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Virtual Event

3rd

**INTERNATIONAL
CONFERENCE ON**

Future of Preventive Medicine & Public Health

**30-31
March**

2023

FUTURE OF PMPH 2023

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YOUR FIRST CHOICE FOR RESEARCH INGENUITY

PROGRAM-AT-A-GLANCE

**FUTURE OF PMPH
2023**

DAY 1

MARCH 30, 2023

Scientific Program

GMT - Greenwich Mean Time

07:45-08:00 Opening Ceremony

Distinguished Speaker Talks

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

08:00-08:20

Title: Staged versus concurrent native nephrectomy and renal transplantation in patients with Autosomal Dominant Polycystic Kidney Disease: A systematic review

Josephine Xu, University of Sydney, Australia

08:20-08:40

Title: Microfinance programs and public health outcomes for low-income women

Gabriela Fernando, University of Queensland, Australia

08:40-09:00

Title: Prognostic Effects of Primary tumor Size on gastric cancer Survival for Chinese population in Shanxi

Yifan Li, Carcinoma Hospital Affiliated to Shanxi Medical University, China

09:00-09:20

Title: Analyzing multiple covid-19 outbreak impacts: A case study based on Chinese national air passenger flow

Zhao Zhang, Beihang University, China

Refreshment Break 09:20-09:40

09:40-10:00

Title: A simple one-step treatment during bonding promotes bonding durability and prevents secondary dental diseases

Qiaojie Luo, Zhejiang University, China

10:00-10:20

Title: Aberrant dynamic minimal spanning tree parameters within default mode network in patients with autism spectrum disorder

Enguo Wang, Henan University, China

10:20-10:40

Title: Secondary hyperparathyroidism

Shouhua Zheng, The First Affiliated Hospital of Zhengzhou University, China

10:40-11:00	Title: Promoting ethic of care interaction with children: Facilitating a practice-based course in pre-service early childhood teacher education Yan-Fang Zhou, <i>Wenzhou University, China</i>
11:00-11:20	Title: Importance of pilot studies in social research involving older populations: Case of Hong Kong during covid-19 Mohana Das, <i>The Hong Kong Polytechnic University, Hong Kong</i>
11:20-11:40	Title: Diagnostic and further multisectoral support route of patient with autism spectrum disorder in Kazakhstan Laura Kozhageldiyeva, <i>Suleyman Demirel University, Kazakhstan</i>
11:40-12:00	Title: Avoidable mortality in Kazakhstan Lyazzat Kosherbayeva, <i>Asfendiyarov Kazakh National Medical University, Kazakhstan</i>
12:00-12:20	Title: Antibiotic prophylaxis in breast surgery: A meta-analysis to identify the optimal strategy to reduce infection rates in breast surgery Bader Alali, <i>Mubarak Al Kabeer Hospital, Kuwait</i>
12:20-12:40	Title: Cardiopulmonary resuscitation in obstetric patient: Special considerations Savani Sameer Futane, <i>MPGIMER, India</i>
Lunch Break 12:40-13:20	
13:20-13:40	Title: The effect of the online eye movement desensitization and reprocessing early intervention protocol(EMDR R-TEP) fort he risk groups during covid-19 pandemic P. Asena Yurtsever, <i>Institute Ay, Turkey</i>
13:40-14:00	Title: Development of the preparation method of chitosan-based polymer enterosorbents for selective sorption of a number of heavy metal ions Sevda Fatullayeva, <i>Institute of Catalysis & Inorganic Chemistry, Azerbaijan</i>
14:00-14:20	Title: The transformative effects of the covid-19 pandemic on contemporary art in Turkey Eser Selen, <i>Kadir Has University, Turkey</i>
14:20-14:40	Title: 3D Approach To maxillofacial structure and pharyngeal airway relationship Mehmet Irfan Karadede, <i>Izmir Katip Celebi Universitesi, Turkey</i>
14:40-15:00	Title: Management of aesthetic prejudices by statification technique : Case Series Bouchra DOUMARI, <i>Hassan II University, Morocco</i>

15:00-15:20	<p>Title: Do adolescents want death to be included in their education? Agustin de la Herran Gascon, <i>Autonomous University of Madrid, Spain</i></p>
15:20-15:40	<p>Title: African American men & Shared-decision making about prostate cancer screening: Preliminary baseline assessment in a clinical trial Margarita Echeverri, <i>Xavier University of Louisiana, USA</i></p>
15:40-16:00	<p>Title: Agricultural Medicine: Protecting the health and safety of farm workers who produce food, fuel, and fiber for the world Kelley J. Donham, <i>University of Iowa, USA</i></p>
<p>Refreshment Break 16:00-16:20</p>	
16:20-16:40	<p>Title: The red reflex test: How ocular diagnoses and examination conditions affect interpretation Angela N. Buffenn, <i>The Vision Center, Children's Hospital Los Angeles, USA</i></p>
16:40-17:00	<p>Title: Sexual trauma Informed understanding of longitudinal depression among repeat juvenile offenders Richard Dembo, <i>University of South Florida, USA</i></p>
17:00-17:20	<p>Title: Covid-19 and Latinx disparities: Highlighting the need for medical schools to consider accepting DACA recipients Francisco Lucio, <i>University of Arizona College of Medicine – Phoenix, USA</i></p>
17:20-17:40	<p>Title: The Limits of Empathy in healthcare David Ohreen, <i>Mount Royal University, Canada</i></p>
17:40-18:00	<p>Title: Heart regeneration: Advanced hiPSC-based 3D systems to model progressive cardiac fibrosis De Angelis Maria Teresa, <i>Technical University of Munich, Germany & University "Magna Graecia", Italy</i></p>
18:00-18:20	<p>Title: Africana digital pedagogy: Cultural exchange, learning, and innovation Clarence George III, <i>California State University, Sacramento The University Union, USA</i></p>

Closing Remarks



DAY 2

MARCH 31, 2023

Scientific Program

GMT - Greenwich Mean Time

07:45-08:00 Opening Ceremony

Distinguished Speaker Talks

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

08:00-08:20

Title: Novel antibody exerts antitumor effect through downregulation of CD147 and activation of multiple stress signals
Keisuke Fukuchi, *Daiichi Sankyo Co., Ltd, Japan*

08:20-08:40

Title: Gefapixant, a novel P2X3 antagonist, protects against Post Myocardial Infarction Cardiac Dysfunction and Remodeling via Suppressing NLRP3 inflammasome
Yanzhao Wei, *Xiangyang Central Hospital, Affiliated Hospital of Hubei University of Arts and Science, China*

08:40-09:00

Title: Executive function touch battery: Translation and preliminary measure validation for Pakistani pre-schoolers
Rubina Hanif, *Quaid-i-Azam University, Pakistan*

09:00-09:20

Title: Deciphering the role of Imatinib therapy on eGFR and hemoglobin level in blood cancer patients: UTT (Unresolved Triple Trouble)
Avinash Kumar Singh, *School of Pharmaceutical Education and Research (SPER), India*

Refreshment Break 09:20-09:40

09:40-10:00

Title: 3D perspective to sagittal and vertical dimension of face anatomy
Beyza Karadede Unal, *Katip Celebi University, Turkey*

10:00-10:20

Title: Comprehensive data on fungi contamination of pearl millet from nigeria and their control by *Trichodermaatroviride*
Hadiza Kudu Muhammad, *Federal University of Technology, Nigeria*

10:20-10:40	<p>Title: Digital protocol and biomimetic approach in a rehabilitation of a tooth wear Nevena Josipovic, MaeDENTIS, Slovenia</p>
10:40-11:00	<p>Title: Sociodrama in higher education and its resistances Sofia Veiga, Polytechnic Institute of Porto, Portugal</p>
11:00-11:20	<p>Title: The effects of low-volume combined training on health-related physical fitness outcomes in active young adults: A controlled clinical trial Ricardo Jorge Costa Martins, Polytechnic Institute of Beja, Portugal</p>
11:20-11:40	<p>Title: Measuring innovation and innovativeness: A data-mining approach Bernard Sinclair-Desgagne, Universite Cote d'Azur (GREDEG), France</p>
11:40-12:00	<p>Title: Assessment of the impact of non-ablative monopolar and bipolar radiofrequency on the degree of hydration and remodeling of women's facial skin Agata Skalska-Stochaj, Stanisław Staszyc State University of Applied Sciences in Piła, Poland</p>
12:00-12:20	<p>Title: International humanitarian and Human Rights Law: Integrating palliative care into primary care in meeting Global health disparities Almas Bandeali, UNICRI, Italy</p>
12:20-12:40	<p>Title: Rare and aggressive cancer types: NEBC and a new insight in individual treatment based on multiparametric tumour profiling Dorthe Schaffrin-Nabe, Praxis fur Hamatologie und Onkologie, Germany</p>
Lunch Break 12:40-13:20	
13:20-13:40	<p>Title: Knowledge, attitudes and practices regarding ergonomic hazards among healthcare workers in a Saudi Government hospital Nawal Hatem Herzallah, Imam Abdulrahman Bin Faisal University, Saudi Arabia</p>
13:40-14:00	<p>Title: Health coaching and transportation assistance intervention at a free Ophthalmology homeless shelter clinic Lauren Hennein, University of California San Diego, USA</p>
14:00-14:20	<p>Title: Intervention targets for disease prevention using systematic analysis of molecules at different biological levels Azam Yazdani, Harvard Medical School, USA</p>

14:20-14:40 Title: Training the next generation of physician communicators to fight health misinformation
Gina Yu, *Stanford University, USA*

14:40-15:00 Title: Candidate prioritization of disease genes using deep graph models
Ali Ahmadi, *York University, Canada*

15:00-15:20 Title: Implication of serial coronary CT angiography for prevention of atherosclerotic cardiovascular disease
Suraj Dahal, *Virginia Commonwealth University (VCU), USA*

15:20-15:40 Title: Role of inhalational Aztreonam lysine in lower airway infections in Cystic fibrosis: An updated literature review
Mehwish Zeb, *Garden City Hospital, USA*

15:40-16:00 Title: Optimal biomarker cutoff identification and validation
Jianan Hui, *Servier Pharmaceuticals, USA*

16:00-16:20 Title: Artificial Intelligence Ethical Principles in Public Health Organizations
Patricia Gomes Rego de Almeida, *University of Brasilia, Brazil*

Refreshment Break 16:20-16:40

16:40-17:00 Title: Through a Glass Darkly: A clinical journey
Linda A Chernus, *University of Cincinnati College of Medicine, USA*

17:00-17:20 Title: Role of optical coherence tomography angiography imaging in patients with diabetes
Patrick Le, *University of North Carolina at Chapel Hill, USA*

17:20-17:40 Title: On the fractal geometry of Gait dynamics in different neuro-degenerative diseases
Tahmineh Azizi, *University of Wisconsin-Madison, USA*

17:40-18:00 Title: Accuracy of ultrasound guided knee injections
Caroline Varlotta, *Mount Sinai Hospital, USA*

18:00-18:20 Title: Does social comparison and Facebook addiction lead to negative mental health? A pilot study of emerging adults using structural equation modelling
Ma. Lourdes Salaum Casingcasing, *University of Nottingham, UK*

End of the Conference

Closing Remarks





SCIENTIFIC ABSTRACTS

DAY 1

VIRTUAL EVENT

3rd International Conference on

Future of Preventive Medicine & Public Health

March 30-31, 2023

FUTURE OF PMPH 2023

Staged versus concurrent native nephrectomy and renal transplantation in patients with Autosomal Dominant Polycystic Kidney Disease: A systematic review

Josephine Xu^{1,3}, Kenneth D'Souza⁵, Ngee Soon Lau^{1,3}, Scott Leslie^{1,6}, Taina Lee², Jinna Yao², Susanna Lam, Charbel Sandroussi^{1,3}, Steven Chadban^{4,5}, Tracey Ying^{4,5}, Henry Pleass^{2,4} and Jerome Martin Laurence^{1,2,3,5}

¹RPA Institute of Academic Surgery, University of Sydney, Australia

²Department of Surgery, Westmead Hospital, University of Sydney, Australia

³Royal Prince Alfred Hospital, Institute of Academic Surgery, University of Sydney, Australia

⁴Department of Renal Medicine, Royal Prince Alfred Hospital, University of Sydney, Australia

⁵University of Sydney Medical School, Australia

⁶Department of Urology, Royal Prince Alfred Hospital, University of Sydney, Australia

Background: Patients with Autosomal Dominant Polycystic Kidney Disease (ADPKD) frequently undergo native nephrectomy prior to transplantation. The nephrectomy may be a staged procedure, or undertaken simultaneously with transplantation. When performed simultaneously, the transplant procedure is longer, involves a larger operative field and incision. There is also a concern of a greater risk of graft loss with simultaneous nephrectomy and transplantation. Moreover, staged surgery may allow nephrectomy to be performed prior to immunosuppression introduction via a smaller incision or involving a minimally invasive approach. However, staged nephrectomy may require a period of dialysis not otherwise necessary if a transplant and nephrectomy were simultaneous. Moreover, only a single procedure is required, implying the avoidance of a prior nephrectomy and its attendant morbidity in a patient with chronic renal insufficiency. To account for these issues, this study aims to compare the cumulative morbidity of two staged procedures versus a single simultaneous approach in term of morbidity and graft outcomes.

Objectives: This study aims to systematically review the literature to determine whether a staged or simultaneous approach to native nephrectomy in ADPKD is the optimal approach in term of morbidity and graft outcomes.

Methods: A literature search of MEDLINE and EMBASE was conducted to identify published systematic reviews, randomised control trials, case-controlled studies and case studies. Data comparing outcomes of staged and simultaneous nephrectomy for patients undergoing kidney transplantation was extracted and analysed. The main outcomes analysed were length of hospitalisation, blood loss, operative time, other early postoperative complications and risk of graft thrombosis. Meta-analysis was conducted where appropriate.

Results: Seven retrospective cohort studies were included in the review. There was a total of 385 patients included in the analysis, of whom 273 patients underwent simultaneous native nephrectomy and kidney transplantation. Meta-analysis showed an increased cumulative operative time in staged procedures (RR 1.86; 95% CI 0.43-3.29 p=0.01) and increased risk of blood transfusions (RR 2.69; 95% CI

1.92-3.46 $p < 0.00001$). For the transplant procedure, there were no significant difference in the length of stay (RR 1.03; 95% CI -2.01-4.14 $p = 0.52$), major post-operative complications (RR 0.02; 95% CI -0.15-0.10 $p = 0.74$) and vascular thromboses (RR 1.42 95% CI 0.23-8.59 $p = 0.7$).

Conclusion: The results suggests that staged

nephrectomy followed by kidney transplantation is associated with a longer cumulative operative time and increased cumulative risk of blood transfusions. There is no evidence to suggest that performing a simultaneous nephrectomy and kidney transplant procedure increases the perioperative mortality rate, major postoperative complication rates or risk of vascular thrombosis.

Biography

I completed medical school at the Australian National University in 2011. Subsequently undertaken training in general surgery with the Australasian College of Surgeons between years 2016 and 2019. After completing general surgical training I undertook 2 years of kidney transplant fellowship at the Royal Prince Alfred Hospital in Sydney. I have also completed a Masters of Surgery (Anatomy) and is about to complete a Masters of Surgical Education.



Microfinance programs and public health outcomes for low-income women

G Fernando

Monash University Indonesia, Indonesia & University of Queensland, Australia

Non-Communicable Diseases (NCDs) attribute to the highest proportion of global mortalities, morbidity and disability. In particular, with strong links between health inequalities and NCDs, the greatest prevalence, magnitude and economic burdens due to NCDs are amongst the poverty-stricken in low-and middle-income countries. Thus, NCDs are recognized as both a consequence and cause of poverty, with grave implications on sustainable development. Microfinance Institutions (MFIs), which offer financial services such as loans, has emerged as a development tool and a strategy for poverty alleviation. Importantly, evidence from health-integrated microfinance operations show that MFIs may also have positive impacts on health outcomes, including Malaria mitigation and HIV/AIDs prevention.

With that, the objective of this study was to explore the links between MFIs and NCDs health indicators, including behavioural risk factors, healthcare access and utilization, and health financing mechanisms in Sri Lanka. This study utilized ethnographic methods, including in-person semi-structured interviews, walking

tours, photography and field observations, with 56 female adult microfinance loan beneficiaries and key microfinance personal. Data was analyzed through thematic analysis using Nvivo® software. The findings revealed that MFIs have several positive and negative impacts on women's (and households') NCD-related health outcomes. First, participation in MFIs increased affordability of healthy foods, including vegetable and fruit intakes, and unhealthy foods, including fast foods and cigarettes. Second, participation in MFIs increased women's social support networks, which in turn strengthened their psychological coping mechanisms and health information dissemination. Third, participation in MFIs increased women's affordability for health transportation, private medicines, and regular access to health services (e.g., blood pressure check-ups). Fourth, participation in MFIs increased household savings for health, and reduced catastrophic health expenditure. Overall, the study highlighted that microfinance programs with health-integrated practices could provide potential pathways to strengthen preventative medicine and public health measures to target both NCDs prevention and poverty alleviation.

Biography

Dr Gabriela Fernando is an Assistant Professor in Global Health at Monash University Indonesia. Her areas of work expand across women's financial inclusion, women and gender equality, Non-Communicable Diseases, community development, and social determinants of health, with a particular focus on low-and middle-income countries. Prior to this, Dr Gabriela completed her postdoctorate at the Gender & Health Hub at United Nations University International Institute for Global Health, where she worked on integrating gender equality in health research and programmes. She has also worked as a Health & Economics researcher in aged care and healthy ageing in Queensland Australia. Dr Gabriela has a PhD in Global Health, and a Masters in International Public Health (majoring in Non-Communicable Diseases, Global health systems & policy, and health financing) from the University of Queensland, Australia.

Prognostic Effects of Primary tumor Size on gastric cancer Survival for Chinese population in Shanxi

Yifan Li

Department of General Surgery, Shanxi Province Carcinoma Hospital, Shanxi Hospital Affiliated to Carcinoma Hospital, Chinese Academy of Medical Sciences, Carcinoma Hospital Affiliated to Shanxi Medical University, China

Background: Pathologic staging is crucial in gastric cancer (GC). Unlike the majority of solid tumors, the current staging model does not use tumor size as a criterion. We evaluated the predictive and prognostic impact of primary tumor size on all stages of GC.

Methods: We conducted an analysis of GC patients diagnosed from May 2002 to December 2020 who underwent resection of their primary cancer. Univariate and multivariate analyses were used to identify predictive and prognostic factors, Kaplan-Meier analysis and Cox proportional hazards models for association between tumor size and survival.

Results: About 1708 patients met the inclusion criteria. Median age was 58 years and nearly half of tumor (50.7%) located at upper 1/3. AJCC stage distribution was: I - 19.67%; II - 24.12%; III - 52.81% and IV - 3.4%. Compared to patients with tumor size <2cm,

the prognostic impact of tumor size alone for the whole study population was significant for 2-4cm (OS:HR 2.122, 1.152-3.909, $p < 0.001$), 4-6 cm (OS:HR 2.655; 1.439-4.935, $p < 0.001$; PFS:HR 1.750, 1.071-2.587, $p = 0.025$), 6-8 cm (OS:HR 2.933, 1.566-5.493, $p < 0.001$; PFS:HR 2.063, 1.249-3.410, $p = 0.005$) and >8cm (OS:HR 3.570, 1.883-3.768, $p < 0.001$; PFS:HR 2.609, 1.554-3.479, $p < 0.001$). The prognostic impact of tumor size was strongly associated with survival in stage II and III disease, but not for stage I and IV. Likewise, tumor size displayed its prognostic predictability in stage II and III disease, except for stage I and IV. Overall survival and progression decreased progressively along with upgrading of tumor size for each tumor location accordingly.

Conclusions: Further studies are needed to clarify the role of tumor size in prognostic staging models, and how to incorporate it into therapy decisions.

Biography

Active PhD, Associate Professor
 Member of Shanxi Anti-Cancer Association
 Member of China Anti-Cancer Association
 Member of gastric Cancer Committee of Chinese Anti-Cancer Association
 Member of Targeted Therapy Committee of Chinese Anti-Cancer Association
 Member of Precision Therapy Committee of the Chinese Anti-Cancer Association
 Member of Liver pathology Committee of Chinese Anti-Cancer Association
 Member of the Pancreatic Lesion Committee of the Chinese Anti-Cancer Association
 Member of the International Gastric Cancer Association (IGCA)
 Member of the International Liver Cancer Association (ILCA)
 Member of the European Society Medical Oncology (ESMO)
 Invited to be a speaker at the Seventh World Conference on Cancer Research and Therapy held in Las Vegas, USA
 Invited to a speaker of 23rd World Congress on Cancer and Diagnostics August 23-24, 2023 Toronto, Canada
 Invited to be a speaker at the 112th World Congress on Biosensors and Bioelectronics in London, UK
 As a reviewer of "Mini-Reviews in Medicinal Chemistry", Impact Factor 3.737



Analyzing multiple covid-19 outbreak impacts: A case study based on Chinese national air passenger flow

Zhao Zhang and Jinghua Wang
Beihang University, China

The spread of COVID-19 results in a significant drop in traffic levels worldwide. Quantifying the impact of multiple COVID-19 outbreaks on traffic systems is critical to developing differentiated policies in the future. This paper proposes a novel COVID-19 multiple outbreak analysis method (NCMOA), dividing the impact scope and degree under multiple COVID-19 disturbances and introducing traffic resilience metrics to quantify the impacts on air passenger flow, such as the recovery rate and accumulated loss. A case study based on Chinese national air traffic flow is executed, and the recovery

patterns and the differentiated disturbances are analyzed. Results show that air passenger flow recovers with a similar pattern after the first outbreak, and subsequent outbreaks cause local effects and cannot affect the overall recovery pattern. Further, the heterogeneous influence factors and trends on the epi-centers (EC) and the nation are analyzed. In addition, the methods and results of this paper quantify the impact of COVID-19 on air passenger flow at a more detailed level under multiple disturbances. They could provide a basis for differentiated policy formulation of airlines and government in the future.

Biography

Zhao Zhang received his Ph.D. from Southwest Jiaotong University in 2013. He is currently an assistant professor with the School of Transportation Science and Engineering, Beihang University, Beijing, China. His research interests include traffic modeling and control, ITS and evacuation optimization.

A Simple One-step Treatment during Bonding Promotes Bonding Durability and Prevents Secondary Dental Diseases

X.D. Li and Q.J. Luo

Stomatology Hospital, School of Stomatology, Zhejiang University School of Medicine, Clinical Research Center for Oral Disease of Zhejiang Province, Key Laboratory of Oral Biomedical Research of Zhejiang Province, Cancer Center of Zhejiang University, Hangzhou 310000, China

Background: As one of the WHO's top three diseases, dental caries severely harms human oral health. Resin-filling therapy based on adhesion is the main clinical treatment and repair method. Secondary caries always occurs on the tooth near the edge of a dental prosthesis, with a high proportion either on permanent teeth or primary teeth and regardless of the material used. The reason lies in the cariogenic bacteria in the saliva grow into the edge of the prosthesis, which accounts for most of failure of caries treatment and restoration. The edge (the interface) of the prosthesis to dentin is named hybrid layer, which is born with numerous defects subject to current bonding technologies and regarded as the weakest link in restoration. Therefore, it is urgent and vital to construct a potent inherent antibacterial hybrid layer with few defects. In this way, the greatly improved interface stability basically promotes restoration effectiveness, and the sharply-reduced "channel" for bacterial invasion as well as the inherent antibacterial properties prevent the cariogenic bacteria from growing into the edge of the filling and intervene bacterial colonization, that can effectively prevent secondary caries.

Materials and Methods: The hybrid layer is constructed by the infiltration of adhesive

into demineralized dentin matrix (DDM) which polymerize in situ. The DDM is three-dimensional network scaffolded by collagen fibrils and covered with a hydrogel-like surface by the hydration of highly-phosphorylated non-collagenous proteins (NCPs). Herein, the DDM is used as a biomineralization-induced environment to induce the rapid deposition of ACP nanoparticles, or as a template to assemble polyethyleneimine (PEI), a polymer with potent antibacterial characteristics, with the expectation to hydrate the DDM and improve adhesive infiltration.

Results and Discussion: The formation of the ACP nanoparticle rapidly dehydrates the hydrogel-like interface and greatly improves the adhesive infiltration and reduces defects, greatly improves bonding durability. More excitingly, the modified DDM by PEI not only rapidly dehydrates the hydrogel-like interface, but also endows the resultant hybrid layer a stable antibacterial effect to the primary cariogenic bacteria (*Streptococcus mutans*). The resultant defect-low hybrid with long-term antibacterial properties greatly improves the bonding effectiveness thus promoting the clinical caries treatment while helps to prevent secondary caries. This has significance to operative dentistry and preventive dentistry.



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Biography

Qiaojie Luo received her Ph.D degree in Stomatology from Zhejiang University in 2015. Currently she is a dentist and scientific researcher in the Affiliated Stomatology Hospital of Zhejiang University. Her current research focuses on preventive dentistry and adhesive dentistry.

Aberrant dynamic minimal spanning tree parameters within default mode network in patients with autism spectrum disorder

Enguo Wang^{1,2}, Huibin Jia^{1,2} and Xiangci Wu^{1,2}

¹Institute of Psychology and Behavior, Henan University, China

²School of Psychology, Henan University, China

The altered functional connectivity (FC) level and its temporal characteristics within certain cortical networks, such as the default mode network (DMN), could provide a possible explanatory framework for Autism spectrum disorder (ASD). In the current study, we hypothesized that the topographical organization along with its temporal dynamics of the autistic brain measured by temporal mean and variance of complex network measures, respectively, were significantly altered, which may further explain the autistic symptom severity in patients with ASD. To validate these hypotheses, the precise FCs between DMN regions at each time point were calculated using the restingstate functional

magnetic resonance imaging (fMRI) datasets from the Autism Brain Imaging Data Exchange (ABIDE) project. Then, the minimal spanning tree (MST) technique was applied to construct a time-varying complex network of DMN. By analyzing the temporal mean and variance of MST parameters and their relationship with autistic symptom severity, we found that in persons with ASD, the information exchange efficiencies between cortical regions within

DMN were significantly lower and more volatile compared with those in typical developing participants. Moreover, these alterations within DMN were closely associated with the autistic symptom severity of the ASD group.

Biography

Enguo Wang, professor of Henan University, doctoral supervisor, Chinese psychologist recognized by the Chinese Psychological Society, expert of postgraduate thesis quality inspection of the Ministry of Education, Special Professor of Henan Province, high-level talents of Henan Province, academic technology leader of Henan Provincial Department of Education, Outstanding Scholar of Philosophy and Social Sciences of Henan Provincial Institutions of higher Learning. He has published more than 60 papers and 7 monographs in authoritative journals at home and abroad. He has presided over more than 10 projects including the National Natural Science Foundation, the National Social Science Foundation and the Humanities and Social Science projects of the Ministry of Education. His current research interests are cognition and learning, and his research results mainly focus on the cognitive processing and brain mechanism of children with special groups.



Secondary hyperparathyroidism

Shouhua Zheng

The First Affiliated Hospital of Zhengzhou University, China

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

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

pruritus and ectopic calcification.

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

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

Biography

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



Promoting ethic of care interaction with children: Facilitating a practice-based course in pre-service early childhood teacher education

Yan-Fang Zhou

College of Education, Wenzhou University, China

The available research confirms that the international literature has devoted considerable attention to the impact of in-service training on the interaction skills of early childhood education and care (ECEC) teachers. To date, however, relatively little attention has been paid to pre-service teachers' ethical care interactions during teacher education. With the growing international call for quality improvement in ECEC, the practice of ethical care interactions is not only a necessary skill for the professional development of early childhood teachers, but also plays an important role in the development of children. This study uses a combination of observation and interview methods to examine the practice of ethical care interactions with children in three different kindergartens by 45 early childhood teacher candidates from a university in China to identify the importance of positive responsiveness, compassion in

sensing children's emotions, gentleness in tone, a child's perspective, and uninterrupted interaction (be present) in ethical care interactions for early childhood development and teacher-child relationships in real settings of early childhood education. Moreover, the five main types of ethical caring interactions - interaction through physical and verbal actions (e.g., looking at each other's eyes, giving a gentle hug, nodding), playing games together, singing or dancing, sharing daily experiences based on shared situations, third-party (peer) agency, and agreed-upon verbal "codes" - have been shown to play a key role in enhancing ethical caring practices. The study affirms the function of reflective practice for pre-service ECEC teachers to develop ethical care interaction skills, and finally, the significance of ECEC teacher candidates' practice-based reflection for professional development is discussed.

Biography

Yan-Fang Zhou (PhD, Wenzhou University, 2021.09-) is a lecturer of Early Childhood Education and Care at Wenzhou University. Previously, she worked as an elementary school teacher in a public school in China. Her research interests include children's well-being, Integration of immigrant children, Integration of immigrant children in early childhood education, and early childhood teacher education.

Importance of pilot studies in social research involving older populations: Case of Hong Kong during COVID-19

Mohana Das and Newman Lau

The Hong Kong Polytechnic University, School of Design, Hong Kong

This paper details the comprehensive process of sequencing the pilot test to determine the efficacy and reliability of the selected research instruments for social research purposes involving older populations during the pandemic. The purpose of the research was to better understand how the pandemic affected these populations. Pilot studies are an essential component of any research project that has been thoughtfully conceived. They provide assistance in the pre-testing of the research instrument using a smaller sample size, which enables researchers to foresee the potential implications that their findings will have on an even bigger population than the sample size used in the pre-testing. This study sheds light on the careful strategy that was used in order to complete questionnaires and conduct interviews with elderly persons who are residing in long term care institutions (LTCs) in Hong Kong. Before the fifth pandemic wave hit the city of Hong Kong, a test run was carried out as part of a

pilot program at one of the city's LTCs.

In light of the difficulties that come with doing this kind of research in healthcare facilities in general and during a pandemic in particular, the revised steps are likely to assist researchers in carrying out the original planned study with a better understanding of the socio-spatial environment. When conducting research on vulnerable populations like the elderly, more consideration must be used during the planning stages because it is challenging to repeat studies in the same context due to problems with the study equipment or staff. In-depth discussion is presented on the factors that must be taken into account while planning the research design, as well as the implications of those factors for the overall scope of the study. The paper also contributes to a better understanding of its methodological insights and provides recommendations for other researchers who may undertake qualitative research methods involving the aging population in care facilities.

Biography

Mohana is presently a PhD candidate in the School of Design at PolyU, where she is investigating how to improve the design strategies already in place to foster wellbeing in Hong Kong's existing long-term care facilities. The researcher, who has thirteen years of experience in architecture and designing healthcare-related spaces, focuses on bridging the gap between theory and practice in developing spaces for community-dwelling seniors. She has presented her works in several international conferences and has won multiple awards in Architecture and Urban Design competitions across the globe, including those held in India, Italy, Hong Kong, the Czech Republic, and Belgium, among many others.

Research interests: Healthcare architecture, design for elderly, spatial planning, and hospital design.



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

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²Suleyman Demirel University, Kazakhstan

³AYeconomics Research Centre, Spain

Objectives of the work: Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder characterized by a lack of social communication, limited interests and repetitive behavior that affects 1 in 160 children worldwide¹. According to the Ministry of Health of the Republic of Kazakhstan (MoH), the number of detected cases of autism in children over the past 7 years has increased 5 times².

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

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

Results and discussion: Nowadays, a number of activities have been carried out by three ministries to ensure equity and UHC policies. The MoH has approved two clinical protocols over the past two years, which enabled to keep the ASD diagnosis after 18 years. In the field of education, admission age to Committee has been changed from 3 years to 0, consequently

ASD children can timely receive specialized education. Despite the changes, there are still challenges like providing tutors at schools. Also, late ASD detection (4 years and above) detected in regions leads to later actions by social protection organizations.

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

Diagnostic and further multisectoral support route of patient with autism spectrum disorder in Kazakhstan - This research has been funded by the Science Committee of the Ministry of Science and Higher Education of the Republic of Kazakhstan (Grant No: BR18574199 «Integrating children with Autism Spectrum Disorder into the social and educational environment based on comprehensive support: challenges and benefits»).

Biography

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



Avoidable mortality in Kazakhstan

L. Kosherbayeva¹, A. Imamatinova¹ and
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¹Asfendiyarov Kazakh National Medical University, Kazakhstan

²AYeconomics, Spain

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

The aim is to study the avoidable mortality in Kazakhstan

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

Results: Our study results show a decline in both preventive and treatable mortality between 2015 and 2019 and a sharp increase in all regions of Kazakhstan in 2020. The number of preventable mortality rose two times while

treatable rates increase three times in last studied year (2020). These changes can be explained due to the situation with COVID-19. In addition, the high rates of avoidable deaths are associated with cardiovascular disease, cancer, and respiratory disease. From preventable mortality, it is necessary to note the high mortality from injuries and alcohol consumption.

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

Avoidable mortality in Kazakhstan - This research has been funded by the Science Committee of the Ministry of Science and Higher education of the Republic of Kazakhstan (Grant No. AP09058136).

Biography

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

Antibiotic prophylaxis in breast surgery: A meta-analysis to identify the optimal strategy to reduce infection rates in breast surgery

Bader Alali³, Benyamin Alam¹, Amir Reza Akbari², Edwin Thankan⁴ and Shaida Ekhacy⁵

¹Queen Elizabeth Hospital, UK

²King's Mill Hospital, UK

³Mubarak Al Kabeer Hospital, Kuwait

⁴Pilgrim Hospital, UK

⁵University of Birmingham, UK

Intro: Breast surgeries are an increasingly frequent operation, with an exponential rise in breast cancer diagnoses, and women opting for cosmetic surgeries. SSIs are the most common post-operative complication with many negative consequences including sepsis and even death. These are treated with prophylactic antibiotics prior to surgery. Breast surgery is currently defined as 'clean', although literature indicates that the infection rate is higher than should be expected for this classification. The aim of this meta-analysis is to evaluate whether pre-operative antibiotics reduce SSI frequency and which class of antibiotics achieve the best reduction.

Methods: A literature search through online libraries was used to find clinical trials investigating pre-breast-surgery antibiotics and SSI frequency. These were grouped all together and separately by class of antibiotics. Additionally studies investigating breast cancer surgeries and non-cancer surgeries were grouped separately.

Biography

Dr Bader Alali received his MBChB from the University of Manchester in the year 2021. He has since returned to train in Kuwait. He is currently practicing as an intern in the general surgery department at Jaber Al Ahmad Hospital, Kuwait. His research interests include population health and quality improvement, and he is currently involved in projects that extend national and international scale. His career interest is in head and neck surgery. He is working towards applying for an otolaryngology residency program in North America.

A forest-plot was created for each group to calculate an estimated effect, these were then compared against each other.

Results: Use of antibiotics resulted in a reduction in SSI frequency by 3.55% overall, and reduced frequency in all types of surgeries performed. Cephalosporins reduced SSI frequency by 2.23%, Beta-lactamase inhibitors 4.17% and macrolides achieved the greatest effect with a 14.58% reduction.

Conclusion: This meta-analysis proves that antibiotics reduce SSI frequency in breast surgery and supports the notion to remove the 'clean' classification. This definition may result in failure to provide prophylaxis, resulting in patients suffering from preventable SSIs and their negative consequences. Macrolides were the most effective followed by beta-lactamase inhibitors and cephalosporins, this may be implemented in structuring new guidelines favouring use of macrolides before conducting breast surgery.

Cardiopulmonary resuscitation in obstetric patient: Special considerations

Savani. S. Futane² and Sadhana. S. Kulkarni¹

¹MGM Medical College, India

²MPGIMER, India

Objectives: The prevalence of cardiac arrest in pregnant women varies from 1/20,000 to 1/50,000 and is associated with high maternal (30–80%) and neonatal (60%) fatality rates. Treatment of cardiac arrest in obstetric patients is challenging due to altered maternal anatomy and physiology. Obstetricians need to update themselves about recent guidelines as correct and timely intervention can alter outcomes of resuscitation.

Scope of the review article: The review article covers

1. Factors Responsible for Cardiac Arrest During Pregnancy
2. Obstetric Early Warning Score (EWS)
3. In-hospital algorithm for cardiac arrest in pregnancy

Table 1 Obstetric Early Warning Score (EWS) *

Sr. No	Parameters	Scores**				
		2	1	0	1	2
1	Temperature (degree Celsius)	< 35	35- < 36	36-< 38		> 38
2	Pulse rate/min	< 40	40-< 50	50-< 100	100–120	> 120
3	Respiratory rate/min	0–10		11–20	21–30	> 30
4	Systolic blood pressure (mm Hg)	< 90	90- < 100	100-< 150	150–160	> 160
5	Urine volume ml/hr	< 20	20–30	> 30		
6	Mode of birth	Cesarean Section		Vaginal		Cesarean Section
7	Consciousness level	Response to pain/unresponsive	Response to voice	Alert	Response to voice	Response to pain/unresponsive

Discussion: Clinical signs like systolic blood pressure, pulse rate, respiratory rate, supplementary oxygen required to maintain oxygen saturation (SpO_2) > 95%, temperature and altered consciousness (using Glasgow Coma Score) are monitored, and scores are given. Unstable mothers with a > 6 score have a mortality rate of 6.3%.


Conclusion: At present, a knowledge gap exists in certain aspects of maternal resuscitation. National databases are essential for the prevention of maternal cardiac arrest, understanding resuscitation science, and outcomes. Repeated training of team members, and mock drills on simulation are essential to improve fetomaternal outcomes.

Biography

Dr. Savani Sameer Futane M.B.B.S Government Medical College Aurangabad, Maharashtra, India. DNB Anesthesiology, Ruby Hall Clinic, Pune, Maharashtra, India. Post-Doctoral Fellowship in cardiothoracic and neuro anesthesia, SCTIMST, Trivandrum, India. Senior Resident, Anesthesiology, PGI Chandigarh, India.

Areas of interest:

1. Neuroanesthesia
2. Regional anesthesia
3. High risk obstetric anesthesia.
4. Clinical Simulation



The effect of the online eye movement desensitization and reprocessing early intervention protocol (EMDR R-TEP) for the risk groups during covid-19 pandemic

**Yurtsever A¹, Bakalim O², Karaman S³,
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¹Institute Ay, Turkey

²Izmir Democracy University, Turkey

³another town Liman Psychology, Turkey

⁴Educational Sciences Institute, Pamukkale University, Turkey

⁵Institute for Behavioral Studies, Turkey

The aim of the research is to investigate the effect of eye movement desensitization and reprocessing (EMDR) therapy on post-traumatic stress disorder (PTSD) levels of individuals who can be defined as high-risk groups during the pandemic. The EMDR R-TEP covers all eight phases of EMDR therapy as a method used for recent traumas: History, preparation, assessment, desensitization, installation, body scan, closure, and reassessment. It involves stabilization, containment, and creating a sense of security since the traumatic experience has happened relatively recently or is still ongoing. At the first wave of pandemic, a system established including 400 volunteered EMDR therapists and 17 supervisors and EMDR R-TEP taught beforehand and each session of volunteered EMDR therapists is supervised during the study. In total, 745 people joined to the online EMDR therapy sessions. Each of them finished their five sessions free service. THE IES-R and a personal information form is used

as measurements. Only 154 filled their forms completely or in time. Therefore, in this study, online EMDR R-TEP Protocol was applied to a total of 154 individuals working with coronavirus patients, frontline professionals (Doctors, Nurses, Paramedics, Polices, Red Crescent), relatives of coronavirus patients, coronavirus patients, and relatives of someone who died from coronavirus and the PTSD symptom level before, after, and 1 month after therapy was measured and examined. A personal information form and impact of events scale were used to collect data. Analyses showed that EMDR therapy was effective in reducing the PTSD level in all groups. The PTSD levels of frontline professionals continued to decrease until the follow-up test but remained the same in the other groups. EMDR R-TEP is a recent event protocol. It was used for ongoing trauma in this study. Based on the results, it can be said that EMDR R-TEP can also be used in ongoing traumas.



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Biography

Asena Yurtsever, M.A., EMDR Europe Senior Trainer, consultant and supervisor, EMDR R-TEP/G-TEP Trainer, family therapist and psychodramatist.

She graduated and completed her masters degree from İstanbul University. She is specialized in EMDR, psychodynamic therapy, family therapy, Expressive Arts therapy and psychodrama. Yurtsever, works with adults and adolescents. She is mostly working and giving supervisions on Psychological traumas, attachment problems; neglect and abuse, anxiety disorders, dissociative identity disorder.

Yurtsever is also an EMDR R-TEP/G-TEP Trainer (EMDR Early Intervention protocols for individuals and groups). She gives EMDR Trainings in Turkiye, and workshops including EMDR R-TEP and G-TEP Protocols (Germany, Iraq, England, Hungary, Lebanon) and EMDR and Attachmentworkshops around the world. She is one of the founders of EMDR Turkey Association and vice president of the association since 2011. She has been giving basic EMDR trainings in Azerbaijan and supporting them in order to establish a strong EMDR community there since 2019.

Development of the preparation method of chitosan-based polymer enterosorbents for selective sorption of a number of heavy metal ions

S. Fatullayeva, D. Tagiyev, N. Zeynalov, F. Makhmudov, D. Babayeva, E. Nasiiyati, S. Humbatova and E. Aliyeva
Catalysis & Inorganic Chemistry Institute of Ministry of Science and Education of the Republic of Azerbaijan, Azerbaijan

Taking into account the diversity of enterosorbents, preparations based on natural molecules and their derivatives are undoubtedly of interest. Among them, the most promising material is chitosan. The presence of a large number of reactive -NH₂ and -OH groups in the structure of this polysaccharide allows to carry out the targeted synthesis of various derivatives of this polymer.

It is known that excessive accumulation of toxic metals in organism is dangerous for humans. The toxicity of metals is related to their ability to damage cell membranes, penetrate and increase the permeability of biological barriers, combine with proteins, block many

enzyme systems, which ultimately causes toxic changes and disorders in the organism [1]. One of the promising applications of chitosan-based polymers is connected with their ability to bind heavy and toxic metal ions [2]. From this point of view, this scientific research carried out in the direction of preparation of polymer enterosorbents based on chitosan and its modifiers, is very relevant and of practical importance [3].

For this purpose, the modification of natural polymer-based chitosan with acetaldehyde, the use of NaBH₄ as a reducing agent in the reduction process, and quaternization with methyl iodide were carried out and its water-soluble modifier

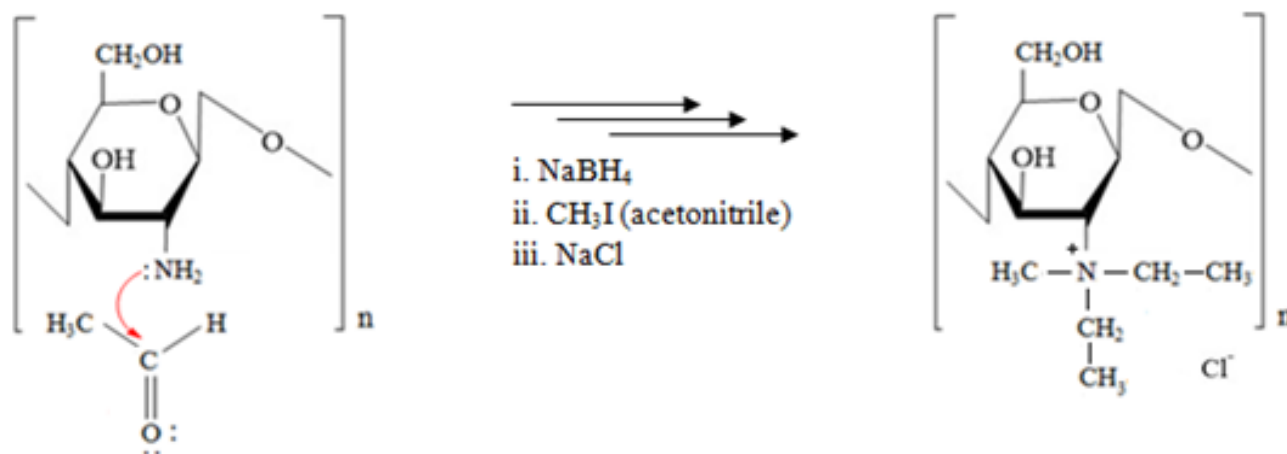


Figure 1. Modification and quaternization reactions of chitosan.

(N,N'-diethyl-N-methyl ammonium chitosan chloride) was obtained.

The sorption of cobalt (II), copper (II) and nickel (II) ions from aqueous solutions was studied in laboratory conditions with the presence of enterosorbents synthesized on the base of chitosan and its modifier. The sorption of metal ions was carried out in amounts close to the norm for the organism, and it was determined that the modifier of chitosan has a relatively high sorption capacity towards these ions. The influence of various parameters such as pH of the medium, amount of sorbent, sorption time on the sorption process was studied and the optimal version of the process was determined.

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Biography

Sevda Fatullayeva graduated from the Baku State University, Chemistry Department (1996) and received PhD degree in Chemical Kinetics and Catalysis (2005). She is currently a leading scientific researcher of "Nanostructured metal-polymer catalysts" laboratory and has postdoc researcher position in field of macromolecular chemistry at Institute of Catalysis & Inorganic Chemistry named after acad. M.Nagiyev of Catalysis & Inorganic Chemistry Institute of Ministry of Science and Education of the Republic of Azerbaijan.

She has over 15 years of teaching experience. Her current research interests is polymer and bioorganic chemistry, in particular, preparation of sorbents, hydrogels and metal complexes based on natural and synthetic polymers with functional groups, study of their physical, chemical properties and study of sorption processes with their participation.

She is the author of over 50 publications, including 5 textbooks, 2 patents.



The transformative effects of the COVID-19 pandemic on contemporary art in Turkey

Eser Selen, Aylin Sunam and Afife İdil Akın

Kadir Has University, Turkey

From the perspective of social sciences and humanities and utilizing a sample group consisting of artists, art professionals, and an art audience, this presentation showcases the results of the project that investigates the current, predicted, and unpredictable effects of the COVID-19 pandemic on the field contemporary art field in Turkey. Our study aims to contribute to the development of possible solutions to the problems arising from the pandemic and becoming apparent in the contemporary art scene, which will improve the infrastructure of Turkey's arts and culture sector.

For this mixed-methods case study-based research project, our data was scraped through data mining from social media and web platforms to infer content at the intersection of contemporary art issues and COVID-19, decided by reviewing digital archives and the literature. An online survey (n. 627) was

conducted with the selected sample, cases were built based on the results obtained from the study, and semi-structured in-depth interviews (n. 36) were conducted with three main groups: artists, art professionals, and art audience. Data collected for this study were analyzed based on the purposes and objectives of the research project through qualitative data analyzed by content analysis and quantitative data, supporting and informing the qualitative data analysis, analyzed by descriptive statistics.

The research and analysis's final results were interpreted to provide information and documentation for the studies to be carried out to support the contemporary art sector, which was culturally, socially, and economically affected by the global pandemic. An integrated open-access website has been designed and launched, displaying infographics based on the study results and related content.

Biography

Eser Selen's research interests are at the intersection of feminisms, performance studies, theories of gender and sexuality, contemporary art, and visual culture. Other than presentations made at national and international conferences, her work appeared in edited volumes and such journals as *the International Journal of Communication, Gender, Place, and Culture, Women & Performance: A Journal of Feminist Theory, and Cultural Trends*. Her first monograph, entitled *Contesting Gender and Sexuality through Performance: Sacrifice, Modernity and Islam in Contemporary Turkey*, is under contract by Edinburgh University Press, Edinburgh Studies on Modern Turkey, to be published in 2024. She is also a visual artist whose work encompasses performance art, installation and video. She has exhibited and performed in Europe, the United States, the Middle East and Australia. She holds an Associate Professor position at the Visual Communication Design Department and Gender Studies PhD Program at Kadir Has University, Istanbul, Turkey.



3D Approach To maxillofacial structure and pharyngeal airway relationship

Mehmet Irfan KARADEDE

Izmir Katip Celebi Universitesi, Turkey

The pharynx extends from the skull base to the lower border of the cricoid cartilage. The pharynx is a 12-14 cm long structure located in front of the cervical vertebrae. The part of the pharynx associated with the nasal cavity is called the nasopharynx, the part associated with the oral cavity is called the oropharynx, and the part associated with the larynx is called the hypopharynx. The relationship between pharyngeal airway volume and craniofacial structure is an important topic of discussion. Although there are different approaches on this subject, there is a general view that oropharyngeal and nasopharyngeal structures play a role in the development of the dentofacial complex.

Today, with the widespread use of 3D imaging techniques, advances in CBCT technology and the reduction of the radiation dose given to the individual, 3D orthodontics has become a practice. In this way, the pharyngeal airway can be examined in 3D.

It is generally accepted that maxillofacial structures are affected by genetic and environmental factors. Respiratory activity affects the growth and development of maxillofacial structures. Respiratory obstructions in the nasal and pharyngeal regions direct the individual towards mouth breathing. Therefore, the close

relationship between mouth breathing and maxillofacial structure should not be forgotten that obstructed airway in children may affect maxillofacial structures during development and growth. There is a relationship between different malocclusions and the size of the oropharynx. Structurally, the anatomical structures and spaces in the region are not only close structures, but also directly related. Positive and negative factors that may occur in these morphological structures may also cause compensation and adaptations. This may cause variations in the anatomy of soft tissues. Variations in soft tissue morphology can cause changes in the structure and posture of adjacent tissues. There may be significant changes in the volume and size of the pharyngeal airway by being affected by the surrounding tissues. Studies report a negative association between mandibular retrognathia and pharyngeal airway dimensions.

We think that determining the areas with narrowing in the upper airway and understanding the size and volume of the pharyngeal airway are important in clinical treatment planning. In this study, the relationship between the pharyngeal airway and the differences in the positions of the jaw and facial structures relative to each other and to the skull base were evaluated with 3D methods.

Biography

Dentist at Dicle University in 1986, PhD in Orthodontics in 1992, Assistant Professor in 1993, PhD in Histology and Embryology in 2004, Professor in 2009. Dr. Dr. Karadede; animal experiments, histological studies, development and growth, orthodontic tooth movement, tmj, occlusion, cephalometry, cleft lip and palate, orthognathic treatments, CT / CBCT, stereophotogrammetry, forensic dentistry and he has a scientific focus on genetics. He has many postgraduated thesis advisors, national scientific projects editorship and chapter authorship in international and national books and many works published in international and national scientific journals and congress papers. He has refereed international and national journals and national projects in different fields and has many international and national citations to his articles. He also served as the chairman of the Dentistry Deans Council (DDK); He was a member of the DDK education and research sub-committee, which wrote the Dentistry National Core Education Program-2016 (DUÇEP-2016) and DUÇEP-2021. He is also a member of TUKMOS-Orthodontics (Medical Specialization Board Curriculum Formation and Standards Determination System).



Management of aesthetic prejudices by stratification technique : Case Series

Bouchra DOUMARI, Sara DHOUM and Hafsa EL MERINI

Faculty of Dental Medicine of Casablanca, Hassan II University, Morocco

Introduction: Direct restorations have often been considered difficult and leading to random results, due to many factors. However, considerable improvements in composite resins, including mechanical and optical properties, as well as guided protocols for simplified layering techniques have made it possible to achieve reproducible and predictable results.

Series of Cases: Through several clinical cases, we will detail the different steps of layering from cavity preparation and choice of the right color to the actual reconstruction on cases of traumatized teeth with uncomplicated coronal fracture and on teeth decayed by anterior and posterior caries.

Tips and tricks" will be given in each case presentation.

Discussion: Aesthetic layering is a technique that often appears difficult to practitioners. The first layering schemes proposed were excessively complex. More simplified methodologies have been proposed, including

the two-layer (2-layer), three-layer (3-layer) multi-mass dentin reconstruction of Vanini, or the "Natural Layering Concept" of Dietschi.

This adhesive technique allows for a minimally mutilating treatment that respects the patient's dental capital. Moreover, because of their aesthetic appeal, acceptable longevity and relatively low cost, composites are an important part of the patient's treatment options.

Three steps play a major role in the final aesthetic result and integration: the choice of color, the layering technique and polishing.

Conclusion: The rationalization of layering allows today its realization, by a large number of practitioners and is no longer reserved to a closed circle of dentists highly specialized in "aesthetic" dentistry. Nevertheless, the success of these techniques of composite restoration is modulated by the know-how, the experience of the practitioner as well as the respect of optimal operating conditions and a strict methodology.

Biography

Bouchra Boumari,

2020-2023: Resident doctor in Conservative Dentistry-Endodontics.

2020: Graduation from the doctorate in dental medicine.



Do adolescents want death to be included in their education?

A. de la Herran Gascón

Faculty of Teacher Training and Education, Autonomous University of Madrid, Spain

Why is it so strange to propose an education that includes death? Are we so far from an education for life, understood globally? The answer may lie in a more complete, perhaps more profound education that, of course, includes death, in a natural and educational approach. What are the attitudes and opinions of adolescents about this possibility? Our research (1) proposed three objectives: to find out the attitudes of secondary school students towards the inclusion of death in education; to identify the influence of the variables of gender, age, school environment (rural or urban), type of school (public or private), school religion (religious or non-denominational), their own religious beliefs and bereavement experience on their attitudes towards death education; and to

discover their views on how death is dealt with in schools. Two instruments were designed and validated to meet the objectives: the 'Death Education Attitudes Scale-Students' and the 'Death Education Questionnaire-Students'. The sample consisted of 1,897 secondary school students aged 12-19 years. Participants showed moderately positive attitudes towards death education. Variables such as gender, age and religious beliefs influenced the results. Death is not unfamiliar to adolescents. On the contrary, they are affected by the loss of loved ones, and considered themselves able to reflect on it. The study has didactic implications for the training of teachers and families and for the inclusion of death awareness in curricula, teaching programmes and in national and international educational policies.

Biography

Pedagogue and professor in the Department of Pedagogy at the Autonomous University of Madrid (AUM). Promoter of the radical and inclusive approach to training and education. Lines of research: radical change of educational change, the radical renewal of Pedagogy (discipline) and education (field), historical background of current and possible teaching, didactic methodology, didactic of creativity, Pedagogy of death and other radical topics. He directs the research group recognised by the AUM "Pedagogy, education and conscience". He has received around twenty awards for his academic, teaching and research career or for projects on which he has worked.



African American men & Shared-decision making about prostate cancer screening: Preliminary baseline assessment in a clinical trial

M. Echeverri

Xavier University of Louisiana, USA

Background: Shared decision making (SDM) is considered a standard of person-centred care in clinical practice. Prostate cancer is the third most prevalent cancer in the U.S. population. Furthermore, the prognosis is worse in African American men (AAM) as they have lower rates of screening and higher rates of morbidity and mortality, when compared to other population groups.

Objectives and scope: Considering current guidelines recommend SDM regarding the Prostate-Specific Antigen (PSA)-test for early detection of prostate cancer (PCa), this study focuses on the assessment of the effectiveness of a new online decision-aid to educate the patient population regarding prostate cancer risk, diagnosis, treatments, and fostering their decisions about whether to be screened.

Methods: A multi-centre, prospective, single blind, behavioural clinical trial of AAM patients (40–69 years old) randomly assigned to an intervention (SDM-aid) or control (usual-care), and who complete surveys at baseline, during the intervention, and following the medical-encounter. Descriptive statistics include frequencies, means, and distributions.

ANOVAS are used to test for differences in knowledge, confidence, satisfaction, and application of the SDM process between the intervention and control groups, and other variables of interest.

Preliminary Results: At August 30, 2022, a total of 137 participants have completed the baseline. Although 94% of participants said they would get a PSA, only 54% knew that PSA is a blood test. Participants who have had a PSA-test before the baseline, had significantly higher mean scores that their counterparts in the three knowledge scales ($p=0.021$, $p<0.0001$, $p=0.021$) and in the confidence ($p=0.004$) and efficacy ($p<0.001$) scales.

Preliminary Conclusions: Significant differences found at the baseline assessment may indicate that patients' knowledge and screening decisions are highly influenced by their previous PSA experiences and family history of PCa. Overall, the decision-aid has been well accepted by participants in the intervention group. Differences among intervention and control groups and by clinical practices will be assessed once data collection is completed.



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Biography

Dr. Echeverri is a professor of social and behavioural sciences and serves as the Educational Coordinator in Health Disparities, Cultural Competence and Diversity at Xavier University of Louisiana College of Pharmacy. She received her Master and PhD degrees in public health and international development at Tulane University, United States. She has more than 10-years' experience in assessing health literacy, developing educational initiatives to address health disparities, and conducting community-based participatory research. Her research focuses on factors influencing patients' health behaviours and decisions related to prevention, early detection, and treatment of chronic diseases, as well as development of strategies to improve communication and understanding among healthcare providers, patients, and researchers. Currently she is the principal investigator in a behavioural clinical trial comparing the efficacy of an educational intervention vs usual care in increasing engagement in shared decision-making regarding screening of prostate cancer among African American men and their primary care providers.

Agricultural Medicine: Protecting the health and safety of farm workers who produce food, fuel, and fiber for the world

Kelley J. Donham

*Department of Occupational and Environmental Health,
College of Public Health, University of Iowa, USA*

Farm workers producing food, fiber, and fuel for the world, work in one of the most hazardous industries. However, attention to the occupational Health and Safety of farmer and farm workers has not achieved the degree of attention from public health and preventive medicine professionals relative to the degree of the problem. This lecture will address the history of the development of the field of agricultural medicine research, practice, and professional training, and recommendations for the future.

Olaus Magnus (a clergyman in the Christian Church) in Sweden in 1555, and Bernardo Ramazzini (a physician) in Italy in 1713 wrote of health conditions in farmers. However, there is no evidence found (in the Western Hemisphere) before 1955, where a specific

institute was present for the preventive health and medicine for farmers, their families, and their workers. There was an absence of research and outreach in the medical and public health fields in agricultural medicine until 1955 at the University of Iowa. The history of the Institute of Agricultural Medicine (IAM) provides a substantive grounding for the field as it stands today. Further, the institute serves as something of a precursor of the One Health Initiative. Here, we trace the history of the institute and highlight its contributions to today's field of agricultural medicine worldwide.

The overarching aim of this lecture is to inform the audience of the major occupational health and injury risks to farm workers, methods of prevention, and education in the field of Agricultural Medicine.


Biography

Kelley J. Donham, MS., DVM, DACVPM is Emeritus Professor, Occupational and Environmental Health, College of Public Health. He was professor on the faculty from 1973 – 2013. Key professional works:

- Founded and directed the Agricultural Health and Safety Training Program at the University of Iowa, and the Building Capacity Training Program in Agricultural Medicine (1974 – 2013);
- Founded and directed Iowa's Center for Agricultural Safety and Health (I-CASH 1990 - 2013);
- Founded and directed the Iowa Health and Safety Service Network (1987-2003) (now the AgriSafe Network).

Kelley obtained a B.S and a M.S. in Preventive Medicine and a Doctor of Veterinary Medicine degree from Iowa State University.

Dr. Donham's research focused on worker health in intensive livestock housing, respiratory diseases, zoonotic infectious diseases, and prevention. He has published over 160 articles, five books, including the first textbook in the field "Agricultural Medicine: Occupational and Environmental Health for the Health Professions" (Blackwell, 2006, and 2ed. 2016).



The red reflex test: How ocular diagnoses and examination conditions affect interpretation

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Introduction: The red reflex test is an indispensable component of the physical examination of neonates, infants, and children. Abnormal results indicate a range of potential diagnoses, including retinoblastoma, cataracts, strabismus, or refractive errors, warranting further evaluation and treatment.

Objectives: The current study has the following two objectives: 1) determine the accuracy of the red reflex test for a range of ocular conditions found in a pathology-enriched population, and 2) identify ideal conditions for the delivery of the test.

Scope: Improving the reliability of cost-effective solutions for eye screening, like the red reflex test, is critical for protecting vision in children.

Methods: A prospective, cross-sectional study of patients with ocular disease evaluated using the red reflex test under randomly selected examination conditions (lights on with eyedrops, lights on without eyedrops, lights

off with eyedrops, lights off without eyedrops).

Results: Data from 223 examinations were analyzed. Examiners correctly detected abnormal red reflexes from more than half of eyes with clinically significant disease (60.7% sensitivity), including most cases of retinoblastoma (92.9% sensitivity) and cataracts (91.7% sensitivity), but often missed abnormalities from refractive errors (49.6% sensitivity). Examiners detected more false positives and false negatives for some conditions when eyedrops were used. Pediatricians recently trained on the red reflex test performed nearly as well as ophthalmologists with decades of experience.

Conclusions: The red reflex test remains useful when screening for ocular diseases that cause leucokoria (such as retinoblastoma or cataracts) but is less useful for refractive errors and other conditions. The test should be conducted following established guidelines (no eyedrops in a darkened room).



3rd International Conference on
**Future of Preventive
Medicine & Public Health**

March 30–31, 2023

Biography

Angela N. Buffenn, MD, MPH is an Assistant Professor of Clinical Ophthalmology, Director of the Orbit and Eye Movement Institute, and Director of the Fellowship in Pediatric Ophthalmology and Strabismus, at the Vision Center, Children's Hospital Los Angeles, Roski Eye Institute, University of Southern California, Keck School of Medicine. Dr. Buffenn earned her Medical Degree and Masters of Public Health Degree in Public Health Policy and Administration from the University of Michigan. She completed her ophthalmology residency at the University of Maryland and her Fellowship in Pediatric Ophthalmology and Adult Strabismus at the Wilmer Ophthalmological Institute, Johns Hopkins Hospital. Dr. Buffenn specializes in pediatric ophthalmology and strabismus, including adult strabismus. Her research interests include clinical and surgical management of strabismus, the impact of strabismus on psychosocial health and quality of life, and the detection of ocular disease in infants and children.



Sexual trauma Informed understanding of longitudinal depression among repeat juvenile offenders

**Richard Dembo¹, Jennifer Wareham², James
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Childhood sexual assault (CSA) victimization and depression are global public health concerns that disproportionately affect youths involved in the juvenile justice system. Little research has examined the influence of CSA on the stability of depressive symptoms among repeat juvenile offenders. The present study tested a gendered model of the association between lifetime CSA victimization and depression for three time points: baseline juvenile assessment entry; second reentry; and third reentry. Further, covariate analyses were conducted to explore the impact of socio-demographics on CSA victimization and depression. Results indicate

that CSA victimization was associated directly with baseline depression and indirectly with depression at second reentry for both male and female justice-involved youths. For white, male youth, there were significantly higher rates of depression over time, than other males. However, age, African American or Hispanic race/ethnicity, living situation, and urbanity were not significantly associated with CSA victimization at baseline or depression over time. These findings underscore the need for juvenile justice services that address exposure to childhood trauma and mental illness more effectively.

Biography

Richard Dembo is a Professor of Criminology at the University of South Florida in Tampa. He received his Ph.D. in sociology from New York University. He has conducted extensive research on the relationship between drug use and delinquency; has published three books and over 300 articles, book chapters and reports in the fields of criminology, substance use, mental health, and program evaluation; and has guest edited five special issues of journals addressing the problem of drug misuse. He is a member of the editorial boards of many journals, has served as a consultant to numerous federal agencies, and a reviewer of manuscripts for numerous professional journals. He is Past-Chair of the American Sociological Association Section on Alcohol and Drugs. He was a major party in the development of the Hillsborough County Juvenile Assessment Center (JAC), and an innovative Health Coach service for youth entering the JAC.

March 30–31, 2023



Covid-19 and Latinx disparities: Highlighting the need for medical schools to consider accepting DACA recipients

Francisco Lucio*University of Arizona College of Medicine – Phoenix, USA*

CCOVID-19 revealed and magnified the pre-existing health inequities faced by many vulnerable groups. The Latinx community is one of these groups and has borne the brunt of disparate rates of infection, hospitalization, and mortality associated with COVID-19. These disparities are rooted in social inequities, such as poverty and lack of access to health care, as well as health inequities associated with disparate disease and condition burdens. Moreover, the lack of an adequate Latinx physician workforce contributes to and exacerbates these inequities. The COVID-19 pandemic has intersected with the U.S. Supreme Court's decision in the Department of Homeland Security v. Regents of the University of California case. The court's decision in this case struck down the attempted ending of the Deferred Action for Childhood Arrivals (DACA) program, although it was settled that the government could end the program if it was

done lawfully. Even though this constitutes a win for DACA recipients, the decision is a stopgap as the future of DACA recipients remains vulnerable and subject to other legal challenges and political vagaries. In a time when the need to ameliorate health inequities for the Latinx community is so pronounced, DACA recipient medical trainees could provide much-needed relief. Since the implementation of DACA, some medical schools have decided to accept DACA recipient students, but many do not. This access-limiting practice stymies a group of potential trainees who could help to increase the Latinx physician workforce, as the majority of DACA recipients are Latinx. This article argues that all medical schools should take steps to consider accepting DACA recipient applicants in line with the principles of health equity and suggests 5 recommendations for medical school admissions, support, and advocacy practices.

Biography

Francisco Lucio serves as the inaugural associate dean of Equity, Diversity and Inclusion at the University of Arizona College of Medicine – Phoenix. Dean Lucio has helped create a five-year inclusive excellence strategic plan, establish a Women in Medicine and Science group and bolster LGBTQ+ programming — amongst other initiatives. These efforts have contributed to the College of Medicine – Phoenix receiving the prestigious 2019, 2020, & 2022 INSIGHT Into Diversity Health Professions Higher Education Excellence in Diversity (HEED) Award. Dean Lucio is assistant professor of practice in the obstetrics and gynecology department and co-director of the Health Equity longitudinal curricular theme. His publications focus on EDI issues in medicine.

Dean Lucio obtained his Juris Doctorate from St. John's University School of Law, where he was the recipient of the American Bar Association, Health Law Section and National Bureau of National Affairs, Inc. Award of Excellence in the Study of Health Law.



The Limits of Empathy in healthcare

David Ohreen

Mount Royal University, Canada

Empathy has taken on increased importance in healthcare interactions. Empathy, research shows, can facilitate effective communication with patients; improve treatment and health outcomes, strengthen relationships with colleagues; and can increase the meaning and importance of work for professionals. Although defining empathy is difficult, generally speaking, it is the identification with another's thoughts and emotions. This identification, ideally, will facilitate a wider connection with patients, colleagues, and create a better healthcare environment. In this presentation, I argue empathy is an overblown concept. Its effectiveness and function, once the philosophical and psychological

research is considered, it very limited to the point of being useless in the healthcare setting. Empathy is problematic because it is indeterminate what mental states need to be simulated to understand another's point of view; it is inaccurate; not everyone can do it; it's unnecessary to understand action intention, and it doesn't motivate helping behaviour. Moreover, empathy can make people biased towards their own social class, income bracket, and, more generally, it can lead to immoral behaviour. As an alternative, I suggest healthcare should jettison empathy and replace it with a normative-based compassionate approach to patient care.

Biography

David earned his Doctoral Degree in Philosophy from the University of Wales, Lampeter, specializing in philosophical psychology. Before coming to General Education at Mount Royal University, he taught at the Bissett School of Business and the Faculty of Management, University of Lethbridge teaching a wide range of courses including social responsibility, business ethics, and environmental management. David's research interests bridge the complex interconnection between psychology and moral decision making. He is currently researching the motivations behind corporate funding of nonprofit organizations; the role of peer influence on moral decisions; and the extent to which empathy can be used to create good corporate citizens. He is the author of *Folk Psychology: It's Scope and Limits* and *An Introduction to Philosophy: Knowledge, God, Mind, and Morality* and has also published academic articles on psychology, ethics, and corporate social responsibility.



Heart regeneration: Advanced hiPSC-based 3D systems to model progressive cardiac fibrosis

Maria Teresa De Angelis

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Department of Experimental and Clinical Medicine, University "Magna Graecia", Italy*

Human heart regeneration is one of the most critical unmet clinical needs at a global level. Muscular regeneration is hampered both by the inability to replace lost myocardium and the onset of cardiac fibrosis, resulting in reduced compliance of the tissue. Human pluripotent stem cells (hPSCs) have emerged as a promising alternative to generate in vitro models of higher physiological relevance. Importantly, hPSCs have the potential to form organoids, which are self-organized microtissues resembling an organ of the body in terms of cell composition, architecture, and function. Thus, we studied fibrotic remodeling exploiting two different pluripotent stem cell-based models: ex vivo heart injury model and hPSCs-derived cardiac organoids. We combined lineage tracing and single-cell transcriptomics in both strategies. First, we uncover the coordinated modes of action in human ventricular progenitor-mediated muscle repair using injured non-human primate heart bio-mimics. Chemoattraction via CXCL12/CXCR4 signalling directs cellular migration to sites of cardiac injury. Cardiac fibrosis is targeted by repulsion of activated fibroblasts regulated by SLIT2/ROBO1 guidance

in organizing cytoskeletal dynamics. Ultimately, differentiation and electromechanical integration lead to functional restoration of damaged heart muscle. Thus, cardiac progenitors may represent an ideal bio-therapeutic for functional heart rejuvenation. The second approach provides the establishment of human pluripotent stem cell-derived cardiac organoids which showing self-organization of myocardial and epicardial layers. The epicardium, the envelope of the vertebrate heart, provides signals essential to myocardial growth and repair. Fundamental understanding of its origin and biology in humans is still limited. Cardiac organoids recapitulate the morphological, molecular and functional patterning typical of the ventricular wall. We shed light on cellular heterogeneity, spatial organization, and lineage segregation of epicardial cells during development and ventricular maturation. Furthermore, upon endothelin-1 treatment we evaluate hypertrophy and fibrotic response showing how cardiac organoids are a powerful and unique platform to follow epicardial activity that could be considered a hub for heart regeneration.

Biography

Maria Teresa De Angelis has completed her PhD at the age of 27 years from University of Naples Federico II. As post-doc fellow, she worked in two laboratories of stem cell biology in Italy with a short period at University of Coimbra, Portugal. Afterwards, she has joined the research group of Cardiovascular Regenerative Medicine at Technical University Munich, Germany. Currently, she is a Researcher of Pathology at University Magna Graecia of Catanzaro, Italy. Her research interests mainly concern the use of pluripotent stem cells for the dissection of molecular mechanisms involved in the pluripotency maintenance, and those governing cellular transitions during cardiogenesis. Particular attention is paid to human cardiac progenitors able to mediate heart regeneration.



Africana digital pedagogy: Cultural exchange, learning, and innovation

**Clarence George III¹, Shingi Mavima²
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²*Department of History, The University of Toledo, USA*

³*School of Writing, Rhetoric and Technical Communication, James Madison University, USA*

This project was created to illuminate the role and value of digital platforms for the Africana community. This research project was exploratory in that the primary researchers had an unclear idea of how the collected response provided by the participants would correlate and interact with the general hypothesis of Africana digital pedagogy (ADP). We surveyed 56 individuals from different segments of the global Africana communities for their opinions on their digital platform usage,

as well as what they learn about themselves and their communities. Through our analysis of these responses, combined with existent literature and our own experiences as Africana individuals who engage with digital spaces to varying degrees, we seek to both garner insight into how the global Africana community currently utilizes these spaces as well as how they can be utilized more effectively in the continued pursuit of Black liberation.



*SCIENTIFIC
ABSTRACTS*

DAY 2

VIRTUAL EVENT

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March 30-31, 2023

FUTURE OF PMPH 2023



Novel antibody exerts antitumor effect through downregulation of CD147 and activation of multiple stress signals

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CD147 is an immunoglobulin-like receptor that is highly expressed in various cancers and involved in the growth, metastasis, and activation of pathways via interactions with various functional molecules, such as integrins, CD44, and monocarboxylate transporters. Through screening of CD147-targeting antibodies with antitumor efficacy, we discovered a novel rat monoclonal antibody #147D. This is humanized IgG4-formatted antibody, h4#147D, showed potent antitumor efficacy in xenograft mouse models harboring the human PDAC cell line MIA PaCa-2, HCC cell line Hep G2, and CML cell line KU812, which featured low sensitivity

to the corresponding standard-of-care drugs (gemcitabine, sorafenib, and imatinib,

respectively). An analysis of tumor cells derived from MIA PaCa-2 xenograft mice treated with h4#147D revealed that cell surface expression of CD147 and its binding partners, including CD44 and integrin $\alpha 3\beta 1/\alpha 6\beta 1$, was significantly reduced by h4#147D. Inhibition of focal adhesion kinase (FAK), activation of multiple stress responsible signal proteins such as c-Jun N-terminal kinase (JNK) and mitogen activated protein kinase p38 (p38MAPK), and expression of SMAD4, as well as activation of caspase-3 were obviously observed in the tumor cells, suggesting that h4#147D induced tumor shrinkage by inducing multiple stress responsible signals. These results suggest that the anti-CD147 antibody h4#147D offers promise as a new antibody drug candidate.

Biography

Dr. Keisuke Fukuchi leads a pre-clinical/clinical project in early clinical development department at DAIICHI SANKYO CO., LTD. He contributed as an originator in target & drug discovery and pharmacological evaluation for past and current pre-clinical and clinical projects in cancer therapeutic field.

Gefapixant, a novel P2X3 antagonist, protects against post myocardial infarction Cardiac dysfunction and remodeling via suppressing NLRP3 inflammasome

Yanzhao Wei and Xiaolin Wu

Department of Cardiology, Institute of Cardiovascular Diseases, Xiangyang Central Hospital, Affiliated Hospital of Hubei University of Arts and Science, China

Objective: The ATP responsive P2 purinergic receptors can be subdivided into metabotropic P2X family and ionotropic P2Y family. Among these, P2X3 is a type of P2X receptor which is specifically expressed on nerves, especially on pre-ganglionic sensory fibers. This study investigates whether gefapixant possesses the potential of inhibiting cardiac sympathetic hypersensitivity to protect against cardiac remodeling in the context of myocardial infarction.

Methods: The Sprague-Dawley rats were divided randomly into three groups: sham group-myocardial infarction group, and myocardial infarction with gefapixant treatment group. Myocardial infarction was induced by left anterior descending branch ligation. The gefapixant solution was intraperitoneally injected each time per day for 7 days and the appropriate dosage of gefapixant was determined according to the results of hematoxylin-eosin (HE) staining and myocardial injury biomarkers. Conditions of cardiac function were assessed by echocardiograph and cardiac fibrosis was evaluated by Western blotting and immunofluorescence staining of collagen I and collagen III. The sympathetic innervation was detected by norepinephrine concentration (pg/mL), in-vivo electrophysiology, and typical

sympathetic biomarkers. Inflammatory cell infiltration was shown from immunofluorescence staining and pro-inflammatory signaling pathway activation was checked by immunohistology, quantitative realtime PCR (qPCR) and Western blotting.

Results: It was found that gefapixant injection of 10 mg/kg per day had the highest dosage-efficacy ratio. Furthermore, gefapixant treatment improved cardiac pump function as shown by increased LVEF and LVFS, and decreased LVIDd and LVIDs. The expression levels of collagen I and collagen III, and TNF- α were all decreased by P2X3 inhibition. Mechanistically, the decreased activation of nucleotide-binding and oligomerization domain-like receptors family pyrin-domain-containing 3 (NLRP3) inflammasome and subsequent cleavage of caspase-1 which modulated interleukin-1 β (IL-1 β) and IL-18 level in heart after gefapixant treatment were associated with the suppressed cardiac inflammation.

Conclusion: It is suggested that P2X3 inhibition by gefapixant ameliorates post-infarct autonomic nervous imbalance, cardiac dysfunction, and remodeling possibly via inactivating NLRP3 inflammasome.

Biography

Yanzhao Wei: Physician at Xiangyang Central Hospital and a research fellow in Institute of Cardiovascular Diseases of Xiangyang Central Hospital. He has his postgraduate degree at Wuhan University and bachelor degree in Queen Mary University of London. His researches mainly focus on environmental medicine and underlying molecular mechanism.



Executive function touch battery: Translation and preliminary measure validation for Pakistani pre-schoolers

Rubina Hanif and Hafsa Khalil Toor

*National Institute of Psychology, Centre of Excellence,
Quaid-i-Azam University, Pakistan*

Keeping in mind the importance of measuring early executive function (EF) skills in low and middle-income countries, the present study examined the feasibility and preliminary psychometric properties of a performance-based computerized EF measure; EF Touch, to be used with Pakistani preschoolers. Review of the content and Urdu translation of verbal instruction EF Touch battery was carried out by subject matter experts before data collection from the 120 preschoolers aged between 3.1 to 5.9 years. The feasibility report indicated that between 79.2% -100% of the preschoolers completed each executive function

task. Confirmatory factor analysis revealed the unidimensionality of the EF battery. Item response theory models were used for the initial assessment of tasks and item parameters. Results demonstrated that each task worked invariantly across subgroups of preschoolers residing in low and middle-income households. Moreover, preschoolers showed differences on each task, and task scores reflect their latent EF skills in the low to moderate range. The battery was demonstrated as a feasible and reliable measure for use with low and middle-income countries specifically in Pakistan.

Biography

Prof. Dr Rubina Hanif is currently working as Director National Institute of Psychology, Centre of Excellence, Quaid-i-Azam University Islamabad. Her areas of expertise are, Assessment and Testing, Academic and Psychosocial issues of Students, Occupational Health Psychology. She is a certified trainer in Soft Skills Training Programs, Positive Youth Development Program and Psychosocial Intervention Program.

Deciphering the role of Imatinib therapy on eGFR and hemoglobin level in blood cancer patients: UTT (Unresolved Triple Trouble)

Avinash Kumar Singh¹ and Manju Sharma²

¹Department of Pharmaceutical Medicine (Division of Pharmacology), SPER, India

²Department of Pharmacology, SPER, India

Purpose: In this study, we evaluated the estimated glomerular filtration rate (eGFR) and hemoglobin level during Imatinib treatment in chronic myeloid leukemia patients.

Methods: Chronic myeloid leukemia patients with chronic phase who had been treated with only Imatinib for 12 months at Rajiv Gandhi Cancer Institute and Research Centre (New Delhi, India) were enrolled and prospectively analyzed. The chronic renal impairment parameters, including estimated glomerular filtration rate and hemoglobin levels for anemia from June 2020 to June 2022, were monitored in newly diagnosed Chronic myeloid leukemia- chronic phase patients. The data were analyzed by SPSS software version 22.

Results: 81 patients with chronic myeloid leukemia chronic phase who had been on Imatinib for 12 months were monitored. The mean estimated glomerular filtration rate was significantly decreased (74 ± 14 to 59 ± 12 ml/min/1.73m², $P < 0.001$) with a decrease in mean hemoglobin levels after 12 months. (10.9 ± 2.01 to 9.0 ± 1.02 , $P < 0.004$). The decreased estimated glomerular filtration rate was negatively correlated with hemoglobin per cent levels after one year of Imatinib therapy (correlation coefficient= 0.892, $R^2 = 0.7976$, $P < 0.05$).

Conclusion: We recommended close monitoring of renal function and hemoglobin levels in a chronic myeloid leukemia patient.

Biography

Avinash Kumar Singh has done Bachelor of Pharmacy in the year 2011-2015 from Jamia Hamdard, India, and cracked the graduate pharmacy aptitude test (GPAT- 2015) conducted by the All India Council of Technical Education (AICTE). He also cracked the National Institute of Pharmaceutical Education & Research- Joint Entrance Exam (NIPER-JEE) in the year 2015 conducted by the Department of Pharmaceuticals under the Ministry of Chemical and Fertilizer. He completed his Master of Pharmacy with a specialization in Pharmacy Practice from NIPER in 2017. He got selected for a PhD in the Department of Pharmaceutical Medicine (Division of Pharmacology), a joint collaboration project for providing a financial assistantship between Sun Pharmaceuticals Pvt. Ltd. and Jamia Hamdard, He worked at Rajiv Gandhi Cancer Institute and Research Center, Department of Haematology and Bone Marrow Transplant, New Delhi, India for research where he evaluated the appropriateness, effectiveness, safety, adherence, and affordability of patients' drug therapy. .

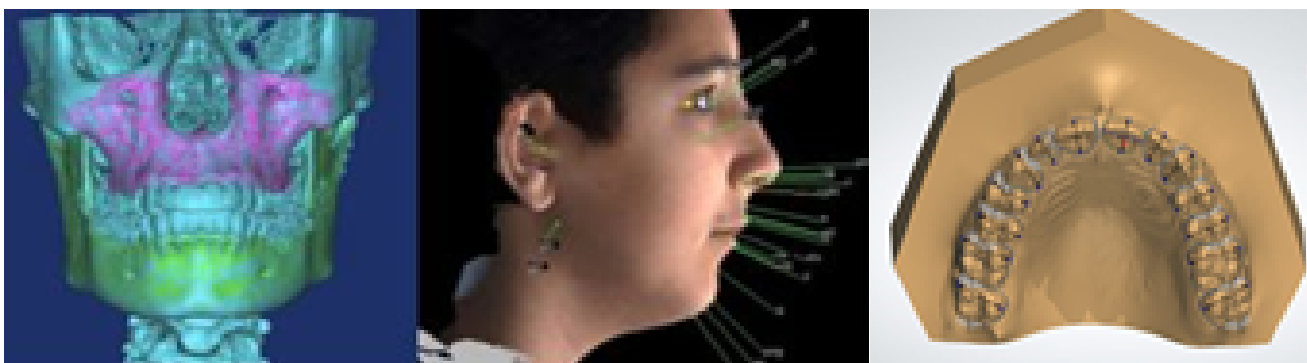


3D perspective to sagittal and vertical dimension of face anatomy

Beyza Karadede Unal
Katip Çelebi University, Turkey

A wide variety of three-dimensional imaging devices are available today. All imaging devices come with advantages and disadvantages. The popularity of digital imaging and three-dimensional imaging is rapidly increasing in dentistry, especially in orthodontics. Cephalometric, panoramic, periapical, and other radiographs offer 2D representations of 3D anatomic structures whereas CBCT offers a 3D image that can be used to aid in orthodontic tooth movement in all three planes of space. This study evaluated Class 1, 2 and 3 malpositions in three dimensions aiding CBCT, stereophotogrammetry and mouth scanning. Soft tissue growth may progress differently for patients with skeletal Class 1, Class 2 and Class 3 malpositions. It was observed that the highest decrease in the nasolabial angle was in the Class 3 group, while the least decrease was in the

Class 2 group. Short facial type patients are characterized by thicker and larger chins with a more square-shaped appearance, which occupy a relatively greater symphysis area. Long facial type patients are characterized by higher symphysis, and soft facial type patients are characterized by a thicker symphysis. Class 1 anomalies may present similar values to Class 2 and Class 3 anomalies. Although class 2 individuals have higher mesiodistal and buccolingual tooth dimensions than class 1 and 3. Significant advances in orthodontic technology have occurred in recent decades, largely due to the incorporation of CAD/CAM technology into the design and fabrication of orthodontic appliances. The clinical evidence to support the efficiency and effectiveness of these appliances is varied, as no single system emerging clearly superior.



Biography

Associate Professor Beyza Karadede Unal has two PhD about Orthodontics and Histology-Embryology. In 2016, she continued part of her academic and clinical education in the Maxillofacial Department at St. George's University Hospital and Kingston Hospital. During this period, she increased her experience in dentofacial deformities and orthognathic surgery. She transfers her clinical experience and knowledge gained during her academic career in her domestic and international experiences to her students. She supervised 3 PhD students and 6 specialist training students and still refers 3 PhD students. Dr. Dr. Karadede Unal, who has many peer-reviewed publications, has original, rational, systematic, objective, open to criticism and consistent working principles. Karadede Unal's works include 18 national, international refereed articles, 44 oral and poster presentations, chapter authorship in 1 international book, chapter authorship in 4 national books, editorship in 1 national book, speaker in 13 meetings, participant in more than 50 congresses and course programs.



Comprehensive data on fungi contamination of pearl millet from Nigeria and their control by *Trichodermaatroviride*

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This paper established a detail fungal profiles of Pearl millet (PM) across Nigeria and test the anti-fungi properties of an endophytic fungi *Trichodermaatroviride*, isolated from the PM samples. A total of 238 PM samples were obtained from six agro-ecological zones, from market and store outlets in Nigeria. The fungal profile was determined conventionally and confirmed molecularly. The toxigenicity of fungi recovered was tested using Ultra High performance Liquid Chromatography-Mass Spectrometry (UHPLC-MS) by determining their ability to produce mycotoxins. Two methods of dual-culture techniques (Method I & II) were employed to test the bio-fungicidal effect of *Trichodermaatroviride* (KT020825.1 strain isolated from pearl millet against other major fungal spp. (*A. flavus*, *A. fumigatus*, *A. niger*, *F. oxysporum* and *P. oxalicum*) by determining the percentage inhibition radial growth

(PIRG), colony over growth and inhibition of mycotoxin biosynthesis. The results obtained showed presence of *Aspergillus*, *Penicillium*, *Fusarium*spp. and eleven (11) other fungi species. A low fungal loads (range: 0.77x10³ to 3.83 x10³ CFU/g) were recorded, with market samples being contaminated at higher levels. Specifically, PM samples from the dry zones of Southern Guinea Savannah (SGS) and Northern Guinea Savannah (NGS) recorded higher fungi incidence compared to the other four zones. *Trichodermaatroviride* (KT020825.1) isolated had an antagonistic effect against the growth of five fungal species and mycotoxin biosynthesis, with high PIRG range (50-79 %) as shown in Table 1. Pearl millet from Nigeria has shown to be less prominent to fungi proliferation, thus Pearl millet could be explored further to serve as bio- fungistatic agent.

Table 1: Mean Percentage Inhibition of Radial Growth and Colony Outgrow of *Trichodermaatroviride* against *A. flavus*, *A. fumigatus*, *A. niger*, *P. oxalicum* and *Fusariumoxysporium* by Dual Culture Method in Pearl Millet Sample from Nigeria

Methods	Fungi Isolate	Accession number	Mean % Inhibition of radial growth (PIRG)	No of days to outgrow the fungi isolate.
Method-I^a	<i>A. flavus</i>	KY490710.1	65.973 ^a	8
	<i>A. fumigatus</i>	MG576101.1	51.622 ^a	8
	<i>A. niger</i>	KU855369.1	59.182 ^a	10
	<i>P. oxalicum</i>	MF326634.1	52.865 ^a	12
	<i>F. oxysporium</i>	ND	49.7207 ^a	12
Method-II^a	<i>A. flavus</i>	KY490710.1	78.753 ^a	7
	<i>A. fumigatus</i>	MG576101.1	65.7325 ^a	6
	<i>A. niger</i>	KU855369.1	as66.100 ^a	8
	<i>P. oxalicum</i>	MF326634.1	61.1900 ^a	10
	<i>F. oxysporium</i>	ND	49.5860 ^a	11

Note : ND=Not determined

Values in the same with the same alphabet are not significantly different at ($p > 0.05$).

Biography

Muhammad Hadiza Kudu (PhD) is currently a Lecturer II with the Department of Biochemistry, Federal University of Technology, Minna, Nigeria. She completed her PhD in Biochemistry from Federal University of Technology, Nigeria in 2019. Her research work encompass: i. detection of toxic compounds in the environment and food ii. Attempt to determine possible biocontrol method to reduce toxic compound specifically mycotoxin from food and environ She teaches basic and advanced courses in Biochemistry at both undergraduate and postgraduate levels. She is a researcher fellow in the Food and Toxicology Research Group (FTRG), Federal University of Technology, Minna. She has worked with both undergraduate and master students. She is a member of Mycotoxin Society of Nigeria. She is married with three children.



Digital protocol and biomimetic approach in a rehabilitation of a tooth wear

Nevena Josipovic¹ and Dragan Stolica²

¹MaeDENTIS, Slovenia

²Popdent d.o.o., Slovenia

Introduction: Digital protocol and digital workflow are becoming a much-needed obligation and no longer an exception in modern dental medicine. Their use is made possible by the development of digital technology, which is getting faster every year. The use of analogue methods is increasingly abandoned due to the disadvantages it provides. Protocol standardization in digital dental medicine still does not exist.

Materials and Methods: A 42-year-old patient came to our clinic with signs and symptoms of a significant tooth wear due to bruxism. Based on clinical examination, preoperative pictures (DSLR, Canon 5D Mark IV, Ota City, Tokyo, Japan) of the patient and IO scans (3Shape, Denmark, Copenhagen) the diagnosis and appropriate treatment plan was provided. Proper diagnosis and patient digitalisation led to the design of future restorations and election of the proper material for its production. The entire work from planning to cementation

was fully digitally created in software 3 Shape Dental Manager 2021. All restorations were done by using of a "copy-paste" technique.

Results: On superimposed STL files of initial and final design of posterior restorations we found the difference of 0,047 mm. Difference between initial and final design of anterior restorations was 0,044 mm.

Conclusion: Help of superimposing and overlapping files acquired during different stages of digital workflow allows us to compare final with the initial design so the final restorations can be almost the same as the proposed initial design. Possibility to storing and maintaining all data in one virtual place helps us to digitally control our work. Digital technology is developing faster than we can test it and keep up with it. However, it can't replace the role of the man himself. Good mutual cooperation between therapist and dental technician remains the most important when it comes to final success.

Biography

Nevena Josipović, MSc was born on October 25, 1980. in Belgrade. In 2005, she completed her studies in dentistry at the Faculty of Dentistry, University of Belgrade. In 2013. she opened her private dental practice MaeDENTIS in Maribor. In 2016, she obtained the Clinical Master's Degree in Esthetic and Restorative Dentistry from the Tribune CME in Italy. In 2022 she obtained the title of University Master of Dental Medicine with the thesis "Oral rehabilitation of the patient using a digital protocol" at the Faculty of Dentistry, University of Zagreb. She is a member of the ITI, ESCD, WIN and DDS. She actively participates in dental medicine congresses. She is the author of several publications in domestic and foreign literature. She works as a licensed instructor for the dental companies Ivoclar Vivadent AG (Schaan, Liechtenstein), Straumann® (Basel, Switzerland) and GC Corporation (Tokyo, Japan). She is a mentor to young doctors of dental medicine.



Sociodrama in higher education and its resistances

S. Veiga

School of Education of the Polytechnic Institute of Porto, Portugal

Sociodrama has been used in various higher education training courses in Portugal and all over the world.

In the Social Education degree of the Escola Superior de Educação do Instituto Politécnico do Porto, Sociodrama has been mobilized as a privileged teaching-learning methodology in two subjects of different curricular years.

This paper aims to reflect on the advantages and constraints of using Sociodrama in a curricular context. If, on the one hand, this method has proved to be particularly fruitful for the personal and social development, as well as for the construction of the identity and professional skills of the students, future social educators; on the other hand, we may witness the emergence of a set of obstacles that hinder the teaching-learning process and the desired change. Due to the importance they may have in the intervention, the resistances which may occur in the Sociodrama groups, in the different phases of the session and with the different participants, will be discussed.

If, for a long time, resistances were seen as obstacles to the intervention process and the desired change, nowadays their presence and analysis are considered important, because they allow us to obtain and work on information concerning the internal aspects, beliefs, expectations and behaviour of the participants.

Resistance arises in the sociodramatic intervention, because its praxis demands from the students and from the teacher himself a greater involvement and socioemotional deepening, commitment with the group, autonomy and co-responsibility for what happens during the sociodramatic sessions. However, social actors are not always able to deal with these challenges, and so personal or collective resistances emerge. Therefore, their function(s), scope and impact should be understood and analyzed. As a result of this analysis, strategies will be mobilized to work on and unblock them, so that the work can promote the development of everyone and of each one in particular.

Biography

PhD in Psychology. Adjunct Professor at the Higher School of Education of the Polytechnic Institute of Porto, Porto, Portugal. Clinical psychologist at the Psychopedagogical Intervention Center of the mentioned school. Integrated Researcher at the Research and Innovation Center in Education. As complementary training, it is noteworthy the specialization in Psychodrama, being a Didata Member of the Portuguese Society of Psychodrama, and the Specialization in Psychodynamic Psychotherapy. She is a researcher and author of several communications and scientific papers in the field of Sociodrama, Social Education, Higher Education, Professional Helping Relationship and Health Literacy with elderly people.

The effects of low-volume combined training on health-related physical fitness outcomes in active young adults: A controlled clinical trial

R. Martins and N. Loureiro

*Department of Arts, Humanities and Sports, School of Education,
Polytechnic Institute of Beja, Portugal*

The effects of combined training (CT) on improving general health are well known, however, few studies have investigated the effects of low-volume CT. So, the aim of this study is to investigate the effects of 6 weeks of low-volume CT on body composition, handgrip strength (HGS), cardiorespiratory fitness (CRF) and affective response (AR) to exercise. Eighteen healthy, active young adult man (mean \pm SD, 20.06 \pm 1.66 years; 22.23 \pm 2.76 kg/m²) performed either a low-volume CT (EG, n=9), or maintained a normal life (CG, n=9). The CT was composed of three resistance exercises followed by a high intensity-interval training (HIIT) on cycle ergometer performed twice a week. The measures of the body composition, HGS, maximal oxygen consumption (VO₂max) and

AR to exercise were taken at baseline and after training for analysis. Furthermore, an ANOVA test of repeated measures and t-test paired samples were used with a $p \leq 0.05$. The results showed that EG improved HGS (pre: 45.67 \pm 11.84 kg vs. post: 52.44 \pm 11.90 kg, $p < 0.01$) and VO₂max (pre: 41.36 \pm 5.16 ml/kg/min vs. post: 44.07 \pm 5.98 ml/kg/min, $p < 0.01$). Although, for all measures the body composition had not significant differences between weeks ($p > 0.05$), nevertheless the feeling scale was positive in all weeks and without significant differences between them ($p > 0.05$). Lastly, for active young adults, the low-volume CT improved HGS, CRF and had a positive outcome in AR, with less volume and time spent than traditional exercise recommendations.

Biography

My name is Ricardo Martins, and I'm from Portugal. I have a master's degree in Physical Activity and Health. Recently, I finished my post-degree in Exercise Physiology. Currently, I'm working as an invited assistant professor at the Polytechnic Institute of Beja, as well as a personal trainer in a health club. Also, I'm applying for a Ph.D. My expertise falls upon the research fields of exercise and health, health promotion, resistance training, combined training, and exercise physiology. As a young researcher, personal trainer, and athlete, I always search to do research based either on practical issues or something that could be exchangeable to the daily exercise practice. I like to say that if you challenge yourself every day, you will always reach new goals, and this is my way of life.



Measuring innovation and innovativeness: A data-mining approach

Bernard Sinclair-Desgagne

Universite Cote d'Azur (GREDEG), France

¹*Asfendiyarov Kazakh National Medical University, Kazakhstan*

²*Suleyman Demirel University, Kazakhstan*

³*AYeconomics Research Centre, Spain*

Despite substantial advances over the past decades, measuring innovation and innovativeness remains a challenge for both academic researchers and management practitioners. To address several key concerns with current indicators—such as their specialization and consequent one-sidedness, their frequent lack of theoretical foundations, and the fact that they may not foster creativity and invention—this presentation will introduce some new metrics via one data-mining

approach—formal concept analysis—which is increasingly used to represent and treat knowledge. We shall see how this approach can adapt to the specific needs and goals of preventive medicine, incorporate various kinds of information (qualitative or quantitative) from different sources, and cope with several types of innovations. We will also look at how this approach uncovers a logical route to novelty, so it might thereby enhance creativity.

Biography

Bernard Sinclair-Desgagné is Professor of Economics and CSR at *Skema Business School*. He holds a PhD in Management Science and Operations Research from *Yale University*. His publications can be found in major journals such as *Econometrica*, *Management Science*, the *Journal of Law, Economics and Organization* and the *Journal of Environmental Economics and Management*. His work focuses on incentive compensation and responsible business, CSR and artificial intelligence, and the measurement of innovation. He has acted as a consultant on these matters with several public organizations and large business firms. Between 2008 and 2019, he was a member of the *Commission de l'éthique en science et en technologie* (CEST), which advises the Government of Québec on ethical matters raised by the deployment of new technologies.

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

Agata Skalska-Stochaj¹, Dorota Hojan-Jeziarska²
and Leszek Kubisz²



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²Department of Biophysics, Poznań University of Medical Sciences, Poland

The present research compared the effectiveness of the monopolar radiofrequency method with that of bipolar method in the facial skin of women in selected age groups. The study included 150 women in good general health and healthy skin. The first group consisted of 75 female participants who received monopolar radiofrequency electromagnetic field treatment (RFM) and 75 women who were treated using the bipolar method (RFB). In both the RFM and RFB groups, 5 age groups were distinguished, i.e. group I (20-29), group II (30-39), group III (40-49), group IV (50-59), group V (60-69). The methods comprise tewametry, the measurement of the stratum corneum barrier function (transepidermal water loss - TEWL), and corneometry - measurement of epidermis hydration. Tewametric and corneometric measurements of the facial skin were performed to determine its condition following radiofrequency electromagnetic field therapy and to assess the sustainability of the obtained

results after 4 months of therapy. The follow-up measurement was performed prior to the first treatment session and the subsequent ones after one month, and four months following the first measurement. The best results, indicating an improvement in epidermal hydration were observed for bipolar radiofrequency method in the age group 40-49 years and group 50-59 years. There are a number of factors influencing the condition of the skin, such as ethnicity, color, thickness, which are essential for assessing the effectiveness and sustainability of the results. Each method of non-invasive skin rejuvenation is based on its regeneration which, in turn, indicates its time-consuming character, while the effects are distributed over time. In the radiofrequency method, a non-ablative tissue tightening is observed, as well as an improvement of skin tone occur by means of its remodeling in the process of neocollagenesis and elastogenesis following deep volumetric heating.

Biography

Held diplomas, academic degrees:

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

- Postgraduate Extramural Study of Scientific Research Methodology, 2nd Faculty of Medicine, Medical University of Karol Marcinkowski in Poznań.
- Doctor of Medical Sciences in the field of Medical Biology obtained at the Department of Biophysics, Department of Biophysics, Medical University of Poznań. Title of the doctoral dissertation: *Assessment of the influence of radiofrequency treatment on selected biophysical properties of the skin.*

Information on didactic, organizational and science popularizing achievements:

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

- Research in the field of minimally invasive, biophysical methods of imaging and diagnostics of human skin (ultrasonography, corneometry, cutanometry, tewametry)
- Facial skin aging, antiaging methods, procedures stimulating the process of neocolagenesis
- Chairman of the student research club, tutor, supervisor and reviewer of theses
- Conducting lectures, exercises, laboratories, seminars in the field of cosmetology in the subjects: Basics of cosmetology, dermatology, beauty cosmetology, spa and wellness.

International humanitarian and Human Rights Law: Integrating palliative care into primary care in meeting Global health disparities

Almas Bandeali, Fahreen Dossa and Zeeba Maita

¹UNICRI, Italy

²University of British Columbia, Canada

³York University, Canada

Objective: Meta analysis-needs assessment to advocate for palliative care (PaC) services as a part of primary care (PiC).

The World Health Assembly (WHA) has called for Member States to “put people at the centre of health care” by providing “comprehensive PiC services, including health promotion, disease prevention, curative care and PaC, that are integrated with other levels of care” (WHA 62.12)¹ The World Health Organization (WHO) defines PaC as: “an approach that improves QoL of patients and their families facing problems associated with life-threatening illness, through the prevention and relief of suffering, the early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual.”²

Both, adults and children need PaC for non/communicable diseases. The WHO estimates,

56.8 million people need PaC each year³ of whom 39% have CVD, 34% have cancer, 10% have chronic lung disease, 6% have HIV/AIDS, and 5% have diabetes.⁴ 5.7% of adults and 10.23% children needing PaC have HIV/AIDS.⁵ Approximately, 6 million children age of ≤ 5 die annually, and 45% of these deaths are accounted for neonatal and peri-natal conditions.⁶ Note, 94% maternal deaths occur

in low-middle-income countries (LMICs).⁷ There is global disparity with access and availability of PaC services: 91.5% of countries lack formal recognition and integration of PaC in their healthcare systems.⁸ LMICs have the greatest burden of disease and yet inadequate access to symptom management, that has been demonstrated to alleviate suffering.^{9, 10}

Most patients who need PaC and prefer to remain at home are deprived of care. Yet basic PaC principles can be integrated in the specialty of primary care. This practice will aid in care management and prevention of severe symptoms, and can be provided in a community setting with simple, inexpensive medicines, and equipments.¹¹

Conclusion: The WHA resolves that PaC is an ethical responsibility of health systems. International Humanitarian Law (during armed conflicts) and International Human Rights Law (all other times) obligate upon States that, every human-being is entitled to the highest attainable standard of health, conducive to living a life in dignity.¹² For these reasons, until wide-ranging PaC services are integrated into healthcare systems, it is imperative that PaC be provided in the community as part of PiC^{13,14,15}.




3rd International Conference on
**Future of Preventive
Medicine & Public Health**

March 30–31, 2023

Biography

Dr. Bandeali has been a part of the global medical community in various capacities for over 25 years. After pursuing a degree in nursing and medicine, she went on to pursue a *Masters in Development of Policies and Practices in Conflict and Fragility Management* from *Geneva*. Her research highlighted the need to reinforce palliative care practices in the developing world. Additionally, she holds a Ph.D. in *Doctor of Psychology in Trauma and Grief Counselling*. She is currently pursuing a Masters in Law at the United Nations Interregional Research Institute of Justice and Crime. She is passionate about learning and understanding human resilience through a spiritual and biological lens. A fun fact about Almas is that she is a globetrotter and has visited more than 140 countries thus far!!!



Rare and aggressive cancer types: NEBC and a new insight in individualized treatment based on multiparametric tumour profiling

Dorthe Schaffrin-Nabe

Praxis für Hamatologie und Onkologie, Germany

Primary neuroendocrine breast cancer (NEBC) is a rare entity accounting for <0.1% of all breast carcinomas and <1% of all neuroendocrine tumours. In most cases, treatment strategies in NEBC are empirical in absence of prospective trial data on NEBC cohorts. Herein, we present two case reports diagnosed with anaplastic large and small cell NEBC. After initial therapies analogue to those of breast cancer (BC) or neuroendocrine cancers (NEC) had failed,

comprehensive tumour profiling was applied, leading to individualized treatment options for both patients. Due to targetable mutations and important co-alterations, the PIK3-mTOR pathway was highlighted from different aspects in both patients. The epicrisis of the two patients exemplifies how to manage the challenge of rare and difficult to treat cancers and how new diagnostic tools contribute to medical management.

Biography

Dr. Schaffrin-Nabe received her medical approbation in March 1995 and her doctoral degree in May 1999. Since September 2004 she has been a specialist in internal medicine and as a senior physician at Marien-Hospital Herne she obtained her additional qualification with a focus on hematology and internal oncology. She has been in private oncology practice since 2007 and has since published numerous papers, lectures and book entries worldwide.



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

Nawal H. Herzallah, Sultan T. AlOtaibi and Sukainah AlHazim

Imam Abdulrahman Bin Faisal University, Saudi Arabia

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

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

Methods: A cross-sectional study will be conducted in which the participants will be interviewed to complete a validated four-section questionnaire (demographic data, knowledge, attitude, and practice information related to ergonomics). The questionnaire is a

newly self-developed based on literature review and it will be pilot-tested after development.

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

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

Biography

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

Perspiration analysis using a self-powered wearable lactate biosensor based on NiCo Nanosheets@CoFe Hollow Nanocubes

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²Department of Chemistry, Sharif University of Technology, Iran

³Department of Medical Physics and Biomedical Engineering, School of Medicine, Shahid Beheshti University of Medical Sciences, Iran

⁴Institute for Nanoscience and Nanotechnology, Sharif University of Technology, Iran

Continuous monitoring and measurement of metabolites and biological markers in a non-invasive manner is of particular importance. Herein, an autonomous flexible biosensor is introduced as a self-powered wearable platform to measure lactate in sweat. The sensor consists of 3 separate parts, which are: the sensing unit for measuring lactate, the supercapacitor part for generating the energy required for the basic function of the sensor, and finally the electronic circuits that connect these two parts. The surface of the working electrode in the sensing unit was modified with nickel cobalt (NiCo) nanosheets grown on CoFe hollow nanocubes, following by immobilization of lactate oxidase (LOx) enzyme on the surface. The electrochemical performance of the system was investigated in the presence of lactate and hydrogen peroxide. An efficient supercapacitor was also fabricated to supply the necessary energy for the performance of the sensing

platform. The asymmetric supercapacitor is composed of positive electrode which contains nickel-cobalt-based nanostructure grown on silver nanowires (NiCoS@NiCoP@Ag NW). The negative electrode was obtained by decorating graphene nanosheets on silver nanowires. A solid state asymmetric electrochemical supercapacitor was made based on potassium hydroxide as solid-state electrolyte and its performance was investigated through cyclic voltammetry (CV) and galvanostatic charge-discharge (GCD) tests. The two units were finally integrated using a home-made circuit board. The results revealed that the constructed biosensor could detect lactate in the sweat sample with a high sensitivity of 421 $\mu\text{A mM}^{-1} \text{cm}^{-2}$ and low detection limit within a wide dynamic linear range. The proposed biosensor paves the way for monitoring lactate and is suitable for the next generation wearable fitness applications.

Biography

Elham Asadian obtained her PhD in 2016 from Sharif University of Technology, Iran, where she worked on electrochemical sensing platforms based on graphene nanostructures. Currently, she is an Assistant Professor at the School of Advanced Technologies in Medicine, Shahid Beheshti University of Medical Sciences. Her current research interest lies in the development of wearable biosensors, as well as the development of nanostrategy-based drug delivery systems and tissue engineering.

Health coaching and transportation assistance intervention at a free Ophthalmology homeless shelter clinic

Lauren Hennein¹ and Alejandra G. de Alba Campomanes²

1Department of Ophthalmology, Rady Children's Hospital – San Diego; University of California San Diego, USA

2Department of Ophthalmology, University of California San Francisco, USA

Purpose: Eye health in the homeless population is important, yet follow-up to referral appointments in this population remains low. The purpose of this study is to investigate the association of health coaching and transportation vouchers with follow-up rates at a free ophthalmology homeless shelter clinic.

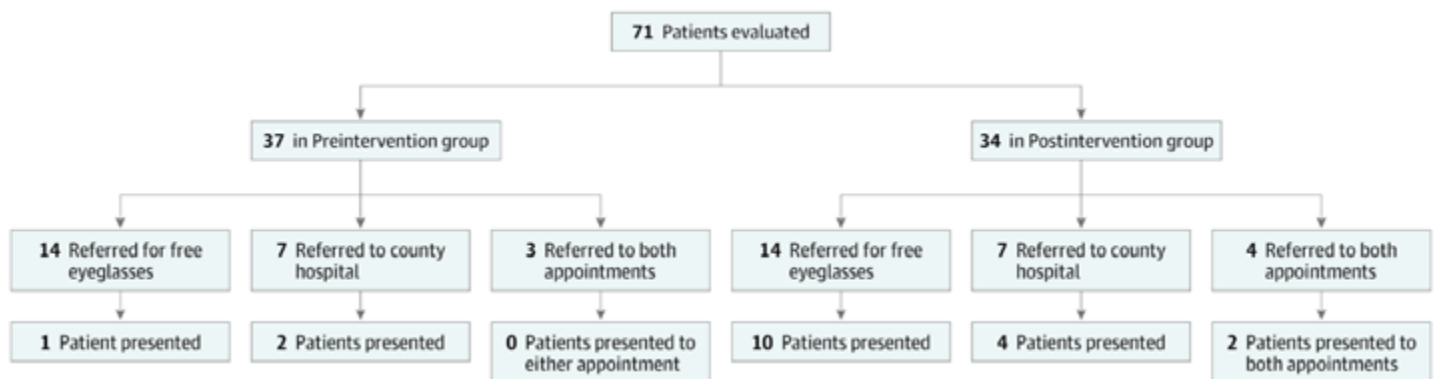
Methods: A prospective cohort study was conducted from January 9, 2019, to March 4, 2020, among all 71 patients evaluated at a free ophthalmology clinic at a single homeless shelter in San Francisco, California. If indicated, patients were referred for advanced ophthalmologic care at a county hospital and free eyeglasses from a nonprofit organization. The primary outcome was follow-up rates to referral appointments. The secondary outcomes were prespecified baseline variables hypothesized to be associated with follow-up. The intervention began September 4, 2019. Follow-up rates were compared between the pre-intervention (n = 37) and post-intervention (n = 34) groups.

Results: Among the 71 patients, 50 (70.4%) were men, and the mean (SD) age was 51.9 (12.4) years. A total of 28 patients (39.4%) were referred for free eyeglasses, 14 (19.7%)

to the county hospital for advanced care, and 7 (9.9%) to both. Of those referred, the difference in follow-up from the post-intervention to pre-intervention groups was 53.8% (95%CI, 39.8%-67.9%; P < .001). Compared with patients who did not follow up, those who did had a mean difference of 59 more days at the shelter (95%CI, 39-80 days; P = .003). Among patients with a visual acuity of 20/40 or worse in the better-seeing eye, the mean difference between those who did not follow up and those who did was 61% (95%CI, 44%-78%; P = .003). The mean difference in follow-up between patients who were born in the US and patients not born in the US was 89% (95%CI, 79%-98%; P = .02). Of those in the post-intervention group, the difference in presentation to follow-up for patients with a high school diploma compared with those without was 59% (95%CI, 37%-81%; P = .001).

Conclusions: This study suggests that a health coaching and bus token intervention improved follow-up rates at a free ophthalmology homeless shelter clinic by at least 39.8%; this improvement supports considering implementation of this intervention when developing public assistance programs if independent corroboration is provided.

Figure



Biography

Dr. Lauren Hennein is an ophthalmologist at Rady Children’s Hospital and the University of California San Diego. She completed her medical degree with distinction from the University of California San Francisco School of Medicine. She completed her internship at Scripps Mercy Hospital in San Diego and her ophthalmology residency at the University of California San Francisco. Dr. Hennein completed a fellowship in pediatric ophthalmology and adult strabismus at Boston Children’s Hospital; Harvard Medical School. Dr. Hennein is a member of the Phi Beta Kappa Honor Society and Alpha Omega Alpha Honor Medical Society. She was selected as a 2021-2022 Heed Fellow. She received the UCSF Garcia Asbury Award for Best Clinical Research and was elected to the UCSF Muriel Steele Society Influential Women in Surgery Honor Roll. Dr. Hennein is passionate about serving the underserved and founded the UCSF Ophthalmology Homeless Shelter Clinic. Dr. Hennein specializes in comprehensive pediatric ophthalmology including congenital cataracts and adult strabismus.

Intervention targets for disease prevention using systematic analysis of molecules at different biological levels

Azam Yazdani and Jochen D. Muehlschlegel

Brigham Women's hospital, Harvard Medical School, USA



A key challenge in elucidating disease mechanisms is to understand the topology and dynamics of relationships between individual underlying factors that contribute to disease. Addressing this challenge requires systematic approaches that combines different, often disparate knowledge and skills including statistics, computer science, and fundamentals of biology and medicine, along with an ability to interpret results that are unfamiliar to the field.

Using systems approaches and integrating genetics with other omics, such as metabolomics and transcriptomics, we construct data-driven networks which represent the underlying biological networks. Linking the networks to disease endpoints, we control for confounding factors and identify biomolecules for intervention to prevent disease. I will review

these steps through applications on real data with clinical validation of the novel findings.

We identified metabolic networks and augmented them with principles of Mendelian randomizations. We then linked the networks to heart failure risk. Controlling for confounding by other metabolites, we identified metabolites with direct effect on heart failure risk, including both metabolites with reduction and elevation in heart failure risk, where some of them were influenced by diet and some influenced significantly by genetic variation.

To identify molecular mechanisms underlying ischemic heart failure, we identified the effect of ischemia on expression of the quantitative trait loci in human myocardium and also identified the causal genes linked with myocardial injury in a 2-sample Mendelian randomization.

Biography

Dr. Yazdani is among the researchers who are addressing challenges in modern biomedical research. To understand biomolecular processes of disease progression, she has been working in both areas of developing and applying approaches to systematically analyze large-scale multi-omics data (i.e., genetics, metabolomics, transcriptomics, etc.) in terms of causality.

Dr. Yazdani is well educated in the areas of statistics and computer science through her study at Shahid Beheshti University in Tehran (formerly the National University of Iran), Friedrich Schiller University of Jena (Germany), and the University of Cambridge (England). After receiving her Ph.D. in causality and machine learning in 2013, Dr. Yazdani started her training in the same year, in Human Genetics as a postdoctoral fellow at the University of Texas Medical school. Since then, she has been developing and applying systems approaches to unravel molecular underpinnings of diseases. In 2022, she was appointed as a Member of the Faculty of Medicine at Harvard Medical School.

Training the next generation of physician communicators to fight health misinformation

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¹University of Minnesota, USA

²Stanford University, USA

³Johns Hopkins University, USA

The COVID-19 pandemic and the subsequent spread of related health misinformation have highlighted the need for more health care professionals to produce and share accurate health information to improve health outcomes and health literacy worldwide. Yet few programs address this problem by training health care professionals how to approach universal topics in approachable ways. One such program, the Stanford Global Health Media Fellowship, aims to train medical students and residents in public communication strategies and streamline techniques for widespread use, which will be communicated through this presentation. Each year a physician-in-training completes a yearlong fellowship that includes journalism study at Stanford, exposure to a national news network (previously NBC and ABC, now CNN), and a placement at an international site. During the year-long program, fellows also complete a capstone project tackling a global health equity issue. Since 2011, 10 fellows have completed the program, and they have acquired skills in

reporting, writing, multimedia, social media, and medical communications. During the news network rotation, they have completed more than 200 medical news pieces and improved the quality of the health information in a myriad of other pieces. Alumni have continued to write and report on medical stories throughout residency, other fellowships, and as practicing physicians. One alumna is now a medical news producer at CNN. Expanding high-quality training in medical journalism for physicians through partnerships with journalism schools; communications departments; and local, national, and international journalists can greatly improve physicians' ability to communicate with the public. It also has the potential to greatly improve the health information the public receives. Educators should consider embedding mass health communications training in medical education curricula and increasing opportunities for physicians to engage with diverse public audiences.

Biography

Gina Yu, MD is currently serving as a resident physician at Stanford University. As a former Stanford Global Health and Media Fellow and CNN Health Fellow, she believes the foundation for practicing good medicine derives from properly capturing the patient's perspective, and she strives to emphasize the power of narrative and storytelling within medicine. Her passion is in advocating for the medically disenfranchised. She also understands the powerful role media can play in widespread health literacy and hopes medicine can harness this resource to allow everyone access to health information, as everyone should have the right to be educated about their health. Her research interests are in ophthalmology and the development of cost-effective, innovative treatment and diagnostic strategies.



Candidate prioritization of disease genes using deep graph models

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¹York University, Canada

²K.N. Toosi University of Technology, Iran

The diagnosis of disease genes basically takes place through two steps, first, the selection of candidate genes for the disease, and next, testing of candidate genes in order to determine the disease true genes. Since the detection of disease genes from a large volume of candidates by use of laboratory methods is very expensive and time-consuming, computational and artificial intelligence-based methods are used prior to the laboratory work to make the best candidate selection. In the current research, we have proposed a new semi-supervised learning method based on graph convolutional neural networks (GCNN) using a novel constructing feature vector for each gene. In the proposed method, first, we construct three feature vectors for each gene using terms from the Gene Ontology (GO) database. This feature vector is the extended version of what we applied in our previous

research. Then, we train a graph convolution network on these vectors using protein-protein interaction (PPI) network data to identify disease candidate genes. Our model discovers hidden layer representations encoding in both local graph structure as well as features of nodes. This method is characterized by the simultaneous consideration of topological information of the biological network (e.g., PPI) and other sources of evidence. Finally, a validation process is done to demonstrate the efficiency of our method. The experiments on 16 diseases genes demonstrate that the proposed method achieves the best results, in terms of precision, the area under the ROC curve (AUCs), and F1-score values, when compared with eight state-of-the-art network and machine learning-based disease gene prioritization methods.

Biography

Ali Ahmadi received his M.Sc. and Ph.D. in Artificial Intelligence and Soft Computing from Osaka Prefecture University, Japan in 2001 and 2004, respectively. He worked as a senior researcher in Nano-device Research Center at Hiroshima University, Japan during 2004–2007. He has been with K.N. Toosi University of Technology from 2007 where he has worked as the head of faculty of computer engineering during 2013-2017 and head of IT research center during 2013-2021. He has managed many large research projects in the field of semantic data mining and big data analytics in recent years. He is currently as an adjunct faculty with York University of Canada. His research interests include: Human Computer Interface, semantic text and image mining, big data and information fusion, virtual reality and artificial life.



Implication of Serial Coronary CT Angiography for Prevention of Atherosclerotic Cardiovascular Disease

Suraj Dahal

*Virginia Commonwealth University (VCU)
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Coronary CT Angiogram was predominantly utilized to detect coronary diameter stenosis for several years. However, with recent advances in techniques to detect atherosclerosis, coronary CT angiograms have been increasingly used to measure plaque burden and further explore plaque characteristics. High-risk plaques, total plaque volume, low-density non-calcified plaques, and calcified plaques are some of the types of plaque characteristics that is now possible to be detected with the help of coronary CT Angiogram. There are numerous clinical trials that have utilized coronary CT angiography to demonstrate the potential benefits of

Icosapent ethyl (Vascepa), statins, apixaban, rivaroxaban, aged garlic extract, biologic agents, and omega-3 fatty acids in reducing coronary plaque progression. In addition to the coronary CT Angiogram, a non-contrast cardiac CT scans (calcium scan) can quantify coronary artery calcification (CAC). These calcifications (CAC) are excellent predictors of future cardiac events, and therefore, also provide an opportunity to start preventive therapy like statins and aspirin. In this presentation, I will be discussing the roles of coronary artery calcium scan and coronary CT Angiogram in preventing atherosclerotic cardiovascular disease.

Biography

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



Role of inhalational Aztreonam lysine in lower airway infections in Cystic fibrosis: An updated literature review

Mehwish Zeb¹, Sujan Poudel^{2,3,4}, Sai Dheeraj Gutlapalli¹, Ijeoma A Toulassi¹, Varshitha Kondapaneni and Ivan Cancarevic¹

¹Internal Medicine, California Institute of Behavioral Neurosciences and Psychology, USA

²Family Medicine, California Institute of Behavioral Neurosciences and Psychology, USA

³Psychiatry and Behavioral Sciences, California Institute of Behavioral Neurosciences and Psychology, USA

⁴Internal Medicine, California Institute of Behavioral Neurosciences and Psychology, USA

Cystic fibrosis (CF) is an inherited disorder most prevalent in the Caucasian population, characterized by a functional abnormality of the transmembrane conductance regulator protein that leads to a wide array of complications, including chronic lung infections. *Pseudomonas aeruginosa* (PA) is a frequently acquired microbe in CF patients and is associated with deterioration in pulmonary function and increased mortality. Inhaled anti-infective agents are an established curative therapy for CF airway infections, especially with chronic PA lung disease. Amongst them, aztreonam lysine for inhalation (AZLI) is an aerosolized monobactam antibiotic aztreonam, approved for use in CF patients nearly a decade ago. This literature review aims to explore studies based on the efficacy, safety, and tolerability of AZLI

use in CF patients with pulmonary infections. We searched for all the relevant articles present in PubMed, Google Scholar, Cochrane Library, EMBASE, ClinicalTrials.gov, and Journal of Cystic Fibrosis for our data collection from 2000 to 2020. The use of AZLI has substantially improved lung function, respiratory symptoms, and remarkably reduced sputum PA density in CF patients, thereby improving the patient's overall quality of life. The adverse effects reported were compatible with CF lung disease. Hence, inhalational therapy with AZLI is highly efficacious and safe in the management of chronic airway infections. More clinical trials need to be conducted in the future to assess its long-term clinical benefits and adverse events as well as to explore the role of AZLI in the setting of acute lung infections.

Biography

I'm Dr mehwish zeb, medical graduate, currently doing training in one of renowned institute of Michigan, USA in internal medicine. Each day in medical residency brings new challenges and learning opportunities for me. On a personal level, I have an adaptable nature and easy going with people. One a side note, I have been involved in community services like breast cancer awareness. I love to do cooking and try new recipes, collecting handicrafts and I am a doting mother of beautiful infant.



Optimal biomarker cutoff identification and validation

Jianan Hui¹ and Wenchuan Guo²

¹Servier Pharmaceuticals, USA

²Seagen Inc., USA

Advances in molecular technology have enabled the new drug development to shift toward targeted therapy where a subgroup of patients is more likely to benefit from the treatment over the general population. To identify the target patient population, a potential predictive biomarker is often investigated to dichotomize the patient population into a marker-positive and marker-negative group. Under many circumstances, the potential predictive biomarker is measured on a continuous scale. Besides, assuming the biomarker under investigation is predictive of the treatment effect, selection of a higher threshold value would reduce the marker-positive patient population size and potentially the enrollment speed if enrichment is desired.

On the other hand, selection of a lower threshold value would dilute the efficacy signal. It is then of interest for clinical trial designs to evaluate the threshold value that optimizes the balance between the size of the marker-positive group and the efficacy effect size. In particular, we propose to first estimate the threshold value by treating it as a parameter in the likelihood function and then derive the simultaneous confidence intervals for efficacy around the estimated threshold value and optionally, a few other candidate threshold values. This procedure would allow for rigorous and flexible decision making by taking into consideration both the size and effect of the target population.

Biography

Dr. Jianan Hui is an Associate Director of Biostatistics at Servier Pharmaceuticals. She currently leads several pivotal studies and global submissions in hematology. Prior to her role at Servier, she worked at Boehringer Ingelheim Pharmaceuticals where she served as the project statistician for various projects in immunology, oncology, cardiovascular and metabolism. Her research interests include Bayesian statistics, adaptive design, statistical go/no-go decision making and statistical learning. Jianan received her Ph.D. in Applied Statistics at University of California, Riverside with research focuses in Markov chain Monte Carlo and spatiotemporal Bayesian Hierarchical modeling. Prior to that, she received two B.S. degrees in Mathematics from University of Texas at Arlington and in Information and Computational Science from University of Science and Technology Beijing.



Artificial Intelligence Ethical Principles in Public Health Organizations

Patricia G. R. de Almeida

Brazilian Chamber of Deputies, Brasilia, Brazil

PPGA, University of Brasilia, Brazil

In the public sector, one can see the growth of decision makers' rhetoric regarding artificial intelligence (AI) expectations for government agencies. Simultaneously with the deepening research on a variety of AI systems implementations, there is a growing awareness of risks when practices that preserve ethical principles are not being followed. Among the most frequent impacts are the loss of privacy, loss of autonomy, biased conclusions and results, discrimination, as well as psychological, physical and financial harm, even the loss of human life.

Considering the imminent approval of legislation to regulate AI in many countries, and the large gap between discussions about ethical principles and what really needs to be done on a day-to-day basis in public agencies, organizations have sought clarity on the steps they need to follow.

Especially, in cases of higher risk AI systems,

such as those that directly interact with human lives in public health agencies, transformations are needed in processes and practices distributed at the strategic, tactical and operational levels. For such purpose, all people involved in the project and operation of the AI system, should know their role in the production of a technology that needs to encompass social and ethical aspects.

Recent research in 17 countries revealed the practices and processes most associated with the implementation of AI governance in public organizations, as well as the main challenges faced by such organizations and how they have presented solutions to overcome them.

Based on the described scenario, it is intended to present, how processes and practices can be combined to enable the implementation of AI governance in public health organizations, in a way to preserve ethical principles and minimize risks to people.

Biography

Patricia is coordinator of Innovation and Digital Strategy at Brazilian Chamber of Deputies, Master degree on electrical engineering at the Federal University of Rio Grande do Norte and PhD on Business Administration at University of Brasilia, where have been researched artificial intelligence governance and regulation.

She where has been involved in many projects related to artificial intelligence governance, digital transformation, digital parliament, agile methods. She also coordinates the innovation hub on open data of the Inter-parliamentary Union.



Through a Glass Darkly: A clinical journey

Linda A. Chernus

University of Cincinnati College of Medicine, USA

The use of the empathic mode for engaging and communicating with patients has become widely accepted by many psychoanalytic psychotherapists since Heinz Kohut's early formulations (Kohut, 1971; Atwood & Stolorow, 2014.) However, diagnostic understanding based on ongoing empathic immersion with our patients is often complicated because it is continually being modified as we know them more deeply and as transference and countertransference factors influence our perceptions. To illustrate the complexity of diagnosis when it is grounded in ongoing empathic engagement with our patients, I describe in detail my treatment of an elderly

woman who initially presented with severe and acute symptoms of psychological, cognitive, and physical impairments. As the treatment has progressed, my diagnostic understanding has been continually modified to include a combination of psychodynamic and organic factors including PTSD, intense unresolved grief, and extreme feelings of guilt and need for subsequent punishment. Adding further to this conundrum, this patient's treatment has been challenged by the complexity of working remotely during the Covid pandemic, which will become increasingly problematic as our patient populations continue to age.

Biography

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



Role of optical coherence tomography angiography imaging in patients with diabetes

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Purpose of review: Ocular manifestations in patients with diabetes mellitus (DM) can present as microvascular changes. These microvascular changes can be challenging to identify on exams, and imaging technologies have commonly aided in the diagnosis and management of patients with DM. Optical coherence tomography angiography (OCTA) provides noninvasive image segmentation of various layers of the retina and choroid. Also, post-processing of images and associated quantitative measurements offer potential clinical enhancements. Our aim is to review the current evidence on the utility of OCTA for patients with DM.

Recent findings: Research suggests OCTA to potentially provide potential clinical

enhancements and alternative methods in detecting subclinical manifestation of diabetic retinopathy, staging diabetic retinopathy, management of diabetic macular edema, and monitoring of systemic markers in patients with diabetes mellitus. OCTA is a promising but relatively new modality, and differences in terminology, research designs, and image processing techniques provide a difficult landscape to navigate. Standardization within further validation is needed to determine the extent of OCTA's clinical utility, but the current literature suggests the potential for earlier detection of ocular manifestations in patients with DM, additional objective measurements for grading and management, and opportunity for additional biomarkers for treatment outcomes.

Biography

Patrick is from Raleigh, North Carolina, and earned his medical doctorate at the University of North Carolina School of Medicine. As a medical student, he served as the Ophthalmology clinic director and clinic coordinator for the student-run clinic. He co-founded an organization aimed at improving vision screening services for elementary school children. Furthermore, his ongoing engagement in research is seen through his selection as a Howard Holderness Distinguished Medical Scholar. He is currently undergoing residency training in Ophthalmology at the University of North Carolina, where he continues his passion for research through his interests in ophthalmic education, ophthalmic imaging, artificial intelligence, telemedicine, and public health.

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

T. Azizi

University of Wisconsin-Madison, USA

Neuro-degenerative diseases significantly influence the gait behavior and the ability to move. To explore the etiology of neuro-degenerative disease, it would be useful to characterize gait dynamics. The purpose of this study is to classify different neuro-degenerative diseases using fractal geometry. We use Gait Dynamics in NeuroDegenerative Disease Data Base including recordings from patients with Parkinson's disease ($n = 15$), Huntington's disease ($n = 20$), or amyotrophic lateral sclerosis ($n = 13$) and 16 healthy control subjects are also included (Hausdorff JM et al., 2000). The vibration analysis using power spectral densities (PSD) method has been carried out to discover whether some type of power-law scaling exists for various statistical moments at different scales of these databases. Using Discrete Wavelet Transform (DWT) and Wavelet Leader Multifractal (WLM) analysis, we explore the possibility that these recordings belong to the class of multifractal process for which a large number of scaling exponents are required to characterize their scaling structures. A non-linear analysis called the Fractal Dimension (FD) using Higuchi algorithm has been performed to quantify the fractal complexity of recordings. According to our results, we noticed that neither the power spectral densities nor the Higuchi algorithm to find the fractal dimension alone were sufficient to separate different classes of patients and healthy people. In addition, when multifractal analysis and scaling exponent were

used as a classifier, the three classes could not be well separated. However, this study revealed that we have a wide range of exponents for some of the gait recordings which indicates they have multifractal structure and they need to be indexed by different exponents as we decompose them into different subsets. In other words, these multifractal subjects require much more exponents to characterize their scaling properties compared to monofractal gait recordings which their spectrum displays a narrow width of scaling exponent. Another important outcome from our multifractal analysis is recognizing obvious changes in the shape of $D(h)$ curves for some of the gait recordings which is crucial in finding the best strategies to better controlling the gait mechanisms in different neuro-degenerative diseases. Although the vibration analysis, fractal dimension and multifractal analysis may not be able to classify gait recordings, however, they can be used as comprehensive frameworks to further analysis, characterize and compare the complexity and fractal behavior of gait recordings and data structures of different neurodegenerative diseases in clinical database. Likewise, beside the Higuchi algorithm to find the fractal dimension as a complexity measure for the gait recordings, it will require much more efforts and further clinical analysis to find a specific threshold which make the fractal dimension to be considered as a biomarker and diagnosis tool for different neuro-degenerative diseases.



3rd International Conference on
**Future of Preventive
Medicine & Public Health**

March 30–31, 2023

Biography

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



Accuracy of ultrasound guided knee injections

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²Interventional Pain Medicine, Brooklyn Premier Orthopedics, USA

³White Plains Hospital, USA

Knee osteoarthritis is commonly treated with viscosupplement injections. However, there is a lack of knowledge about how the injectate spreads within the knee following an injection. Using ultrasound and fluoroscopy, this study sought to assess whether injectate introduced into the suprapatellar recess disperses into the tibiofemoral joint.

This was a descriptive case series and design used a reliability test-retest study. The setting was an outpatient rehabilitation center at an academic teaching hospital. There were fourteen adults between 44 and 80 years old with knee osteoarthritis, defined as a grade 2-4 on the Kellgren and Lawrence Osteoarthritis scale, who were candidates for hyaluronic acid injections. Participants received ultrasound guided knee injections into the suprapatellar recess with hyaluronic acid and contrast. Post-


injection fluoroscopic images were taken. The participants then underwent a walking protocol. Post-walking fluoroscopic images were then taken.

The main outcome measures were determining of injectate introduced into the suprapatellar recess localizes to the tibiofemoral joint following a walking test. This was completed by an interrater agreement of two radiologists and one interventional physiatrist.

Fluoroscopic imaging confirmed the ultrasound-guided injection of hyaluronic acid into the suprapatellar recess dispersed into the tibiofemoral joint after a walking test in twelve to thirteen of the fourteen cases, depending on the reviewer. Future studies should examine whether the amount of injectate found in the tibiofemoral joint is correlated with patient outcomes.

Biography

Dr. Varlotta received a Bachelor of Science from the University of Pittsburgh and graduated medical school from the New York Institute of Technology College of Osteopathic Medicine. She received the Distinguished Service Award for her dedicated work during medical school. Dr. Varlotta is currently in residency training at Mount Sinai Hospital in the Department of Rehabilitation and Human Performance. Her research participation has included multiple endeavors, including pain after minimally invasive spine surgery and neuromodulation. Dr. Varlotta has published chapters in the topics of cervical spine discogenic pain, shoulder anatomy, patellofemoral knee disorders, nutritional supplements, and peripheral nerve stimulation. Once completing residency, Dr. Varlotta plans to pursue a pain medicine fellowship. Her interests include musculoskeletal pain syndromes and degenerative spine pathology.



Does social comparison and Facebook addiction lead to negative mental health? A pilot study of emerging adults using structural equation modelling

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Recent research has observed that among the ever-increasing young users of social networking sites (e.g., Facebook), some present problematic use similar to other behavioral addictions. While regular use of Facebook is not systematically associated with mental health disorders, its addictive use has been consistently associated with higher level of depression and loneliness. Therefore, further research is needed in studying the separate impacts of regular and addictive Facebook use on young adults' lives. The present study explored the role of Facebook addiction and social comparison on mental health and types of social networking sites (SNSs) usage (i.e., active versus passive usage), hypothesizing that addiction and social comparison will predict negative mental health outcomes and higher SNS usage. The study sample comprised 280

students at a British university. The data were analyzed using structural equation modelling to test for the significance of the relationships between these variables as well as the appropriateness of the overall hypothesised model. Results demonstrated that Facebook addiction significantly predicted depression, loneliness, and both active and passive SNS usage, and social comparison significantly predicted the level of depression significantly. The overall model also demonstrated a good fit which indicates that the hypothesized associations between the variables were strong. It is argued that the association between Facebook addiction and mental health could be a vicious cycle because no causation direction can be excluded. The implications of the study findings and future research directions are also discussed.

Biography

My name is Ma. Lourdes Casingcasing. Currently, I am working as a full time STR worker at an early intervention in psychosis team in CAMEO at Cambridgeshire and Peterborough Foundation NHS Trust. My role entails supporting service users who fall into the first episode in psychosis (FEP) pathway, extended or specialist pathway, by helping them with their journey into recovery. We support people from ages 14-35, but this will change as we transition to becoming an age inclusive service. The work I offer could be supporting them with social inclusion, providing brief psychological interventions or assessing their mental state by critically analyzing their cognition, mood, thinking and/or feeling. Aside from my passion in the field, I am currently undergoing a PhD programme at the University of Nottingham reading into trauma informed care work.



*ACCEPTED
ABSTRACTS*

VIRTUAL EVENT

3rd International Conference on

Future of
Preventive
Medicine &
Public Health

March 30-31, 2023

FUTURE OF PMPH 2023



Human amniotic fluid derived extracellular vesicle biologic attenuates T cell immune response and inflammation



Tania del Rivero, Maria Ines Mitrani and Michael A. Bellio

Organicell, Davie, FL, USA

Amniotic fluid (AF) has been reported to have both regenerative and anti-inflammatory properties and contains a heterogeneous pool of extracellular vesicles (EVs) from different perinatal cell sources. Zofin is an acellular biologic derived from AF and contains naturally occurring EVs. Extracellular vesicles isolated from human amniotic fluid (AF-EVs) have previously been found to modulate inflammation and macrophage infiltration in a mouse model. In this study, we investigated the effects of Zofin and AF-EVs on the T cell immune response in an in vitro cell culture model. Peripheral Blood Mononuclear Cells (PBMCs) were stimulated with Phytohemagglutinin (PHA) to induce the immune response and were

subsequently treated with either a vehicle, Zofin, or concentrated AF-EVs. Both Zofin and AF-EV treatment suppressed PHA-induced T cell proliferation and PHA-induced T cell activation; however, treatment with higher concentrations of AF-EVs had greater suppressive effects. Additionally, both Zofin and AF-EVs reduced PBMC pro-inflammatory cytokine release. AF-EVs were found to be taken up by both CD4+ and CD8+ effector T cell subsets. Overall, this data demonstrates that Zofin and AF-EVs have a robust immunomodulatory effect on T cells and suggests AF-EVs could be used as an immunotherapeutic tool. Zofin is currently under clinical investigation for COVID-19 infection and Post Acute Sequale of COVID-19.



The effects of acute physical activity on executive functions in preschoolers during outdoor play and indoor instructional time



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The design of outdoor play environments may increase time spent in moderate-to-vigorous physical activity (MVPA). Executive functions (inhibitory control, attention, and memory) are known to be influenced by physical activity (PA) in older age groups. The preschool years are an important time for learning as significant social, emotional, and cognitive development is occurring. The preschool setting offers preschoolers an opportunity for PA during play, with peers, both indoors and outdoors. This is important for both PA and socialization. Therefore, the aim of this study was to explore the effects of preschooler PA in two separate environments (indoor/outdoor) on

measures of EFs in preschoolers. Eighteen preschool age (3-5 years) children were recruited for the study. Participants of the study wore an accelerometer for 30 minutes during indoor classroom-based activities and 30 minutes during outdoor PA. Pre and post inhibitory control and simple reaction time assessments were completed for each condition, for a total of four assessments for each participant. One assessment of the inhibitory control task (Arrows) resulted in a significant interaction of time x condition, $F(1,16)=3.42$, $p=.08$, partial $\eta^2=0.18$. These results indicate that performance improved in response to outdoor PA but declined in response to indoor classroom activities.



Experience of tinnitus in adults who have severe-to-profound hearing loss: A scoping review



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Background: Tinnitus is defined as the subjective perception of sound in the absence of an external stimulus. Hearing loss is recognized as the main risk factor for the pathogenesis of tinnitus. However, clinical guidelines for tinnitus disorder provide little direction for those who have severe-to-profound hearing loss including those who are pre-lingually Deaf.

Method: A scoping review was conducted following the Preferred Reporting Item for Systematic Reviews and Meta-analysis extension for Scoping Reviews. Records were included if they reported an evaluation of tinnitus in adults who had severe-to-profound hearing loss. The online databases Ovid (MEDLINE, EMBASE and PsycINFO),

CINAHL, ProQuest, Scopus, and Google Scholar were searched using the search terms 'tinnitus' (as a MESH term) and 'deaf' OR 'profound hearing loss.

Results: Thirty-five records met the inclusion criteria for this review and were catalogued according to three major themes: Impact of tinnitus in deaf adults; Primary treatment of tinnitus in deaf adults; and Cochlear implant studies where tinnitus was a secondary outcome. Tinnitus symptom severity was assessed before and after intervention using tinnitus validated questionnaires in 29 records, with six further records using other assessment tools to measure tinnitus severity. Participants using cochlear implants were included in 30

studies. Medication, repetitive transcranial magnetic stimulation (rTMS), electrical promontory stimulation, and behavioural self-control therapy were each reported in single records.

Conclusion: It is shown that there is very limited research reported in this field. Although this review included many records,

most focused on the provision of cochlear implants for severe-to-profound hearing loss, with assessment and measurement of tinnitus as a baseline or secondary outcome. Largely missing in the literature are empirical studies that seek firstly to understand the nature of the experience of tinnitus by people with no or little residual access to external sound.



Development of microspheres for chemo and Radioembolization in Latin America from the National Atomic Energy Commission of Argentina



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The use of Microspheres (MS) for Transarterial Chemo (TACE) and Radioembolization (TARE) for the treatment of liver tumors has increased worldwide. In Latin America these are not produced. A multidisciplinary group from Bariloche and Ezeiza Atomic Centers (National Atomic Energy Commission, CNEA) and the Nuclear Medicine Centre of the Institute of Oncology Angel H. Roffo (University of Buenos Aires, UBA- CNEA), work in the development, production, and

biological evaluation of MS for TACE and TARE.

Aim: The aim of this work is to present the project of the production of MS for TACE and TARE by CNEA and the biological evaluation by UBA-CNEA.

Materials and Methods: Three MS of 25-45µm are produced: a porous MS of Polyvinyl alcohol/polyvinyl acetate (Patented in 2022) and a porous silicon dioxide MS for TACE, and a glass MS of

⁸⁹Yttrium aluminosilicate (YAS) for TARE, activated to ⁹⁰Y in the Nuclear Reactor RA3 (CNEA). For TACE MSs, doxorubicin (Dox) loading and release were determined. Both MS were labelled with ^{99m}Tc to study detection by SPECT/CT in phantoms. Their biological efficacy was evaluated in vitro in cell culture and the antitumoral effect in vivo in a subcutaneous tumor model in BD IX rats. Radiopacity was tested in every MS by CT.

Results: Both MS for TACE load and release Dox. In vitro, both reduce cell viability and in vivo produce a statistically significant antitumoral effect. Both MS for TACE load ^{99m}Tc and could be detected by SPECT/TC. MS YAS were the only ones radiopaque and were detected by CT in hepatic tissue ex vivo.

Conclusion: In CNEA we have the competence to develop original MS for chemo and radioembolization, facilitating its use in Latin America.



Socioeconomic inequalities and child wellbeing in single parent families



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This work examines whether the increase of single parenthood specifically amongst women in an unfavourable socioeconomic position, has repercussions for child well-being, understood here as material deprivation. The main objective is to analyse the possible differential impact of single parenthood on children's material deprivation in relation to mothers' level of education. Children from single-parent families suffer deprivation mainly due to their parents' formation and job insecurity due to is only one breadwinner in their households, usually a woman. However,

the situation of these children may differ between European countries according to gender equality and family policies to improve the socioeconomic situation of these fragile families. The findings suggest that in countries the growth of single parenthood amongst women with a lower educational level may have an impact on child well-being inequality. On the other hand the results also show that gender equality in the labour market reduces child deprivation, especially in families where the parent has a temporary employment and low education. Redistributive family policies have a more limited impact.



How are inequalities shaping the European context? –A reflection



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One of the aims of society is to provide equal access to facilities to both man and women. Additionally, we teach our children that everyone should be treated in the same way – whether we are talking about wages, earning or digital inclusion. Nevertheless, what we face is not exactly what we pray – there are inequalities, related with gender. In this communication, we will evaluate the

digital divide in three stages - access, use and results and relate it to gender and salary gaps in the context of the European Union based on data provided by the OECD and EUROSTAT. A cluster analysis and a comparison of means and a regression analysis show that the influence of the insecurity and the gender wage gap goes beyond the women and affects society.



General M-Estimator processes and their m out of n bootstrap with functional nuisance parameters



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In the present talk, we consider the problem of the estimation of a parameter θ , by maximizing some non-smooth criterion function which depends on an unknown nuisance parameter h , possibly infinite-dimensional. The classical estimation methods are mainly based on maximizing the corresponding empirical criterion by substituting the nuisance parameter by a some nonparametric estimator. We show that the M-estimators converge weakly to maximizers of Gaussian processes under rather general conditions.

The conventional bootstrap method fails in general to consistently estimate the

limit law. We show that the m out of n bootstrap, in this extended setting, is weakly consistent under conditions similar to those required for weak convergence of the M-estimators. The aim of this work is therefore to extend the existing theory on the bootstrap of the M-estimators. Examples of applications from the literature were given to illustrate the generality and the usefulness of our results. Finally, we investigate the performance of the methodology for small samples through a short simulation study.

“
**The strong black
woman archetype
and therapeutic
outcomes: Examining
relationships among
women with childhood
sexual abuse histories**
”

Bibi Aneesa Subhan and Veronica E. Johnson

John Jay College of Criminal Justice, USA

The Strong Black Woman archetype (SBWA) describes a cultural pattern where Black women are expected to and present as physically and mentally strong, regardless of past and ongoing stressors. The SBWA has served the historical purpose of aiding survival for Black women throughout years of racial and gender oppression. However, the practice has also been associated with adverse mental health and with behaviors, such as self-silencing, that could impede therapeutic process. The purpose of this empirical study was to investigate the relationships between adherence to the SBWA and therapeutic outcomes (i.e., satisfaction with therapy, satisfaction with therapist, perceptions of one’s global improvement in therapy) among Black women with childhood sexual abuse histories—a subpopulation at increased need for mental health treatment and who may be susceptible to high levels

of adherence to the SBWA. Black adult female participants (N=103) completed an online survey including a demographic questionnaire, an assessment of SBWA endorsement, and treatment outcomes from their current or most recent therapy experience. Three hierarchical linear regressions were conducted with SBWA as the independent variable and (i) satisfaction with therapist, (ii) satisfaction with therapy, and (iii) global improvement as the dependent variables. Consistent with our hypotheses, we found that SBWA inversely predicted satisfaction with therapy and the therapist. While the relationship between SBWA and global improvement was statistically significant, the finding was not practically significant. Still, our study findings suggest that higher levels of SBWA predict less favorable therapy outcomes. Future research directions and clinical implications are discussed.



A review of medico-legal cases and patient complaints in relation to gynaecology care



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Department of Obstetric and Gynaecology, Coombe Women and Infants University Hospital, Ireland

Introduction: Litigation in obstetric and gynecological practice has become an aspect of medical practice that must be addressed in order to provide adequate professional protection. The burden of litigation and written complaints in gynaecology is a concern to any hospital.

Objectives: To review patient complaints and filed legal cases arising from the gynaecology service and to consider changes in practice in order to increase patient safety and satisfaction.

Methodology: This study was carried out in the Coombe Women and Infants University Hospital (CWIUH). The CWIUH has a patient complaints department that assesses and addresses all written complaints to the service and a formal department that deals with litigation cases. Both department's data bases were accessed by the study team after anonymising the complainant/litigant and any named individual clinician or health care worker and categorised according to

the Health Service Executive charter and the CWIUH complaints categories.

Results: All cases were classified by the same people (CM and HA). There were 159 complaints made by 129 women and 33 cases of litigation brought by 31 women. The complaints were related to; access 55/159 (34.6%), safe and effective care 44/159 (27.7%) and communication 31/159 (19.5%). Litigation cases were related to safe and effective care in 97% of cases. Complaints and litigation cases comprised two significantly different aetiologies (Chi-sq 142, $p < 0.001$).

Conclusion: In this study the majority of causes of litigation in gynaecology are related to complications and diagnosis. In contrast complaints were spread across many categories and formed a different spectrum of issues.

Any measures to address complaints and litigation are likely to be different and any results will be specific.

Table 1: Complaints (n=153) received from 129 women and litigation cases (n=33) brought by 31 women categorized by the combined HSE standard of good practice and the CWIUH complaints classification

Chi-sq 142, p=<0.001

CATEGORY	Complaints n(%)	Litigation cases n (%)
ACCESS		
delay	21	0
access other	16	0
inappropriate clinician / access to clinician)	10	1
hospital facilities	4	0
carpark	4	0
Total	55 (34.6%)	1 (3%)
COMMUNICATION		
communication- lack of information / want more information	16	0
communication skills- poor presentation of information / tone of voice /poor patient management	13	0
communication - poor explanation	1	0
communication - incorrect information	1	0
Total	31 (19.5%)	0
SAFE AND EFFECTIVE CARE		
complications	1	15
diagnosis	2	13
continuity of care	3	0
treatment and care	31	4
lack of staffing	1	0
health care records	4	0
hygiene / infection prevention and control	2	0

Total	44 (27.6%)	32 (97%)
DIGNITY AND RESPECT		
dignity and respect - inappropriate behaviour	8	0
discrimination	0	0
Total	8 (5%)	0
PARTICIPATION		
participation	1	0
consent	1	0
Total	2 (1.3%)	0
PRIVACY		
privacy	6	0
Total	6 (3.8%)	0
IMPROVING HEALTH		
improving health - catering	0	0
Total	0	0
ACCOUNTABILITY		
accountability- finance	13	0
Total	13 (8.2%)	0
TOTAL	159	33



Hybrid learning in nursing programs: A scoping review



Claire Song^{1,2} and **Daniel Yorke**¹

¹*Douglas College, Canada*

²*University of British Columbia, Canada*

Objectives: This review set out to explore nursing students' perception of hybrid learning methods and assess these methods' efficacy compared to traditional face-to-face and online learning methods.

Design: Following Arksey and O'Malley's (2007) five-stage framework, a scoping review methodology was used.

Data Sources: Articles published from 2001-2021 were gathered from the following electronic databases: CINAHL, MEDLINE, EBSCOhost, PsychINFO and Google Scholar. Review Methods: After the initial screening of abstracts, 124 articles were identified by the researchers as potentially relevant; subsequently, 16 articles were chosen to be included in the study, as determined by the inclusion criteria.

Results: The perception of hybrid learning methods among nursing students was generally positive, with a few notable

exceptions. However, the evidence for the superiority of hybrid learning methodology compared to other learning methodologies in the medical context appears uncertain at this point in the research. An explanation for this finding is that one methodology may outperform the other on certain measures of educational success but be outperformed by another methodology on another measure. Factors across teaching situations such as instructors' personality, design of online teaching platform, individual class dynamics, student motivation levels, and course content are also important to consider when evaluating the success of a methodology.

Conclusion: Hybrid learning is a feasible and innovative way to deliver nursing skill classes if used appropriately. More research is needed to elucidate which learning contexts can be ideally matched with a specific learning methodology.



Modifying the traditional school calendar for a post-COVID world: Adjusting school calendars for improved public health and academic outcomes



Daniel Jones

Saint Louis University, St. Louis, USA

The COVID-19 pandemic has provided a period for re-examination of how the world schools its children. Policy makers are considering how to address myriad academic and health-related challenges during this tenuous post-COVID era in primary and secondary education. This presentation is a summary of the growing body of research concerning the impact of school calendars on public health and student outcomes. Potential school calendar change will be discussed in the aftermath of the COVID-19 pandemic. Specifically, modifying the traditional school calendar to a balanced approach - whereby longer breaks and intersessions are interspersed throughout the year - has been attempted and scrutinized for decades providing varying results on academic achievement; however, recent studies suggest calendar changes may have an impact on viral transmission. As the world still grapples with coronavirus outbreaks, and as there will likely be a higher frequency of viral outbreaks and pandemics

moving forward, schools need to take proactive stances in simultaneously keeping students healthy and ensuring high levels of achievement. The question that will be addressed during this presentation is whether a year-round or extended school calendar could counteract COVID-19 learning loss, in addition to addressing achievement gaps, reducing viral transmission, and supporting vulnerable student populations. The goal of this presentation is to provide public health advisors, policy makers, and other concerned leaders with information to help underpin decisions to be made in myriad communities about when primary and secondary schools should be in session. The presentation will also address recent research regarding viral transmission among students in school throughout the world. Abstract should give clear indication of the objectives, scope, results, methods used, and conclusion of your work. One figure and one table can be included in your results and discussions.



Impact of primary care screenings for Mental illness



David Anibal

Massachusetts College of Pharmacy and Health Sciences, USA

Mental illness often emerges in adolescence to young adulthood. Current screening for mental illness in primary care includes the Generalized Anxiety Disorder scale-7 (GAD-7) and Patient Health Questionnaire (PHQ-9). A literature review was conducted which indicated the importance of early screening, importance of the physician-patient relationship, current inadequacies in mental illness treatment, and the poor prognosis if left untreated. This literature review was viewed through the lens of Melies's Transitions theory which examines transitions such as new mental health diagnosis and how outsiders can support individuals during their transition. Gaps were found in the literature relating to a small sample sizes decreasing generalizability of the research, lack of studies on the effectiveness of the GAD-7 and PHQ-9, and lack of research surrounding treatments in primary care. It was determined further research was necessary to overcome these gaps found in the literature and to build a stronger basis for the findings of this project. Implications for practice in the primary care setting include; PHQ-9 and GAD-7 with every patient as early as possible; the development of the provider-patient relationship; and advocacy for better mental health services.



**Social change
and health
care: Igniting a
movement**



Dawit Rumicha

University of Michigan, USA

The workshop will be grounded in the Social Change Model of Leadership developed at the University of California - Los Angeles with a specific focus on the individual level. Once the theoretical framework is introduced, the presentation will shift toward applying constructs of the individual level to healthcare delivery. Following the transition, there will be an

emphasis drawn on the concept of being a change agent and how an individual can create positive change in healthcare delivery. The presentation will integrate 3 short clips to foster reflection and set the stage for a take-home challenge at the end. The goal of the take-home challenge is to have the audience practice authentic gratitude.



Cost-effectiveness of 5 fraction and partial breast radiotherapy for early breast cancer in the UK



Duncan Wheatley

Royal Cornwall Hospital, UK

The FAST-Forward and FAST trials have planned identify a five-fraction schedule of adjuvant radiotherapy (radiation therapy) delivered in 1 week that is non-inferior in terms of local cancer control and is as safe as an international standard 15-fraction regimen after primary surgery for early breast cancer. The FAST-Forward study met it's primary endpoint showing 26 Gy in five fractions over 1 week is non-inferior to the standard of 40 Gy in 15 fractions over 3 weeks for local tumour

control, and is as safe in terms of normal tissue effects up to 5 years for patients prescribed adjuvant local radiotherapy after primary surgery for early-stage breast cancer. Cost effective analyses subsequently have been published which show that a one week schedule of whole breast and partial breast radiotherapy reduce costs for the UK health system and patients. Data to support this will be presented.



Weight lifting as an adjunct intervention for psychological trauma



Eva Nowakowski-Sims¹, Mariah Rooney², Dana Vigue³ and Savannah Woods⁴

¹Barry University, USA

²LICSW, RYT, USA

³Harvard Medical School, USA

⁴The New School for Social Research, USA

Research has found significant benefits in using exercise as an adjunct treatment for PTSD, depression, and anxiety. Weight lifting for healing trauma is an emerging research area with very few empirically based studies. This study used a qualitative grounded theory approach to explore how weight lifting contributed towards healing and sought to create a clear and coherent theory of practice for its use with persons with a trauma history. Forty-six persons (26=women, 8=men, 6=nonbinary, 5=transgender man, 1=agender), recruited from the Justice Resource Institute's email lists and social media posts, were individually interviewed. Data were analyzed using Charmaz's (2006) constructivist grounded theory strategies. Central themes revealed that past and current trauma

experiences created disconnection fueled by hyper or hypo-vigilance, impulsivity, and dysregulation. Weight lifting healed trauma through the felt sense of the mind-body connection, which created a healthier, more empowered and connected trauma survivor. A follow up study discovered how the six domains of trauma-informed care (safety, trustworthiness and transparency, peer support, collaboration and mutuality, empowerment, voice and choice, and cultural, historical, and gender issues) may be used to design a weight lifting program informed by the lived experiences and unique needs of trauma survivors. Study findings offer important insights to inform the development of trauma informed gym spaces as well as the professionalization of personal trainers in trauma-related competencies.

“ Emerging future health challenges for cities”

G. Briscoe and **G. Ramster**

Royal College of Art, UK

Factors such as population growth, urban migration and climate change, are placing ever greater demands on health around the world. Cities are becoming the frontline in providing the future of healthcare, with more than half of the world’s population now living in urban environments, which is forecasted to near 70% by 2050. There is therefore a growing need to identify emerging and future challenges that cities will face, identifying trends for priority issues such as ageing populations, pandemic risks and climate change, as well as indicators of current and expected future readiness for these challenges.

We used design research to determine emerging and future challenges for cities to deliver healthcare. This included eight 40-minute phone interviews and six workshops with subject matter experts in healthcare provision from cities across three continents (North America, Europe, Africa), as well as literature reviews. The three speculative design workshops involved participatory design research, exploring design futures to identify

emerging and future challenges. The qualitative data collected was synthesised with existential risks identified from literature reviews, grouping key challenges. We then, through creative engagement approaches with experts and designers in a final workshop, identified indicators for these key challenges.

We have determined emerging and likely future health challenges for cities, ranging from social cohesion to emerging technologies, including age-friendliness, green space, and drug resistance; grouped them into four areas: ‘ageing & lifestyle’, ‘environment & climate’, ‘innovation & technology’, and ‘other existential risks’; and identified indicators for current and future readiness. By synthesising the knowledge of experts with literature reviews, we have determined the key emerging and future challenges facing cities. Knowing these likely health challenges, we can prepare to manage them better. Furthermore, policymakers and researchers working in public health and healthcare provision can make use of the identified indicators.

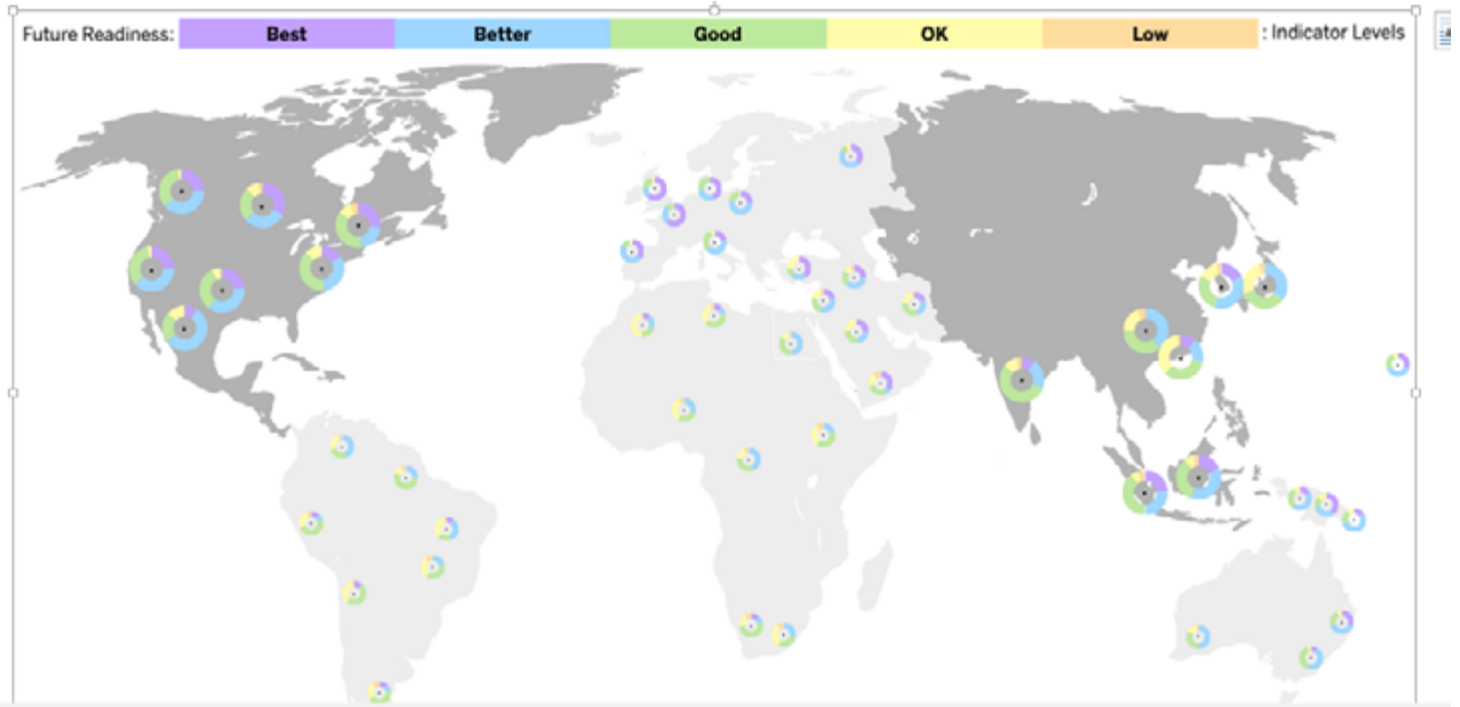


Figure 1: Sample visualisation of city readiness for emerging and future health challenges.



Glycemic response of volunteers to the consumption of supplements and food formulas for oral and/or enteral nutrition



R. Giovanna², G. Eliana¹, A. Camila², R. Marina², V. Jady² and R. Mariana²

¹Food Research Center (FoRC), Universidade de Sao Paulo, Brazil

²Department of Medical Affairs, Danone Brazil LTDA, Sao Paulo, Brazil

Purpose: The objective of this study was to determine the glycemic index (GI) and glycemic load (GL) of three products from the Brazilian market used as a supplement and food formula for oral and/or enteral nutrition.

Methods: The volunteers (n=16) attended Food Research Center weekly for six weeks after a 10–12-h overnight fasting. Blood was sampled in the fasting state (t=0) and at 15 min, 30 min, 45 min, 60 min, 90 min, and 120 min after starting to eat each evaluated meal: glucose solution (reference food, three times) and three products: Cubitan® vanilla (specific for wounds healing), Diasip® chocolate, and Diasip® vanilla (diabetic supplements). GI was determined by calculating the area under the glycemic response curve using the trapezoidal rule and ignoring the areas below the fasting line and considering the

GI of glucose to be 100. To determine GL, it was considered the amount of carbohydrates available in a standard serving of the product and GI.

Results: The three products studied showed low GI and low GL (Cubitan® GI=35, GL=6; Diasip® chocolate GI=49, GL=7; Diasip® vanilla GI=47, GL=7), with significant differences from those and the reference food, but no significant difference between them. Similar results were also observed for the blood glucose peak, which occurred 30 min after the consumption of all products.

Conclusions: GI and GL of the products were considerably lower than those of the reference food. The products evaluated presented a low glycemic response, shown by a glycemic response curve with a slightly accentuated shape and no high peaks.



Teachers' perceptions and attitudes towards domestic violence and their role in supporting students: A mixed methods study



G. Dass, J. Kidger, H. Lambert and D Knipe

University of Bristol, UK

Background: Adverse childhood experiences (ACEs) such as child maltreatment or exposure to domestic violence (DV) in children and adolescents (C&A) have harmful effects on their overall health (Hughes et al., 2017).

Having a secure attachment figure can improve child resilience to trauma and distress caused by DV (Holt, Buckley and Whelan, 2008). While a non-violent parent or grandparent can possibly play this role, it could be that a school counsellor or teacher can act as a buffer for these stressful effects.

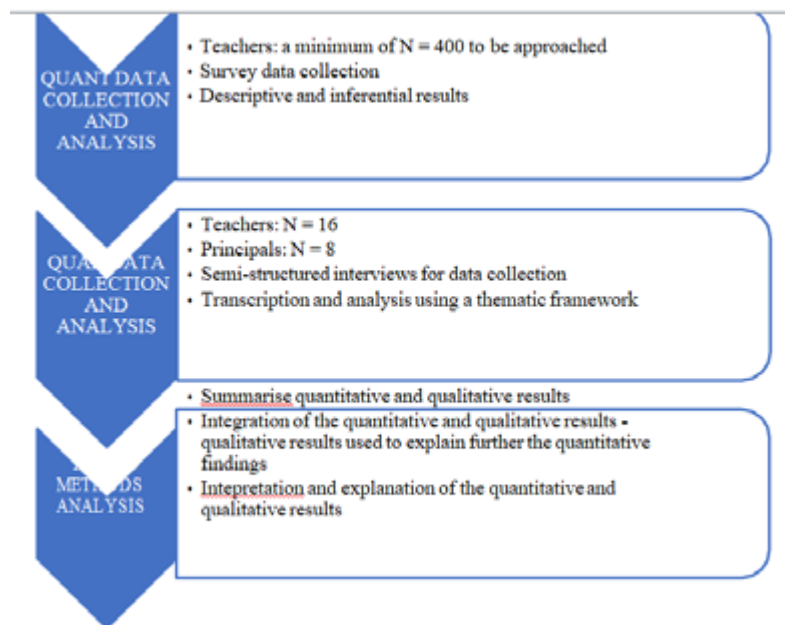
Research has indicated the benefits of involving schools to support C&A exposed to DV, further evidence has also suggested the need to link schools with relevant services after disclosure for further support (Stanley et al., 2015). Since behaviours and social norms are instilled early on and carried throughout life, it is also important to avoid normalising violent

behaviour as a way of resolving conflict. Therefore, involving schools can provide an opportunity to introduce school-based programmes that help students develop positive values, attitudes and skills that may also help reduce violent behaviour in their future lives and relationships (Grossman et al., 1997).

Objectives:

- (1) assess teachers' understanding of the impact of DV on C&A and factors that influence their attitudes towards DV and
- (2) investigate teachers' perceptions of their role in supporting students exposed to DV and their intentions to intervene if a student was exposed.

Methods: This study employed an explanatory sequential mixed methods design which consisted of two distinct phases as presented in the figure below. The study setting was a region in Northern Sri Lanka with relatively high rates of DV.



Results: Overall, no statistical evidence to suggest a teacher’s sex, being a parent, being a counsellor or years of teaching experience influenced their attitudes towards DV. However, there is statistical evidence to demonstrate that teachers who have had personal experience with DV are more likely to agree that DV can happen in any family and that they would take action.

Teachers also felt it was their role to support students.

Ka/14/01: “Being a teacher for many years and becoming a principal. And through the training I have received and through the higher studies I have learned is that providing education through books is not the only thing a child who comes to us with trust needs. We don’t have to be a teacher or a principal that provides knowledge from books to students. You should be able to provide emotional support and protection needed by the student.”

Ka/14/02: “The main goal is to teach/show students how to face problems and reach their targets. We give our best support. For example, we will get financial help from someone for tuition fees and provide it to students. We try to arrange programs to provide nutritional food and books and stationery for students. We recommend these children when foreign volunteers get in contact with us to help students. Above all, providing love and support by talking to them in a kind way is the most important thing.”

Conclusion: Majority of the teachers in the region were aware of the different forms of domestic violence and are able to identify if a student was exposed to domestic violence. While teachers indicate they would like to support students experiencing domestic violence at home, concerns around personal safety, not knowing how to respond and whom to direct students to for further support seem to be key challenges faced.



Open reduction internal fixation of incarcerated greater tuberosity avulsion fracture: A case report



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SSM Health St. Anthony Hospital, USA

Introduction: Proximal humerus fractures are common injuries of the upper extremity. These fractures are frequent in the elderly population due to low-energy trauma and in the younger patient secondary to high-energy trauma that is associated with shoulder dislocations. Proximal humerus fractures are frequently classified according to the Neer classification which is defined by the number of segments and the amount displacement. Segments include the greater tuberosity (GT), the lesser tuberosity, the humeral head, and the humeral shaft. Fractures are considered displaced if there is at least 45° of angulation or 1 cm of displacement.

Case Report: Our patient is a 42-year-old Caucasian patient with a displaced and incarcerated GT avulsion fracture following a motorcycle accident. In this report, we describe the patient positioning, technique using open reduction internal fixation and the successful outcome of our patient 1 year from the injury.

The patient was placed supine and standard deltopectoral approach was utilized.

Fragment was identified and two 4.75mm Arthrex anchors with associated FiberWire were placed in the footprint of the GT. Sutures were sequentially passed through the tendinous portion of the supraspinatus muscle-bone interface from inferior to superior and tied in a horizontal fashion to secure the GT to its anatomic location. The tails of the FiberWires were then passed through two additional anchors and placed distally for further compression. Post-operatively the patient was placed in a shoulder immobilizer. He underwent early pendulum exercises followed by rotator cuff repair protocol. At last follow up he had 140 degrees of active forward flexion, 20 degrees of external rotation and healed fragment on radiographs.

Conclusion: While standard ORIF techniques using plates and screws are appropriate for treating these injuries, we chose to pursue a method that involved only bio-absorbable suture anchors. Using these anchors, we were able to achieve an anatomic reduction of the GT fragment that ultimately went on to achieve full healing.



Highly educated immigrant Workers’ Perspectives of occupational health and safety



Janki Shankar

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D eclining fertility and decrease in the working-age populations of many developed countries have led to a rising demand for immigrant workers to sustain the national economies of these countries. Yet, these workers, especially those who are new are among the most vulnerable members of society. They are often engaged in unsafe jobs without adequate safety training or protective equipment, and experience higher rates of workplace injury, compared to native born workers. This paper is based on a study that explored the perspectives of new immigrant workers regarding occupational health and safety and workplace conditions that increase their vulnerability to sustaining injury or illness. Using an interpretive research approach and semi-structured qualitative interviews, 42 new immigrant workers from a range of industries operating in two cities in a

province in Canada were interviewed. Seventy-nine percent of the workers were highly qualified. A constant comparative approach was used to identify key themes across the workers’ experiences. The findings revealed that new immigrant workers have an incomplete understanding of occupational health and safety. In many workplaces, poor job training, little worker support, lack of power in the workplace, and a poor workplace safety culture make it difficult for workers to acquire occupational health and safety information and to implement safe work practices. Many workers experience mental health issues because of lack of a workplace safety culture. The study proposes workplace policies and practices that will improve worker occupational health and safety awareness and make workplaces safer for new immigrant workers.



Health in all policies: Towards a model of policy management for health and wellbeing



Jorge Mandl Stangl

Retired from Public Administration, Venezuela/Germany

Understanding that HIAP was not conceived as a mere technocratic planning tool, we focused on people's well-being (bottom-up, especially taking into account the accumulation of unmet needs of vulnerable populations), with a global political vision. Partimos de una concepción del HIAP como un modelo de gestión caracterizado por una secuencia de políticas públicas integradas y sostenibles que son producto de procesos multisectoriales y transdisciplinarios de mediación social para asegurar que todos los miembros de la sociedad tengan

oportunidades justas y equitativas de participar en las decisiones que permitan cambios en los determinantes de las inequidades en salud, y por lo tanto en la calidad de vida de la población.

We develop our main proposal by suggesting a policy pathway for consideration by governments and consolidation within communities. We conclude with a series of reflections on the feasibility of the ideas presented, so as to constitute a renewed call for debate and public consultation by different actors.



Sexual function, body Image and quality of life of women with cancer



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²*Institute of Public Health, University of Porto, Portugal*

Background: Few studies have focused exclusively on the sexuality and body image of women with advanced cancer and the physical and emotional impact of cancer treatment on sexual function.

Objective: This study aimed to examine sexual dysfunction, quality of life (QOL) and body image in women with stage III-IV breast, colorectal, and gynecologic cancer.

Methods: Sixty women completed the Female Sexual Function Index, the Body Image Scale, the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire and the Beck Depression Inventory. A Spearman correlation test was conducted to examine the associations among scale scores.

Results: Body image problems were inversely associated with global QOL ($rs = -0.357$, $p = 0.006$) and functional scores ($rs = -0.489$, $p < 0.001$), and positively

associated with cancer symptom severity ($rs = 0.394$, $p = 0.002$). Body image problems were inversely associated with satisfaction with sexual life for both sexually active ($rs = -0.576$, $p = 0.005$) and inactive women ($rs = -0.377$, $p = 0.023$). In sexually active women, poor body image was inversely associated with sexual function ($rs = -0.544$, $p = 0.009$), but unrelated to global QOL ($rs = 0.304$, $p = 0.181$).

Conclusions: More than quantifying sexual dysfunction, it is important to understand the reasons for disruption in sexual activity. The absence of an association between sexual function and QOL and the association between body image and QOL suggest that QOL and sexual function are distinct experiences, and that QOL scales are not enough to detect treatment-induced sexual changes, which are not addressed by health professionals.



Toward children centric AI: A case for a growth model in children AI interactions



Karolina La Fors

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This article advocates for a hermeneutic model for children-AI (age group 7–11 years) interactions in which the desirable purpose of children's interaction with artificial intelligence (AI) systems is children's growth. The article perceives AI systems with machine-learning components as having a recursive element when interacting with children. They can learn from an encounter with children and incorporate data from interaction, not only from prior programming. Given the purpose of growth and this recursive element of AI, the article argues for distinguishing the interpretation of bias within the artificial intelligence (AI) ethics and responsible AI discourse. Interpreting bias as a preference and distinguishing between positive (pro-diversity) and negative (discriminative) bias is needed as this would serve children's healthy psychological and moral development. The human-centric AI discourse advocates for an alignment of capacities of humans and

capabilities of machines by a focus both on the purpose of humans and on the purpose of machines for humans. The emphasis on mitigating negative biases through data protection, AI law, and certain value-sensitive design frameworks demonstrates that the purpose of the machine for humans is prioritized over the purpose of humans. These top-down frameworks often narrow down the purpose of machines to do-no-harm and they miss accounting for the bottom-up views and developmental needs of children. Therefore, applying a growth model for children-AI interactions that incorporates learning from negative AI-mediated biases and amplifying positive ones would positively benefit children's development and children-centric AI innovation. Consequently, the article explores: What challenges arise from mitigating negative biases and amplifying positive biases in children-AI interactions and how can a growth model address these? To answer this, the article recommends

applying a growth model in open AI co-creational spaces with and for children. In such spaces human-machine and human-human value alignment methods can be collectively applied in such a manner that children can (1) become sensitized toward the effects of AI-mediated negative biases on themselves and others; (2) enable children to appropriate and imbue top-down values of diversity, and non-discrimination with their meanings; (3) enforce children's

right to identity and nondiscrimination; (4) guide children in developing an inclusive mindset; (5) inform top-down normative AI frameworks by children's bottom-up views; (6) contribute to design criteria for children-centric AI. Applying such methods under a growth model in AI co-creational spaces with children could yield an inclusive co-evolution between responsible young humans in the loop and children-centric AI systems.

“ **CRISPR nuclease off-target activity and mitigation strategies** ”

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²*Department of Surgery, University of California, USA*

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The discovery of CRISPR has allowed site-specific genomic modification to become a reality and this technology is now being applied in a number of human clinical trials. While this technology has demonstrated impressive efficacy in the clinic to date, there remains the potential for unintended on- and off-target effects of CRISPR nuclease activity. A variety of in silico-based prediction tools and empirically derived experimental methods have been developed to identify the most common unintended effect—small insertions and deletions at genomic sites with homology to the guide RNA. However, large-scale aberrations have been reported such as translocations, inversions, deletions, and even chromothripsis. These are more difficult to detect using current workflows indicating a major unmet need in the field. In this review we summarize potential sequencing-based solutions that may be able to detect these large-scale effects even at low frequencies of occurrence. In

addition, many of the current clinical trials using CRISPR involve ex vivo isolation of a patient’s own stem cells, modification, and re-transplantation. However, there is growing interest in direct, in vivo delivery of genome editing tools. While this strategy has the potential to address disease in cell types that are not amenable to ex vivo manipulation, in vivo editing has only one desired outcome—on-target editing in the cell type of interest. CRISPR activity in unintended cell types (both on- and off-target) is therefore a major safety as well as ethical concern in tissues that could enable germline transmission. In this review, we have summarized the strengths and weaknesses of current editing and delivery tools and potential improvements to off-target and off-tissue CRISPR activity detection. We have also outlined potential mitigation strategies that will ensure that the safety of CRISPR keeps pace with efficacy, a necessary requirement if this technology is to realize its full translational potential.



Using reflexivity as a tool to validate feminist research based on personal trauma



Lisamarie Deblasio

Plymouth University, UK

This essay explores social science researchers with 'insider status'. This term describes a researcher who is a member of the population they are studying. The research in question involved a birth mother studying the impact of compulsory child adoption on birth mothers. Research that grows from traumatic experiences may involve a researcher revisiting painful memories through her interactions with participants. She may hold unconscious biases and preconceptions. If not exposed or addressed, this raises ethical implications and can negatively affect the reliability of the findings. Personally motivated research can be validated with the use of reflexivity. Often used in feminist methodology, it demands that the researcher examines her own feelings, reactions, and motives and how these influence the interactions with participants, the analysis and findings. A

reflexive approach lessens the risk of bias and authenticates research by ensuring transparency. Keeping a reflexive journal for the duration of a project can facilitate this process. Feminist researchers also employ reflexivity to reflect on power imbalance in research relationships with the active avoidance of exploiting or disempowering participants. This essay shows how these philosophies behind reflexively operate in practice. By reflexively aligning my own personal journey alongside birth mothers' narrative, I was able to recognise and validate the role of myself in my research. This allowed me to face up to and challenge my biases and to avoid hierarchy that commonly exists between researcher and participants. For me this process went beyond simply being ethical practice, opening up opportunities for both creative and personal transformations.



Community Outreach: Needs analysis for children and young people at risk or engaged in Volatile Substance Misuse



Marilyn Casley¹ and Senior Sergeant Matthew Scott²

¹Griffith University Logan Campus, University Drive Meadowbrook, Australia

²Queensland Police Service, Australia

The prevalence of Volatile Substance Misuse (VSM) particularly by children and young people is a complex and challenging phenomenon for communities to address. Engagement with and support for these vulnerable children and young people requires different ways of understanding, thinking and responding if we are to meet their health, safety and educational needs. For this project gathering the perspectives of children and young people was seen as vital. Too often the voices of children and young people in policy making, service delivery and developing practice are marginalised or not considered at all. Identifying those at 'risk' of volatile substance misuse and including them in problem solving was identified as one of the key elements for defining this problem.

A qualitative, methodological approach was selected to allow for the researchers to gain in-depth understanding of the participants' feelings and experiences in relation to Volatile Substance Misuse.

The data collection tools comprised semi-structured interviews with the children and young people and parents/carers and focus groups with different groups of government and community stakeholders. Qualitative data was thematically analysed to identify both common and unique threads to inform study findings.

The key research findings were: a) engagement in chroming was for these purposes: relieving the feelings of pain and family stress, child removal, disengagement from school, relief of boredom and a sense of social cohesion, b) families found that reaching out for help and support doesn't exist in the long term and left most feeling helpless to do anything about what was happening within their families, and c) multiple integrated approaches co-designed between government departments, agencies, community elders and local leaders, with the children and young people at risk or engaged in this activity is needed.



Psychotherapy research: How we used Biofeedback to investigate the psychoanalytic interpretation



Maximilian Fischer and Anna Buchheim

Institute of Psychology, University of Innsbruck, Austria

This pilot study is the first to use an experimental approach to measuring the psychophysiological reactions to psychoanalytic interpretations. The study examined the feasibility of an experimental approach to investigate theoretically derived hypothesis, concerning affective reactions to psychoanalytic interpretations.

20 participants took part in an OPD-2 Interview (Operationalized Psychodynamic Diagnosis). The diagnostic of OPD-2 axis II (relationship dynamics) was used to formulate personalized interpretations. In a second session, psychophysiological reactions were recorded using biofeedback measure of heartrate, respiration and skin conductance while participants read their interpretation and were compared with reactions to a neutral stimulus(baseline) and another individual stimulus (episode from their OPD-2 interview). The MDMQ (Multidimensional Mood State Questionnaire) was used to measure the self-reported emotional reaction. Participants were asked whether they agreed with the content of their interpretation to test how

their rating interacted with their measured reaction (Biofeedback, MDMQ). Participant's personality organization was measured using the IPO 16 (Inventory of personality organization).

The analysis showed that 80% of the subjects rated the interpretation as applicable to them. Heart rate and respiration rate were lowest when reading the interpretation. Self-reported mood levels were lower after reading the interpretation. Interaction effects between respiration rates and self-reported mood levels differed whether the interpretation was accepted or not. The experimental setting turned out to be applicable to investigating affective reactions to psychoanalytic interpretations with the benefit of being independent to other psychotherapeutic mechanisms. Biofeedback measures show that operationalized interpretations yielded measurable psychophysiological reactions in 20 healthy participants. Differences between self-reported and measured affective reactions could point to defense mechanisms.



Blockchains and AI in public health



Moses Ma

FutureLab, USA

Current approaches to non-pharmaceutical interventions (NPI) were developed hundreds of years ago – during the Black Plague. Humanity’s attempts to develop new technology-powered NPI defenses, such as contact tracing apps, have fallen short in terms of both adoption and efficacy. What humanity needs is an entirely new approach to dealing with infectious disease, by gathering data previously unavailable in a new open way using blockchains, and to process that data in a new way using artificial intelligence (AI) to enable a breakthrough in pre-syndromic surveillance and containment. These data sources are based on non-invasive remote health telematics, behavioral data, with social incentives for compliance.

It should be noted that there are persistent barriers to sharing data in the context of epidemics, rooted in a lack of trust in confidentiality and reciprocity, ambiguity over resource ownership, and conflicting public, private, and academic incentives. Recent advances in blockchain and related technologies could enable equitable decentralized mechanisms to help break down these systemic barriers. The use of artificial intelligence, machine learning, and optimization technologies, especially in the realms of remote health monitoring

and behavioral economics, can address situations where people often do not act in their own best interest... which is the core issue in public health.

An effective analogy for COVID is to study how London vanquished cholera in the 19th century, which had become endemic. The city didn’t end continuous outbreaks with some miracle drug, it created a new infrastructure to solve the problem. What was happening was that the city’s drinking water was intermingling with human waste, spreading bacteria in one deadly outbreak after another. A new sewage system that separated the two solved the root problem, and London never again experienced another major cholera outbreak after 1866. Something equally radical needs to happen to end pandemics: we need to create a new digital infrastructure for rapidly detecting and containing infectious disease.

Although this is an area that is still in its infancy, significant progress has quietly been made in the development of such a new decentralized infrastructure for public health, and this presentation and workshop will provide both insights and case studies of revolutionary innovative techniques that are being applied to optimize NPI in public health.



Quality appraisal for systematic literature reviews of health state utility values: A descriptive analysis



M.T Muchadeyi¹, K. Hernandez-Villafuerte^{1,2} and M. Schlander^{1,3}

¹Division of Health Economics, German Cancer Research Center (DKFZ), Germany

²WifOR institute, Germany

³Alfred Weber Institute for Economics (AWI), University of Heidelberg, Germany

Background: Health state utility values (HSUVs) are cardinal measures of patient preferences that are increasingly used in cost-utility analysis to inform healthcare allocation decisions. However, it is not always possible to derive these values in every clinical study. To compensate for this, systematic literature reviews (SLRs) are conducted to provide summarised information on HSUVs from an increasing number of primary studies. The quality appraisal (QA) of these SLRs is an essential process for ensuring the credibility of the HSUV estimates.

Objectives: To comprehensively describe the nature of QA in published SRLs of studies eliciting HSUVs and generate a list of commonly used items.

Methods: A comprehensive literature search was conducted in PubMed and

Embase from 01.01.2015 to 15.05.2021. SLRs of studies eliciting HSUVs that were published in English were included. Descriptive statistics (prevalence of QA, frequencies of use and occurrences of QA items, proportions of high- quality studies and item ranking) were computed, and a comprehensive list of QA items was generated.

Results: A total of 73 SLRs were included, comprising 93 items and 35 QA tools and good recommendation practices. The prevalence of QA was 55% (40/73), where reporting, methodological and study relevance were evaluated to varying extents. Figure 1 illuminates a considerable mismatch between what is considered essential by SLR authors (Panel A) and currently existing QA tools analysed (Panel B).



Quality appraisal for systematic literature reviews of health state utility values: A descriptive analysis



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high- quality studies and item ranking) were computed, and a comprehensive list of QA items was generated.

Results: A total of 73 SLRs were included, comprising 93 items and 35 QA tools and good recommendation practices. The prevalence of QA was 55% (40/73), where reporting, methodological and study relevance were evaluated to varying extents. Figure 1 illuminates a considerable mismatch between what is considered essential by SLR authors (Panel A) and currently existing QA tools analysed (Panel B).

Only 5% of the SLRs that appraised quality used QA to inform their data analysis. The studies that met the minimum quality threshold ranged from 33% to 100%.

Conclusions: There is a low prevalence of QA in SLRs of HSUVs and a wide variation in the QA dimensions and items used—mostly attributed to a lack of widely accepted QA tool for this purpose. This underscores the need for a scientifically developed QA tool for multi-variable primary studies of HSUVs.

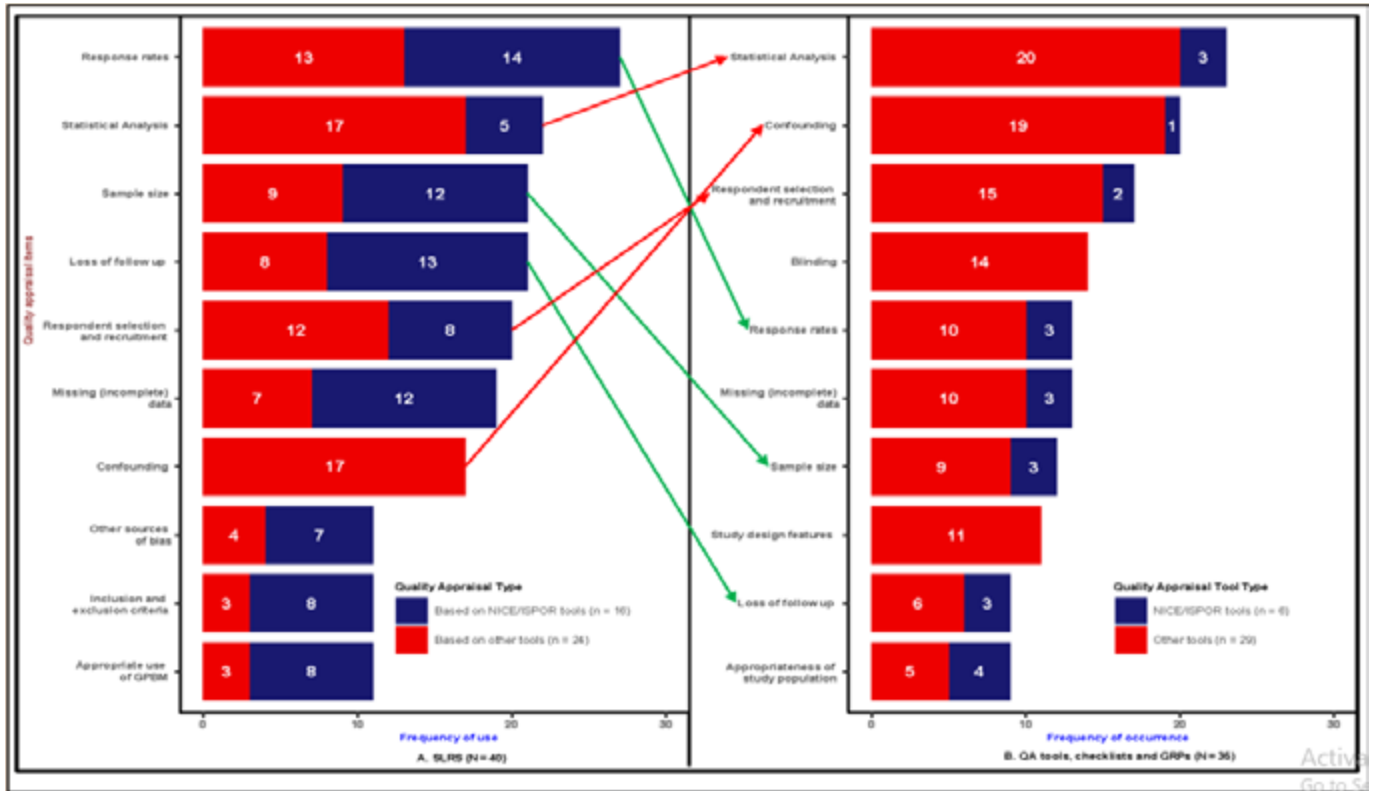


Figure 1: Top ten most occurring items in (A) SLRs and (B) QA tools and checklists. GPBM, generic preference-based measure; HS, health states and HSUVs, Health state utility values



Changes in urine composition and risk of kidney stone disease following bariatric surgery: A systematic review over last 2 decades



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Introduction & Objectives: The association of kidney stone disease (KSD) and gastrointestinal (GI) surgery has been well established. With a rising obesity, we wanted to see the correlation of urinary composition in patients undergoing bariatric surgery and the risk of KSD.

Materials & Methods: A systematic review of literature search was performed using various databases (including Up-to-date, Google Scholar, MEDLINE, EMBASE) for all articles on bariatric surgery and KSD over the last 2 decades (2000-2020). Meta-analysis was performed in R statistical software using the 'meta' package. Risk of bias analysis was undertaken using the Newcastle-Ottawa tool.

Results: A total of seven studies met criteria for final analysis in this review. This included 2498 patients who underwent bariatric surgery with a mean age of 46.7

years and a Male:Female ratio of 1:3. The most popular bariatrics surgery was the Roux-en-Y procedure. Studies included were overall of moderate to good quality. Meta-analysis of the studies showed that significant decrease in urinary calcium, citrate, and urate, and increase in urinary oxalate. Volume was seen to be reduced in the post-operative cohort however these results were rendered insignificant on statistical analysis. The decrease in urinary citrate and increase in urinary oxalate both predisposing factors of stone formation. Further data from the studies are detailed in table attached.

Conclusions: There is strong evidence that bariatric surgery results in significant changes in urine composition in keeping with the increased risk of developing KSD. This identifies useful therapeutic targets in the prophylactic management of patients who have undergone bariatric surgery.

Urine composition outcomes

Paper (Year)	Patel -2009		Asplin -2007		Lieske -2015		Duffey -2008		Duffey -2010		Sinha 2007		Wu -2013	
	P	C	P	C	P	C	P	C	P	C	P	C	P	C
Total urine volume(ml)	2070	1430	1613	1473	1790	1834	900	1280	1600	1600	1612	1939	1500	2000
Oxalate (mg/day)	67.2	34.1	81	33	63.1	35.1	41	31	63	33	60	31.5	47.7	38.2
Calcium (mg/day)	140.3	164.2	138	171	135	170	101	146	108	227	132	206	181.7	138.8
Citrate (mg/day)	620.8	572.1	378	544	448	638	516	617	421	696	394	660	843.7	744.6
Uric acid (mg/day)	0.62	0.63	-	-	447	497	378	531	510	628	456	708	0.6	0.7
SSCaOx	7.78	7.41	12.38	7.46	2.12	1.69	3.47	1.73	2.2	1.73	2.23	1.51	10.5	4.9
SSCaPO	0.66	1.3	-	-	1.34	1.01	1.14	1.92	0.85	1.55	-1.47	-0.31	1.1	0.5
SS Uric acid	0.95	1.3	-	-	0.82	0.21	3.73	2.5	3	2.57	0.83	1.43	1.3	1.3

ml: millilitre, mg: milligram, SSCaOx: Calcium oxalate super saturate, SSCaPO: Calcium phosphate supersaturate, SS Uric Acid: uric acid supersaturate. Please note for Patel, Asplin and Lieske P = participant and C = control group. For Duffey (2008 and 2010), Sinha and Wu, P= pre-operative and C = post-operative.



Association between hospital-diagnosed sleep disorders and suicide: A nationwide cohort study



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Introduction: sleep disorders are related to mental disorders. Yet few studies have examined their association with suicide. We examined whether males and females diagnosed with sleep disorders had higher rates of suicide than individuals not diagnosed with sleep disorders.

Methods: In a cohort study, nationwide data on all males and females aged 15+ years living in Denmark during 1980-2016 were analysed. Sleep disorders were identified through diagnoses recorded during contacts to somatic hospitals. Incidence Rate Ratios (IRR) were estimated using Poisson regression models and adjusted for relevant covariates.

Results: In all, 3,674,563 males and 3,688,164 females were included, of whom 82,223 (2.2%, mean age: 50.2, SD: 17.5) males and 40,003 (1.1%, mean age: 50.6, SD: 19.9) females had sleep disorder

diagnoses. Compared to those with no sleep disorders, the adjusted IRRs for suicide were 1.6 (95% CI, 1.4-1.7) and 2.2 (95% CI, 1.8-2.6) for males and females with sleep disorders, respectively. Excess rates for narcolepsy were found for males (IRR:1.2, 95% CI, 1.0-1.5) and females (IRR:3.3, 95% CI, 3.0-4.1), and for sleep apnea in males (IRR:1.8, 95% CI, 1.5-2.2). A difference with respect to age and sex was observed ($P < 0.001$) between males and females. Males and females had IRRs of 4.1 (95% CI, 3.1-5.5) and 7.0 (95% CI, 4.8-10.1), respectively, during the first 6 months after being diagnosed with a sleep disorder.

Conclusions: Sleep disorders were associated with higher suicide rates even after adjusting for pre-existing mental disorders. Our findings suggest attention towards suicidal ideation in patients suffering from sleep disorders is warranted.



Various presentations of the Olfactory hallucination in two patients with migraine disease



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Background: Migraine prevails in about 12% of the general population, with the migraine aura accountable for at least one-third of these cases. Aura is a transient sensory disturbance that gradually arises before a migraine headache or shortly after the headaches start and can recur. The most common aura is the visual aura, followed by the sensory aura, speech, and motor auras. Olfactory hallucinations preceding the headache phase of migraine are rare. To date, the International Classification of Headache Disorders (ICHD) has not recognized them as a subset of migraine aura. This study reports two different presentations of migraine with the olfactory hallucinations: a case with the typical hallucinatory olfactory symptoms preceding migraine headaches and another case with longstanding olfactory hallucinations.

Methods: Patients were identified from electronic health records who had a diagnosis of chronic migraine with aura by the ICHD-3 criteria and reported having

Phantosmia (PO) aura before, during, or after their migraine attacks.

Results: Two distinct patient cases were reported. Patient 1 presents with a typical PO aura before their migraine headache in which they note the smell of burning for about 30 minutes before their headache starts. In contrast, Patient 2 experiences a longstanding PO aura. This patient describes that they can smell cigarette smoke from the beginning of their headaches up to 3-7 days after the headaches are gone. The smell persisted with Patient 2's migraines even when they lost their ability to smell due to COVID-19.

Discussion: The olfactory hallucination may present differently in patients with migraine disease. Based on the clinical significance of migraine with olfactory hallucinations, we propose that the ICHD classify this phenomenon as a subtype of aura in the future. However, larger studies are still required to better assess the pathophysiology of this phenomenon.



The HEV Ventilator, at the interface between particle physics and biomedical engineering



P. Collins and J. Buytaert

CERN, Switzerland

A high quality, low-cost ventilator, dubbed HEV, has been developed by the particle physics community working together with biomedical engineers and physicians around the world. The HEV design is suitable for use both in and out of hospital intensive care units, provides a variety of modes and is capable of supporting spontaneous breathing and supplying oxygen enriched air. An external air supply can be combined with the unit for use in situations where compressed air is not readily available.

HEV supports remote training and post market surveillance via a web interface and data logging to complement standard

touch screen operation, making it suitable for a wide range of geographical deployment. The HEV design places emphasis on the ventilation performance, especially the quality and accuracy of the pressure curves, reactivity of the trigger, measurement of delivered volume and control of oxygen mixing, delivering a global performance which will be applicable to ventilator needs beyond the COVID-19 pandemic. This presentation will describe the prototype design and present the measured performance on prototypes.

The status of this ventilator will be evaluated in comparison with similar projects and the ongoing developments will be described.



Designing and deploying robotic companions for psychological wellbeing



Sooyeon Jeong

Northwestern University, USA

Today, we are surrounded by interactive technologies in our hands, on our wrists, and in our homes. However, most existing technologies act as useful tools for us, rather than collaborative and helpful companions that are integrated in our daily lives. In this talk, I will present unique opportunities for relational technologies (e.g., social robots or virtual avatars) in enhancing human health and wellbeing. Robotic companions were designed and deployed in the real

world (pediatric hospitals, college campus dormitories, and homes across the U.S.) to improve people's social and emotional wellbeing. I will highlight lessons learned from these long-term deployment studies and valuable insights on how interactive technologies can build relationships with us and personalize interventions and interaction experiences based on each individual's needs, preferences, and behaviors for better support outcomes.



New promising methods of treatment with injecting and applying different fractions of plasma IPRF and APRF in musculoskeletal injuries and arthrosis: Films from tests and injections of plasma fractions



Tomasz Kardacz

Niepubliczny Zakład Opieki Zdrowotnej, Poland

Introduction: Treatment simple post-traumatic, overload and sports injuries in a GP's surgery. Films from tests and injections of plasma fractions.

Methods and Materials: Using an 8-20 Mhz head ultrasound device, the author in the GP's office gives plasma fractions such as IPRF to the sites of tendon, muscle and ligament damage. Very frequent post-traumatic interventions and the availability of simple and inexpensive high-frequency heads of ultrasound devices from 10-20Mhz allow to depict damage of the simplest areas. The most frequent are injuries to the anterior fibula ligament, tennis elbow, golfer's elbow, damage to the rotator ring, overload of the sinewy goose's foot. Plasma administered under the control of the ultrasound head is fixed on an electronic medium using the CINE loop and left to the patient together with the description of the procedure.

Results: As a result of the treatment, we obtain an improvement at first injection

in about 70% of younger people, the treatment is slightly less effective in older people. After a few weeks we can repeat the injections, which brings further relief to the patients; after the third injection, if there is no improvement, the treatment is considered pointless.

Conclusion: The method of treatment with centrifuged plasma fractions is extremely safe, harmless, free of side effects, simple and cheap. However, a good knowledge of anatomy, a certain hand and a minimum of 12-14 Mhz linear heads are required. And centrifuges in which you can set the appropriate parameters.

Even if for someone this method look like complicated, for GP and rural clinics it could be interesting solution in many cases. Administering the plasma fraction to muscles, tendons and ligaments is a relatively simple, inexpensive and safe procedure. However, the head of the ultrasound must be in the hand of an experienced doctor.



Role of robotic approach in ileal pouch–anal anastomosis (IPAA): A systematic review of the literature



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Introduction: Restorative proctocolectomy with ileal pouch–anal anastomosis (IPAA) has become standard surgical treatment of choice in patients with ulcerative colitis (UC) and familial adenomatous polyposis (FAP) in which the medical management fails. Despite the wide use of laparoscopic method, the enhanced and innovative features that come with the robotic platform, such as endo-wrist technology, 3D visualization, surgeon-controlled camera and motion scaling, make it an appealing choice.

Aims and Objectives: This study aims to investigate the feasibility and safety of robotic approach for proctectomy or proctocolectomy with IPAA as compared to conventional laparoscopic approach.

Materials and Methods: A systematic review was completed for studies done between 2010 and 2022 comparing the robotic approach with the laparoscopic approach. Nine studies were found to be feasible to be included in this review.

Results: In terms of the outcomes, although the mean operating time was slightly higher than the laparoscopic approach, the other outcomes, such as mean blood loss, return of the bowel movement, mean hospital stay, and conversion to open, were found to be significantly lower in the robotic approach as compared to both laparoscopic and conventional open techniques. Despite the overall increased rate of complications combined from all the studies, the rate

of significant complications such as anastomotic leaks requiring readmission and return to theater was also found to be substantially less.

Conclusion: This study concludes that although robotic approach is in its initial stages for pelvic surgeries, it can be safely employed due to improved dexterity and visibility.



Comparative evaluation of the remineralizing potential of different calcium and fluoride- based delivery systems on artificially demineralized enamel surface; an in vitro study



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MGV's KBH Dental College, India

Background: Enamel is the hardest and vastly mineralized structure of the human body. Inorganic salts make up the majority of it. Water and ions pass right through the enamel. The enamel undergoes demineralization and remineralization cycle throughout life. Recently, the interest in the development of calcium, phosphate, and fluoride remineralization technology has been increased leading to the development and reintroduction of various remineralizing agents such as fluoride, casein phosphopeptide-amorphous calcium phosphate fluoride (CPP-ACPF), nano-hydroxyapatite (nano-HA), xylitol, bioglass, Ozone, etc.

Aim: The aim of this study is to evaluate and compare the potential remineralization of CPP-ACPF, calcium sucrose phosphate (CaSP), amine fluoride (AmF), and nano-HA.

Settings and Design: The design of this research is experimental. This is an in vitro study. The research was carried out at the Dental Teaching Institute. This study involved human teeth. No demographic data were obtained. One hundred and twenty premolars were selected from the tooth bank of the Department of Oral and Maxillofacial Surgery. The teeth included in the study were non-carious, non-restored, and nonfractured extracted teeth.

Teeth excluded from the study were extracted teeth with any visible or detectable caries, white spot lesions, microcracks, attrition, abrasion, erosion, or abfraction.

Materials and Methods: One hundred and twenty enamel samples were taken; they were divided into six groups (n = 20). The demineralization process was

carried out in Groups II, III, IV, V, and VI. The remineralization process was carried out on Groups III, IV, V, and VI for 14 days using CaSP, AmF, and nano-HA, respectively. No surface treatment was performed in Group I causing it a positive control group, whereas Group II was considered a negative control with only enamel surface demineralization and no remineralization. The microhardness of enamel was measured using Vickers microhardness testing machine after a 14-day remineralization regimen.

Statistical Analysis: In the statistical analysis, one-way analysis of variance and post hoc Tukey's tests were performed.

Results: The mean microhardness values in declining order: positive control > nano-HA > AmF > CaSP > CPP-ACPF > negative control.

Conclusion: All remineralizing agents exhibited enhanced surface remineralization. Nano-HA showed the highest remineralization potential followed by AmF, CaSP, and CPPACPF.



Asymmetric impact of public debt on economic growth of Nigeria



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Debt overhang is crowding-out private investment and limiting government's ability to invest in critical infrastructure that supports poverty reduction and inclusive growth in Nigeria. The effect of public debt on economic growth has been extensively analysed by a variety of studies, but the empirical evidence more often than not remains controversial and ambiguous. One common hypothesis of previous studies is that they have assumed that the effect of public borrowing on growth is symmetric. The main purpose of this study is to investigate the asymmetric impact of government debt on economic growth in Nigeria for the period 1980 to 2018 using the Nonlinear Autoregressive Distributed Lag approach. The co-integration test established a long-run nonlinear relationship between economic growth and the indicators of public debt. The findings indicate an asymmetric relationship between inflation rate and economic growth while external debt and debt service payment showed significant evidence of a linear relationship with growth both in the long and short-

run. The outcome of the analysis show that an increase in the general price level significantly impedes growth, whereas a decrease in price level inhibits growth in the long-run but motivates growth in the short-run. Positive and negative changes in the stock of external debt indicate the same effects of promoting growth in the long and short-run, while positive and negative changes in debt service payment confirmed the same effect of suppressing growth. Domestic debt had a linear long-run effect on growth but an inverted short-run effect, whereas foreign reserve holding had an asymmetric long-run effect and a symmetric short-run effect on growth. Positive and negative changes in domestic borrowing hinder growth in the long and short run whereas an increase in the stock of external reserves stimulated long and short-run growth. To mitigate the negative effects of unsustainable public debt, the study advocated for fiscal reforms that effectively reduce deficit financing, improve domestic revenue generation, and infrastructure spending, as well as strong corporate governance and institutions.



Effect of cluster-Based clinical mentorship and supportive supervision in enhancing access to family planning and abortion services in Ethiopia

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A full range of family planning (FP) services and comprehensive abortion care (CAC) are not readily available in Ethiopia due to shortages of skilled providers. Improving health worker competency is critical to enhancing access to quality FP services and CAC. Clinical mentorship is one mechanism that can help sustain high-quality clinical competencies in resource-constrained settings. EngenderHealth supported the ministry to scale up the national plan through the provision of CBCM and supportive supervision (SS) for FP and CAC. EngenderHealth designed a CBCM-SS model in alignment with Ethiopia's three-tier health service delivery system and prioritized university teaching hospitals to serve as centers of excellence.

Our study aimed to assess the extent to which CBCM-SS activities improved FP and CAC uptake and addressed skills gaps among providers and positively influenced provider perspectives.

Conducted a mixed-methods assessment on our experience implementing the CBCM-SS initiative, which was supplemented by desk review.

The percentage of respondents that reported being able to insert intrauterine devices (IUDs) and implants without supervision increased by 20% after the CBCM-SS. The average competency score before the mentorship was 64.4/100, and the average score after the mentorship was 86.5/100, with few differences by gender or profession. Health facilities had resulted in a reduction in unnecessary referrals, mainly for incomplete abortion care, compared with before the mentorship program.

CBCM-SS initiative improved providers' abilities to deliver high-quality FP and CAC services. The approach strengthened providers' clinical knowledge, skills, and attitudes. In addition, CBCM-SS increased the availability of FP services and CAC services.



Assessment of mental health conditions among working class people during COVID-19: insights from Dhaka South City, Bangladesh



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The recent coronavirus disease 2019 (COVID-19) virus caused unprecedented vulnerabilities in the physical and mental health conditions of people across the world. This research explored the effect of COVID-19 on the mental health, sleeping patterns and professional atmosphere of the working people of Dhaka South City (DSC) in Bangladesh. We applied a range of tools of quantitative method to carry out the present study. The data were collected from purposively selected 139 respondents from DSC. A structured questionnaire was prepared and disseminated among the sampled respondents through online platforms in October 2020. Employing the depression anxiety stress scale (DASS) 21 scale, the study revealed that depression (82.7%), anxiety (87.8%), stress (77.7%) and sleep disturbance (56.1%) occurred due to the COVID-19 pandemic in the study area. In addition, the paper found that respondents faced difficulty concentrating on work ($p < 0.05$), felt workload pressure, and experienced shaky mental conditions ($p < 0.05$) accompanied by mild to extremely severe conditions of depression, stress, and anxiety. Statistical analysis pearson Chi-square test showed that socio-demographic aspects and COVID-19 factors significantly impacted mental health conditions among the respondents. This research recommends providing low-intensity psychological interventions and mental health strategies are needed to lessen sufferings for the target population.



Temporal trend of diarrhea morbidity rate with climate change: Egypt as a case study



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Many studies have detected a relationship between diarrhea morbidity rates with the changes in precipitation, temperature, floods, droughts, water shortage, etc. But, most of the authors were cautious in their studies, because of the lack of empirical climate-health data and there were large uncertainties in the future projections. The study aimed to refine the link between the morbidity rates of diarrhea in some Egyptian governorates representative of the three Egyptian geographical divisions with the meteorological changes that occurred in the 2006–2016 period for which the medical data are available,

as a case study. Medical raw data was collected from the Information Centre Department of the Egyptian Ministry of Health and Population. The meteorological data of temperature and precipitation extremes were defined as data outside the 10th–90th percentile range of values of the period of study, and their analysis was done using a methodology similar to the one recommended by the WMO and integrated in the CLIMDEX software. Relationships between the morbidity rates of diarrhea in seven Egyptian governorates and the meteorological changes that occurred in the period 2006 to 2016 were analyzed using multiple linear regression

analysis to identify the most effective meteorological factor that affects the trend of morbidity rate of diarrhea in each governorate. Statistical analysis revealed that some meteorological parameters can be used as predictors for morbidity rates of diarrhea in Cairo, Alexandria, and Gharbia, but not in Aswan, Behaira, and Dakahlia where the temporal evolution cannot be related with meteorology. In Red Sea, there was no temporal trend and no significant relationships between the diarrhea morbidity rate and meteorological

parameters. The predictor meteorological parameters for morbidity rates of diarrhea were found to be depending on the geographic locations and infrastructures in these governorates. It was concluded that the meteorological data that can be used as predictors for the morbidity rate of diarrhea is depending on the geographical location and infrastructures of the target location. The socioeconomic levels as well as the infrastructures in the governorate must be considered confounders in future studies.



Infants developmental milestone pattern of shiraz (iran) in relation to the denver chart



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This paper presents standardized norms of child development in Shiraz (Iran). A

birth cohort of 317 randomly selected neonates born at the 14 maternity clinics of Shiraz during 2 random consecutive weeks were followed at homes for 2 years at 12 designed occasions and their development examined by 2 trained public health officers and a community medicine expert. In gross-motor and personal-social sectors, girls were earlier than boys in "crying", "head control" and social smile items respectively. In fine motor-adaptive sector boys showed more advancement in the "thumb-finger grasp" and "pass cubes" items. Boys development in language, personal-social and fine motor-adaptive sectors were earlier than girls in items "ooo/aaah", "papa, mama", "recognize

relatives", "look for yarn", "recognize own nipple and bottle" respectively. The rest of the items passed by boys and girls were the same in both groups and not favoured to anyone. The subjects developed slower than the Denver sample in one item in fine motor-adaptive and personal-social sector. However, Shiraz infants were earlier than Denver ones in the item of other sectors, but in general, no statistically significant differences were detected. The paper concludes that the Denver Developmental Screening Test (DDST), in general, is a valid developmental screening instrument, which may be used in Iran with the adjustments presented.

Public health nurses may apply these key item skills, in that the use of a standard gives them an increased insight into child development.



Effectiveness of an osteoporosis prevention educational program in Tunisian pre-menopausal women working in sedentary occupations: A quasi-experimental study



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Introduction: The main purpose of the study was to evaluate the effectiveness of an osteoporosis prevention educational program on knowledge and perception of self-efficacy in adopting preventive behavior osteoporosis in Tunisian premenopausal women working in sedentary occupations.

Methods: A quasi-experimental pre-post intervention study design. Our study population was composed of female employees, aged 35-50 years, of a company located in the industrial zone Sousse, situated in the center East of Tunisia. Three data collection methods were used: a questionnaire exploring socio-demographic characteristics and anthropometric

measures, the Osteoporosis Knowledge Test and the Osteoporosis Self Efficacy Scale.

The intervention consisted of an educational program relating to the promotion of calcium intake and physical activity. We are referred to the "Health Belief Model".

Results: A survey conducted on 97 women. Only 81 participants have completed the study. The total knowledge score regarding osteoporosis improved by +14.57 which correspond to percentage of 109% between the pre (T1) and post test (T2). This improvement in knowledge was statistically significant ($p < 0.001$), going from 13.41 ± 3.94 at (T1) to 27.98 ± 2.49 at (T2).

The total osteoporosis self-efficacy score has increased by +9.56, or a percentage of 15% between the pre and post-test. This improvement in self-efficacy was statistically significant ($p = 0.001$), going from 64.18 ± 20.84 at (T1) to 73.73 ± 14.35 at (T2).

Conclusion: It is important to create an appropriate environment for the adoption of favorable behaviors to healthy bones and to promote health education with political commitment and collaboration with different sectors.



A review of natural peptide sweeteners



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The increasing prevalence of diseases caused by sugar consumption has become a threat to human health and various studies have reported the relationship between high sugar consumption and the risk of various cardiovascular diseases, obesity, type 2 diabetes. Sugar-free products such as peptide sweeteners, are very popular today due to the production of fewer calories. These sweeteners often have a protein structure and have a wide variety in terms of taste and dosage. Although extensive studies consider sweeteners to be safe and suitable substitutes for sugar, studies show that artificial types of these sweeteners can cause oxidative stress, metabolic syndrome and nervous system diseases. Despite these conflicting studies, food safety organizations such as the FDA (Food and Drug Administration) limit the consumption of sweeteners to the

acceptable daily intake (ADI) for all people, except for cases such as phenylketonuria. Our purpose is to briefly introduce natural peptide sweeteners (NPSs) that are good candidates to replace sugar and artificial sweeteners. NPSs giving a good taste to foods and beverages, also have a positive effect on the color, shelf time and caloric value of the products that are added to them. The most important NPSs include thaumatin, brazzein, monellin, curculin, miraculin, mabinlin, pentadin, whose safety, dosage and toxicity are discussed. In this group, thaumatin has been approved by FDA. This protein offers sweetness about 2000 times more than sucrose while produces only 4kcal/g. NPSs generally show fewer side effects than synthetic types. The use of other NPS is also currently legal as a flavor enhancer and sugar substitute, but there are still challenges to their approval by the FDA.



Incidental detection of neurovascular bundle compression by dampening of radial arterial waveform in paediatric live donor liver transplantation



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Neuropraxia after liver transplantation is a significant complication causing severe patient distress and also has medico-legal implications. The reported incidence is 8.2% in recipients and 3-4% in live donors, though the true incidence maybe under-reported. The symptoms could be transient lasting median 5 days to 2-3 years with functional loss of work. The risk factors in liver transplant are mainly long duration of surgery with poor positioning and lack of padding leading to stretching, compression and/or ischaemic nerve injury. Male gender, tall patients, poor nutritional status, diabetes, smoking, have also been implicated in the development of neuropraxia. Treatment is usually conservative with analgesics, gabapentin, physiotherapy and in few cases surgery.

We are reporting a case of paediatric liver transplant where dampening of the right radial artery waveform on application of

Thompson retractor warned us of vascular occlusion with the possibility of brachial plexus ishaemia. The patient was a 12-year old boy weighing 32.4 kg (BMI 15.2) who underwent live donor liver transplantation. The occlusion of neurovascular bundle could have led to severe upper limb injury over the course of liver transplant lasting 10-12 hours. Palpation above the right clavicle from the head end confirmed upward movement of clavicle as the retractors were applied. The anterior and cephalad migration of the rib cage on applying retractors caused possible occlusion of subclavian vessels between the clavicle and first rib, as illustrated in Fig.1. The retractors were loosened, patient positioning was readjusted, the head was kept neutral and the retractors were reapplied ensuring the radial artery waveform trace was normal. The surgery was uneventful and the patient was awake and alert next day with no oedema or nerve injury to the upper limb.

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29% 🔋

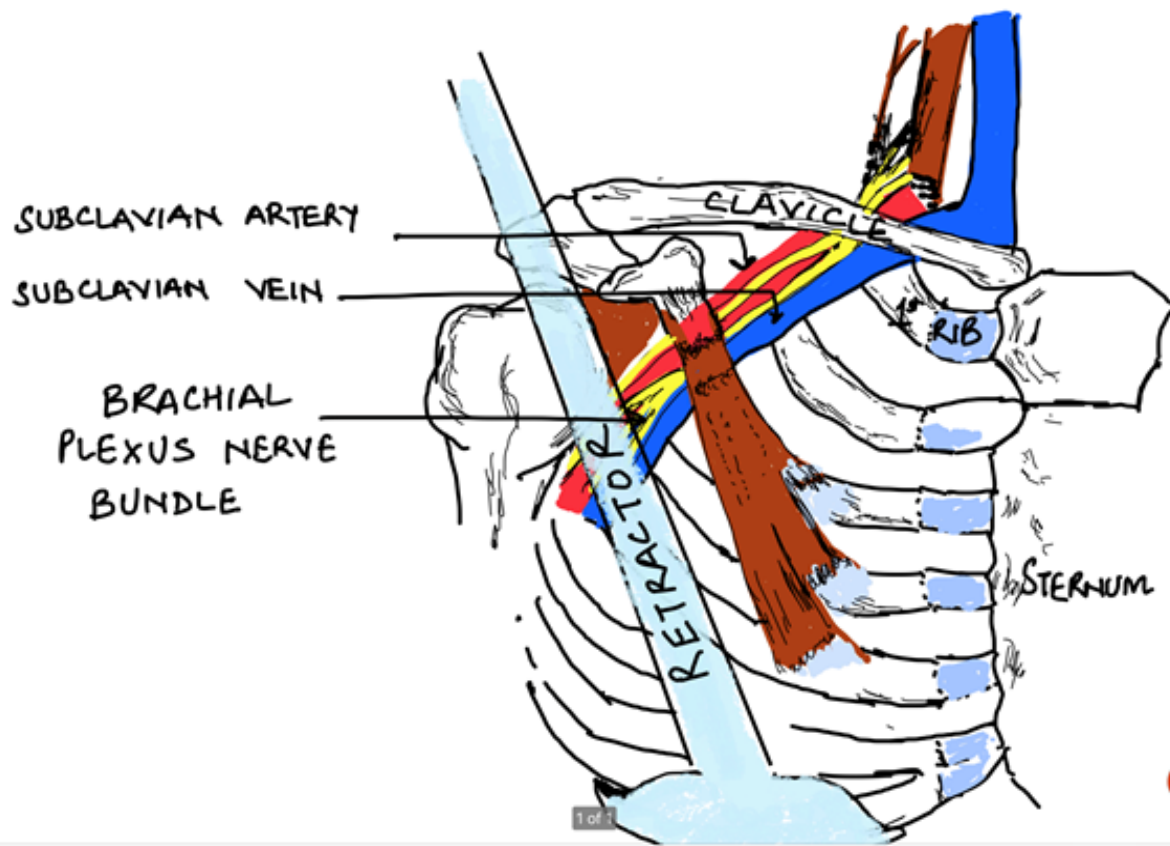


Fig. 1. Line diagram showing compression of neurovascular bundle on application of retractor. The image is just representative, not anatomically accurate



The innovation of Six-Dimensional pooling risk framework in Universal health insurance coverage



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This study aims to transform the existing three-dimensional pooling risk framework of the health insurance Bismarck model to finance health promotion, disease prevention, treatment, and palliative health care services, and equity in low-density population districts. A case study design was used to synthesize the health insurance Bismarck model with Sustainable Development Goals (SDGs) 1, 2, 3, 6, and 10, the four types of preventions, universal health coverage (UHC) frameworks, the District Division Administrative Disaggregation Data framework, and others theoretical frameworks. The Precede-Proceed Planning Model was implemented to formulate the six-dimensional pooling risk framework. The innovative cross-subsidization of

the framework was developed based on the rich subsidizing the poor, healthy people subsidizing sick people, the young subsidizing the elderly, the healthy people subsidizing for their health promotion, and disease prevention, and high-density population districts subsidizing for equity in low-density population districts. In conclusion, the innovative six-dimensional pooling risk framework of health insurance Bismarck model functions to remobilize health care resources towards the four types of health care services of UHC and equity in low-density population districts. The premium of the model is demanded to transform based on probability of health and illness, and equity in low-density population districts.



Predicting permanent pacemaker implantation following transcatheter aortic valve replacement: A contemporary meta- analysis of 981,168 patients



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Background: Heart block requiring permanent pacemaker (PPM) implantation is a relatively frequent complication of transcatheter aortic valve replacement (TAVR).

Objective: The purpose of this study was to perform a contemporary meta-analysis to provide an updated assessment of clinically useful predictors of PPM implantation post-TAVR.

Methods: Medline and EMBASE searches were performed to include all studies reporting PPM post-TAVR between 2015 and

2020. Pertinent data were extracted from the studies for further analysis. RevMan was used to create forest plots and calculate risk ratios (RRs).

Results: We evaluated 41 variables from 239 studies with a total of 981,168 patients. From this cohort, 17.4% received a PPM following TAVR. Strong predictors for PPM implant were right bundle branch block (RBBB) (RR 3.12; P ,.001) and bifascicular block (RR 2.40; P 5 .002). Intermediate factors were chronic kidney disease (CKD) (RR 1.53; P ,.0001) and

first-degree atrioventricular block (FDAVB) (RR 1.44; P ,.001). Weak factors (RR 1–1.50; P ,.05) were male gender, age 80 years, body mass index 25, diabetes mellitus (DM), atrial fibrillation (AF), and left anterior fascicular block (LAFB). These factors along with increased left ventricular outflow tract (LVOT) area (.435 mm²) and/or aortic annulus diameter (.24.4 mm) were incorporated to propose a new scoring system to stratify patients into high- and low-risk groups.

Conclusion: Male gender, age 80 years, FDAVB, RBBB, AF, DM, CKD, Medtronic CoreValve, transfemoral TAVR, increased LVOT, and aortic annulus diameter were significant predictors of post-TAVR PPM implantation. Preprocedural assessment should consider these factors to guide clinical decision-making before TAVR. Validation of our scoring system is warranted.



Coblation versus cold dissection Tonsillectomy: A comparative study

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Tonsillectomy is the most frequently performed surgery in the recent years. Many techniques have been advocated to improve surgical efficacy and decrease postoperative morbidity. Probably the most update was coblation tonsillectomy. This is a comparative study which was conducted on 50 patients (23 females and 27 males) who underwent tonsillectomy operations, 25 patients using cold steel dissection method whereas coblation technique was used for the rest 25 patients. Follow up was done at day 1,3, 7 and 14 and the related parameters were calculated. The mean age of patients was 11.6 years with a mean of

2.2–40 years. There were 27 (54%) males out of 50 and 23(46%) were females. Male to female ratio was 54%:46% & 1.17:1. The current study revealed significant difference between coblation versus cold dissection tonsillectomy. Postoperative pain was significantly less at day3 and day 7 using coblation technique (Table 1). Moreover, there were less intraoperative bleeding, less time in days to return to normal diet and less time to return to normal activities. We believe that coblation tonsillectomy carries less morbidity than cold steel dissection, hence we recommend it to be applied at our hospital.

	Coblation	Cold dissection	p value
Post op. day 1	6.6 ± 1.8	6.8 ± 2.00	.05
Post op. day 3	4.2 ± 0.95	5.6 ± 2.10	.05
Post op. day 7	1.24 ± 0.77	1.84 ± 0.85	.05
Post op. day 14	0.4 ± 0.328	0.2 ± 0.4	.05

Table 1: Post-operative pain score



The effect of mouth breathing on general health and facial development



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Nasal breathing is very important to maintain the balance of craniofacial development. Individuals whose mouth breathing can be observed long, narrow faces, narrow mouths, high palatal vaults, dental malocclusion, gummy smiles, and many other unattractive facial features, such as skeletal Class II or Class III facial profiles. In addition to abnormal facial growth and dental malocclusions, many other medical health problems can be attributed to mouth breathing. Nasal respiration is essential for the production of nitric oxide. Nitric oxide is crucial to overall health and the efficiency of smooth muscles, such as blood vessels and the heart. Nasal respiration produces the most efficient mechanism for introducing oxygen into the lungs and body for overall health.

Mouth breathing during critical growth periods in children causes tendency for clockwise rotation of the growing mandible, with a excessive increase in anterior lower vertical facial height and decreased

posterior facial height. Such increases in anterior lower vertical face height are often associated with retrognathia of mandible and such retrognathia of mandible associated with open bites, high predisposition to obstructive sleep apnea and a lower and posterior position of the hyoid bone.

Oral breathing of patients presenting vertical direction growth excess (statistically insignificant) also negatively affected nasopharyngeal airway volume. Different sagittal and vertical facial types affect the pharyngeal airway. The relationship between upper airway obstruction and abnormal facial growth has been proven. It has been reported that there is a significant relationship between the sagittal position of the jaws and face types, and the position of the hyoid bone and the pharyngeal airway. It can be said that those who breathe through the mouth have a narrower maxilla, retrusive mandibles, a longer face type and they have distinctive facial features that can be easily distinguished.



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



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When an event that endangers public health security occurs, the enterprise that causes the event often file for bankruptcy, which leads to the current problem of how to protect the interests of the infringed in bankruptcy proceedings. This is a typical problem of bankruptcy law, but neither the bankruptcy law of the United States nor that of China has made specific provisions for this problem, putting the interests of the infringed at risk. The study of the vaccine incident of Changchun Changsheng Biotechnology and the baby powder incident of Johnson & Johnson reveals that the solution to this problem is essentially the same in China and the United States (i.e., to divest some assets from a bankrupt company and use them to compensate the infringed), but the two countries have different starting points and different problems to solve.

In the baby powder incident of Johnson & Johnson, the bankruptcy court of the United States mainly considered how to reduce the total cost to society and give necessary compensation to the infringed. In the vaccine incident of Changchun Changsheng Biotechnology, the Chinese government considered how to provide adequate compensation to the infringed but not how to reduce the total cost to society. Compared with China's approach, due to the lack of government intervention, the approach of the United States may not ensure adequate compensation for the infringed and it is less efficient. However, where the Chinese government's practices are in conflict with the Chinese Enterprise Bankruptcy Law and other laws, the Chinese government should amend relevant legislation in a timely manner in the future to achieve a legal basis.



Children hospitalized for suspected maltreatment in Greece: Who, why and what for?



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Child maltreatment crosses all socioeconomic, ethnic, religious, and educational boundaries; however, studies focusing on demographic characteristics of these children in Greece are scarce. Despite recent effort there is no national registry and the response system remains fragmented. Since the existing response system often includes hospital admission, this study aims to describe the characteristics of children up to 16 years of age with suspected maltreatment admitted to a tertiary children's hospital in Greece, as well as to describe the case management procedure and to calculate the length and baseline cost of hospitalization for this population of children. The socioeconomic factor most often recorded in the study

participants was parental unemployment within the nuclear family structure. The main reason for referral to Social Services was neglect. The mean hospitalization duration was 28.5 days. The most frequent outcome was discharge to parental home under Social Services' supervision. The analysis of associations between gender, age, residence status and the referral reasons showed significant differences. Quantitative and qualitative descriptors of children with suspected maltreatment offer potential insights on the social determinants of health. Our findings have the potential of offering assistance to future interventions that aim to develop effective system responses and preventive strategies.



Watermarking system for Telemedicine based on FABEMD



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Telemedicine is conquering obsession and it is upbeat research space now a day. Commuting therapeutic images amid secluded localities is a mundane in telemedicine as the therapeutic images are exceptionally used for making inference concerning diagnosis by remote specialists. Therapeutic images are largely commuted over internet. Therapeutic images may be attacked by diverse kinds of noise while commuting through the internet. Usage of noise attacked therapeutic images may lead to misdiagnosis. So, the remote authority

must attest the veracity of the significant part (ROI) in therapeutic image and recover the ROI on the off chance that it has been attacked by noise. This paper presents an innovative watermarking system which uses Fast and Adaptive Bi-dimensional Empirical Mode Decomposition (FABEMD) to recover the ROI in a therapeutic image when it is attacked by noise. Experiments carried out using this novel technique proves that the ROI in therapeutic image is restored to its original state.



Unusual presentation of Multisystemic inflammatory syndrome



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CCOVID 19 pneumonia in children presents with very mild symptoms through an entity of multisystemic inflammatory syndrome and can result in a life-threatening hyperinflammatory condition, with the involvement of at least four organ systems and a marked inflammatory state. We present a case report of an 18-year-old high school student who presented with a sore throat, macular rash, abdominal pain, diarrhea, fevers, and joint pains. He presented with acute kidney injury and confusion with multiple tests and was eventually diagnosed with

Multisystem inflammatory syndrome in children (MIS-C).

COVID-19 pneumonia can lead to MIS-C resulting in multiple organ inflammation. Patients with MIS-C are more prone to thrombotic events and multiple organ failures. Therapies with steroids and intravenous immunoglobulins have been shown to improve outcomes significantly. AKI caused by renal infarction is rare; this may be the only case resulting in renal infarction requiring renal replacement therapy



Exploring efficacy of video literacy curriculum for Anti-Bullying to create awareness and advocacy in primary school children in Pakistan



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With a scarcity of research looking at violent and extremist tendencies in primary school children in Pakistan, this study aimed to look at the effects of emotional resilience education through the means of cartoon-based learning. Children have a limited attention span and research on video/cartoon-based literacy projects has indicated greater efficacy with more retention and engagement. The cartoon based on the theme of anti-bullying was used in a 6-week intervention program in an experimental design setup with 120 experimental and 40 control group students recruited from the Islamabad/Rawalpindi area (ages 9–11). The behaviors and awareness about the concepts of physical and verbal bullying, coercion and damaging others' property,

as well as qualitative information about the cartoon themes were assessed before and after the program for pre- and post-test comparison. The cartoon was accompanied with teaching aids, worksheets and activity-based learning. The results indicated that only 3.3% of students were aware about bullying and its various types to begin with and after intervention 98.7% understood the concept clearly. Before the intervention, 65.8% of students didn't understand that they were bullies – after the intervention it reduced to 22.5% who thought they were not bullies. The effectiveness of the results from this video literacy program will enable development of more emotional resilience education courses in the curriculum to create a more resilient society in the long run and curb bullying in schools.



Infiltration of outdoor particles and influencing factors



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Undoubtedly, prolonged exposure to fine and ultrafine particles is a potential risk factor for mortality. However, the extent of people's indoor exposure to ambient originated particles depends on their infiltration, which is a function of the meteorological parameters, air exchange rates (ACH), particle size, and structural characteristics of the building, including window airtightness.

Considering that about 60% of buildings in Tehran have not observed the energy-saving and window airtightness requirements, we investigated the real-time changes of indoor-outdoor PM_{2.5} concentrations, infiltration factor, and analyzed the effect of ACH, airtightness and various meteorological parameters on indoor particle levels in an apartment, which was a typical example of relatively old buildings in Tehran with drafty windows, before and after sealing

the window gaps.

The results confirmed window status and building leakage could substantially modulate the effect of outdoor sources on indoor PM. Although the correlation analysis showed that the indoor PM levels were highly dependent on the outdoor ones, the penetration behavior of different particle sizes was different. Despite the absence of indoor sources, indoor PM₁₀ content was not similar to outdoor. The highest contribution to outdoor PM₁₀ for both airtightness cases was observed for coarser particles while the most abundant particle size indoors was related to the finer sizes.

Moreover, air tightening slightly decreased the indoor/outdoor ratio and particle infiltration factor and weakened the indoor-outdoor PM correlation, especially for coarser particles.

The results of regression models indicated that particle size, envelope airtightness, and outdoor source as the main factors that governed fractional particle infiltration. The impact of meteorological parameters on indoor levels was overshadowed by the effect of the outdoor source.

Furthermore, the comparison of IDW interpolated PM_{2.5} data of ambient fixed stations with outdoor measured PM_{2.5} depicted that ambient stations' data are not applicable as surrogates for exposure.



Retama monosperma (L.) Boiss.: A review of its uses in traditional medicine, chemical constituents, and pharmacologic activities



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Introduction: Retama monosperma (L.) Boiss., which belongs to the Retama genus, is a medicinal plant endemic to the Mediterranean basin. It is used in traditional medicine to treat various diseases such as skin diseases, diabetes, rheumatism, and hypertension. In this review, we highlighted previous information on the taxonomy, botanical description, geographical distribution, uses in traditional medicine, chemical composition, and pharmacologic activities of Retama monosperma (L.) Boiss.

Methods: The data on Retama monosperma (L.) Boiss was collected using the scientific research databases PubMed, Scopus, and Web of Science. The compiled bibliography contains twenty-one references. The Plant List and the "Inventaire National

du Patrimoine Naturel" were used to authenticate the scientific names. The information presented in this paper summarises the phytochemicals, uses in traditional medicine, and pharmacologic properties of Retama monosperma (L.) Boiss.

Results: In traditional medicine in the Mediterranean region, Retama monosperma (L.) Boiss is used to treat various diseases including diabetes, abortive, rheumatism, and hypertension. Overall, these studies show that the extracts of different parts of Retama monosperma (L.) Boiss have five main pharmacologic activities, such as anticancer, anti-oxidant, anti-inflammatory, anti-fungal, and anti-aging activities. The phytochemical analysis by GC/MS, HPLC/

MS, and NMR of the essential oil and the extracts of *Retama monosperma* (L) Bioss revealed the presence of different classes of secondary metabolites bioactive such as cyclitols, alkaloids, flavonoids, terpenes, and sterols. In this study, we inventoried 60 compounds isolated and identified from different extracts of *Retama monosperma* (L) Bioss.

Conclusions: Many aspects of *Retama monosperma* (L) Bioss extracts and their secondary metabolites have not been investigated; further studies on toxicity and clinical activity are needed to explore the untapped potential of this plant.



CDC20 serve as a novel biomarker and potential therapeutic target for intrahepatic cholangiocarcinoma



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Background: Intrahepatic cholangiocarcinoma (iCCA) is a highly aggressive malignancy originating from bile duct or hepatocyte. The prognosis of iCCA is very poor, and the biomarker study is unsatisfactory compared with other common cancers. Cell division cycle (CDC20) has a diagnostic and prognostic value in various malignant tumors, yet its role in iCCA remains unclear.

Methods: In present study, we investigated the expression of CDC20 in iCCA and its relationship with prognosis were analyzed through TCGA and GEPIA databases. Base on the iCCA cell lines (RBE and HCCC9810) and intrahepatic bile duct epithelial cell, the expression of CDC20 in iCCA cell was detected by Western blot and RT-PCT. The expression of CDC20 in cell lines were down-regulated by siRNA, and we detected the down-regulation effect by Western blot and RT-PCT. We detected the effects of CDC20 expression on proliferation, migration and invasion of iCCA cells through colony formation, CCK-8, scratch and transwell

assay. The effects of CDC20 on the cycle and apoptosis of iCCA cells were detected by flow cycle and flow apoptosis assay.

Results: The expression of CDC20 in iCCA tissues was higher than that in normal paracancer tissues, and the expressions of CDC20 in iCCA cell lines were higher than that in normal hepatobiliary duct epithelial cell. The proliferation, migration and invasion ability of iCCA were significantly decreased after down-regulated CDC20 expression ($p < 0.05$), and the number of cells staying in G2 phase was noticeably decreased, while the number of cells staying in G1 phase was significantly increased ($p < 0.05$). In addition, inhibition of CDC20 expression markedly increased the apoptosis rate of iCCA cell lines ($p < 0.05$)

Conclusions: CDC20 expression was associated with iCCA occurrence and development. These findings together support that CDC20 may serve as a novel biomarker and potential therapeutic target for iCCA.



Kawasaki disease in Tunisia: Clinical and epidemiological aspects before Covid 19 pandemic



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The KD is reported as rare in Tunisia and the epidemiology is unknown because of lack of large series. The clinical and epidemiological of disease are changing since the pandemic of COVID 19. The objective was to study the epidemiological, clinical and evolutive aspects, in all 17 pediatric departments in the 13 teacher hospitals of Tunisia, before the pandemic. The study is retrospective, transversal multicentric study, over ten years period (2010-2019). The inclusion criteria are the AHA 2017 criteria concerning the diagnosis of complete and partial KD. The descriptive results are interpreted according to SPSS 21.

We report 295 cases of KD so an incidence of 2,23/100,000 children aged under than 5 years, 62,08% are from the north of the country. Mean age was 38,60 months \pm 27,75 and 66,44% are aged from 1 to 5 years. The number is raising every year and passed from 25 cases in 2010 to 35 in 2019. The most cases are recorded from December to May; Clinical data showed a diagnosis delay (compared

to beginning of fever) of 8 days \pm 4,6 (1-39), and 25.5% are diagnosed after the tenth day of fever. The clinical form was complete and typical in 70%. The criteria were fever, buccopharyngeal changes, cutaneous rash, extremity changes, lymphadenopathy and perineal desquamation in respectively 100%, 88.1%, 80%, 61.7%,

61.7%, and 22.3%; The other criteria are gastro-intestinal, articular, and neurological in 33.8%, 13.5% and 9.8%; The biologic data showed inflammatory features with Mean ESR: 83 \pm 34.28 mm and mean CRP: 100.8 \pm 84.4 mg/l, renal involvement in 53 cases and liver involvement in 58 cases with cytolysis in 45. Coronary aneurysm are noted in 38 cases (12.8%) and were several in 11. Resistance to IVIG is noted in 41. Twenty five of them received a second dose of IVIG and 10 were treated by corticosteroids. In conclusion the diagnosis of KD is still delayed despite the frequency of complete forms. This is contrasting with less frequent coronary aneurysm than many series.



On the goodness of fit of parametric and non-parametric data mining techniques: the case of malaria incidence thresholds in Uganda

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To identify which data mining technique (parametric or non-parametric) best fits the predictions on imbalanced malaria incidence dataset. The researchers compared parametric techniques in form of naïve Bayes and logistic regression against non-parametric techniques in form of support vector machines and artificial neural networks and their goodness of fit and prediction was assessed using 10-fold and 5-fold cross-validation on an independent validation dataset set to determine which model best fits the predictions on imbalanced malaria incidence dataset. The 10-fold cross-validation outperformed the 5-fold cross-validation in all performance metrics with the naïve Bayes classifier attaining accuracy of 69% with a sensitivity of 90.9%, a specificity of 55.6%, a precision of 55.6% and an F-measure score of

69.0%, the logistic regression achieved an accuracy of 65.5% with a sensitivity of 83.3%, a specificity of 52.9%, a precision of 55.6% and F-measure score of 66.7%, the support vector machines achieved an accuracy of 82.8% with a sensitivity of 88.2%, a specificity of 75.0%, a precision of 83.3%, and F-measure score of 85.7% whereas the artificial neural networks registered an accuracy of 89.7% with a sensitivity of 94.1%, a specificity of 83.3%, a precision of 88.9%, and F-measure score of 91.4%. Non-parametric data mining techniques in form of artificial neural networks and support vector machines outperformed the parametric data mining technique in form of naïve Bayes in making predictions emanating from imbalanced malaria incidence dataset on account of registering higher F-measure values of 91.4% and 85.7% respectively.



Study on the influence of radiation safety culture on occupational health of radiation workers in medical institutions



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Objective: To explore the influence of radiation safety culture on occupational health of radiation workers.

Methods: The current situation of radiation safety in 171 medical institutions was investigated by retrospective survey, current situation survey and laboratory study. The occupational health monitoring data of 1547 radiation workers in medical institutions were statistically analyzed according to the provincial level, county level, township level. To evaluate the current status of radiation safety and estimate occupational health risks. This research was approved by the Bioethics Committee at the Gansu provincial center for disease control and prevention [2018(006)].

Results: The improvement degree of radiation safety culture construction in

high-level public hospitals is far better than that in other hospitals. The differences of ALT ($P < 0.05$), lens opacity ($P < 0.05$) and micronucleus ($P < 0.05$) were statistically significant. The detection rate of lens opacification was stratified according to radiation working years ($P < 0.05$), the difference was statistically significant.

Conclusion: Radiation safety culture status is closely related to the radiation sensitive indicators, radiation protection, radiation workers knowledge training and awareness, cultural degree, radiation protection, medical conditions, equipment advanced degree, living habits, living conditions have an impact on the sensitive indicators, such as county district, particularly township-level radiation safety culture of medical institutions need to be further improved.



Sexual and gender- based violence victims' satisfaction of the support services through the holistic model of care in the Democratic Republic of Congo



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The quality-of-care assessment is an important indicator of the efficiency of a healthcare system. In the Democratic Republic of the Congo (DRC), despite the implementation of the holistic care model for the treatment of sexual and gender-based violence (SGBV) victims, little is known about the client's perception of this model and its outcome. This study aimed to examine the expected and perceived satisfaction of service recipients through the One-Stop-Center model of health care in eastern DRC. This descriptive and analytical cross-sectional study was conducted at Panzi Hospital (PH), in eastern DRC. Data were collected by a mixed-methods approach, 64 Victims

of Sexual Violence participated in individual (in-depth) interviews and 150 completed the Survey. The Kruskal-Wallis test was used to compare the mean item scores of sexual violence victims' satisfaction. The findings from our qualitative analysis demonstrated that the victims admitted at PH had various expectations and needs on arrival depending on their social identity and residence locations. For instance, the victims coming from remote areas with ongoing armed conflicts mentioned concerns related to their security in the post-treatment period and the risks of re-victimization that this could incur. Conversely, those who came from the urban neighborhood, with relative security

raised various concerns related to their legal reparation and ongoing access to other support services. With scores above 4, victims of sexual violence were extremely satisfied with the overall care provided and wished that PH could continue to support them mentally and financially for an effective reintegration into their communities. The Kruskal-Wallis analysis confirmed statistically significant differences ($p < 0.1$) in satisfaction with

legal support based on the victims' residential locations, social support based on their age groups, occupational therapy based on their religious denominations, and accommodation based on their professional activity. The results of this study suggest that victims' satisfaction with support services is based on either the organizational frameworks of clinical or support services within the hospital and the victims' social environment.



Examining the Etiology and Treatment of Mental Illness Among Vodou Priests in Northern Haiti



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This study assesses the perspectives and experiences of Vodou priests (ougan) in the treatment of mental illness in northern Haiti. Our goal is to explore the etiology and popular nosologies of mental illness in the context of Haitian Vodou, through understandings of illness and misfortune which are often viewed as a result of sent spirits—or spirits sent supernaturally by others with the intent to cause harm. Using a qualitative approach, this study conducted semi-structured in-depth interviews with 20 ougan living near the city of Cap-Haïtien. Interviews highlight a sample of healers with little formal training who maintain beliefs and practices

that differ significantly from current biomedical models. Ougan treat mental illness through a variety of means including prayer and conjuring of spirits, leaves for teas and baths, as well as combinations of perfumes, rum, human remains, and other powdered concoctions that are either imbibed or rubbed on the skin. The primary purpose of these treatments is to expel the spirit causing harm, yet they can often result in additional harm to the patient. Findings suggest that while ougan are willing to collaborate with biomedical practitioners, significant barriers remain preventing cooperation between these two groups.



**Potential
factors
influencing
repeated SARS
outbreaks in
China**



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Within last 17 years two widespread epidemics of severe acute respiratory syndrome (SARS) occurred in China, which were caused by related coronaviruses (CoVs): SARS-CoV and SARS-CoV-2. Although the origin(s) of these viruses are still unknown and their occurrences in nature are mysterious, some general patterns of their pathogenesis and epidemics are noticeable. Both viruses utilize the same receptor—angiotensin-converting enzyme 2 (ACE2)—for invading human bodies. Both epidemics occurred in cold dry winter seasons celebrated with major holidays, and started in regions where dietary consumption of wildlife is a fashion. Thus, if bats were the natural hosts of SARS-CoVs, cold temperature and low humidity in these times might provide

conducive environmental conditions for prolonged viral survival in these regions concentrated with bats. The widespread existence of these bat-carried or -released viruses might have an easier time in breaking through human defenses when harsh winter makes human bodies more vulnerable. Once succeeding in making some initial human infections, spreading of the disease was made convenient with increased social gathering and holiday travel. These natural and social factors influenced the general progression and trajectory of the SARS epidemiology. However, some unique factors might also contribute to the origination of SARS in Wuhan. These factors are discussed in different scenarios in order to promote more research for achieving final validation.



Rate and types of childbirth mistreatment and abuse and its association with satisfaction with birth care: A cross sectional study of 1196 Kurdish women



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Background and Objectives: Concern about mistreatment and abuse during childbirth care is growing, and evidence suggests that many women worldwide experience mistreatment during childbirth. The study aimed to assess the prevalence of abused women during labor, types of abuse, rate of satisfaction with birth care among abused women, and associated sociodemo-graphic and obstetric factors with mistreatment and abuse in the delivery room.

Methods: A cross-sectional study was conducted with data from 1196 women who experienced a vaginal delivery at least once within the past year in a public health setting in Erbil city, Kurdistan Region, Iraq. The author developed a questionnaire after a comprehensive review of the literature. Data were collected through direct interviews with the sample. Frequency, percentage, and chi-square tests were used for data analysis.

Results: About half of the study sample (49.9%) mentioned that they experienced mistreatment and/or abuse during labor and delivery. The most experienced type of mistreatment and abuse were as follows: lack of privacy (84.6%), patient-blaming (58.5), purposeful neglect (51.6%), abandonment of care, and detention in facilities (43.9%), Non-consented care (42.9%). The rate of physical and verbal abuse was 24.3% and 29.8%, respectively. There was a highly significant association between parity and general satisfaction with birth care with experiencing abuse ($P=0.006$, $P\leq 0.001$).

Conclusions: Mistreatment and abuse of women during childbirth are present among Kurdish women, leading to generally non-satisfaction with birth care, and exploring the reasons behind why health care providers mistreatment and abuse women during childbirth is critical.



Water management in rural Mexico: Water accessibility and health implications



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Access to sufficient water of suitable quality represents a Sustainable Development Goals (SDGs) of the 2030 Agenda. Currently, water access is restricted to three of 10 persons globally. However, in rural areas of Mexico and other low-income countries, coverage could be even less due to the absence of formal supply. Rural communities usually are going to fetch water or collect rainwater, which does not guarantee access to safe water. Lack of access to clean water and adequate sanitation is still prevalent in many rural areas, and land use change has been the main cause of the deterioration of water resources. This work recognizes barriers and bridges to water access in a rural environment through mixed methods, on three communities as case studies in southeastern Mexico by analyzing 90 questionnaires conducted at the household

level in parallel with water quality analysis and its relationship with management practices. The barriers and bridges were classified into six water-access challenges: i) access to water in a sufficient amount; ii) access to water of adequate quality; iii) access to water for household-crop irrigation; iv) hygiene and sanitation facilities; v) collective organization, and vi) climate variability. The main results indicate that the quantity and quality of water available to families is deficient due to the lack of formal infrastructure and represents a health risk. Fetching water has the greatest impact on women and children in poor rural areas and is a major barrier to sustainable development. In contrast, collective organizing and recognition of agreements proved to be an essential bridge to access to water in these communities.



The vase against the criminalization of doping based on public health risk



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Over the past two decades, several states have enacted legislation criminalizing the use of performance-enhancing drugs in sports, otherwise known as doping use. The decision to criminalize doping use raises an important question: 'Is the criminalization of doping use justifiable?' In an attempt to justify a criminal response, several proponents of the criminalization of doping use have argued for its criminalization based on its potential health risk both to the athlete themselves and to the general public. This paper critically evaluates whether the said argument justifies the criminalization of doping use. In order to evaluate whether the argument based on public

health risk justifies the criminalization of doping use, considerations from principles of criminalization as well as the principles of proportionality, subsidiarity, necessity and pragmatics are brought to bear. In this paper, it is argued that the proposed justification does not provide sufficient reason, let alone a compelling case, to criminalize doping use. It is also concluded that a criminal response based on such justification is disproportionate, unnecessary, and impractical. If sound, this implies that the criminalization of doping use based on public health risk is unwarranted and potentially contributes to the crisis of 'over-criminalization.



Association between outdoor particulate air pollution and the risk of osteoporosis: A systematic review and meta-analysis



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Air pollution is a major threat to global health, which is associated with several adverse health outcomes and increased mortality. Few studies have investigated the association between air pollution and osteoporosis, and their findings were inconclusive. Our objective is to determine whether exposure to outdoor air pollution is causally associated with risk of osteoporosis. A systematic literature search of PubMed, Web of Science, Embase, and Cochrane Library for publications up to December 2020 was conducted for studies reporting the association between air pollution and osteoporosis. Meta-analysis was performed to estimate the pooled effect size of air pollution on osteoporosis using the relative risk (RR) and 95% confidence intervals (95% CI). Quality assessment was conducted, and

all statistical analyses were performed by RevMan 5.3 software. Our search identified 9 eligible studies involving 9,371,212 patients. Meta-analysis revealed that there was an increased risk of osteoporosis (total body BMD and hip fracture) as a result of exposure to air pollution including PM_{2.5} and NO₂. However, no significant excess risk of osteoporosis was found regardless of PM₁₀, NO, and O₃. In spite of a few numbers of epidemiological studies selected in the present literature review, this study indicated that the increased exposure to air pollutants was positively associated with high risk of osteoporosis. Further cohort studies with large sample sizes are needed to investigate different constituents and the duration of exposure of air pollutants.



Diagnosis and management of gout by clinicians in Nepal: A web based survey



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Aim of the study: The study aimed to evaluate knowledge, attitude, and practice (KAP) of point-of-care clinicians of Nepal regarding diagnosis and management of gout and assess the quality of treatment provided to the patients.

Method: A web-based descriptive, cross-sectional study was conducted among doctors managing gout patients. The questionnaire comprises 38 multiple choice questions; 9 questions for demographic data, 8, 11, and 10 questions each for knowledge, attitude, and practice, respectively. A pilot study was conducted to observe comprehensibility of the questionnaire before subjecting it to the participants. Ethical approval was obtained from review committee of National Centre for Rheumatic diseases, Nepal. Simple descriptive statistics was used to describe the correct responses.

Result: Among 1200 clinicians invited, 32% (380) participated in the survey.

Maximum respondents were of age group 25–45 years (82%) with majority being internists (43%). Although only 32% understood that the disease is not curable, knowledge regarding disease was acceptable in majority (60–90%). Around 83% denied attending any gout-related seminars and 34% denied being updated with the recent guidelines. The majority of postgraduates (72%) managed the cases themselves. Although there was acceptable practice accuracy on use of therapy for acute attacks (75%), target urate levels (57%), and use of urate-lowering agents (92%), they lacked in adequate screening of co-morbidities and initiation of long-term treatment.

Conclusion: The point-of-care clinicians have adequate knowledge to diagnose and treat acute events. However, there is poor reflection in practice and frequent update of treatment guidelines is warranted.



Zoom dysmorphia in e-teaching: Shifting the value from attributes to appearance



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The current study is motivated by Tory Higgins's self-discrepancy theory and the objectification theory. It aimed to investigate university staff members' perspectives towards zoom dysmorphia while involved in e-teaching during the Covid-19 Pandemic in terms of its popularity, causes, and instructors' experiences with the healing or eliminating mechanisms. Put simply, the researchers meant to identify the impact of the pandemic on body image and the long-term repercussions of e-teaching on instructors' quality. A descriptive online questionnaire was compiled to explore the way (630) university staff members having academic and academic/administrative positions evaluate, perceive, and handle zoom dysmorphia while teaching online. The study results showed several associations between the variables studied. Gender was significant because females proved to have more features of dysmorphia; faculty

members who serve in scientific faculties also proved to expect more features of dysmorphia as they tended not to turn on their cameras. The study results also showed that sufferers of zoom dysmorphia warranted that their appearances occasionally made them feel insecure and occupationally unstable. Therefore, they tried different healing mechanisms to eliminate or, at least, reduce its traits. The study concluded that the prevalence of zoom dysmorphia may result in shifting the value from good, effective attributes (e.g., professionalism, adaptability, collaboration, empathy, and patience) of instructors to merely outside physical appearances. The researchers recommend that educators should elicit the presence of zoom dysmorphia at an early stage. They should prepare courses to improve instructors' self-confidence, and provide them with proper technical experience.



Effects of dropout and weight initialization on human face classification accuracy



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Research in machine learning focuses on classifying real-world data using its characteristics as a basis for learning. Face recognition methods have difficulty recognizing people based on real-life data, regardless of whether the data is binary or multi-class. Several techniques are available for performing facial recognition, such as two-pathway generative adversarial networks (TP-GANs), which combine preprocessing, post-processing, and feature representation techniques in order to achieve high accuracy in face identification and classification accuracy. A major advantage of TP-GANs is their ability to generate frontal views based on landmark detection and synthesis functions, which limits their capacity to generate high-quality frontal face images under extreme poses. This paper proposes

a dropout rate and weight nationalization for high classification recognition that improves the model performance for identifying facial images. The main idea behind these methods is to modify parameters to solve the issue of co-adaptation among neural network layers in order to reduce overfitting. Establishing robust feature extractors that adapt a feature is a helpful step toward achieving a balanced learning strategy, which leads to significant improvements in classification accuracy. The effectiveness of our proposed method is verified on both Multi-PIE, FEI, and CAS-PEAL datasets. Quantitative and qualitative results show that our proposed method improves TP-GAN results under extreme poses and achieves the desired classification accuracy.



A study of environmental factors affecting nutritional status among students of primary schools at Ulanga district, Tanzania



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Background: The prime concern of a society is to ensure healthy growth and development particularly to students of primary school because are the future of the nation. Normal Growth and development takes place only if there is optimum nutrition and safe environment to live in. WHO estimates that there are 178 million children that are malnourished across the globe and Malnutrition contributes to the deaths of over one half of children in developing countries and Tanzania inclusively

Methodology: Analytical cross sectional study was conducted among 914 students at Ulanga district. Multistage cluster sampling technique was applied then school to school survey was performed for the selected school , anthropometric measurements of primary school students for those sampled schools were done and BMI was calculated to assess the nutritional status of primary school students .

Environmental factors were studied and correlated with nutritional status.

Results: 82.7%, 16.7 %, 0.3% and 0.3 % of students were found to be underweight, normal overweight and obese respectively. Significantly association was observed between nutritional status and unsafe water ,poor method of water purification specifically filtration, personal hygiene and high house status and majority of students were underweight

Conclusion and recommendation: Unsafe water, poor method of water purification, personal hygiene and high house status are related to nutritional status and majority of students were underweight. Proper sanitation of the drinking water should be promoted in the community to prevent the water born diseases in the children, mass education on person hygiene and proper method of water purification should be promoted.



Phytochemical studies and In vitro antioxidant activity in selected leaves of Cassia species



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Objective: Analysis of phytochemical constituents in selected species of Cassia viz; *C. fistula*, *C. javanica*, *C. siamea* and *C. suratensis* leaves for possible antioxidant effect.

Methods: Dried leaves of *C. species* were extracted in different polarity gradient solvents for qualitatively of primary and secondary metabolites. Quantitative estimation of phenolics and flavanoids carried out using FCR and antioxidant activity by DPPH scavenging assay.

Results: Result of phytochemical screening suggests that maximum metabolites were present in methanolic extract along with all leaves of Cassia species as compared to other solvent extracts. Maximum phenolic content was detected in leaves of *C. suratensis* (200 ± 0.046 GAE/g) followed by *C. siamea*, *C. fistula* and *C.*

javanica respectively. Highest flavanoids was present in *C. suratensis* and *C. siamea* (75 ± 0.025 QE/g, 75 ± 0.015 QE/g) respectively. Antioxidant activity were significantly ranges from (0.02mg/ml to 0.10mg/ml) 44.41 ± 0.011 to 91.58 ± 0.011 in *C. javanica* leaf with IC₅₀ value 0.033 and 39.72 ± 0.020 to 91.31 ± 0.001 in *C. suratensis* leaf with 0.035 IC₅₀ value respectively by DPPH assay.

Conclusion: This study revealed that *C. suratensis* leaf has maximum antioxidant activity as compared to other species that was significant. The alcoholic extract of this plant leaves is a good source to prevent oxidative stress related diseases. Hence, the study scope for development of pharmaceuticals from extracts/fractions with marker compound(s) having antioxidant activity.



**Effect of parenting
intervention
through “care for
child development
guideline” on early
child development
and behaviors:
A randomized
controlled trial**



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Several studies showed that parenting intervention programs play a core component in early child development. Considering the limited healthcare resources in developing countries, group-session intervention based on care for child development (CCD) guideline might be cost-effective.

This randomized controlled trial was conducted at an outpatient public Pediatrics clinic in Isfahan, Iran. We included 210 pregnant women aged 18–45 years in their third trimester and followed their children

for 18 months. The intervention group underwent 5 educational group sessions, each lasting for almost 45 minutes.

The main outcomes were the children's development and socio-emotional behavior problems based on Bayley Scales of Infant and Toddler Development-III (BSID-III) at 12 months and the Children Behavior Checklist (CBCL) at 18 months.

Overall, data of 181 children were included in the current study, including 80 in the intervention group and 101 controls. The adjusted median/mean differences

between intervention and control groups using median/ linear regression were not significant for all BSID-III domains except for median differences for cognitive score based on BSID-III (β (SE): $-4.98(2.31)$, $p:0.032$) and mean differences for anxiety/ depression score based on CBCL (β (SE): $-2.54(1.27)$, $p:0.046$).

In this study, parenting interventions through CCD group sessions were

significantly effective on just one subscale of children's socio-emotional behavior domains based on CBCL and one domain of children's development based on BSID-III. There might be a ceiling or floor effects for the BSID-III and CBCL assessment, respectively, leaving little room for improvement as almost all children have achieved their full developmental potential in our study.



The impact of technology on patient knowledge acquisition and retention of oral hygiene instructions and associated risks



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Introduction: Orthodontics is a specialty that significantly enhances function and aesthetics. Augmented Reality (AR) “refers to a wide spectrum of technologies that project computer-generated materials, such as text, images, and video onto users’ perceptions of the real world. Initially, researchers defined AR in terms of specific facilitating devices, such as head-mounted displays (HMDs)”.

Aim & Objectives: The aim of this study was to evaluate the patients’ knowledge, understanding and comprehension of the information given to them at the start of the treatment regarding the instruction of oral hygiene (OHI) during Orthodontics treatment, the risks of orthodontic treatment and the care of the fixed orthodontics appliance.

The specific objectives of the study were:

- To compare between two educational methods and evaluate them through which one patient understands best the risks of orthodontic treatment, OHI and instruction related to Orthodontic treatment.
- To evaluate if their comprehension is related to their age, gender and socioeconomic class.

Methods: The sample groups were in the range of 12-16 years old. There were 49 participants (23 received teaching through leaflet; 26 received teaching via Augmented Reality) The population were paired in similar age, gender and school grades. Then they were randomly allocated to one of the two teaching method (Augmented reality or Leaflet). The Augmented Reality (AR) technique was used to educate half of the sample, while the other half was educated via traditional methods using paper-based leaflets. Comprehension of the oral hygiene Instructions among

participants, and their awareness of the risks of orthodontics treatment, was then assessed. The study tool was a validated survey which was knowledge based. The survey was used in previous similar study in English. Validation of the Arabic translation was done through various stages inclusive of content and face validation. The Questionnaire was filled twice; before and after the educational intervention. The first occasion was the base line for the study. The data acquired from the patients was analyzed using Paired samples t-test (SPSS ver24).

Results: The results showed that the educational material played via AR have higher impact (205%) on teenage patients compared to leaflet. Also, by observing behaviors of the patients while reading or being engaged with AR in the clinic, it was obvious that patients were more focused

while engaged with AR than reading the leaflet. The feedback from participating patients was highly positive and favorable toward AR. The improvement in the AR group was statistically significantly higher than that for the group using the traditional methods (Paired samples t-test shows significant between AR and leaflet; $p=0.003$) The increase of mean score of the patients in the knowledge-based survey in the videos were 4.35 points, while for the leaflet it was 2.13 points.

Conclusion and Recommendation:

Using AR had greater impact on educating Orthodontic patients than leaflets. AR is an affordable and effective method for educating Orthodontic patients. Utilization of trending technologies to enhance the educational experience in healthcare is foreseen.



Assessing spatial vulnerability of Bangladesh to Climate change and extremes: A Geographic information ”

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Climate change has been the most argumentative issue of the world over the last few decades where developing countries like Bangladesh are maintained as most vulnerable to the forthcoming impacts. The geography and natural hazard proneness of Bangladesh make the country extremely risky. Furthermore the socioeconomic condition has already exacerbated the susceptibility to extreme climate events. Therefore, detailed study of countrywide climate change vulnerability is imperative to facilitate proper measures towards adaptation. Nonetheless, to meet the exigency of demonstrating spatial climate change vulnerability, this study aims to identify the profiles of sectoral vulnerability; to retain unbiased weights of indicators; and to visualize the spatial vulnerabilities in GIS environment. In this study, 42 indicators, 33 socioeconomic and 9 biophysical, have been integrated in the IPCC framework. All the indicators have been incorporated to the GIS database and

converted to raster input layers followed by normalization of the raster layers. Multivariate analysis of all 42 indicators to retain Principal Components (PCs), in order to get unbiased weights and sectoral vulnerability profile, has been performed in Python module of ArcMap 10.5. Through Catell's scree test and Kaiser's criterion, 6 PCs having a higher Eigenvalue and accumulative of Eigenvalues (about 75%) have been identified. The overall vulnerability of the country from exposure, sensitivity and adaptive capacity has also been indexed in this study. The PC1, defined as the meteorological shift vulnerability, shows the south-eastern and western climatic sub-region consisting of 17 districts as highly vulnerable. The PC2, the extreme climate vulnerability, shows the coastal region with its 9 districts as highly vulnerable. Water related vulnerability (PC3) is high in riverine areas as well as in other wetlands and comprises 8 districts. Socioeconomic vulnerability (PC4) is high

in south and hilly regions containing 35 districts. Most regions of the country are found moderate to less vulnerable to infrastructure and information vulnerability (PC5). However, hazard shock vulnerability (PC6) is high in south west coastal region, central region and north eastern region, where households and crops are usually affected due to a variety of natural disasters, consisting of 7 districts. Coastal region, part of hilly region, riverine areas and the haor basin are found highly vulnerable since these regions are more exposed as well as highly sensitive to climate change effects. Though adaptive capacity is found quite good all over the country, the level of vulnerability of coastal region is controlled by exposure and sensitivity. The haor basin is moderate to highly exposed and sensitive to climate change, yet the lower level of adaptive capacity makes this

region highly vulnerable. Riverine areas are found highly vulnerable probably due to flood and river bank erosion, especially the Brahmaputra river basin found to be more vulnerable than other riverine areas. Upper parts of the Chittagong hilly region, outer Brahmaputra floodplain and most of the Ganges flood plain are moderate to low vulnerable; lower level of exposure and sensitivity of these regions make them moderate to low vulnerable having moderate adaptive capacity. The present study however is a new edition in climate vulnerability assessment since it encompasses multivariate spatial analysis to demonstrate countrywide climate change vulnerability. Results from this study can also be an essential tool in taking proper measures related to the adaptation and mitigation of climate change impacts from root level to policy making platforms.



**Social innovation
based on
collaboration between
government and
non-governmental
organizations in
COVID-19 crisis:
evidence from Iran**



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Background: One of the effective ways to attract social collaboration to provide effective, prompt, and coordinated interventions in emergencies is through social innovation. The present study seeks to identify the factors affecting the implementation of the social innovation plan based on the collaboration between government and non-governmental organizations (NGOs) for saving people's lives in crises. The initial idea of this research was obtained from the best practice "Every Home Is a Health Base" which was implemented in Iran.

Methods: The Grounded Theory strategy has been used in this study. The statistical population of the study is health experts from the Ministry of Health and Medical Education of Iran. The study time span is during the first half of 2020. Exploratory

analysis was used to identify the factors of social innovation. By selecting and reviewing 68 research in-depth, the initial framework was prepared. Then, through a semi-structured interview with experts, the framework was adapted and reviewed. Based on the analysis of the collected data, 39 open codes were extracted and the factors affecting the implementation of the social innovation were identified.

Results: The eight axis codes as the factors affecting the implementation of the social innovation plan based on the collaboration between government and NGOs are as follows: Paying attention to the components of the NGOs collaboration effectiveness, investment to attract NGOs collaboration, the ability to manage the implementation, the ability of networking, the ability of policymaking, providing the necessary

cultural and educational infrastructure; Existence of capable legal organizations to solve the executive problems of the plan and facilitate coordination, and controlling, containing and reducing the effects of the crisis, as consequences.

Conclusions: Lessons learned from the COVID-19 pandemic have shown the world that the current governmental and social structures are not efficient enough to respond quickly to the emergence of

global challenges. Social innovation is a solution to this problem. The findings of this study also confirm this and identify the factors affecting the implementation of the social innovation plan based on collaboration between governments and NGOs in crises. The results of this research give governments and policymakers an efficient solution by involving NGOs, especially in times of widespread crises. Also, they can be used in planning for social development.



Place of extracorporeal shockwave lithotripsy in the treatment of urolithiasis in the region of GHarb Chrarda Bni Hssen (Morocco)



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The extracorporeal shockwave lithotripsy (ESWL) is a minimally invasive therapeutic approach which has been widely used through the last years. The aim of this study was to evaluate the effectiveness of ESWL in the treatment of urolithiasis in Gharb Chrarda Bni Hssen area (North of Morocco).

A retrospective study of 590 patients with urinary stone was conducted between february 2009 and january 2013 in the Centre of Lithotripsy Anoual Clinical Kenitra. The treatment consisted in one or several sessions of ESWL. Evaluation of efficiency was based on radiological examinations using abdominal echography during the consultation with the urologist after the last session.

There were 306 males and 184 females aged 17 to 79 years. The medium size of stone was $12,3 \pm 5$ mm. The average number of sessions and shock waves were 4 and 2490, respectively. The shockwave session was continued until stone fragmentation was observed when 4000 shocks were given. Failure of stone fragmentation or the presence of fragments larger than 4 mm were indications of repeat ESWL sessions. 92% of patient stones were completely cleared ($p < 0,05\%$). The majority of patients were asymptomatic.

This data show that the ESWL is extremely successful in treating human kidney stone. It's the first line of choice as a treatment modality for this pathology by the population of this area.



Detection of salivary biomarkers as a non-invasive diagnostic tool for the early detection of Oral squamous cell carcinoma (OSCC)



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Background: Due to the increasing prevalence of risk factors related to the cancer and the increase in the level of complications and mortality early screening of high-risk populations is necessary. Saliva reflects the body status and may reveal the presence of a disease in the early stages. MicroRNA 320a and vascular endothelial growth factor receptor 2 (VEGFR-2) along with IL-6 and CRP could be prognostic in Oral lichen planus (OLP), dysplastic OLP and OSCC. Therefore, their salivary levels detections were aimed in our study.

Materials and Methods: Histopathologic examinations were carried out to distinguish the patients with dysplastic OLP and OSCC. Salivary microRNA expression analyzed using RT-qPCR. IL-6 and CRP levels were measured via ELISA method. VEGFR-2 expression in sections was evaluated using immunohistochemistry.

Results: A significant decrease in salivary microRNA-320a level in dysplastic OLP and OSCC but not in OLP without dysplasia was found. VEGFR-2 visualization confirmed the increasing angiogenic process in these cases. A significant increase in IL-6 level was detected in cases with OLP, dysplastic OLP and OSCC. CRP levels also showed a significant increase in dysplastic OLP and OSCC. Besides, a positive correlation between IL-6 and CRP levels was found.

Conclusion: Identification of the salivary microRNA-320a and hs-CRP may provide a convenient noninvasive predictive tool for dysplastic OLP, whereas IL-6 could be a diagnostic and therapeutic target in both OLP without dysplasia and dysplastic OLP cases.



Prophetic health and cosmetic products: A case study in Malaysia



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The use of personal care health and cosmetic products has increased manifold as there is great demand for them from the community. Concoctions assembled from various constituents have proliferated in the last century and a half, and the variety of choices has increased. The present work aimed to identify and describe the community's understanding of health and cosmetic products related to the sunnah of Prophet Muhammad which are available in the Malaysian market. The demographics of this understanding are examined with respect to gender, age, marital and working status, highest level of education, and monthly income earned. A structured questionnaire pertaining to such products was used to capture the relevant data. This survey implemented a multistage design stratified by state, proportionate to the size of the state population, and was representative of the Malaysian population. Complex data

analysis of the results was carried out with the help of Statistical Packages for Social Science (SPSS) version 22.0. The paper concluded that the community's understanding of the term 'prophetic products' is that it refers to various products that Prophet Muhammad used and/or spoke of approvingly such as dates, raisins, pomegranates, honey, and others. It was observed that these ingredients were strongly identified in public perception as prophetic health and cosmetic products and that there is consequently great demand for them amongst Malaysians. The factor was identified through various elements: First: the combination of things recognized as prophetic items such as dates, raisins, pomegranates, and others within the product. Second: the labeling of merchandise as prophetic products. Third: positive testimonials or tributes; and Fourth: product effectiveness and suitability for the consumers.



**Agency,
intentionality,
and subjectivity
in “Everyday
Wired-Herat”
Cyborgs**



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The role of Technological Human Body is mainly overlooked in the Philosophy of Technology. However as result of diverse bodily technologies (somatechnologies) which are emergent everyday, for either enhancement, rehabilitation, or even recreational activities, the relation between bodies and technologies are such entangled that no longer could anybody ignor it. Cyborg is an amalgamation of Human and Machine. The philosophical challenges that such an entity brings forth is immense;

Agency, Intentionality, Subjectivity, Power relations, Ethics to mention but a few. In this study we try to investigate such issues through a phenomenological and feminist stance by examining Everyday cyborgs, i.e. human beings who have heart implants that vital for keeping them alive. We suggest that Everyday Cyborgs do have inhibited intentionality. Moreover, it is proposed that such a being is split in its subjectivity. These results have consequences for cyborgs as far as power relations and habits are concerned.



Reliability and validity of the fall risk self-assessment scale for community-dwelling older people in China: A pilot study

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Background: Falls are a common and serious public health issue among older adults, contributing to the loss of independence, psychological distress, and incapability to engage in meaningful occupations, etc. However, there is lack of abundant information about the fall risk self-evaluation scale for community-dwelling older people. Therefore, this study aimed to evaluate the preliminary reliability and validity of the fall risk self-assessment scale (FRSAS) among community-dwelling older adults.

Methods: A cross-sectional study was conducted. A total of 230 individuals aged 65 years and over were recruited by a convenience sampling between October and December 2020 from three communities in Haidian district, Beijing. Eligible participants were required to fill in the general condition questionnaire and

the fall risk self-assessment scale. The reliability and validity were analyzed by using SPSS 20.0.

Results: Two hundred twenty-two participants completed the assessment as required (the completion rate was 96.52%). The most items of FRSAS were understood by older adults, which was completed in 10 min. Cronbach's α and intraclass correlation coefficient ICC (2,1) of the scale were 0.757 and 0.967 respectively, suggesting good internal consistency and test-retest reliability. Exploratory factor analysis yielded 14 factors that explained 61.744% of the variance. Five items failed to be categorized into any factors because the factor loading of these items was less than 0.4. A future large-sample study needs to be conducted to explore its construct validity. The total scores and dimensional scores except for C-dimension

showed significant differences between participants who had experienced a fall in the previous 6 months and those who had not ($P < 0.05$), indicating good discriminant validity.

Conclusions: The fall risk self-assessment scale including 41 items demonstrated relatively high feasibility as well as satisfactory results in the internal consistency, test-retest reliability, and discriminant validity.



Strategies and interventions for improving safety culture in Australian emergency departments: A modified Delphi study



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Background: Patient safety and safety culture are critical for quality healthcare delivery in general and in Emergency Departments (EDs) in particular. The aim of this study is to identify strategies that may contribute to the improvement and maintenance of patient safety culture and which are considered most feasible in the ED environment.

Methods: A two-step modified Delphi method with 11 experts' panel was performed to establish consensus. A list of potential expert participants with a background in patient safety culture in EDs was compiled through the professional networks of the supervisory team. Snowball

sampling was used to identify additional possible participants. The expert panel included key leaders in the emergency medicine community in Queensland, Australia: patient safety experts and researchers, patient safety directors, and healthcare providers in an Australian ED. The study ran from September 2018 to December 2018. The tool used in Round 1 in this study was developed through triangulating the outcomes of a review of literature, results from a survey of ED staff and findings from semi-structured interviews with key stakeholders in ED. The results from Round 1 informed the development of the Round 2 tool. The

responses from the Delphi Round 1 tool were analysed as both qualitative data and quantitative data. The responses from the Delphi Round 2 tool were treated as quantitative data and analysed with the SPSS software. Consensus was calculated based on more than 80% agreement in collapsed categories 1 and 2 (or 4 and 5) of the five-point Likert scale.

Results: Only six strategies out of 17 (35%) achieved consensus for both importance and feasibility. These strategies may therefore be considered the most important and feasible key strategies for improving safety culture in EDs. Seven

strategies (41.1%) achieved consensus for importance, but not for feasibility and four strategies (23.55%) did not achieve consensus for either importance or feasibility.

Conclusions: This study offers practical solutions for safety culture improvement in the ED context. Six key strategies were seen as both important and feasible and these grouped into three main themes; leadership through agenda setting, operational management approaches to reinforce the agenda and commitment, and systems and structures to reinforce the agenda and monitor progress.



Novel medical image encryption using DWT block based scrambling and edge maps

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This paper proposes the discrete wavelet transform (DWT) block-based scrambling algorithm used for medical image encryption which applies the edge maps extracted from a source image. The method comprises three major stages: DWT-plane decomposition, generation of edge map sequences, and DWT-level scrambling. In the first stage, the original medical images are decomposed into numerous DWT-planes. In the second stage, the deriche edge detector method has been presented to

estimate the edge maps, which must be a similar size to the DWT-bit scales. The DWT-level scrambling has been used to isolate the neighboring pixels into various rows and columns, thus it weakens the strong correlation among the neighboring pixels efficiently. This proposed method shows the Number of Pixel Change Rate as 99.592% and Unified Average Hanged Intensity of 34.268%. Furthermore, simulations and security analysis shows strong resistance to diferent security attacks and perform better other conventional methods.



Dental pulp stem cells and autoimmune T-cells from Type1 Diabetes: A potential therapeutic nexus waiting to be explored



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Background: Dental pulp stem cells (DPSCs) are a type of oral mesenchymal stem cells, which are commonly characterized as CD73, CD90, CD105 positive and CD34, HLA-DR negative cells. An exhaustive amount of research has been directed towards elucidating the immunomodulatory potential of bone marrow-derived mesenchymal stem cells. Following the advent of oral mesenchymal stem cells, accelerated efforts were devoted to elucidate --and potentially harness-- the immunomodulatory potential of DPSCs owing to their ease of isolation and growth requirements. Type1 diabetes (T1D) is a chronic autoimmune condition where Beta cells of the pancreas are destroyed, mainly by T cells, which recognize and respond against certain autoantigens. It is well established that autoreactive T cells and inflammatory environment are causing the pathological symptoms of T1D, and there are many molecular and cellular reasons inducing this autoreactivity.

Objective: This study aimed to assess whether DPSCs can firstly inhibit the autoreactive T cells, and, secondly can negatively modulate the inflammatory phenotype of these autoreactive T cells. **Methods:** Contact-independent immunomodulatory effects of DPSCs were studied through the effect of cell supernatants at specific time intervals. Sorted T lymphocytes from T1D patients were co-cultured with DPSCs to assess the contact-dependent immunomodulation.

Results: DPSCs exhibited both contact-dependent as well as contact-independent immunomodulatory effects on T lymphocytes.

Conclusion: DPSCs are a potential avenue for immunomodulatory intervention in autoimmune conditions such as T1D. Further characterization and elucidation of the underlying mechanisms is warranted in future studies.



Modeling and optimization of the antibiotic drug on alginate/vermiculite hydrogel with amine and silanol functional groups using Response surface methodology (RSM) and adaptive neuro-Fuzzy inference system (ANFIS)



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Silanol groups on Alginate/Vermiculite composites were employed to decrease the cell toxicity and improve 6-Aminopenicillanic acid (6-APA) release in vitro. The composites' properties were examined by FTIR, XRD, and BET. The equilibrium and kinetic (reaction and diffusion-based models) studies were conducted to evaluate the effect of 6-APA concentration and contact time on the adsorption capacity of composites. Results indicated that the silanol group on Alg/VMT can improve the adsorption capacity of 6-APA compared to antibiotic loading on another Alginate. Response surface methodology (RSM) and adaptive neuro-fuzzy inference system (ANFIS) models were used to develop systematically predicting interactions of synthesis conditions on

6-APA adsorption capacity and optimize the best amount of compound. The effect of process variables investigated by RSM through central composite design (CCD) matrix and the results compared with ANFIS model. In vitro release kinetics in the presence of different CaCl₂ concentrations (10%-15%-20%) showed a maximum of 19% 6-APA was released within 12 h. The composites behaved as barriers against cell growth and have better biocompatibility against standard strains of *Pseudomonas aeruginosa* (P.a) and Methicillin-Resistant *Staphylococcus* (MRSA). MTT assay was applied to determine the cytotoxicity of VMT-Alg modified with silanol groups. The cell viability and MTT studies revealed that the presence of silanol groups increased viability and reduced cytotoxicity.



Viral diseases in Africa: Preventing the outbreak of acute Hepatitis of unknown Etiology



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Hepatitis is an inflammation of the liver. There had been an outbreak of hepatitis of unknown origin among children, where nine pediatric patients in Alabama, United States of America, tested negative for hepatitis viruses (A, B, C, D, and E) and autoimmune conditions. So far, no case has been recorded in Africa. This article seeks to give guidelines on how to prevent its occurrence in Africa. Various literatures were reviewed on

the background of hepatitis of unknown origin while focusing on World Health Organization publication as regards the outbreaks in other European countries. Therefore, it is worthy to state that Africa needs to keep its healthcare systems ready to take care of the mechanism by which the outbreak may occur and protect the vulnerable pediatric population from such an outbreak.



The contribution of Blockchain to addressing Healthcare Financing System Challenges: Insights and future directions



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This paper analyses the potential (realized and upcoming) of Blockchain to address Healthcare Financing System Challenges. The paper adopted a systematic review approach using the PRISMA guidelines to identify and map blockchain use cases in healthcare financing systems. This paper also sought to determine the extent to which blockchain-based applications have been developed in relation to the identified use cases. It further highlights some of the limitations of the proposed solutions and how to circumvent them. Findings reveal that blockchain-based data-sharing frameworks leveraging on-chain tagging, cryptographic techniques and a distributed file system can be used to generate a secure data-sharing system in which data is fluid and builds resilience through orchestrated smart contracts, which ensure traceability and data integrity. The findings also suggest that blockchain on its

own is not sufficient to deal with healthcare financing challenges. Thus, Healthcare 4.0 processes should be implemented within and alongside the blockchain system. The processes and technologies used for data accessibility should be authenticated and validated using simulation-optimization algorithms. Also, machine learning-based processes alongside blockchain show high potential in creating a fluid healthcare financing system that is secure, and accessible with embedded data integrity. There is also a demand for more research on the application of blockchain within healthcare processes, systems and industry as a whole. More specifically, prototypes of proposed blockchain frameworks need to be developed, tested and show proof of concept to broaden and deepen the understanding of how blockchain could be used to enhance current healthcare systems and practices.



The dynamics of language: A linguistic analysis of the framing of COVID-19 in Eswatini



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COVID-19 has drastically disrupted the lives of many people globally, and the havoc it has wreaked has shattered world economies. The effects of COVID-19 in Eswatini (formerly Swaziland) are threatening the very foundations of the country. Referenced in the national language, its effects manifest in the perceptions and experiences shared among Swazis (emaSwati) about the scourge. This article investigates the pandemic's impact on Swati (siSwati) and the ways in which Swazis adapted their language-related tropes in the face of unprecedented social and economic disruptions. Data are

drawn from government briefings, news bulletins, media interviews and addresses. The findings demonstrate that COVID-19 has produced neologisms and expressions that index Swazis cultural views. While a morpho-syntacticanalysisoftheneologisms demonstrates that they derive from varied word-building mechanisms and exhibit COVID-19's distinctive characteristics of transmissibility, pathology, and annihilation, the measures to contain COVID19 are presented aesthetically to dispel the anxiety associated with the pandemic.



Adenomyosis – An update: Influence on ICSI clinical outcome in FET cycle



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Objective: To evaluate the impact of adenomyosis on pregnancy outcome in ICSI / FET cycles and the beneficial effect of GnRH agonist pretreatment , conservative surgery or combination therapy on pregnancy outcome.

Materials & Methods: This is a retrospective Cohort study where 613 ICSI cycles done in the period from Jan 2018 to Dec 2020 in Sudha infertility centre, Erode were analysed. Study populations include 235 women with adenomyosis undergoing ICSI / FET cycle.

Result: Overall the outcome in terms of

clinical pregnancy rate, miscarriage rate, live birth date and ongoing pregnancy rate were lower in women with adenomyosis following ICSI / FET cycles. We found significant improvement in clinical pregnancy rate who had pretreatment with GnRH agonist, conservative surgery or combination therapy.

Conclusion: Adenomyosis as such has detrimental effect on ICSI clinical outcome. Pretreatment with GnRH agonist and conservative surgery and GnRH agonist long protocol could be beneficial. Further large scale prospective comparative studies are needed to confirm this result.

Table 1: Comparison of Clinical Outcomes among the GnRH-agonist protocol

Parameters	Adenomyosis (Group A)	Endometriosis + Adenomyosis (Group B)	p Value
Clinical pregnancy rate <i>n</i> (%)	179/213 84.04 %	18/22 81.82 %	0.003*
Miscarriage rate/pregnancy <i>n</i> (%)	7/213 3.29 %	2/22 9.09 %	0.019**
Live birth rate <i>n</i> (%)	156/213 73.24 %	13/22 59.09 %	0.015**
Ongoing	16/213 7.51 %	3/22 13.64 %	0.016**

* Significant at the 0.01 level (2-tailed),** Significant at the 0.05 level (2-tailed).

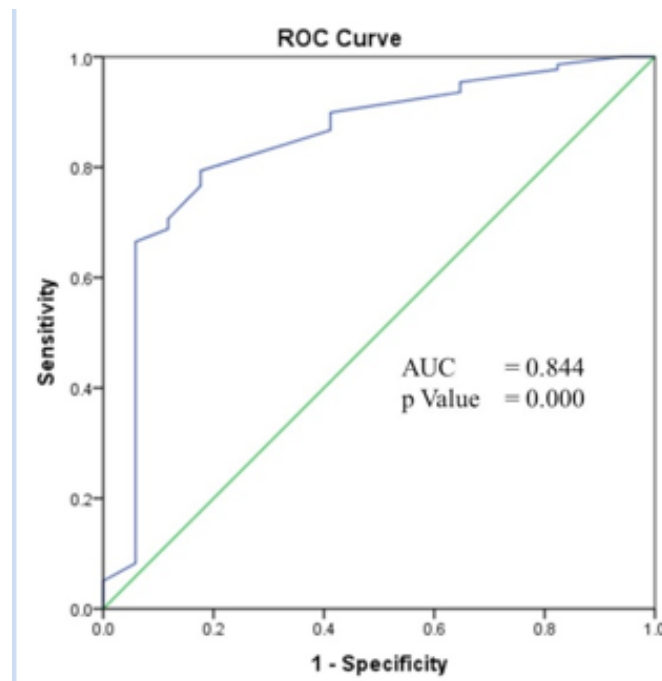


Fig. 1 The diagnostic thresholds of maximal endometrial thickness provided by ROC curve analysis for prediction of Clinical Pregnancy Rate

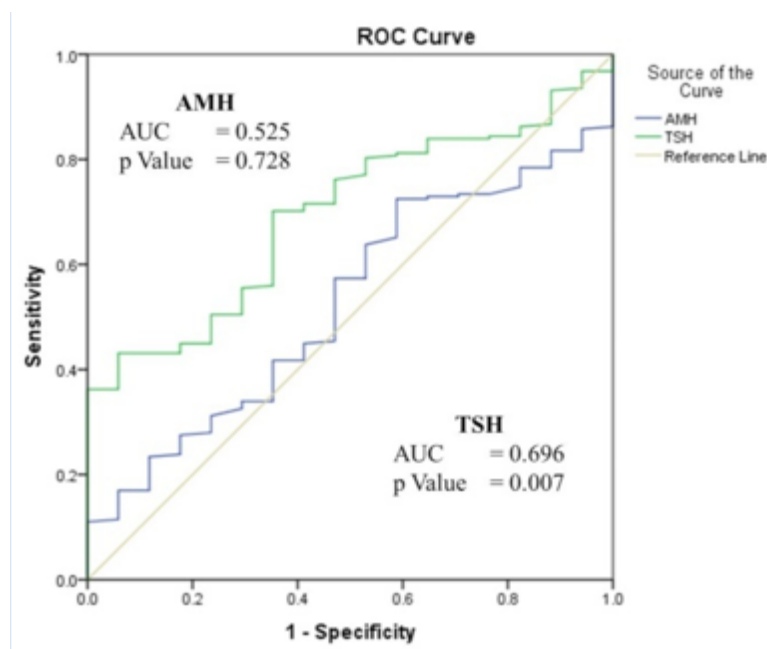


Fig. 2 The diagnostic prediction of AMH and FSH provided by ROC curve analysis for prediction of Clinical Pregnancy Rate



Emerging trends in the management of plastic waste during the COVID-19 pandemic: Biomass absorbents and plastic waste in microwave pyrolysis



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Demand of plastics have significantly increased in years. This demand of plastics has produced large amount of plastic wastes. Inappropriate handling and less efficient disposal techniques is one of the reasons. Despite recycling, the majority of plastic waste still winds up in landfills or dumped in oceans and rivers. In the past years 2019-2022, the generation of COVID-19 waste (masks, personal protective equipment's, gloves) along with other types of plastic waste have made the disposal process, even more complex. Researchers are finding a suitable technology to treat the plastic waste in an integrated way. One such solution is to microwave pyrolyze the plastic waste to produce valuable hydrocarbons, fuels and char. The products of pyrolysis process have high calorific values and can be used as alternate for fuel production. Added to microwave pyrolysis, the use of microwave absorbents can be selected from biomass waste. Since, microwaves are transparent to

plastic waste, microwave absorbents convert the microwave energy to heat energy and transforms the energy to plastic waste for degradation. Biomass waste is to be converted to carbon and activated carbon to accelerate the reaction in microwave reactor. According, to the elemental composition of biomass, its Characteristics differs. Description and synergistic effects of absorbents with plastic waste will be correlated in terms of heating rate, reaction temperature & time, different types of absorbents from biomass were studied and discussed. Hence, this approach is a two-way dealing of plastic waste and biomass waste. This research article will highlight the treatment technologies, development, potential use of microwave pyrolysis and the utilization of biomass as absorbents are comprehensively discussed. Finally, techno-economic analysis of choice of absorbents and plastic waste, its energy consumption and generation were also discussed.



Non-coding RNA-related FCGBP downregulation in head and neck squamous cell carcinoma: A novel biomarker for predicting paclitaxel resistance and immunosuppressive microenvironment



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Background: In head and neck squamous cell carcinoma (HNSC), chemoresistance is a major reason for poor prognosis. Nevertheless, there is a lack of validated biomarkers to screen for patients for categorical chemotherapy. Fc gamma binding protein (FCGBP) is a mucus protein associated with mucosal epithelial cells and has immunological functions that protect against tumors and metastasis. However, the effect of FCGBP on HNSC is unclear.

Methods: In pan-cancer tissues, the expression of FCGBP and the survival status of patients were analyzed using information from The Cancer Genome Atlas (TCGA) and Gene Expression Omnibus (GEO). Correlation analysis and Cox regression analysis were conducted to confirm the relationship and survival outcome.

Bioinformatics analysis was utilized to predict the probable upstream non-coding RNA.

Results: FCGBP functioned as a potential tumor suppressor gene in HNSC. Notably, FCGBP expression was negatively correlated with enriched tumor-infiltrating macrophages and paclitaxel resistance. Cox regression with gene, clinical, and immune factors showed that FCGBP was a risk factor acting in an independent manner. In HNSC, the utmost possibly upstream non-coding RNA-related pathway of FCGBP was also discovered to be the PART1/AC007728.2/LINC00885/hsa-miR-877-5p/FCGBP axis.

Conclusion: According to the present study, non-coding RNA-related low levels of FCGBP are a prognostic indicator and are linked to an HNSC-related immunosuppressive state.



Examining the reasons for missed nursing care from the viewpoints of nurses in public, private, and university hospitals in Jordan: A cross-sectional research



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Background: Missed nursing care is an indicator of quality nursing care. It is a significant healthcare delivery problem, especially given increased demand and limited resources worldwide, including in Jordan. It is paramount to identify the reasons for missed care in hospital settings.

Aim: To identify the perceptions of registered nurses for missed nursing care in medical and surgical wards in Jordanian hospitals. We also aimed to identify differences in the reported reasons for missed nursing care across three healthcare sectors: public, private, and university.

Methods: A quantitative approach utilising a cross-sectional design was conducted

by surveying registered nurses at 10 hospitals in Jordan. This study employed the MISSCARE Survey tool. The data collection was performed between March and July 2021. Descriptive statistics and analysis of variance were used to address the objectives.

Findings: A sample of 672 registered nurses working in medical and surgical wards in 10 acute care hospitals in Jordan were recruited. The major reason for missed nursing care was inadequate number of staff. Communication issues were more important to missed nursing care in university hospitals than public and private hospitals.

Conclusion: A study of Jordanian registered nurses revealed that a perceived shortage of human resources is the principal reason for missed nursing care in medical and surgical wards. Comparing the reasons for missed nursing care between the three hospital sectors could help nursing administrators to tailor operational interventions to mitigate the effect of these causes. Therefore, reducing missed nursing care.



Inequality in the distribution of Covid-19 vaccine: A systematic review



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Background: The equality in the distribution of vaccines between and within countries along with follow sanitation tips and observe social distance, are effective strategies to rid the world of COVID-19 pandemic. Inequality in the distribution of COVID-19 vaccine, in addition to causing inequity to the population health, has a significant impact on the process of economic recovery.

Methods: All published original papers on the inequality of Covid-19 vaccine distribution and the factors affecting it were searched in PubMed, Web of Science, Scopus and ProQuest databases between December 2020 to 30 May 2022. Selection of articles, extraction of their data and qualitative assessment (by STROBE) were performed by two researchers separately. Data graphing form was used to extract detailed data from each study and then, the collected data were classified.

Results: A total of 4623 articles were evaluated. After removing duplicates and screening the title, abstract and full text of articles, 22 articles were selected and

entered into the study. Fifteen (68.17%) studies were conducted in the United States, three (13.64%) in Europe, three (13.64%) in Asia and one (6.66%) in Oceania. Factors affecting the inequality in the distribution of COVID-19 vaccine were classified into macro and micro levels determinants.

Conclusion: Macro determinants of inequality in the Covid-19 vaccine distribution were consisted of economic (stability and country's economic status, Gross Domestic Product (GDP) per capita, financial support and human development index), infrastructure and health system (appropriate information system, functional cold chains in vaccine transport, transport infrastructure, medical and non-medical facilities per capita, healthcare access and quality), legal and politics (vaccination allocation rules, health policies, political ideology and racial bias), and epidemiologic and demographic factors (Covid-19 incidence and deaths rate, life expectancy, vulnerability to Covid-19, working in medical setting, comorbidities, social



3rd International Conference on
**Future of Preventive
Medicine & Public Health**

March 30–31, 2023

vulnerability, incarceration and education index). Moreover, micro/ individual level factors were included in economic (household's income, home ownership, employment, poverty, access to healthy food and residency in the deprived areas) and demographic and social characteristics (sex, age, race, ethnic, religion, disability, location (urban/rural) and insurance coverage).



The association of different health and lifestyle factors with uterine fibroid among Saudi Women



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Objectives: The objective of this study was to measure the association between uterine fibroid (UF) and different risk factors (parity, miscarriage, diabetes, hypertension, physical activity, smoking, family history of UF, and contraceptive pill use) among Saudi women.

Methods: A case-control study was conducted at two medical centers in Riyadh, among 478 women. Cases were confirmed by ultrasound. Demographic and risk factor information was collected by interview and medical records. The prevalence of the different risk factors was calculated with 95% CI. Unconditional logistic regression analysis was used to measure the association between UF and different risk factors.

Results: More than half of the participants were obese. The average BMI for cases was 31.2 (± 6.81), whereas it was 29.4

(± 7.02) for controls. Women ages 40 years and older had 4 times the odds for UF compared to women younger than 40 years (AOR=4.24, 95% CI=2.63, 6.85). Having a family history of UF was associated with 69% increased odds for UF (AOR=1.69, 95% CI=1.02, 2.81). Being obese was associated with 74% increased odds for UF (AOR=1.74, 95% CI=1.00, 2.59), while previous live-births reduced the odds for UF by 62% (AOR=0.38, 95% CI=0.19, 0.75).

Conclusions: This study helped identify certain risk factors associated with UF in the Saudi population. Age over 40 years, obesity and having a family history of UF are important risk factors for UF, while parity seems to be protective against developing UF in Saudi women. Early recognition of these risk factors is important to prevent UF complications.



**Epirubicin, cisplatin
plus ifosfamide
versus standard
chemotherapeutic
regimens for advanced/
unresectable primary
thoracic sarcomas**



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Thoracic sarcomas are rare malignancies, with limited data for unresectable/advanced scenarios. Our goal is to provide insights of a three-drug chemotherapy regimen improving patient survival compared to standard regimens.

Methods: Retrospective cohort analysis of patients diagnosed with unresectable/advanced primary thoracic sarcoma divided

between primary pulmonary sarcomas (PPS) and chest wall sarcomas (CWS) comparing chemotherapeutical regimens efficacy. Not true soft tissue sarcomas (STS) for PPS were excluded from the analysis. Univariate and multivariate analysis performed via Cox-regression model. Progression-free survival (PFS) and overall survival (OS) analysis via Kaplan–Meier with hazard ratio (HR) obtained via Mantel–Haenszel or log rank.

Results: 157 total cases were included, from which 50 cases were PPS and 107 cases CWS. The most common histology was undifferentiated sarcomas, 63% of cases were treated with E/C/I and 37% with another regimen. The E/C/I regimen demonstrated a benefit for both OS ($p=0.020$) and PFS ($p=0.010$) when compared to any other regimen as well as when compared to non-platinum regimens ($p=0.016$ and $p=0.001$). Regarding CWS, the most common histology was synovial and undifferentiated sarcomas, 55.1% were treated with E/C/I and 44.9% treated with another regimen. The E/C/I regimen did not demonstrate a benefit for OS or PFS

compared to any other regimen, neither when compared to other non-platinum regimens. However, a benefit was observed in favor of E/C/I when compared to other platinum regimens in both OS ($p=0.049$) and PFS (0.015).

Conclusion: This study demonstrates that platinum therapy alone does not work, and that cisplatin must be the agent of choice and when used in combo could increase treatment response. The E/C/I regimen demonstrated a benefit in PPS but not for CWS. The regimen proposed here could represent a possible new standard of treatment for PPS.

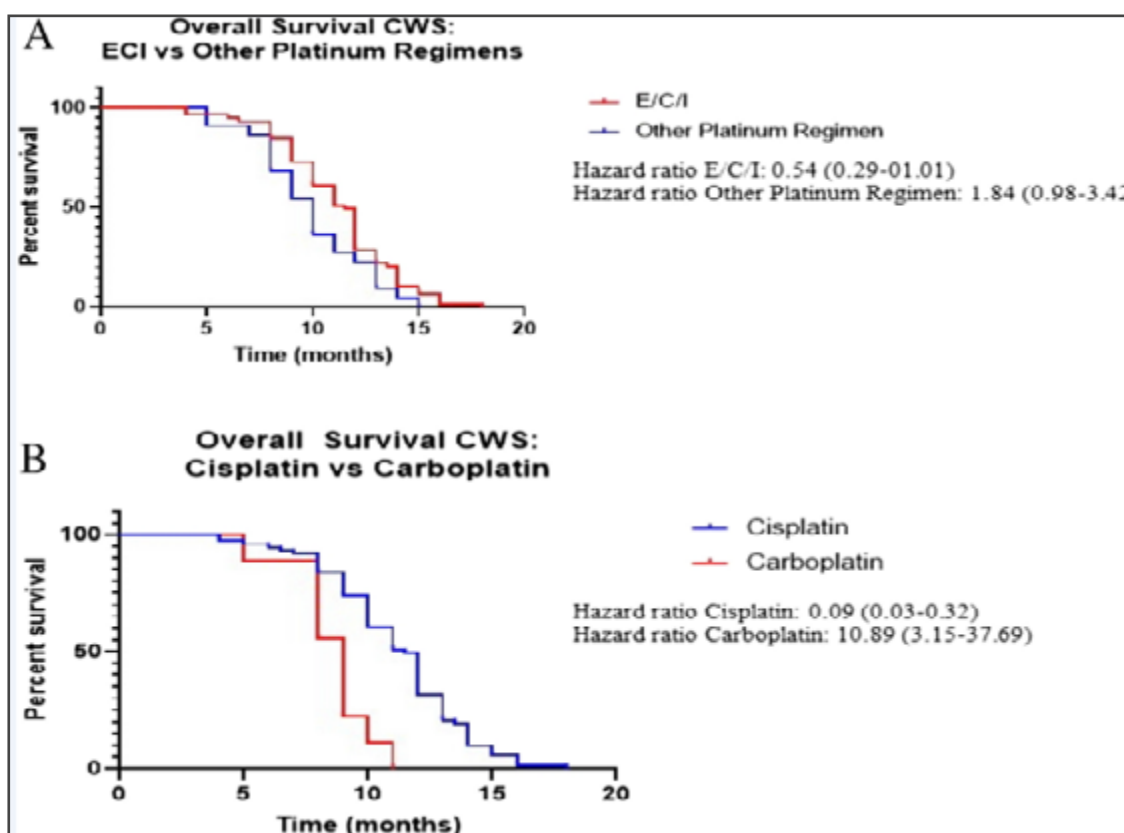


Figure 1. A. Overall Survival (OS) in Primary Pulmonary Sarcomas (PPS), ECI (Epirubicin, Cisplatin, Ifosfamide) vs Other chemotherapy regimens. B. OS in PPS, ECI vs Non-Platinum Regimens.

	Chest Wall Sarcomas		Primary Pulmonary Sarcomas*	
	E/C/I (N= 59)	Other regimen** (N=48)	E/C/I (N= 29)	Other regimen** (N= 17)
RECIST				
Partial response	32 (54.2)	25 (52.1)	17 (58.6)	12 (70.6)
Complete response	1 (1.7)	2 (4.2)	2 (6.9)	1 (5.9)
Stable disease	15 (25.4)	12 (25)	7 (24.1)	0 (0)
Progressive disease	11 (18.6)	9 (18.7)	3 (10.3)	4 (23.5)
Objective Response Rate				
No. of patients (%)	33 (55.9)	27 (56.2)	19 (65.5)	13 (76.5)
Median OS—months	11.50	10.00	13.00	11.00
Median PFS—months	9.00	8.00	10.00	8.00

Table 1. Summary of treatment response. Other regimens include: gemcitabine + paclitaxel; doxorubicin + cisplatin; gemcitabine + carboplatin; doxorubicin + ifosfamide; etoposide + carboplatin and gemcitabine + docetaxel.



Intelligent Alzheimer's Diseases gene association prediction model using deep regulatory genomic neural networks



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The primary cause of Dementia, the neurodegenerative disease is genetical factors caused by the several gene combinations of elderly individuals. Biomarker features are acquired from the genome collection core of ADNI(Alzheimer's Disease Neuro Imaging Initiative) repository. These are classified as significant features of stable and progressive cognitively impairment, regular cognitive decline due to aging, and AD. The present work classifies the biomarker with normal genetic carriers with cognitive decline related to normal aging or the actual carriers of AD significant gene motif in the early stage. This helps clinicians perform preparatory medications that may suppress disease onset by recovering and protecting the brain cells from atrophy. To make a more clinical conclusion, utilize blood test information obtained from Genome base-wide studies associated with ADNI and selected the gene expression information to anticipate the disease significant gene variations that act as AD carriers and increase the

likelihood of AD onset in people. Gene mapping is a well-known technology that helps identify most conditions before birth. Similarly, in this work, gene mapping is used to determine the presence of APOE 4 allele in the human body with the Intelligent Alzheimer's diseases Gene Association Prediction (IADGAP) Technique which is implemented in Deep Regulatory GenOmic Neural Networks (DragoNN). The final prediction model combines microRNA expression profiles and genomic information with ML classifiers such as Support vector classifier with genome dataset, Random Forest, and Decision trees to produce precise categorization of early disease stage prediction. The innovative collection of genetic allele patterns yielded 96% accurate prediction outcomes. Because genetic data is a prominent feature in AD diagnosis, this study ensures improved outcomes with the best classifier, which had an accuracy of 85% and above and an F1 significant score of 80% in the pathology prediction and classification.



Relationship between asporin and extracellular matrix behavior



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Asporin (ASPN), as a member of the smallleucine-richrepeatproteoglycan family, is a type of protein that is found in the extracellular matrix. Collagen deposition or transformation is involved in a variety of pathological processes. ASPN is identified in cancerous tissue, pathological cardiac tissue, articular cartilage, keloid, and fibrotic lung tissue, and it has a role in the development of cancer, cardiovascular,

bone and joint, keloid, and pulmonary fibrosis by interfering with collagen metabolism. This review article summarizes the data on ASPN expressions in mouse and human and highlights that overexpress of ASPN might play a role in a variety of diseases. Although our knowledge of ASPN is currently limited, these instances may help us better understand how it interacts with diseases.



Intravenous lidocaine versus dexamethasone to prevent postoperative vomiting in children tonsillectomy



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Introduction: we evaluate the effectiveness of lidocaine infusion compared to the intravenous dexamethasone and placebo on postoperative vomiting and first oral intake in children post tonsillectomy.

Methods: we conducted a prospective double-blinded randomized and controlled clinical trial involving children aged between 3 and 13 years proposed for elective tonsillectomy without or with adenoidectomy under general anesthesia. They were randomized into 3 groups: lidocaine group included patients who received intravenous bolus of 2 mg/kg lidocaine over 5 minutes after the induction of anesthesia. Then, they received an infusion of 1.5 mg/kg/h until the end of the surgical procedure, dexamethasone group included patients who received intravenous dexamethasone 0.15 mg/kg administrated over 5 minutes after the induction of anesthesia followed by an identical rate of 0.9% saline and the saline group included patients who received an equivalent volume of 0.9% saline.

The software IBM SPSS® 25.0.0.1 was used for the statistical analysis. Statistical significance was defined as $p < 0.05$.

Results: eighty-three (83) children were analyzed in our study and randomized into 3 groups: 27 children for each lidocaine and dexamethasone group and 29 children for the Saline group. The demographic data were not significantly different between the three groups such as age ($p=0.246$), gender ($p=0.378$), and body mass index (BMI) with $p=0.233$. The duration of surgery and anesthesia was also comparable in the 3 groups ($p=0.893$). Patients of the lidocaine and dexamethasone group had at least one episode of retching, vomiting, or both less than the saline group in the post-anesthetic care unit with p respectively 0.015 and 0,035, and in the ward with p respectively 0.004 and 0,038 Without a significant difference between the dexamethasone and the lidocaine group. The time to the first oral intake was significantly shorter in the dexamethasone group and the lidocaine group compared with the saline group ($p=0.0001$) with no statistical difference between the dexamethasone and lidocaine groups.

Conclusion: lidocaine infusion is as effective as intravenous dexamethasone on postoperative vomiting as well as on oral intake in children post tonsillectomy.



Global health care infrastructure and Africa in times of Covid-19: Insights for sustainable development and future pandemics



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This exploratory study aims to assess Africa's lagging position in global health in relation to some health care infrastructure before critically examining the situation of Africa in the light of pressing Covid-19 healthcare infrastructural needs in terms of number of hospital beds, intensive care units (ICU) beds and ventilators per 100 000 people. A comparative analysis is provided to showcase which regions are leading in the health facilities in the world

in general and Africa in particular as well as countries that are lagging in the attendant healthcare facilities. Analytical insights are provided to illustrate that the Covid-19 pandemic has revealed how Africa cannot reach most Sustainable Development Goals (SDGs), especially SDG-3 on health and wellbeing. Moreover, corresponding inferences suggest that the continent is unprepared for future pandemics in terms of health facilities.

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**Choline chloride-
based DES as
promising green
solvents for phenolic
compounds extraction
from Clematis
flammula L. leaves**
”

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Lately, green chemistry has pushed researchers to investigate alternative solvents for the recovery of phenolic compounds (PC). Therefore, the optimization of PC extraction from Clematis flammula L. leaves (CFL) using ultrasound-assisted deep eutectic solvents (UAE-DES) was investigated. Additionally, phytochemical screening, biological activity, and characterization of the bioactive molecules using gas chromatography coupled with mass spectrometry (GC-MS) were performed. Choline chloride-acetic acid (ChCl-Acet) was explored as a potential extractant of TPC (110 ± 5.98 mgGAE/Gdw) and the optimal extraction conditions were as follows: 18.2% of water, 49.4 °C, and 40 min of extraction time. Also, the in vitro anti-oxidant assays revealed that CFL extract was a potent antioxidant agent with a high inhibition compared to the control with $97.23 \pm 1.72\%$ and $94 \pm 4.21\%$

inhibition for ABTS and DPPH, respectively. CFL extract showed antimicrobial effects against fungus and two bacterial strains, namely Candida albicans (CA), Methicillin-resistant staphylococcus aureus (MRSA), and Pseudomonas aeruginosa (PA), respectively, with a minimal inhibitor concentration (MIC) of 390 µg/mL. For the first time, GC-MS was used to assess the characterization and quantification of phenolic profiles. Protoanemonin (63.94%), phenol (8.76%), decamethyl (7.00%), linalool (5.47%), salicylic acid (4.66%), dodecamethyl (4.41%), and n-dexadecanoic acid (4.22%) were the major compounds identified. The obtained results highlight the effectiveness of choline chloride-based DES as an alternative extraction solvent for phenolic compounds for industrial and pharmaceutical applications.



High dependency renal unit (HDRU) for management of patients with acute and chronic kidney disease



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Patients with kidney disease are prone to develop severe COVID-19 illness due to concomitant risk factors like advanced age, hypertension, diabetes, cardiovascular disease. COVID-19 in patients with End-Stage-Renal-Disease (ESRD) is associated with high mortality. Similarly, several reports have highlighted severity, non-resolution and high mortality of acute kidney injury (AKI) due to COVID-19. Mumbai was an epicentre during the pandemic and handling high surges of hospitalisations during waves created unique challenges for hospital administration. Limited resources, manpower, need for triage of dialysis services and intensive care, logistics of monitoring kidney patients often needing multi-pronged care, necessitated formation of a high dependency renal unit (HDRU).

This was an observational cohort study of patients needing dialysis for COVID-19 associated AKI (AKI-D) and patients

with ESRD hospitalised for COVID-19. Components of care included nephrology specific care bundles, training of fellows and nurses, checklist-based clinical monitoring, and integration of multi-specialty care. Primary outcome of the study was in-hospital mortality. Secondary outcomes were- dialysis dependence in AKI-D, and predictors of death.

238 of 4254 (5.59%) COVID-19 admissions had severe renal impairment (116 AKI-D and 122 ESRD). 145 (62%) had severe COVID-19. HDRU was operational from 28th May to 31st August 2020. Kaplan-Meier analysis showed significant improvement in survival after implementation of HDRU [19 of 52 (36.5%) in pre-HDRU versus 35 of 160 (21.9%) in HDRU died, $p < 0.01$]. 44 (67.7%) AKI-D survivors were dialysis dependent at discharge, pre-existing hypertension and CKD were associated with dialysis dependence. In regression analysis

for AKI-D cohort, presence of shock at presentation or stay and altered mental status at presentation were predictors of mortality, while shock at presentation or developing during stay, altered mental status, severe COVID-19 illness were

predictors for ESRD cohort.

HDRU managed by nephrologists is a potentially effective approach in improving outcomes of COVID-19 patients with severe renal impairment.



Mechanistic insights on the possible protective role of polyphenols extracted from *Tamarix aphylla* aerial parts against sodium arsenite-induced hepatotoxicity in rats



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Objective: Arsenic exposure is associated with the induction of hepatotoxicity. Current study was aimed to investigate the hepato-protective ability of polyphenolic components of *Tamarix aphylla* (TA) ethanolic extract against sodium arsenite (SA)-induced liver injury of rats.

Methods & Results: Significantly, higher quantities of phenolic (318.7 ± 2.5 mgg⁻¹GAE) and flavonoid (250.69 ± 3.3 mgg⁻¹QE) contents were present. Inhibitory concentration (IC₅₀) exhibited an excellent potential for antioxidant (IC₅₀ = 25.99 µg/mL) assay. High performance liquid chromatography (HPLC) confirmed the existence of myricetin (10.40ppm), sinapic acid (2.131ppm), kaempferol (0.486ppm), caffeic acid (5.094 ppm). Forty-two rats were divided into 7 groups. Group 1 received normal saline (2 mL/kg/day, orally for 21 days), Group 2 received SA (10mg/kg/day for 21 days), and Group 3 received SA alone for 7 days (10mg/kg)

and continues with silymarine for 21 days (25mg/kg orally). Group 4, 5, 6 received SA alone for 7 days and continue with TA extract up to 21 days (125mg/kg, 250mg/kg, and 500mg/kg orally) respectively, and Group 7 received TA extract (500mg/kg) for 21 days. SA was administered to all treated groups for 21 days. Treatment with polyphenolic ethanolic extract of TA restored the hepatic indices and oxidative markers in a dose-dependent manner. The upregulation in tumor necrosis factor- α , interleukin-6, and cyclooxygenase-2 upon SA treatment suggesting inflammation was normalized by the treatment of rats. Above mentioned biochemical findings were supported well with histopathological screening.

Conclusion: Present findings suggest that TA polyphenolic ethanol extract could mitigate the oxidative stress and inflammation induced by SA in liver tissues.

Table.1. Quantitative analysis of polyphenolic TA extract by using HPLC.

Sr.#	Compounds	Retention time (min)	Area (mAU*S)	Area %	Amount (ppm)
1	Caffeic acid	6.518	1407.69836	86.2955	5.0941163
2	Sinapic acid	11.673	223.55443	13.7045	2.1319314
3	Myricetin	4.594	890.59033	73.3817	10.403431
4	Keamferol	8.48	37.00148	3.0488	0.486458

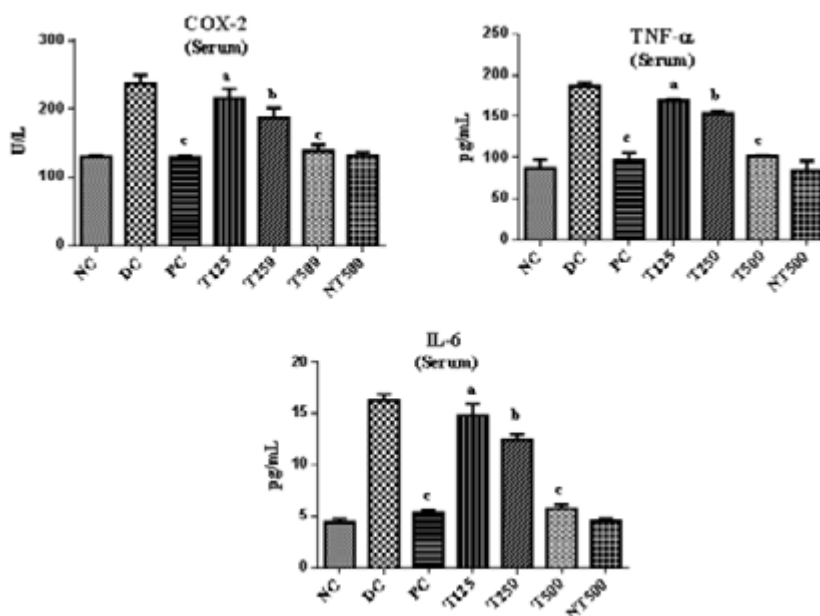


Fig.6. Effect of TA polyphenolic extract on sodium arsenite-induced changes in inflammatory mediators (COX-2, TNF-α and IL-6). a, b, c and d show statistically significant difference with respect of DC group at level of $p < 0.05$, $p < 0.01$, $p < 0.001$ and $p < 0.0001$ respectively

“ Nature-Based therapy applications In Turkey ”

S. Pouya

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Although horticultural therapy has been used as an alternative therapy method for years in American and European countries, it has been determined that this subject is mostly theoretical, and applied studies are very few in Turkey. The aim of this study was to apply the individual horticultural therapy technique to disabled children receiving education at İnönü University Special Education and Rehabilitation Center and to investigate the quality of life and psychological improvement effects on disabled children. In order to measure the effects of horticultural therapy on the development of social skills and quality of life in children with disabilities (as quantitative data), the teachers working at the study center were asked to fill in the Social Reciprocity Scale (SRS) and The Pediatric Quality of Life Inventory (PedsQL) forms before and after the procedure. As a result, The Pediatric Quality of Life Inventory (PedsQL) before

and after individual garden therapy, more emotional improvements were detected in the clients. The most common of these was the reduction of feelings of sadness and anger, worries about the future, and of difficulties in sleeping. According to the Social Reciprocity Scale (SRS) before and after individual garden therapy, it was explained that most social developments occurred. these; participation in group activities improved, being able to share feelings with others, less avoidance of being the initiator of a social relationship with someone new, and appearing to have self-confidence in the relationship with others. According to the observation forms filled out by the clients and the results of SRS and PedsQL, it was determined that the patients who participated less in the practice sessions or who had a severe disability had less improvement after horticultural therapy.

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**Learning-based
 compensation-
 corrective
 control strategy
 for upper limb
 rehabilitation
 robots**”

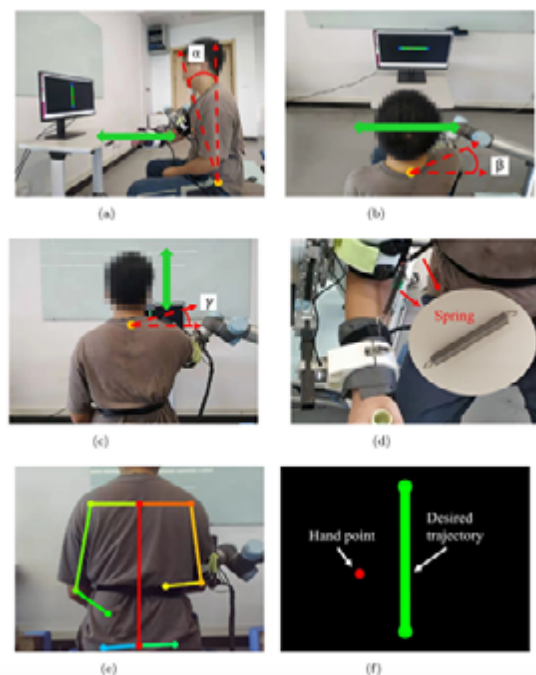
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Trunk compensations are commonly observed when stroke patients perform reaching tasks, that negatively affect their long-term motor recovery. To restrain the compensatory patterns, this study proposes a learning-based compensation-corrective (LBCC) control strategy for upper limb rehabilitation robots. The proposed LBCC strategy comprises a learning and a reproduction phase. Specifically, a learning from demonstration framework is employed to generalize the referenced task in the learning phase. The compensatory patterns are corrected by shoulder restraint, hand assistive, and coupling force feedback, which are generated by the LBCC control strategy, in the reproduction phase. Experiments were carried out on ten healthy subjects as a feasibility study. The trunk compensations were significantly reduced in three types of reaching tasks with the force feedback. In addition, the proposed LBCC control strategy significantly enhances the upper limb motor performance, therefore,

providing a user experience similar to human-assisted rehabilitation for patients with stroke.



The human-robot interaction interface. a Forward reaching. b Leftward reaching. c Upward reaching. d Configuration of springs for inducing compensations. e Skeleton detection by the ZED camera. f Desired trajectory and real-time hand point on the display screen.



Effect of the COVID-19 outbreak on paediatric cancer care in low- income and middle- income countries



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Childhood cancer is highly curable when healthcare systems provide timely, accurate diagnoses and appropriate therapy. In Latin America, the pediatric cancer survival rate is significantly lower than in high-income countries, and approximately one in two children diagnosed with cancer will die of the disease. This disparity is due to health system challenges such as limited access to early detection and effective treatment and care (1). During the COVID-19 outbreak, children with cancer have been particularly at risk of suffering the consequences of resource reallocations by having treatments delayed, interrupted, or substantially modified. The pandemic has forced pediatric oncology units to alter their basic operability to minimize the risk of the virus spreading while providing the best possible management of cases found positive for COVID-19 and, above all, to ensure that children and adolescents are able to access their oncology treatment.

In The Lancet Child & Adolescent Health, Dylan Graetz and colleagues (2) present the results of a cross-sectional survey (from June 22 to Aug 21, 2020) distributed to 311 healthcare professionals at 213 institutions in 79 countries. The study aimed to investigate the effect of the COVID-19 pandemic on childhood cancer care worldwide and assessed the institution's characteristics, the number of patients diagnosed with COVID-19, and disruptions and adaptations to cancer care. The authors concluded that although the COVID-19 pandemic has substantially affected childhood cancer diagnosis and management worldwide, its effect has been more prominent in low-income and middle-income countries than in high-income countries. For example, unavailability of chemotherapy agents ($p=0.022$), treatment abandonment ($p<0.0001$), and interruptions in radiotherapy ($p<0.0001$) were more frequent in low-income and middle-income countries.

In a similar study in April 2020, Vasquez and colleagues (3) evaluated the early effects of the pandemic on hematology and oncology practices across Latin America, revealing that COVID-19 had negatively affected the prognosis of children with cancer. The study showed that pediatric oncology units made efforts to provide chemotherapy for children with newly diagnosed cancer and those who required active ongoing treatment. Healthcare providers reported an indefinite delay of follow-up appointments, outpatient procedures, cancer surgeries, radiotherapy schedules, outpatient consultations, stem-cell transplantation, and palliative care. Additionally, 36% of cases required modification of chemotherapy regimens because of a shortage of drugs, and 79% of survey participants reported a shortage of blood products. Discontinuation of or amendment to therapy was significantly more frequent in countries with travel restrictions(3).

These studies emphasized the challenges of delivering childhood cancer treatment and care during the pandemic, especially in resource-constrained settings. In low-income and middle-income countries, including Latin America, the common issues of late diagnosis and treatment abandonment or interruptions have worsened during the pandemic (4).

During the COVID-19 early crisis in March 2020, the region's governments enforced the WHO guidelines, mainly social distancing. When the first cases were reported in mid-March in Latin America, country leaders closed both air and land borders and

implemented quarantine measures. These lockdown measures, lasting until June or July in some countries,5 included either partial or complete suspension of public transportation, which decreased mobility and considerably reduced patients' flow in healthcare centers. As many households lost their wages, the expectation of substantial economic effect on families might have led to treatment abandonment in children with cancer or non-adherence to treatment (such as intermittently missing medication doses or appointments) (6,7)

In response to the challenges, countries have implemented new policies and distributed resources. Hospitals are inclined to decrease the need for hospital visits when patients have a high risk of death due to SARS-CoV-2 infection (8). In El Salvador, the national pediatric cancer program team recognized the importance of expanding telemedicine to optimize care through video calls. The healthcare system affected by the lockdown-imposed fear and forced patients to embrace telemedicine. Telemedicine attempted to safeguard resources in the oncology program by seeing follow-up patients through it, while the medical team optimized the care for newly diagnosed patients or those under active treatment. By mid-April, the traveling restrictions became more severe, forcing patients to stay home. Eventually, as of September, the team provided care through telemedicine to all follow-up patients, and many patients in active treatment started receiving their post-chemotherapy laboratory evaluation results by telephone. Different pediatric oncology units have also reported implementing physical distancing

measures, reorganizing staff in 12-h shifts per group, or sending non-essential personnel to telework to reduce exposure (9).

Healthcare systems in the Latin America region need to reorganize healthcare infrastructure to address the emergency to ensure sustained curative outcomes for children with cancer while maintaining public health and safety. The COVID-19 pandemic created an opportunity to develop legislation for childhood cancer services. For instance, the Peruvian legislature proposed the Childhood Cancer Law in April

2020, which will have a substantial effect on the fight against childhood cancer in Peru, despite a global pandemic (10). The Childhood Cancer Law strives to benefit children and adolescents with cancer by implementing universal health coverage, conferring parents a financial allowance (the equivalent of two minimum-wage salaries) while their child is under treatment, and building a National Program for Children and Adolescents with cancer that incorporates a population-based pediatric cancer registry. The law will effect the life of at least 650 patients per year, improving the survival rate of childhood cancer in Peru.



**Role of domestic
water filtration
plants to cope with
the diseases caused
by contaminated
tap water; SEM-ANN
Approach**



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Drinking contaminated water is a leading cause of several waterborne diseases. Domestic water filtration plants are treated as one of the possible alternative tools to combat the disease caused by contaminated drinking water. Little is known about the usage behaviour of households to use water filtration plants at the domestic level in combating waterborne disease. Unveiling how different social, economic, and technological factors can mould household usage behaviour to use domestic water filtration plants can be helpful in combating the spread of diseases caused by contaminated water. I have collected a cross-sectional dataset from one of the developing countries and applied

the SEM-ANN dual-stage hybrid model to test the proposed hypotheses and rank the social, economic, and technological factors according to their normalised importance. Results revealed that awareness of risks associated with contaminated water, social influence and water pollution knowledge are the most significant predictors behind the use of domestic water filtration plants, whereas cost is a potential barrier. Gender found a significant moderator and caused a small moderation in the study. The study results have important policy suggestions for governments and other stakeholders to combat waterborne disease and achieve the WHO clean water goal 2030.

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**Enabling factors
for sustainable
menstrual hygiene
management
practices: A rapid
review**
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“ Menstrual Hygiene Management should be universally recognised, promoted, and practised as a fundamental to good health, dignity and quality of life” (WHO/ UNICEF 2012). This paper highlights the crucial enabling factors in menstrual hygiene management. The use of products depends on various factors, such as access to water, privacy, social, cultural and economic. Gender equality and women's empowerment are integral to the Sustainable Development Goals (SDGs). Half of the world's population are women, and women have specific needs to manage the menstrual cycle during their lifetime. To manage the bleeding, girls and women use different products, depending on their accessibility and affordability. They are (a)

disposable—one-time use products and (b) reusable products—reusable products used multiple times. We followed five steps in rapid literature review: (1) building keywords and search strings, (2) using the keywords to search in literature databases, (3) screening the articles, (4) coding the articles, and (5) analysing the findings. The study found that there are limited studies related to the use of menstrual products and the impacts of these products on women's health and the environment. Also identified are factors responsible for choosing a particular type of menstrual product, the perceptions of women using the products, and their implications on health and the environment. This study is unique because it tries to explore specific enabling

factors of MHM practices and outline the strengths, weaknesses, environmental impact and awareness levels of different menstrual products. The study suggests the need to study the type of menstrual products women prefer using appropriate variables, address the issues of disposal systems, and provide adolescent girls with

adequate infrastructure and access to affordable sanitary products. To achieve gender equity to manage their periods with dignity increasing awareness regarding sustainable/reusable menstrual products, suggesting a further investigation into menstrual hygiene management.



***Tamilnadia uliginosa* (Retz) Tirveng and Sastre: An overview on the journey from traditional remedies to modern therapeutics**



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Ethnopharmacological relevance: Numerous studies have proven the effectiveness of herbs and natural remedies in the treatment of human illnesses. *Tamilnadia uliginosa* (Retz) Tirveng and Sastre (Rubiaceae) is a perennial edible medicinal herb that is utilized by many ethnic communities of India and other south Asian countries.

Objective: The review aims to report the current information of the plant based on its botanical and taxonomic description, traditional use, active phytoconstituents, pharmacological use and toxicity.

Scope: The plant contains a wide variety of secondary metabolites such as flavonoid, alkaloid, terpenoids and organic acids which are generally responsible for a wide variety of pharmacological activity. regrettably, very limited clinical and preclinical investigation has been carried out to scientifically validate the traditional application of the plant.

Result: The review's findings indicate

that the plant is used by the many tribes in the communities to cure people who have diarrhoea, dysentery, diabetes mellitus, fever, and cough. Based on the online poll, data about *T. uliginosa*'s transition from traditional use to scientific validation was acquired. The plant has extensive pharmacological action, including antidiarrheal, antibacterial, anti-inflammatory, antidiabetic, anticancer, and antiepileptic effects, according to scientific research. Additionally, 15 major polyphenolic phytoconstituents from the fruits of *T. uliginosa* were identified and isolated based on the phytochemical aspects.

Conclusion: The results of this review will produce a new, safe, and affordable therapeutic strategy to the isolation of novel chemical entities in drug development. Additionally, it can aid in the isolation of novel lead compounds and the investigation of additional clinical study research by researchers.

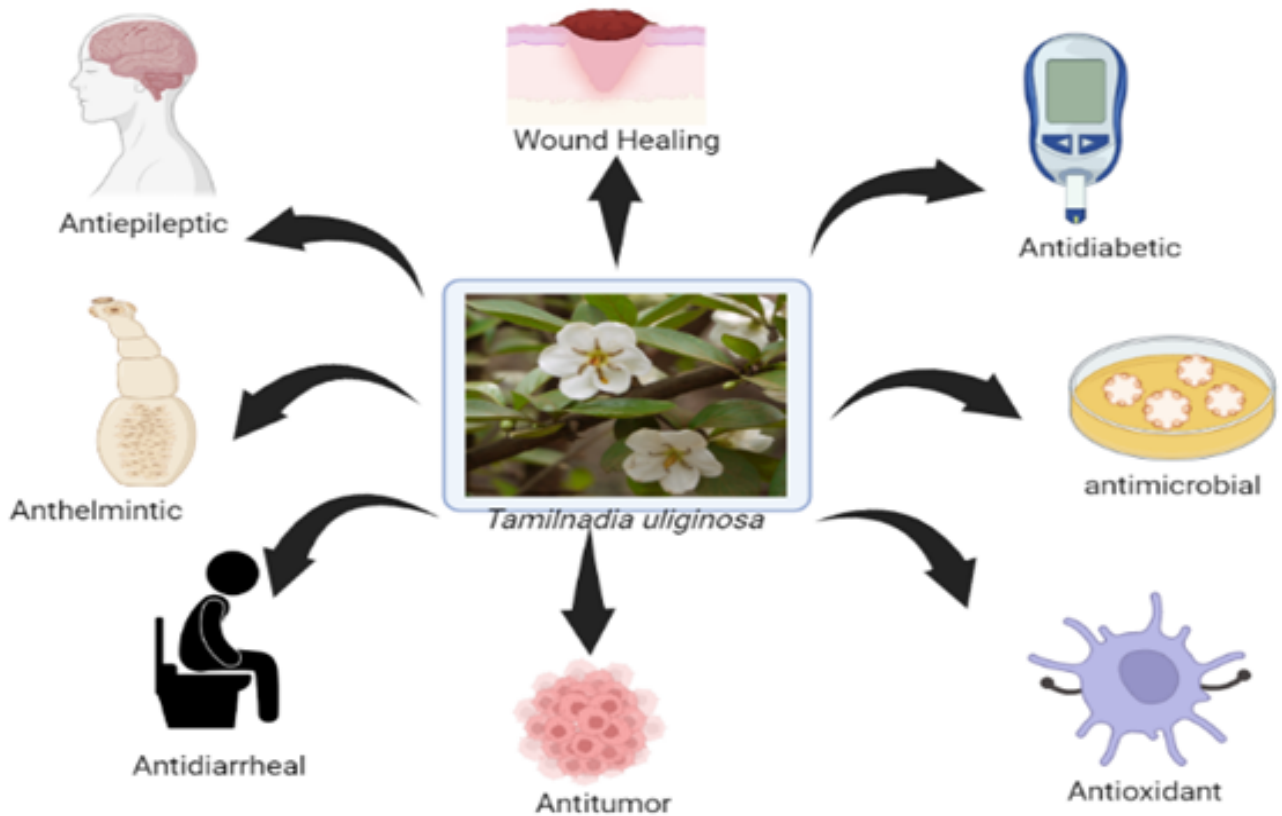


Figure 1: Graphical abstract



Systematic literature review on trends and challenges of block chain in electronic health care system



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The exponential growth in the quantity of digital information is accumulated in electronic health records. Electronic health records is now booming in providing patients, doctors and health care management in examining the profiles of patients and giving proper treatment when emergency. The health care system related technology has been growing rapidly from various healths record management systems which thrives the lack of security threats. The electronic health record systems are staying behind with challenges in patient's privacy, data integrity, interoperability, scalability and lack of better security in a decentralized platform. In the existing works the Homomorphic encryption has given secured frameworks with enormous increase of data breach, criminal deception, unjustifiable claiming and thefts in data make difficult for health care systems to provide quality oriented care to patients by contradict it needs

an effective authentication mechanisms and secured data storage which is challenging. Block chain technology with homomorphic encryption have immensely attracting the healthcare industries with its secured storage methods, distributed and immutability nature of securing the data. The main objective of the research is to identify various methods, frameworks with homomorphic encryption and analyze the various techniques with deep learning for the secured predictions of patients data and to understand the gap in threats with patient's records, hence the findings of the research with existing methods helps for the betterment of health organizations and society. The outcome of this study will be highly beneficial for deploying improved block chain security frameworks with effective cryptographic authentication mechanisms for electronic health record system.



Risk factors for schizotypy in the Mexican general population



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Introduction: Schizotypy represents the underlying vulnerability to schizophrenia, occurs in the general population as a subclinical manifestation, and is an important predictor of transition to psychosis. However, not all individuals with schizotypy develop a psychotic disorder. The study of schizotypy dimensions allows the identification of protective and risk factors to better understand the etiology, developmental trajectories, and expression of schizophrenia spectrum psychopathology at a time when it is possible to implement preventive interventions that improve prognosis and reduce the long-term public health burden generated by these disorders.

Objective: To examine the association of clinical and psychosocial risk factors with schizotypy dimensions in the Mexican general population.

Methods: An online survey was conducted with 777 Mexicans from the general population (mean age of 29.4; SD=8.3 years). Auto-informed questionnaires were used to assess schizotypy, clinical and psychosocial risk factors.

Results: Risk factors for positive schizotypy

were PTSD symptoms, cannabis use, anxious attachment, disorganized attachment, child abuse, and low self-esteem. Risk factors for negative schizotypy were social functioning, low self-esteem, perception of lower social support, lower levels of anxious attachment, and higher levels of avoidant and disorganized attachment. Risk factors for disorganized schizotypy were PTSD symptoms, social functioning, depressive symptoms, perceived cognitive deficits, childhood abuse, low self-esteem, and disorganized attachment.

Conclusions: Findings are consistent with studies indicating that schizotypy dimensions have differential patterns of association with various clinical and psychosocial variables. Also, the findings are compatible with research demonstrating a close relationship of childhood maltreatment and insecure attachment with vulnerability to psychosis. The various protective and risk factors that showed association with dimensions of schizotypy may help to guide preventive interventions in the population at potential risk for developing schizophrenia spectrum disorder and other psychotic disorders.



Epidemiological perspective associated with principal risk factors of *Trichinella spiralis* infection in pigs and humans in Egypt



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Background and Aim: In Egypt, there is a scarcity of recent data on trichinellosis in pigs and humans. Therefore, this study aimed to determine the epidemiological profile and risk factors associated with *Trichinella spiralis* infection as well as to assess the effectiveness of the trichinoscope and digestion technique in diagnosing trichinellosis.

Materials and methods: Data were collected on 33812 pigs slaughtered during a year at the Al-Basateen abattoir, Cairo Governorate, Egypt. The slaughtered pigs had already been examined by trichinoscope in the abattoir. The diagnostic effectiveness technique was randomly conducted on 170 pork muscle samples, which were examined using the digestion technique. Furthermore, 90 serum samples from high-risk individuals in Qena and Sohag Governorates, Upper Egypt, were analyzed

using an enzyme-linked immunosorbent assay.

Results: The investigation revealed that the overall prevalence was 1.06% in pigs by trichinoscope. Of the examined 170 samples, 2.35% and 3.35% were found to harbor *Trichinella* by trichinoscope and artificial digestion, respectively. *Trichinella* was identified as *T. spiralis* using a polymerase chain reaction (PCR) technique. A significant relationship was affirmed between the prevalence of trichinellosis and the sex and age of the examined pigs. Likewise, for the first time, there was a considerable seasonal trend in the prevalence of *Trichinella* with the maximum infection, which was observed during Autumn (1.18%). The prevalence of trichinellosis in humans was 10%, with a significant association with age.

Conclusion: Our findings are intended to serve as a starting point for developing effective preventive and control measures for trichinellosis (as application of Hazard Analysis Critical Control Points (HACCP) in pig farms, stop feeding pigs on garbage as well as, preventing illegal slaughter of pigs outside the slaughterhouses). It also fortifies the establishment of the digestion technique because of its high specificity and sensitivity, although it is difficult to apply to a large number of samples.



Male predisposition in cerebellar mutism syndrome: A cohort study



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The aim of this study was to explore the association between sex and cerebellar mutism syndrome and to examine other potential risk factors. This ambispective cohort study examined 218 pediatric patients (132 boys) with a posterior fossa tumor who underwent tumor resection from July 2013 to March 2021. The patients' demographics and tumor characteristics were examined and statistically analyzed to explore the associations among the variables. Multivariable and subgroup analyses were conducted to validate the independent risk factors for cerebellar mutism syndrome (CMS). The male and female patients did not differ significantly in terms of age, tumor size, tumor location, tumor consistency, VP shunt placement before resection, extent of resection, or surgeon, as well as with respect to the presence of

hydrocephalus or paraventricular edema. The overall incidence of CMS was 32.6%. The incidence of CMS was significantly higher in male patients than that in female patients (41.7% vs. 18.6%; $P=0.001$). In the multivariable analysis, male sex (adjusted odds ratio [OR], 3.27; $P=0.001$), solid tumor consistency (adjusted OR, 5.61; $P=0.001$), midline location (adjusted OR, 3.78; $P=0.004$), and hydrocephalus (adjusted OR, 2.56; $P=0.047$) were independent risk factors for the CMS. Chi-square analysis revealed that solid tumor consistency and midline location were associated with medulloblastoma ($P<0.001$). Male patients had a higher risk of developing CMS after a posterior fossa tumor resection. Midline location, solid tumor consistency, and hydrocephalus were independent risk factors for CMS.

Table. Step-wise multivariate logistic regression analysis

Covariant	Regression coefficient	OR	CI		P value
			5%	95%	
Intercept	-4.53	0.01	0.00	0.04	
Male	1.18	3.27	1.62	6.58	0.001
Midline location	1.33	3.78	1.54	9.26	0.004
Solid Tumors	1.72	5.61	2.01	15.68	0.001
Hydrocephalus	0.94	2.56	1.33	4.95	0.047



***Distemonanthus
benthamianus***
**Baillon: Antidiarrheal
potential via
inhibiting voltage-
dependent calcium
channels and
cholinergic receptors**



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Objective: To evaluate spasmolytic mechanisms of aqueous and methanolic extracts from *Distemonanthus benthamianus* trunk-bark.

Methods: Spasmolytic activities of extracts were evaluated in vitro on spontaneous and potassium chloride-induced jejunum contractions, or against cholinergic [acetylcholine (0.3 μ mol/L)] stimulations. High performance liquid chromatography analysis of both extracts was performed in reference to standard compounds.

Results: Extracts developed concentration-dependent inhibitory activities. The methanolic extract, which revealed better activity, produced spasmolytic and

myorelaxant effects at concentrations of 0.01-0.30 mg/mL with EC₅₀ of 0.06 and 0.09 mg/mL (95% CI: 0.03-0.3 mg/mL), respectively. Its anticholinergic effect was obtained at the same concentrations with EC₅₀ of 0.11 mg/mL (95% CI: 0.03-0.3 mg/mL). Chromatograms showed the presence of gallic acid in both extracts, rutin being only detected in the aqueous extract.

Conclusions: *Distemonanthus benthamianus* extracts exhibit verapamil and atropine-like activities, thus highlighting calcium channels and muscarinic receptors blocking potentials, which may be conveyed by some phenolic compounds. These results confirm the antidiarrheal activity of *Distemonanthus benthamianus* extracts.



**An alternating
current
electrokinetics
biosensor for rapid
on-site serological
screening of Taenia
solium cysticercosis
infection**



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Cysticercosis, caused by *Taenia solium* infection, is a leading cause of acquired epilepsy in many developing countries. Several types of immunoassays have been developed for the detection of *Taenia solium* infection in both infected humans and livestock animals. However, these methods require central laboratory facilities and are both time- and labor-consuming with longer than desired turnaround time. In this work, we demonstrated that AC electrokinetics (ACEK) capacitive sensing can be used to realize point-of-care immunosensor in general, with the on-site screening of *Taenia solium* infection as an example here. The sensor employs interdigitated microelectrodes (IDME) functionalized with a recombinant *Taenia solium* antigen, rT24H, to detect anti-rT24H antibodies in clinical serum samples. ACEK capacitive

sensing method interrogates the IDME sensors with a special AC signal, which serves the dual purposes of enriching target antibodies by ACEK effects and directly measuring the capacitance change induced by specific binding. First, to characterize the ACEK biosensor as an immunosensor in general, IgG in phosphate-buffered saline buffer was tested against IDME sensors functionalized with anti-IgG. The limit of detection of the sensor was 24.1 fg/mL, and the linear dynamic range was 0.1–100 pg/mL. To test the clinical usage of this sensor, ACEK capacitive sensors with rT24H probe were used to test clinical serum samples from patients with or without *Taenia solium* infection. The diagnostic sensitivity of the ACEK capacitive sensor for *Taenia solium* infection was found to be 88.24%. ACEK capacitive immunosensors have shown good potential for point-of-care diagnostics.

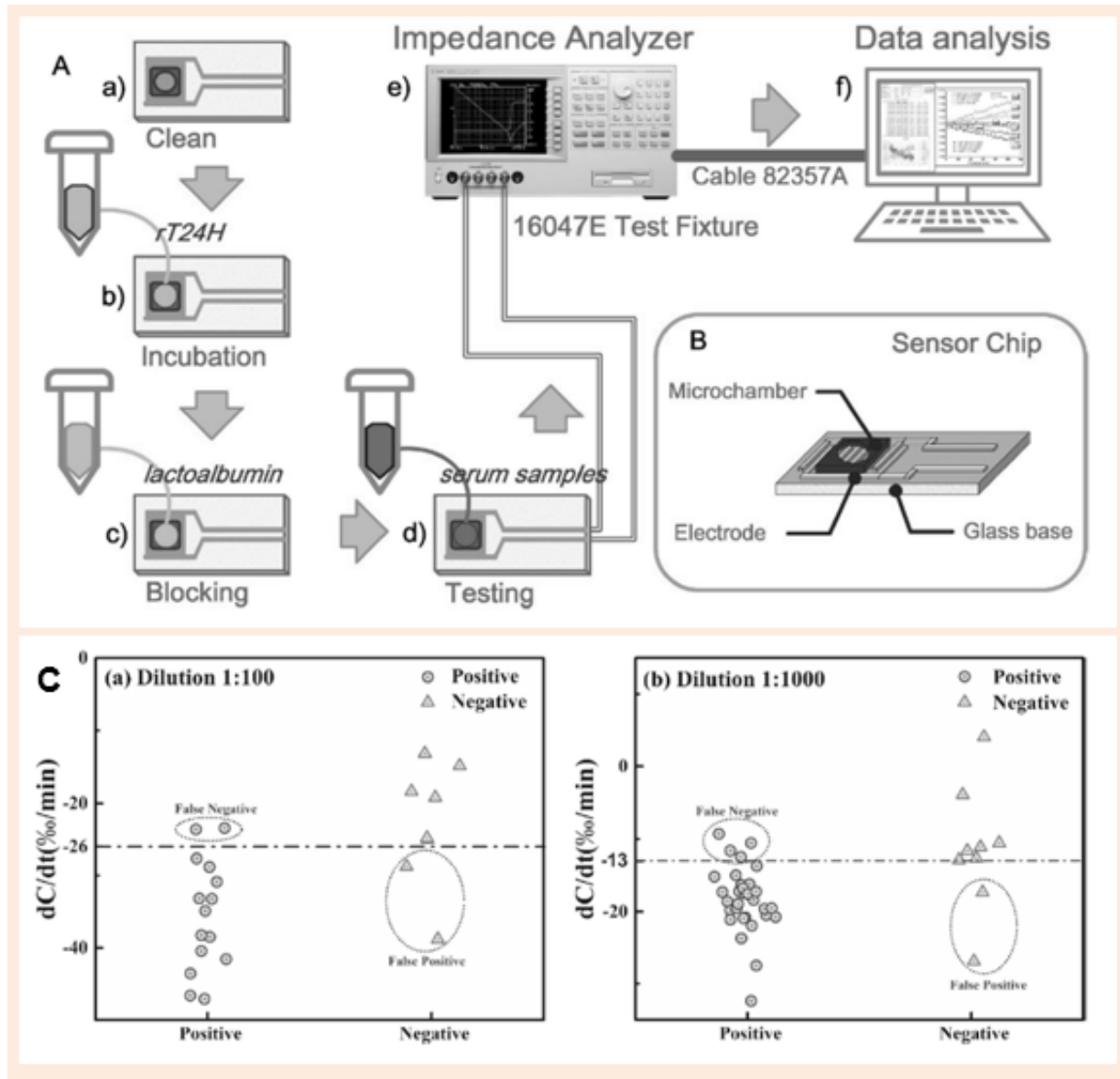


Fig. 1 Schematic illustration of the general procedure of ACEK biosensor preparation and measurement. **A** The sensor preparation and analysis procedure. (a) Cleaning IDMEs and sealing silicone microchamber onto the chip for sample loading. (b) Applying the antigen probe onto sensors for immobilization. (c) Applying lactoalbumin blocking solution to inhibit non-specific binding. (d) After surface preparation from (a) to (c), the sensor was ready for testing. Here, a serum sample was dropped onto the sensor. (e) The electrode chips were connected to the impedance analyzer for detection. (f) Data analysis. **B** The structure of the ACEK biosensor. **C** Blind test results for clinical serum samples, diluted with $0.1 \times$ PBS. Two dilution factors (1:100 and 1:1000) were tested. The red color indicated the true positive samples, while the green color indicated the true negative samples. The false negative and false positive data points were highlighted in the dashed lined circles. The threshold value was illustrated by the horizontal dashed line.

Table 1 Comparison of different immunosensors

Method	Target	Medium	Dynamic range	LOD	Assay time	Ref
QuickELISA™	T24H	Pig serum	0.1–100 µg/mL	– 60 ng/mL	60 min	[13]
LLGP-EITB	rT24H	Serum	1–100 µg/mL	– 50 pg/mL	120 min	[14]
Electrochemical	CYFRA 21–1	Serum	0.002–10 ng/mL	0.22 pg/mL	5 h	[15]
Optical	CK-MB	Serum	0.14–1000 ng/mL	0.14 ng/mL	1 h	[16]
SPR	Glycocholic acid	Urine	13.3–119.4 ng/mL	2.5 ng/mL	> 30 min	[17]
Fluorescence	PD-1	Cell culture supernatant	1–100 ng/mL	85.5 pg/mL	30 min	[18]
Impedimetric	A1BG	Serum	1–300 ng/ mL	1 ng/mL	10 min	[19]
QCM	<i>Tilletia indica</i> -Teliospore	Wheat	19 pg–10 ng/mL	4.4 pg mL	> 1 min	[20]
Capacitive sensing	rT24H	Serum	64%	24.1 fg/mL	30 s	This work

In contrast, ACEK capacitive sensing seamlessly integrates interphase capacitance analysis and target molecule enrichment into a single step. This method uses very low voltages (< 350 mV) yet still can generate sufficient ACEK enrichment effect by adopting an appropriate combination of testing buffer, electrode topology, and functionalization. As a result, the assay time needed for receptor-ligand binding to yield a detectable response is reduced from hours to less than a minute, with a much lower limit of detection.

“ Changes of incudostapedial joint angle in stapedotomy: Does it impact hearing outcomes? ”

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Purpose: The aims of this article are: (1) is there an ideal incudostapedial joint (ISJ) angle after stapedotomy? (2) is there any difference between pre- and postoperative ISJ angle? and (3) what is the significance of the ISJ angle in postoperative hearing outcomes?

Methods: Forty six ears from 39 different adult patients (28 women and 11 men; 21 left and 25 right ears) with a mean age of 39 years with clinical otosclerosis who underwent stapedotomy between May 2017 and May 2019 were retrospectively registered, including seven bilateral surgery cases. ISJ angle and intravestibular depth of the stapes prosthesis were measured from multiple planar reconstruction-computed tomography images and the length of the prosthesis was measured during surgery. Relationships between the ISJ angle parameters and postoperative hearing

outcomes and parameters of the prosthesis were analyzed.

Results: The mean ISJ angle was $93.3^{\circ} \pm 8.8^{\circ}$ preoperatively and $101.9^{\circ} \pm 6.3^{\circ}$ postoperatively, increasing by 8.6° during stapedotomy ($p < 0.01$). There were weak and negative correlations between ISJ angle changes and postoperative air conduction gains at frequencies ≤ 1 kHz and bone conduction gains at 0.5 kHz. When the postoperative ISJ angle changed more than 20° , the success rate of the procedure decreased to 0%.

Conclusion: The stapedotomy operation increased the ISJ angle. The success of postoperative auditory outcomes had more to do with the ISJ angle change than the value of the angle itself, indicating there is no universal ideal ISJ angle that surgeons should aim for during stapedotomy.



Percutaneous management of breast cancer: A systematic review



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Objectives: Surgical treatment of breast cancer is tending minimally invasive. We review the development status of percutaneous management for breast cancer and the evidence relating to tumor size as a fundamental determinant of treatment clinical outcome.

Results: It is safe and feasible for percutaneous management (except IRE) to treat breast cancer. For tumor size ≤ 2 cm, percutaneous management is a promising alternative modality. For tumor size ≤ 3 cm, it is controversial whether percutaneous

management can achieve similar effects to surgery, especially its long-term effects. For tumor size >3 cm, it is still in the initial exploration stage and showed the potential in the treatment of unresectable cancer by benefitting the local control of primary cancer.

Conclusion: Percutaneous management of breast cancer is a valuable method for breast cancer treatment in selected patients. It is urgent to provide the high level of evidence for widespread clinical application.

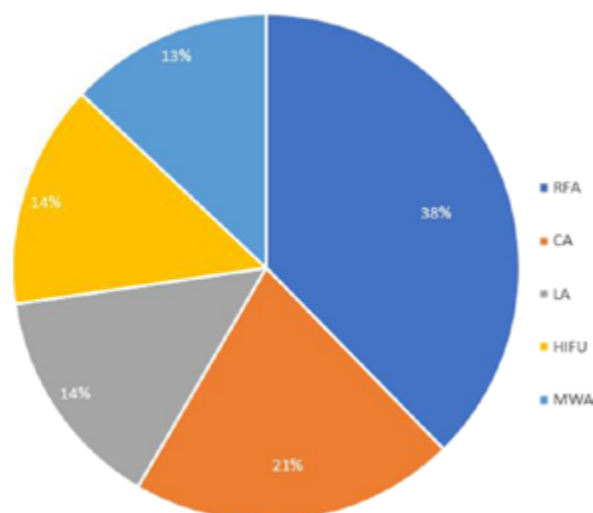


Figure. Pie chart of the number of articles published in each technology



Construction of equipment evaluation index system of emergency medical rescue based on Delphi method



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Analytic hierarchy process and Delphi method were commonly used to construct index system for comprehensive evaluation. The combination of the two different methods was helpful to solve the problems of unreasonable selection of elements, unclear meaning of elements, unsystematic and incorrect relationship between elements, unreliable quality of evaluation results

and so on. The above methods were applied to build the evaluation index of materials and equipment of emergency medical rescue team (EMTs) , which ensured that the evaluation index system met the requirements of systematicness, standardization and credibility , and could help to timely find and correct the problems existing in materials and equipment of disaster EMTs.



Development and preliminary validation of a public health emergency competency model for medical staffs of national health emergency teams in China



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Background: In the present study, we attempted to develop and validate a participatory competency model for medical workers and then evaluate the current status of competency characteristics of Chinese medical workers.

Methods: The competency model was constructed in a multistage process, including literature review, expert consultation, critical incident and focus group interview. A pilot study was conducted to refine the initial model among 90 participants and the viability and reliability were evaluated by a questionnaire survey among 121 medical workers. Then, the current status of competency characteristics was measured based on the final version of competency model.

Results: In the pilot study, ten questionnaires were dropped for the poor quality and thus the eligible rate was 92% (138/150). KMO value was 0.785 and

Bartlett test showed that the $\chi^2=6464.546$ (df=903) and p value < 0.001. Then, 0 items with double loading and factor loading < 0.4 were deleted. Finally, 33 items were retained with the lowest factor loading value of 0.465. The validity and reliability of competency model were determined with Cronbach's α coefficient of 0.975 and ICC value of 0.933. Finally, a revised competency model with 5 dimensions and 31 items was obtained. The overall competencies of current medical workers were in a high level, except for emergency knowledge related competencies. Age was an independent factor affecting the competencies.

Conclusions: Our competency model was a reliable and validated tool for assessing the competencies of medical staffs against public health emergencies, and the overall competencies of current medical workers in China were in a high level, except for emergency knowledge related competencies.

“
**Outcomes of genetic
testing-Based
cardiac rehabilitation
program in
patients with acute
myocardial infarction
after percutaneous
coronary intervention**
”

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Objective: We aimed to screen the exercise-related gene sensitivity of patients with acute myocardial infarction after PCI by establishing the gene spectrum of aerobic exercise and cardiopulmonary function sensitivity, test the effect of individualized precision exercise therapy, and provide evidence for the establishment of a precision medicine program for clinical research.

Methods: Aerobic exercise- and cardiopulmonary function-related genes and single-nucleotide polymorphisms (SNPs) were obtained by data mining utilizing a major publicly available biomedical repository, the NCBI PubMed database. Biological samples from all

participants underwent DNA testing. We performed SNP detection using Samtools. Patients who underwent PCI were enrolled in the study (n=122). We screened the first 24 cases with a high mutation frequency for aerobic exercise- and cardiopulmonary function-related genes and the last 24 cases with a low mutation frequency and separated them into two groups for the exercise intervention experiment.

Results: In both the low mutation frequency group and the high mutation frequency group, after 8 weeks of exercise intervention, 6 MWT distance, 6 MWT%, VO₂/kg at peak, and VO₂/kg at AT were significantly improved, and the effect in the high mutation frequency group

was significantly higher than that in the low mutation frequency group (6 MWT distance: 468 vs. 439, $P=0.003$; 6 MWT%: 85 vs. 77, $P=0.002$, VO_2/kg at peak: 14.7 vs. 13.3, $P=0.002$; VO_2/kg at AT: 11.9 vs. 13.3, $P=0.003$).

Conclusions: There is extreme variability between individual responses to exercise training. The identification of genetic variants associated with individual variabilities in exercise-related traits could

guide individualized exercise programs. We found that the subjects with a high mutation frequency in aerobic exercise and cardiopulmonary function-related genes achieved more cardiorespiratory fitness benefits in the aerobic exercise rehabilitation program and provided evidence for the establishment of a precision medicine program for clinical research.



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