home food production may usefully complement vitamin A supplementation for rural children. Large, long-duration trials with good randomization, allocation concealment and correct adjustment for clustering are needed to assess effectiveness

of home food production on nutritional blindness in young children.

Biography

Chizoba Esio-Bassey is a Doctor of Optometry from Imo State University Nigeria, She has an MSc in Public Health from the University of East London and a PhD in health economics from the University of East Anglia, Norwich. She is a Senior Lecturer In Public Health at the University of the West of England Bristol. Dr. Esio-Bassey has contributed to several impactful public health research projects, including a World Health Organization funded scoping review to inform the update of dietary guidelines for children specifically focusing on vitamin A, iron, and magnesium. She is currently an Academic Supervisor with the South-West England Public Health Specialist Training.

Fatemeh Chichagi

Tehran University of Medical Sciences,School of Medicine, Tehran, Iran

Cardiovascular health in Kratom users; a narrative review

Abstract

Background: Kratom, also known as Mitragyna speciosa, is a plant that originates in Southeast Asia and possesses unique pharmacological characteristics. It is commonly consumed in the form of tea made by boiling the leaves or using the leaves to create the powder. According to its pain-relieving effects, the prevalence of kratom use around the world has increased, which has various implications for healthcare providers. Mitragynine is a well-known active compound in kratom.

Objective: This review aims to provide a comprehensive perspective on the cardiovascular effects of mitragynine and its potential cardiotoxicity through the literature.
Method: Authors searched PubMed, Scopus, and Google Scholar databases using appropriate search strategies for each database. After the screening, all relevant studies were included.

Results: Although kratom may have the potential for therapeutic benefits, it has been associated with multi-organ damage and cardiac toxicity in some cases. According to the available data, tachycardia and hypertension are the most common adverse effects. Other possible cardiovascular effects include atherosclerosis, ventricular arrhythmia, cardiomyopathy, dose-dependent prolonged QTc interval, myocarditis, cardiomegaly, and cardiopulmonary arrest.

Conclusion: While prior research has indicated the possible negative effects of mitragynine overdose on the cardiovascular system, there are no definitive conclusions, and additional investigations are needed.

Biography

Dr Chichagi finished her med school at 25 and then started her practice as a general practitioner. At the same time, she conducted several research projects remotely. Then, she joined Tehran Heart Center as clinical trials physician and postdoctoral researcher. She has published 30 papers and abstracts, mainly focused on internal medicine.

Helene Scotland

University Hospitals of North Midlands, Stoke-on-Trent, ST4 6QG, England, UK

Examining the Implementation of Universal Healthcare (UHC) Across High, Middle, and Low-Income Countries in the World Health Organization Network

Abstract

As the world grapples with the growing burden of chronic diseases, aging populations, and economic disparities, universal healthcare (UHC) remains one of the most transformative yet contentious challenges of our time. While some nations have embraced UHC as a fundamental right, others have opted for their own unique approaches to healthcare accessibility. The impact of the different systems on healthcare disparities becomes more stark with an increasing demand for medical care- particularly in the face of financial constraints, workforce shortages, and systemic inefficiencies. This investigative review explores the distribution of UHC across high-, middle-, and low-income countries, emphasizing its profound impact on global health and healthcare outcomes, particularly in lower-income nations and regions with limited access to care.

All World Health Organization (WHO) member countries were categorized by income level—high, upper-middle, lower-middle, and low—using the World Bank Atlas methods for the 2025 fiscal year. UHC status of the various countries was determined using the WHO Data Bank. Determinants and variables of health as reported by each country were obtained from the WHO data and world health statistics report 2024. Comparisons, statistical analysis, and figures were generated using GraphPad Prism 8.0. Significance was determined at $p<0.5$ with a confidence interval of 95%. Worldwide health determinants analyzed included population size, life expectancy, maternal, under-five and neonatal mortality, skilled health professional birth attendance, neglected tropical diseases, death probability from non-commmunicable diseases, HIV, tuberculosis, annd malaria incidence, prevalence of markers for Hepatitis B, and household health expenditures. Overall, higher income levels were significantly

associated with better health outcomes for both UHC and non-UHC groups. However, UHC groups consistently outperform non-UHC groups across almost all indicators, with the greatest disparities significantly observed in Low and Low-Middle income countries. This demonstrates the significant advantages of universal health coverage, particularly in reducing mortality and improving access to essential healthcare services. Highlighting these dynamic intersections of health economics and social determinants shifts the narrative from cost to investment and from intervention to prevention, designing a healthcare society which self-advocates for community health empowerment and a healthier society.

Biography

Dr. Helene Scotland earned her Bachelor of Medicine, Bachelor of Surgery (MBBS) degree in 1994 from the University of the West Indies. With over 20 years of experience as a general practitioner in her home country of Antigua and Barbuda, she has held several impactful roles, including serving as a District Medical Officer, an on-site physician for disabled and orphaned children at the Care Project, and an adjunct professor of Clinical Medicine at the American University of Antigua College of Medicine. Recently, she completed a Master's in Business Administration with a specialization in Healthcare Management from UNICAF University and is now practicing in the United Kingdom. Dr. Scotland is a passionate advocate for systemic quality improvement and health initiatives aimed at enhancing access to care in community medicine.

Isaie Nshimiymana

School of Public Health, Kigali , RWANDA

Factors associated with adolescent pregnancy among girls aged between 15 and 19 years in Muhanga district, Rwanda

Abstract

Adolescent pregnancy, also known as teenage pregnancy, is an unwanted pregnancy affecting girls aged 15–19 years. With a global prevalence of 25%, Africa has 18.8% of female adolescents become pregnant, preventing them from a better standard of living, such as good education and parental care, and adolescent pregnancy, which poses health risks, educational and career disruptions, financial strain, and lower academic achievement, while also increasing public costs and social service demand. This study aimed to determine the prevalence and factors associated with adolescent pregnancy among girls aged 15–19 years in Muhanga district, Rwanda. The study involved 392 female adolescents aged 15–19 years in Muhanga district, Rwanda. The participants were selected through a multistage sampling method, and the study ensured voluntary participation whereby the assent and consent forms were signed. Data were collected through questionnaires and analyzed via STATA v.18, and statistical analysis, including chi-square tests and multivariate logistic regression, was used to control for confounders. Ethical approval was obtained from Mount Kenya University and Muhanga district administration. The study reported an adolescent pregnancy rate of 10.7% (95% CI: 7.7–13.7). Adolescents financially supported by others (not their parents or guardians) had higher odds of having pregnancy (AOR = 3.9, 95% CI: 1.431–10.467, $p < 0.01$). Those not in school and primary school showed higher odds of having a pregnancy (AOR = 23.76, 95% CI: 6.833–82.630, $p < 0.001$) and (AOR = 25.60, 95% CI: 7.224–90.741, $p < 0.001$), respectively, compared to those in secondary school. Receiving SRH education was associated with lower odds of having a pregnancy (AOR = 0.2, 95% CI: 0.80–0.514, $p < 0.001$). Experiencing peer pressure increased the odds of having a pregnancy (AOR = 4.12, 95% CI: 1.521–11.131, $p < 0.01$). This study highlights a significant adolescent pregnancy rate in Muhanga district,

emphasizing the need for targeted interventions. Addressing educational gaps, improving financial support systems, and enhancing sexual and reproductive health education are crucial steps. Policymakers should focus on these areas to reduce adolescent pregnancies and improve outcomes for young girls. Future efforts should also include strategies to counteract peer pressure and integrate comprehensive support programs.

Biography

Isaie Nshimiymana holds a Master of Public Health (MPH) in Epidemiology and Disease Control from Mount Kenya University. He is a Registered General Nurse at Ndera Neuropsychiatric Teaching Hospital in Kigali, where he also serves as the Director of Research. With expertise in epidemiology, disease control, and neuropsychiatric care, Isaie leads various public health research projects aimed at improving healthcare outcomes. His work bridges clinical practice and research, contributing to evidence-based healthcare strategies. Isaie has also authored a publication on public health topics, further solidifying his commitment to advancing health initiatives within his community.

Izzeldin Fadl Adam

Faculty of Public and Environmental Health, Khartoum, Sudan

Prevalence and predictors of mental health disorders among internally displaced women in Sudan: A systematic review

Abstract

Internally displaced women in Sudan face considerable mental health challenges. Armed conflicts and civil unrest significantly impact mental health, leading to increased rates of anxiety and depression, and post-traumatic stress disorder (PTSD) particularly among vulnerable populations such as women.This study aims to analyze the prevalence and predictors of common mental disorders among internally displaced women in Sudan based on available research and data. Understanding these factors is crucial for designing effective interventions and providing targeted mental health support to this population. A systematic review was conducted in April 2025 with a comprehensive search in databases for academic papers from the Semantic Scholar corpus. We retrieved the 50 papers most relevant to the quer. Six screening ccriteria were set to make a holistic judgement about the inclusion of each paper. In total 50 papers most relevant to the query were retrieved, of which 10 were included for analysis. The studies were primarily cross sectional, with one systematic review and one longitudinal investigation involved over 18,000 participants from conflict-affected areas such as Darfur and Central Sudan. Overall, the pooled mental health disorder rates ranging from 44.2% to 72%. Specific rates include post traumatic stress disorder in 12.3%–70.3% of cases, depression in 13.5%–62%, and anxiety in 23.6%–26%. Key predictors emerge from the evidence. Female gender shows a strong association with both PTSD and depression; one study reports an adjusted odds ratio of 8.434 for PTSD among women. Middle age (particularly 40–59 years) is linked to depression (AOR 6.473). Other factors associated with higher risk include exposure to traumatic events, extended displacement, loss of a family member (with an odds ratio of 4.7 in one study), poverty, unemployment, and social exclusion. These findings directly indicate the high burden of common mental disorders among internally displaced women in Sudan and

delineate the demographic and displacement-related factors that predict their occurrence.

Biography

Assistant Professor of Epidemiology at University of Khartoum obtained his PhD from Tokyo Medical and Dental University. He worked as a consultat for the Unit of Support and Development, Ministry of Health, Saudi Arabia. His major interests are strategic planning, monitoring and evaluation of maternal health outcomes, and quality management. His work focused heavily on the impact of conflict on health care delivery, particularly in the context of family planning and maternal health. He has published more than 25 papers in peer- reviewd journals, co-found international reports, and developed medical protocols. Throughout his career, Dr. Izzeldin has also shown a keen interest in the socio-economic determinants of health. This is evident in his work on the underlying causes of mortality during the COVID-19 in Saudi Arabia and social distancing during the COVID-19 in Sudan, as well as his research on socio-economic inequalities in diabetes mellitus in Bangladesh.

Jie Zhang

Wisdom Lake Academy of Pharmacy, Xi'an Jiaotong-Liverpool University, Suzhou, China

The mechanism of the therapeutic potential of stem cell-derived Dendrobium Officinale (SDO) for gastric mucosa wound healing

Abstract

Dendrobium Officinale (DO) is a traditional Chinese medicine known for its efficacy in repairing gastrointestinal mucosa injuries. Our observation s have indicated that stem cell-derived Dendrobium Officinale (SDO) exhibits significant mucosa wound-healing effects. Further identification showed substantial extracellular vehicles (EVs) in SDO water extract. Our initial experiments involving transwell migration and immune adhesion assays have demonstrated that EVs significantly enhance cell migration and reduce inflammation. However, the specific mechanism remains unknown.

In our study, we successfully established a mouse model of alcohol-induced gastric mucosal injury. Treatment was administered with different concentrations of SDO EVs as well as varying concentrations of SDO extract. We measured changes in inflammatory markers in serum and gastric tissue, along with alterations in apoptosis-related protein expression. Preliminary results suggest that SDO-derived EVs provide superior protection against alcohol-induced gastric mucosal injury compared to traditional DO.

To further explore the mechanisms, we will conduct RNA-level analysis to investigate microRNAs within the EVs. Subsequently, in vitro functional analysis will be performed using a gastric injury cell model to evaluate the protein-level effects of EVs. Finally, Single Cell Sequencing experiments will elucidate how EVs impact different cell types during in vivo wound healing. Additionally, we aim to investigate the functional mechanism of EVs in vivo.

Biography

Elhem GHORBEL has completed his PhD at the age of 27 years in materials science and engineering from the National High Engineering School of Mines - Paris. She is Professor at CY Cergy Paris University in the department of Civil Engineering (IUT) since 2003.

Keyi Zou

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Single-cell analysis identifies MKI67+ microglia as drivers of neovascularization in proliferative diabetic retinopathy

Abstract

Purpose: Proliferative diabetic retinopathy (PDR) is among the primary causes of blindness in individuals with diabetes. Although elevated lactate levels have been identified as critical biomarkers associated with the prognosis of PDR (proliferative diabetic retinopathy), the detailed pathways through which lactate impacts pathological neovascularization remain insufficiently elucidated. This study is aimed at establishing a clear link between lactate metabolism and angiogenesis in PDR, advancing our understanding of the disease mechanism and identifying potential therapeutic targets.

Methods:

1. Single-cell RNA sequencing (scRNA-seq) was performed to profile lactate metabolism-related genes in proliferative diabetic retinopathy (PDR). Unsupervised clustering of microglial cells revealed distinct subpopulations, including a highly proliferative cluster marked by elevated expression of cell cycle-related genes (e.g., MKI-67). Differential gene expression and pathway enrichment analyses (HALLMARK, METABOLISM, KEGG, GO) were applied to characterize metabolic features of this subpopulation. Pseudotemporal trajectory analysis was used to infer differentiation dynamics modulated by lactate metabolism-associated genes. Cell-cell communication networks were reconstructed to identify interactions involving this microglial cluster.
2. In vitro experiments using human microglial cell cultures subjected to high-glucose conditions (50 mM) assessed the induction of lactate metabolism-related genes. We established a coculture system of Human Microglia cells (HMCs) treated and HUVECs, subsequently, the

effects of HMCs treated by high glucose on cell proliferation and migration of HUVECs were evaluated using EdU incorporation assay and wound healing assay.

3. An oxygen-induced retinopathy (OIR) mouse model was used to evaluate the impact of abemaciclib after intraperitoneal injection, an FDA-approved proliferation inhibitor, on retinal neovascularization. RT-qPCR was used to validate the gene expression levels of proagiogenic factors and Ki67. The western blot results demonstrated the different protein expression levels of proagiogenic factors and Ki67. Multiple types of immune fluorescence staining were conducted to show the expression of Ki67 and Iba1 in microglia adjacent to neovascularization tufts (IB4 staining).

Results:

1. The scRNA-seq data identifies MKI67+ microglia as a novel subset strongly associated with lactate metabolism and proliferation, distinguished by the upregulation of genes such as MKI67, PARK7, and LDHA, and the enrichment of glycolysis-associated pathways. Analysis of the state trajectories indicated that lactate metabolism genes have impact on the progression of microglia subgroups. These microglia promote angiogenesis by interacting with endothelial cells via the secreted phosphoprotein 1 (SPP1)-integrin alpha 4 (ITGA4) signalling pathway and secreting some proangiogenic factors.
2. In vitro experiments confirmed that high-glucose conditions simulate the PDR microenvironment, enhancing microglial promotion of vascular proliferation.
3. In vivo, treatment with abemaciclib reduced retinal neovascularization by approximately 4.5% in the OIR mouse model. Proangiogenic factor (Hif1a, Vegfa, Ldha, and Pdgfb) and Ki67 gene levels were significantly lower in the retinas of the abemaciclib group than in the retinas of the control group. The Western blot analysis further demonstrated a significant reduction in the expression levels of pro-angiogenic proteins and Ki67 protein in the abemaciclib group compared to the control group. Multiple types of immune fluorescence staining were conducted with a proliferation marker (Ki67) and a microglial marker (Iba1) in OIR retinas; the results confirmed the presence of proliferative and active microglia adjacent to neovascularization tufts, as indicated by isolectin B4-induced colocalization. In contrast, Ki67+ MG was barely observed in abemaciclib-injected retinas, accompanied by a significant decrease in retinal neovascularization.

Conclusion: In summary, this study utilized scRNA-seq data from the fibrovascular membranes of patients with PDR. A key subpopulation of cells, MKI67+ MGs, was identified and found to be strongly associated with lactate metabolism. The genetic markers, lactate metabolism-related gene expression, signalling pathways, and cell differentiation trajectories of these cells were described, explaining their role in promoting angiogenesis through metabolism- and immune-related mechanisms of action. Furthermore, in vitro experiments and animal model validation demonstrated the therapeutic potential of abemaciclib in reducing neovascularization by targeting MKI67+ MG proliferation, paving the way for future studies on combination therapies and translational applications. This work lays the foundation for future studies on MKI67+ MG origin, differentiation regulation, and targeted therapeutic interventions to advance the treatment of PDR. Future research should also explore the broader implications of lactate metabolism in other retinal diseases and systemic vascular complications.

Key words: single-cell analysis, lactate metabolic gene, proliferative diabetic retinopathy, microglia, abemaciclib, oxygen-induced retinopathy.

Biography

Zelin Ou is currently pursuing a Ph.D. in Dermatology and Venereology at Chongqing Medical University. As a co-first author or corresponding author, he has published three SCI papers, with the highest impact factor of 18.962. He was invited to speak at the 2022 Chinese Burn Association Annual Meeting and the 14th Asia-Pacific International Burn Conference. His research contributions have earned him recognition in the field, and he continues to make significant strides in dermatology and burn medicine.

Maha Rhamttallah

School of Medicine, University of Khartoum, Sudan

Impact of Hypertension Knowledge on Adherence to Antihypertensive Therapy: A Cross-Sectional Study in Primary Health Care Centers During the 2024 Sudan Conflict

Abstract

Effective management of hypertension relies heavily on medication adherence, which is often compromised in conflict-affected areas such as Sudan. Understanding the factors that influence adherence is crucial for improving outcomes. The aim of this study was to examine the relationship between patients' knowledge of hypertension and their adherence to antihypertensive therapy within the context of ongoing conflict in Sudan. A cross-sectional study was conducted across six primary healthcare centers in Al-Dammer, Sudan, including 389 hypertensive patients selected through convenience sampling. Data were collected using face-to-face questionnaires assessing sociodemographic characteristics, medication adherence (GMAS), and hypertension knowledge (HKT). Analyses were performed using SPSS software, with categorical data presented as percentages, continuous variables as means ± standard deviation, and nonparametric tests (Shapiro-Wilk, Kruskal-Wallis) applied where appropriate. Most participants were female (63%), with 43.7% aged over 60 years. Knowledge levels were categorized as average (57.8%), high (25.2%), and low (17%). Regarding adherence, 1% demonstrated poor adherence, 2.8% low, 22.6% partial, 26.5% good, and 47% high adherence. A positive correlation was observed between hypertension knowledge and medication adherence ($r = 0.47$, $p < 0.001$). Major barriers to adherence included affordability (43.4%) and medication unavailability (36.2%). While 82.3% of participants had a history of controlled hypertension, only 58.4% maintained control at their most recent measurement, with 41.6% showing uncontrolled blood pressure, underscoring challenges in achieving sustained management. Improved adherence was associated with higher income, better education, and

better blood pressure control. This study highlights that increasing hypertension knowledge is associated with better adherence and improved control, but addressing economic and supply barriers remains essential for sustainable hypertension management in conflict settings.

Biography

I am currently a sixth-year undergraduate student at the Faculty of Medicine, University of Khartoum. I have published two papers in reputable journals, reflecting my strong passion for research and academic growth.

Dr Manira Moussa Ahmed

Cheikh Khalifa International University Hospital, Mohammed VI University of Health Sciences, Casablanca, Morocco

Fulminant Form of Guillain-Barré Syndrome Complicated by Hematoma of the Corpus Callosum Occurring in the Context of Head Trauma: A Case Report

Abstract

Guillain-Barré syndrome (GBS) is an acute, demyelinating, immune-mediated polyradiculoneuropathy, often triggered by an infection. It is the most common cause of acute flaccid areflexic paralysis in children. Although generally associated with infections, this article presents a rare case with a rapid onset, where GBS was revealed following a context of head trauma. A 2.5-year-old boy, with no significant medical history, was admitted to the intensive care unit for severe acute respiratory distress, occurring 48 hours after a head trauma. Clinical examination revealed severe dyspnea without fever, and tetraparesis on admission, progressing to tetraplegia during his stay in the intensive care unit, with sensory deficit and abolished deep tendon reflexes, followed by peripheral facial diplegia. Imaging studies were normal, and cerebrospinal fluid analysis showed a characteristic albuminocytologic dissociation, typical of GBS, with no signs of meningitis. The patient required intubation and mechanical ventilation. The diagnosis of GBS was confirmed by an electroneuromyogram (ENMG), showing signs of severe sensory-motor axonal polyradiculoneuropathy. Intravenous immunoglobulin (IVIg) therapy was administered, and the patient's condition gradually improved, leading to extubation after 20 days of respiratory support. The risk factors for respiratory failure and biological markers, such as lymphopenia, are also discussed in this case report. Although GBS is a rare pediatric neurological emergency, this case illustrates how the condition can mimic other pathologies and occur in the context of head trauma, particularly in cases with axonal involvement. This can lead to a diagnostic delay. This article emphasizes the importance of

early diagnosis to improve the vital prognosis and reduce the mortality associated with this potentially severe condition.

Biography

Dr Manira's finished her PhD at 26 years old from Djibouti University and postdoctoral investigations from Tunisia and Morocco University School of Medicine. She is in the departement of pediatrics and inensive care unit of Cheikh Khalifa University in Casablanca.

Dr. Manshi Kishori Satishchandra Mankiwala

State Consultant, National Health Mission, Department of Health & Family Welfare, Government of Gujarat, India

Strengthening Newborn - Child Health through Mobile Health Teams: A Scalable Early Intervention Model

Abstract

The School Health – Rashtriya Bal Swasthya Karyakram (SHRBSK) presents a scalable model for delivering early interventions in child health through over 992 Mobile Health Teams (MHTs). These teams reach newborns, infants, and children up to 18 years across Anganwadis, schools, and homes.

This initiative addresses the "4Ds" — Defects, Diseases, Deficiencies, and Developmental Delays — through integrated screening, treatment, and referral mechanisms. Special focus includes:

- Newborn screening and follow-up of SNCU/NRC discharges.
- Biannual screenings at Anganwadis and annual 4D checks in schools.
- Digital Health Cards, real-time referral dashboards, and parent counseling via a centralized call center.
- Convergence with education, telemedicine, and emergency response services.

The initiative demonstrates how rights-based, community-embedded health strategies, combined with digital innovation, can significantly enhance maternal and child health outcomes in LMIC contexts.

Biography

Dr. Manshi Mankiwala is a public health professional serving as State Consultant with the National Health Mission, Gujarat. She holds a Master of Public Health (MPH) from Anglia Ruskin University, UK. With over 12 years of experience leading large-scale public health programs, she specializes in child and maternal health, digital innovation, and intersectoral governance. Her initiatives have received

national recognition including SKOCH awards for innovation in early intervention and adolescent health programs. Her proposed PhD research explores the convergence of health, legislation, and human rights to improve early childhood development outcomes.

ABIRAMI S

Hindusthan College of Arts & Science, Coimbatore,Tamilnadu, India

Exploring Lichen Derived Compounds for Therapeutic Potential in Diabetes Management

Abstract

Nature has long been a vital source of medicinal agents, with modern drug discovery frequently rooted in traditional medicine. Among natural sources, lichens a unique symbiotic association of fungi and algae stand out for their rich repertoire of bioactive secondary metabolites. Compounds such as depsides, depsidones, and usnic acid have demonstrated antimicrobial activity against mycobacteria and Gram-positive bacteria, underscoring their therapeutic potential. This study investigates the antimicrobial, antioxidant, and enzyme inhibitory activities of lichens collected from Ooty, Tamil Nadu, India. Using advanced analytical techniques, including LC-MS, the lichen extracts were assessed for total phenolic content and antioxidant properties through FRAP, ORAC, and DPPH assays, revealing significant free radical scavenging activity. Enzymatic inhibition assays targeting pancreatic lipase, α-glucosidase, and α-amylase highlighted notable activity against key enzymes implicated in metabolic disorders. Additionally, in silico analyses predicted favorable pharmacokinetic properties, low toxicity risks, and strong molecular interactions, further validating the therapeutic promise of these metabolites. This research not only sheds light on the bioactive potential of lichens from temperate and tropical ecosystems but also positions them as promising candidates for developing natural remedies against oxidative stress and metabolic syndrome-related diseases.

Key words: Bioactive Compounds, Diabetes, Enzyme Inhibition, Traditional Medicine.

Biography

As she finished her M.Sc and Doing her Ph.D at 29 years old from Bharathiar University. she is currrently working as an assistant professor at department of microbiology, Hindusthan College of arts & Science ,Coimbatore,Tamilnadu,India. shee has Published in excess of 5 papers and 3 books in rumored diaries.

Nayrouz Romana

The American University in Cairo, Egypt

The User-Side Perspective on Implementing Electronic Health Records in Egypt

Abstract

Background: Electronic health records (EHR) have been recognized as an important tool for increasing patient safety and improving overall efficiency in healthcare delivery. Despite this common knowledge, there is evidence that EHR has been slowly implemented in most developing countries. This research sought to identify the factors that affect the adoption of EHR in Egypt from the perspective of healthcare providers. Methods: This research was conducted in 2023 using mixed methodology. A self-administered questionnaire was sent to a sample of healthcare providers to assess their knowledge, attitude, and intention toward using the system. In addition, semi-structured interviews were conducted with experts in healthcare management to identify the barriers and facilitators of the implementation process. Results: A total of 177 healthcare providers completed the survey, and seven experts were interviewed. A positive attitude, gender, and the influence of subjective norms were found to be strong predictors of intention to use EHR. Financial concerns, technical support, training, and data security were among the barriers affecting the adoption process.

Conclusion: To the best of our knowledge, this is the first study conducted to examine the effect of perception factors on different healthcare professionals' intention toward EHR adoption in Egypt using a mixed methodology. These findings could help healthcare organizations develop better EHR implementation strategies to increase acceptance among healthcare staff..

Biography

Nayrouz Romana has completed her Master's degree in Global Public Health from the American University in Cairo. She has a Bachelor's degree in Dentistry from Cairo University and has been working in the digital health field for almost six years. She is passionate about advancing public health outcomes through research and making a positive impact on community health.

Ngutor Simon Akiiga

School of Basic And Applied Science, department of Nanoscience E-JUST, Egypt

Development of novel two-dimensional material architectures including paper-based microfluidic systems to enhance the efficacy of flexible biosensors

Abstract

The use of two-dimensional (2D) materials in biosensor technologies has revolutionized the field. Materials like graphene, transition metal dichalcogenides (MoS2 and WS2), have a nanoscale thickness and distinct physical properties that might greatly enhance biosensor performance.
Graphene, with its exceptional electrical conductivity and mechanical strength, is widely recognized for its versatility in biosensors.
using conventional manufacturing techniques to create flexible sensors with excellent sensitivity at a low cost is still difficult.
This paper introduces a low-cost, and a high-sensitivity glucose sensor (WS2/WO3@LPEG) that is prepared by combining liquid-phase exfoliated graphene (LPEG) with Tungsten sulfide (WS2) and Tunsten oxide (WO3) for the first time through Inkjet printing.

The proposed electrode enabled a continuous and sequential sample collection, achieving a sensitivity of 5,245 $\mu A \cdot mM^{-1} \cdot cm^{-2}$ with a linearity accuracy in the clinically relevant range (0~5 mM)in artificial sweat within 1.5 s.

Biography

Ngutor Simon Akiiga is a research/teaching assistant with successful experience in material science and nano-optoelectronics at the Federal University of Agriculture Makurdi, Nigeria. Ngutor Simon specializes in metal oxides, 2D-based nanomaterials, and their application in sensors, smart-coated windows, and supercapacitors.

Simon has participated in different workshops/conferences across Africa. He has been honored with several awards, including the winner of a team project entitled; “Theranostics Nanoformulation for TB therapy and monitoring” at the Nanotechnology Research and Innovation Bootcamp 2021 in collaboration with the African Material Research Society.

Nicolaus Dahlmann

Institute for Biometry and Nutrition, Hamburg, Germany

Dahlmann-Body-Analysis: A tool to evaluate body composition in terms of health risks

Abstract

The plasticity of human body in terms of surface area and composition is a challenge for health care units to address obesity or sarcopenia. What they need is a cost-effective, easy to use tool to manage the daily clinical settings.

For that reason, Dahlmann created a model that refers to a reference population (1). Based on several regression equations including the parameters height, weight and hand circumference, the model offered for the first time the possibility to develop weight-height-frame tables (2) and to calculate a reference weight (RefWt) for each individual regardless of age. The waist circumference (WC) was integrated into the model as a proxy for central obesity. Processed by a network of algorithms, it was now possible to distinguish the difference between the actual weight (ActWt) and the reference weight (RefWt) into fat mass (FM, kg) and muscle mass (SMM, kg). Fat mass derived by the DBA revealed a strong agreement with BIA measurements (3). Quantification of fat mass made it possible to determine lean body mass (LBM). A linear relationship was found between BMI and SMM-increase (ΔSMM) for both women and men (4). Overall, the results indicate that the present model has satisfactory predictive qualities to be applicable in clinical studies (5).

The availability of a cost-effective, non-invasive, convenient and easy to use tool is crucial to enable a person for clinical or personal use to evaluate his body weight in terms of health risk. The DBA model rolls out the means on the basis of sex, height, weight, skeleton frame and body fat, all you need is a scale and a string.

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Dr. Odong Christopher

Naguru Referral Hospital, Kampala-Uganda

Prognostic Value of the White Blood Cell-to-Hemoglobin Ratio (WBC/Hb) on In- hospital Mortality: Insights from a Retrospective Cohort Study in Uganda

Abstract

Background: The white blood cell-to-hemoglobin ratio (WBC/Hb), a composite marker derived from routine laboratory parameters, may offer unique prognostic value by integrating systemic inflammation and physiological reserve. This study investigates its association with in-hospital mortality (IHM) in a resource-limited medical setting.

Methods: We retrospectively enrolled patients admitted to the medical ward of Naguru Regional Referral Hospital-Uganda between January and June 2024. Data on demographics, clinical status, and lab results, including WBC count and hemoglobin, were extracted. The primary outcome was IHM. Patients were categorized into three WBC/Hb subgroups. Hazard ratios (HR) and Area Under the Curve (AUC) assessed its prognostic value, adjusting fully for age, sex, comorbidities, and admission diagnoses.

Results: Overall, 226 patients were included (mean age 45.35±18.85yrs, 54.4% female). The mean WBC/Hb ratio was 1.04±1.22 $\times 10^9$ cells/L per g/dL, and the IHM rate was 19.9%.
Per-standard increase of WBC/Hb (2.22 $\times 10^9$ cells/L per g/dL) was associated with a high risk of IHM (HR 1.19, 95% CI 1.00–1.44; p=0.012). The Results were similar when stratification into three groups (<0.55, 0.55–1.00, and ≥1.00 $\times 10^9$ cells/L per g/dL), compared with the reference group (<0.55), 0.55–1.00 group (HR 2.81, 95% CI 1.06–7.43; p=0.037) and ≥1.00 group (HR 2.82,
95% CI 1.05–7.57; p=0.040) had significantly high-risks of IHM. The WBC/Hb demonstrated

predictive value for IHM with an AUC of 0.701 (95% CI 0.550–0.718).

Conclusion: WBC/Hb, a readily available and cost-effective marker, was associated with IHM. Incorporating it into routine clinical assessments could improve risk stratification, especially in resource-limited settings. Prospective studies are needed to validate these findings and assess their broader utility.

Biography

Dr.Odong Christopher is a physician cardiologist with expertise in internal medicine, cardiometabolic disease, and medical education. With four years of experience in clinical practice, and research, he has developed a responsive constructivist evaluation model to drive innovation in

cardiovascular medicine. Dr. Odong earned his MBBS from Southern Medical University, MMed from Sun Yat-sen University, and completed his residency at the First Affiliated Hospital of Sun Yat-sen University. His clinical interests span internal medicine, with a focus on preventive cardiology, cardiometabolic disease, and aortic stenosis management. An active researcher and peer reviewer, he has authored or contributed to more than 11 publications in internal medicine and cardiology. As an educator and mentor, Dr. Odong is committed to fostering a research-driven mindset in future physicians. By integrating research, and clinical practice, he remains dedicated to advancing health care and improving patient outcomes globally.

Pedro Pitrez

University of Porto, Rua Dr. Roberto Frias 400, 4200-465, Porto, Portugal

Energy recovery from infectious hospital waste and its safe neutralization

Abstract

The COVID-19 pandemic has drawn attention to the challenge of managing hazardous waste, such as masks and syringes. This study presents a sustainable plasma gasification system modelled on Aspen Plus V12 to treat hazardous medical waste. The system includes an extra Gibbs reactor to increase the lower calorific value of the syngas (LHV) and increase the mole fractions of H_2, CO, and CH_4. These wastes are medical waste from Turkey, masks from Indonesia, Korea, and Lithuania, and even syringes from China. Analysis results of syngas produced from various residues show that Korean masks produced the highest H2 content, Turkish medical waste produced the most CO, and Lithuanian masks generated the most CH_4. Turkish medical waste results in the lowest LHV syngas, while Korean masks achieved the highest. A sensitivity analysis optimised airflow, steam inlet, and torch temperature to enrich the syngas composition. For Turkish waste, the mole fractions of H_2, CO, and CH_4 increased from 42.7% to 84.3%. Lithuanian masks emerged as the most promising, producing syngas with an LHV of 10.647 MJ/m^3 and hydrogen content of up to 85.7%. This work demonstrates an environmentally friendly so lution to hazardous and infectious waste, generating energy-rich syngas and inert slag useable in construction. The system has significantly improved the quality and efficiency of syngas, offering a scalable approach to waste treatment across different regions. The new conditions maximise efficiency, allowing for better energy recovery and broad applicability to waste from different regions.

Biography

Pedro Pitrez is a dedicated Mechanical Engineer, specialized in Thermal Energy, with solid academic and professional training. He has a master's degree in Mechanical Engineering from FEUP and he is currently a PhD student in same area at FEUP.
His research focuses on energy systems, internal combustion engines and plasma gasification for the treatment of hazardous waste.

He has experience as a researcher and teacher, teaching Thermodynamics 1 and 2 at FEUP and supervising laboratory and theoretical-practical classes at UTAD. As a Research and Development Engineer at INEGI, he contributed to the design and optimization of industrial machinery, particularly in the cork industry. He currently works as a Planning and Operations Engineer at EDP Geração, managing production planning and hydroelectric maintenance.

Pedro has actively contributed to the scientific community, with publications in renowned journals. In 2023 he published an article in Energy Reports entitled "Numerical Analysis of plasma gasification of hazardous waste using Aspen Plus". In 2025, his paper "Recovery of infectious hospital waste and its safe neutralization" was published in the International Journal of Hydrogen Energy. He has also presented at international conferences including TMREES and ENCIT, gaining recognition for his research.

In addition to academia and industry, Pedro has been involved in mentoring and innovation initiatives. In 2024, he served as a mentor for the Well Do Good challenge at the University of Porto, where he guided participants in developing sustainable and profitable solutions for an industrial company seeking to improve its environmental performance.

His experience spans computational tools such as MATLAB, Aspen Plus and TwinCat 3, as well as strong problem-solving, leadership and continuous improvement skills. Passionate about automotive engineering, he also conducted numerical and experimental studies on high-performance internal combustion engines, as shown in his publication shared in 2020 entitled: "Numercial Analysis of the performance and subsequent upgrade of a racing 3.0 L Porsche 911 Engine".

Peter Averkiou, M.D

Associate Professor of Pediatrics at Charles E. Schmidt College of Medicine, United States of America

Engaging Medical Students with the Community Through Service-Learning Programs

Abstract

INTRODUCTION: Service-learning (SL) programs in medical schools illustrate one of the number of adult learning principles and practices now used in today's accredited curriculum that better prepares medical students for working with a variety of patients. AIM: The research aim was to assess medical students' learning experiences while participating with nonprofit organizations during an SL curricula-designed program. METHOD: Analysis of 60 reflective essays over a three-year period from 192 medical students placed in teams of 2-4. A case study research design was employed. This iterative approach allowed the identification of themes and interpret meaning. RESULTS: Four major themes and one overarching theme emerged that illuminated adult learning theories including: (1) transferring learning of one's skills and knowledge to community and practice; (2) articulating a variety of ways to communicate with multiple, diverse community audiences; (3) employing creative process for quality improvement strategies; (4) creating positive, trusting, and rewarding relationships; and an overarching theme: collaboration emerging almost without forethought. Medical educators may find that replicating this SL program into the curriculum infrastructure provides agency and student buy-in. A multi-prong process bringing reward to students and to the community. Reflection provides for meaningfulness from SL programs and helps student identify how experiential learning affects their professional development. CONCLUSION: Implementing an SL program into any medical school curriculum strengthens the adult learning theoretical delivery approach. Disseminating projects and lessons learned to and from the community also showcases experiential learning opportunities for medical students and other professionals.

Many aspects of awareness from the medical students during the SL program emerged. They learned about specific aspects of community engagement. They found it a privilege to give and take many lessons from the experiences and opportunities.

Biography

Dr. Peter Averkiou is a pediatrician and an Associate Professor of Pediatrics at the Charles E. Schmidt College of Medicine at Florida Atlantic University. He is the Co-Director of the four Foundations of Medicine Courses, the Director of the Service Learning Projects, the Director of the Newborn Nursery Clinical Rotation and the Director of the Synthesis and Transition Course at the medical school.

Poulami Ghosh

College of Medicine and Health, University of Birmingham, Edgbaston, Birmingham, B15 2TT, UK

Genetic and Demographic Insights into Breast Cancer in European and South Asian Women

Abstract

Breast cancer remains one of the most prevalent malignancies among women worldwide. However, in developing and underdeveloped countries, Population-Based Cancer Registries (PBCRs) often face challenges in consistently collecting staging data due to resource constraints and systemic complexity. Our risk-of-bias analysis underscores how this lack of standardized data hinders accurate evaluation of early detection, screening efficacy, and treatment outcomes. This study aims to bridge this gap by comparing the genetic landscape of breast cancer in women from European regions (UK/EU) and South Asia (India, Pakistan, and Bangladesh), thereby exploring regional and genetic factors influencing disease outcomes.

We analyzed 1,750 breast cancer cases sourced from the cBioPortal for Cancer Genomics and the COSMIC cancer database. Our investigation focused on identifying shared and distinct genetic mutations, evaluating the distribution of breast cancer subtypes, and assessing the influence of demographic variables such as age and ethnicity. The findings reveal notable variations in genetic profiles and subtype prevalence between UK/EU and South Asian cohorts, suggesting that demographic and genetic differences significantly contribute to disease progression and therapeutic response.

This study highlights the critical need for personalized treatment strategies informed by genetic and demographic contexts. The disparity in sample sizes between the UK/EU and South Asian groups also emphasizes the importance of expanding genomic research in underrepresented populations to ensure equitable healthcare outcomes.

Biography

My name is Poulami Ghosh, and I am currently undertaking my group project under the supervision of Dr Archana Sharma-Oates at the University of Birmingham, as part of the MSc Bioinformatics programme (2024–2025). As part of our research team, I have contributed to a project that addresses a critical challenge in global oncology: the inconsistent collection of staging data by Population-Based Cancer Registries (PBCRs), often due to complexity and limited resources. Our risk of bias analysis demonstrates how this gap in data quality affects accurate evaluations of early detection, screening effectiveness, and treatment outcomes. My work has focused on exploring how genetic and demographic factors influence breast cancer presentation and progression among women from European and South Asian backgrounds. Through analysis of subtype distributions and therapy responses, my findings underscore the urgent need for more personalized and equitable treatment strategies in breast cancer care.

Dr. Rachna Anand

Brightlifecare Private Limited, Gurugram, Haryana, India

Efficacy & safety of Skin Radiance Collagen on skin and hair matrix: a placebo-controlled clinical trial in healthy human subjects

Abstract

Collagen supplements are rising in the market as collagen has been demonstrated to be an important protein in the human aging process. Also, it is safe and easily absorbed in the body. Hence the aim of this study was to examine the effectiveness and safety of a collagen and antioxidant-rich treatment compared to a placebo in relation to various skin and hair indicators in healthy adult human subjects. Forty healthy adult non-pregnant/non-lactating women (aged 38–50 years) provided their informed consent in writing before their participation. Skin Radiance Collagen (SRC) treatment and a placebo were assessed for efficacy before application on Day 1, and post-application on Days 28 and 56, to measure changes in skin elasticity, hydration, brightness, pigmentation; texture, wrinkles, dryness, smoothness, fine lines, changes in the crow's feet region; as well as hair strength and hair fall. It was observed after 56 days that therapy with SRC, compared to placebo, produced a substantial effect on reduction of wrinkle depth and fine lines by 48.11% and 39%, respectively, with p-value<0.01 in the test group. There was a 15.69% improvement in skin observed and 28% reduction in hair fall with p-value <0.01. SRC, a combination of collagen with hyaluronic acid (HA), biotin, and vitamins C and E, showed a significant improvement in skin and hair health, including improvements in skin elasticity, skin hydration, reduction in crow's feet area wrinkles and fine lines, hair fall, and decrease in roughness, leading to improved skin texture. Vitamin C in the formulation also acts as a collagen builder for the body and helps in preventing oxidative stress in the body. The test treatment SRC was found to be efficacious and safe in healthy human adult subjects.

Biography

Dr. Rachna Anand, Ph.D. in Industrial Pharmacy, with over 18+ years of expertise in product development, scale-up, and technology transfer, boasts a comprehensive educational background and a wealth of professional experience. She is currently working as General Manager - R&D at Brightlifecare, Gurugram, India. Dr. Anand, with her profound expertise in pharmaceutical and nutritional sciences, emphasizes the significance of balanced nutrition in promoting general wellness. Through her professional endeavors, Dr. Anand has contributed to the development of nutritional supplements, functional foods, and natural products aimed at supporting optimal health and vitality. Dr. Anand's dedication to continuous learning and development drives her commitment to researching and implementing innovative approaches in formulating products that cater to the diverse nutritional needs of individuals.

Runping Ma

School of Health Policy and Management, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing, China

The dual use of traditional cigarettes and e-cigarettes and behavioral and psychological risk factors among Chinese adolescents

Abstract

The dual use of traditional cigarettes and e-cigarettes is common among adolescents. Dual use is likely more dangerous than smoking traditional cigarettes or using e-cigarettes alone. However, few studies have explored the behavioral and psychological factors associated with this pattern of tobacco use among Chinese adolescents. We surveyed high school students in all 31 provincial-level administrative divisions (PLADs) in mainland China. Tobacco use was categorized as dual use, exclusive traditional cigarette use, exclusive e-cigarette use, and non-use. We collected 11 behavioral and psychological variables potentially associated with tobacco use, including physical activity, screen time, sleep duration, diet, alcohol use, fighting, social self-control, self-esteem, self-efficacy, stress, and depression. Multinomial logistic regression adjusted for PLAD fixed effects was used to analyze the association. The weighted sample included 15,000 students with an equal distribution of genders and a median age of 17 years (IQR: 16–18). About 6.9% (95% confidence interval: 6.1%–7.7%) reported dual use. Several behavioral and psychological factors, including screen time, insufficient sleep duration, unhealthy dietary habits, alcohol use, fighting, strong social self-control, strong self-esteem, strong and weak self-efficacy, and strong stress, were found to be associated with the dual use. Some of the above factors were associated with the exclusive use of traditional cigarettes or e-cigarettes. This study reveals the phenomenon of dual use and its behavioral and psychological factors among high school students in China. Families and schools should pay attention to health risk behaviors and psychological health to prevent tobacco use among

adolescents.

Biography

Runping Ma received the B.S. degree in Public Administration from Renmin University of China, Beijing, China. She is currently working toward the M.S. degree in Social Medicine and Health Service Management with the School of Health Policy and Management, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing, China. Her research interests include adolescent and young adult mental health.

SAYERH FatimaZahra

Laboratory of Process Engineering and Environment, Faculty of Science and Technology of Mohammedia, Hassan II University, Casablanca, Morocco

Hospital Effluents and Antibiotic Resistance: Assessing Microbiological Risks and Environmental Implications in Southwestern Morocco

Abstract

Antibiotic resistance is a significant public health issue in the fight against infectious diseases, and hospital effluent is a special category of liquid waste, hazardous because of its contagious and toxic characteristics. However, these effluents are becoming uncontrollable, and the problem of their discharge into the environment is becoming increasingly important, especially as hospital effluents are a source of antibiotic bacteria. This work aims to analyze hospital effluents from two prefectural hospitals in the southwest region of Morocco (Temara Sale towns) by assessing the microbiological quality and diversity of antibiotic-resistant bacteria in these effluents collected via weekly spot sampling. Samples taken from both sites showed high loads of fecal indicator bacteria and pathogens, particularly total coliforms, with levels ranging from 102 and 7,5 × 104 UFC/100 ml, fecal coliforms (8,1 × 106 UFC/100 ml), Escherichia coli (5,1 × 106 UFC/100 ml), intestinal enterococci (8,1 × 103 UFC/100 ml), Staphylococcus aureus (6,6 × 106 UFC/100 ml) and Pseudomonas aeruginosa (7,9 × 106 UFC/100 ml). The study of antibiotic resistance in strains isolated from hospital effluent revealed that of the 75 isolates examined, Escherichia coli was the most commonly detected isolate in both hospitals, with a prevalence of 42 % at PHT Hospital and 47 % at PHS Hospital. It was followed by Klebsiella pneumonia, Pseudomonas aeruginosa, and Staphylococcus aureus, with respective prevalences of 29 %, 16 %, and 12 % at PHT Hospital, and 16 %, 22 % and 13 % at PHS Hospital. The results show varying resistance rates to different antimicrobials, with high levels of resistance observed with antibiotics belonging to the beta-lactam class. Characterization of

the hospital effluents from the two hospitals studied showed that these effluents present health and environmental risks that qualify the hospital-environment interface as a place conducive to the transfer of resistance, thus necessitating the urgent development of specific treatment methods before discharge into the natural environment.

Biography

PhD student in Environmental Sciences, specializing in the analysis and treatment of hospital effluents. I conduct in-depth research on the microbiological and physicochemical quality of hospital effluents, with a focus on antibiotic resistance and their environmental impact. Passionate about environmental protection and public health, I am also involved in awareness-raising and training activities, notably by leading educational sessions on waste management and the environmental impact of effluents.

Shuet Ching Neong

Quality Unit, Hospital Pulau Pinang, Ministry of Health, Malaysia

Patient safety incident report trend in Hospital Pulau Pinang

Abstract

Introduction There has been tremendous emphasis on patient safety in the past decade, and more so in the recent years. Each year, there are approximately 134 million adverse events which take place in mostly low- and middle-income countries. The initial MPSG implemented since 2013 consisted of 13 goals for hospitals with Intensive Care Units, and 11 goals for hospitals without Intensive Care Units, with 4 goals for clinics. In the launching of MPSG 2.20, there are only 7 goals, with 9 KPIS which are included for monitoring in hospitals, and 4 goals for clinics (Patient Safety Council Malaysia & Medical Care Quality Section 2021). Objective The objective of this study is to outline the trend of patient incident reports which occur in Hospital Pulau Pinang in the past 5 years. Methodology – this is a study which compares the trend of patient incidents which occur in Hospital Pulau Pinang for the past 5 years including the current year. Results The results showed a total 308 incidents in year 2020, with decreasing trend in 2021 and 2022 which are 269 incidents and 184 incidents respectively. While in 2023, there is a surge in number of patient safety incidents; total of 319 incidents. In 2024, the data collected was only from January to June 2024 showed a total 196 patient safety incidents. Discussion It seemed that the total incident reports decreased initially and this could be due to the hospital being a hub of referral for COVID-19 patients, where during the peak, 13 wards and 4 ICUs were utilised for COVID-19 patients in the region, out of the 63 total wards available. Conclusion The number of incident reports per year is noted to be high. However, there needs to be more training and awareness among our healthcare workers with regards to the availability of this system and the maturity of the Incident Reporting System.

Keywords: Incident report, patient safety, trending and tracking, Ministry of Health.

Biography

Dr Shuet Ching Neong completed her PhD at 41 years old years from National University of Malaysia in the field of Community Health with the concentration in Health Management. She is the Head of Quality Unit in Penang State Hospital and received her primary MBBS degree in King's College London. She has published eleven papers and presented thirteen papers in total.

Shuo Wang

School of Medicine, Nankai University, China

Immunomodulatory effects of 2'-Fucosyllactose on Immunosenescence

Abstract

With the accelerating global aging population, epidemiological studies have revealed that olders face significantly increased risks of recurrent infections compared to healthy individuals at other life stages. The link between immunity and aging has gained unprecedented attention. The immune system undergoes characteristic functional declines during aging, termed "immunosenescence", which affects both innate and adaptive immune responses and plays a critical role in the development of most age-related chronic diseases. Against the backdrop of societal aging, elucidating strategies to regulate immunosenescence and identifying effective interventions-such as optimizing dietary regimens to enhance immune resilience in olders are essential for improving quality of life and achieving healthy aging. The humon milk oligosaccharides of 2'-Fucosyllactose (2'-FL) exerts its prebiotic effects primarily through interactions with gut microbial metabolism. This study focused on the regulatory effects of 2'-FL on central/peripheral immune organs, innate/adaptive immune cells, and immune effector molecules. The results identify the intervention on aging-related metabolic disorders and osteoporosis. The detailed methanisms rely on the relieve of the aging-induced proportional changes in either the adaptive immunity of Th subtypes, or the changes in dendritic cell (DC) and macrophage subsets with age. The aging intestinal microecology was ameliorated by 2'-FL treatment. These findings highlight that 2'-FL is an ideal dietary prebiotic for improving aging-related chronic diseases by modulating both the inmmunity and the gut microbial profile.These results highlight 2'-FL as a promising dietary supplement for combating immunosenescence and support the development of targeted interventions to promote healthy aging.

Biography

Professor Shuo Wang is a Distinguished Professor and doctoral supervisor at Nankai University. A recipient of China's National Science Fund for Distinguished Young Scholars, Cheung Kong Scholar, and National Leading Talent in Science and Technology, he is recognized for his pioneering research in food nutrition, safety, and processing. His work focuses on gut immunity, dietary-microbiome interactions, functional nanomaterials for food safety detection, and nutrient bioavailability. With 791 SCI papers (total citations: 14,218, H-index: 70), he has been consecutively listed among Elsevier's "Highly Cited Chinese Researchers" (2015–2023). He has authored 9 monographs, secured 50+ patents, and led 30+ national research projects, including National Key R&D Programs. His accolades include the National Science and Technology Progress Award (Second Class) and multiple provincial awards. Prof. Wang is an IUFoST Fellow and serves on key national food safety committees.

VALENTINA DI GREGORI

San Pier Damiano Hospital, Faenza, Italy

Preventing infections in operating rooms and the hospital good practices

Abstract

The difficult task of a Medical Direction in a hospital is to cope with the continuing increase of activity balancing with the risks of each intervention. This prevention activity is made according to the task of the Risk Manager.

We defined protocols for prophylaxis with antibiotics, protocols for managing infections in the rooms and operating rooms, protocols for managing wounds and protocols for washing hands and cleaning surfaces. We also monitor infections in all wards and operating rooms by sampling and analysis. We continued using good practices for preventing infections and we had good results.

We found a continued low stable incidence (<0,0001)and we monitored that every specialty could warrant these results.

Biography

Valentina Di Gregori graduated in 2004 from the School of Medicine of the University of Bologna. After some work experiences in the clinical research, she succeded in attending the Drugs Assessment and Pharmacoepidemiology Master at the University of Bologna and then she graduated from the School of Public Health at the University of Bologna(2015).

Several abstracts and 22 original papers are published dealing with many of the Public Health related topics such as Infant Mortality, Breast Cancer ,,Infectious diseases, Bibliometry and Physical activity, Orthopedics, Infection Epidemiology and Antibiotic resistance.

She did consulting and publishing with many italian institutional partners such University of Bologna and National Agency for the Evaluation of the Research. From February 2022 she

is Chief Medical Officer and Clinical Risk Manager in a private hospital in Faenza (Emilia Romagna) where she worked on infection prevention , Clinical risk management and services planning and organisation as consultant. Now from 2023 she covers also the role of Chief Medical officer in the Wellness Company Longlife formula and Castrocaro Terme.
She also starts contract for education where she covered the role of Contract Professor at Ludes Campus for Semmelweiss University.