Peers Alley Media
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MARCH
24-25, 2022
LONDON
UK

2nd International Conference on Future of Preventive Medicine and Public Health

PEERS ALLEY MEDIA

A CONFLUENCE OF ERUDITE AND KNOWLEDGE-SEEKER

PROGRAM-AT-A-GLANCE

FUTURE OF PMPH 2022

DAY 1

MARCH 24, 2022

Scientific Program

08:00-08:30	**Registrations**
08:30-09:00	**Opening Ceremony**

Keynote Session

09:00-09:30	**Title: EBP Skill: Improving outcome measurement through item response theory** **Angela Benfield,** University of Wisconsin- La Crosse, USA
09:30-10:00	**Title: Educating to address healthcare needs for refugees and displaced persons** **Roger Worthington,** Royal Stoke University Hospital, UK

Refreshment Break 10:00-10:20

Workshops

10:20-11:00	**Title: Design thinking for a patient-centered innovation in the nursing industry: How hospitals can use the design thinking tool for processes, services and infrastructure around the patient** **Judith Hantl-Merget & Scherm Matthias,** RoMed Kliniken, Germany
11:00-11:40	**Title: Making decision-making visible- teaching the process of evaluating interventions** **Angela Benfield,** University of Wisconsin- La Crosse, USA

Oral Session

11:40-12:00	**Title: Building a peer group community** **Angela Cole,** Mid South Essex NHS Trust/Barts Health NHS Trust, UK
12:00-12:20	**Title: Bereavement needs of critical care nurses: A qualitative study** **Taline Omran,** Vanguard University, USA

12:20-12:40	**Title: Direct to consumer genetic and genomic testing with associated implications for advanced nursing practice** **Ashley Kate Hughes,** Department of Veterans Affairs, USA
12:40-13:00	**Title: Impact of waterpipe educational program on university students' who are active waterpipe smokers** **Mahmoud Ogla Al-Hussami,** Univeristy of Jordan, Jordan

Group Photo

Lunch Break 13:00-13:40

13:40-14:00	**Title: Estimating nickel exposure in respirable dust from nickel in inhalable dust** **Cornelia Ramona Wippich,** Institute for Occupational Safety and Health of the German Social Accident Insurance, Germany
14:00-14:20	**Title: Covered-stent treatment of an extracranial internal carotid artery pseudoaneurysm in a 3 years-old child with 12-years follow-up: A case report** **Roberto Sanchez,** University of Concepcion, Chile
14:20-14:40	**Title: Can you train the neck to help prevent concussion?** **Theo Versteegh,** Western University, Canada
14:40-15:00	**Title: The acceptability and use of mind-body interventions among African American cancer survivors: An integrative review** **Pinky Shani,** University of Houston, USA
15:00-15:20	**Title: Multithreaded variant calling elPrep 5 and future developments in genomics analysis** **Roel Wuyts,** Imec's ExaScience Life Lab, Belgium
15:20-15:40	**Title: Reproductive health counseling in CKD** **Ivie Okundaye,** Stanford University Medical Center, USA

Refreshment Break 15:40-16:00

16:00-16:20	**Title: Citizen participation and new practices and meanings for the development of healthy public policies** **Jorge Mandl Stangl,** Ministerio Popular para la Salud, Venezuela
16:20-16:40	**Title: Ethical aspects of AI in healthcare** **Christoph Lutge,** TUM Institute for Ethics in Artificial Intelligence, Germany
16:40-17:00	**Title: Waterpipe smoking and the coronavirus syndemic** **Peter Walton,** Independent Researcher, UK **&** **Khaled Alturki,** Medical Services Department, Saudi Arabia
17:00-17:20	**Title: Efficacy and cost-feasibility of the timely chest compression training (T-CCT): A contextualized cardiopulmonary resuscitation training for personal support workers participating during in-hospital cardiac arrests** **Catalina Sokoloff,** CHUM Academy, Canada
17:20-17:40	**Title: Using mobile phones in health behaviour change: Perceptions among adolescents** **Anna Seitero,** Linkoping University, Sweden
17:40-18:00	**Title: Assessing understanding of caregivers on immunization and COVID-19 vaccines using a survey instrument** **Gozde Ercan,** Sancaktepe Education and Research Hospital, University of Health Sciences, Turkey

End of Day 1

DAY 2

MARCH 25, 2022

Scientific Program

	Introduction
Oral Session	
09:00-09:20	**Title: Privacy-preserving federated clinical analytics** **Roel Wuyts,** Imec's ExaScience Life Lab, Belgium
09:20-09:40	**Title: Integrated management of HIV/NCDs: Knowledge, attitudes, and practices of health care workers in Gaborone, Botswana** **Tiny Masupe,** University of Botswana, Botswana
09:40-10:00	**Title: Comparing knowledge, attitudes and practices regarding COVID-19 amongst Cameroonians living in urban versus rural areas** **Atabong Emmanuel Njingu,** University of Buea, Cameroon
10:00-10:20	**Title: Gender differences in the association between serum uric acid, body mass index, blood pressure and kidney functions in a population with prehypertension history: A cross-sectional study** **Mochammad Sja'bani,** Universitas Gadjah Mada, Indonesia
Refreshment Break 10:20-10:40	
Poster Session 10:40-11:20	
Oral Session	
11:20-11:40	**Title: Exploring Maternal Health in Ethiopia Using Indigenous Approaches: Policy and Practice Implications** **Aissetu Barry Ibrahima,** Northeastern Illinois University, USA
11:40-12:00	**Title: Empowering digital transformation: A Human Biomonitoring (HBM) Global Registry Framework** **Maryam Zare Jeddi,** National Institute for Public Health and the Environment (RIVM), Netherlands

12:00-12:20	**Title: The deployment of k9 detection dogs in screening for COVID-19 virus SARS-COV-2** **Mohammed Hag-Ali,** Higher Colleges of Technology, United Arab Emirates
12:20-12:40	**Title: Can CO_2 emissions and energy consumption determine the economic performance of South Korea? A time series analysis?** **Gbenga Daniel Akinsola,** Girne American University, Turkey
12:40-13:00	**Title: Making safety training stickier: A richer model of safety training engagement and transfer** **Tristan William Casey,** Griffith University, Australia
Lunch Break 13:00-13:40	
13:40-14:00	**Title: Determining the effect of group flower arranging sessions on caregiver self-efficacy and stress levels in an in-patient hospice** **Joanne Lavin,** CUNY School of Professional Studies, USA
14:00-14:20	**Title: Obesity myths and facts** **Ecler Ercole Jaqua,** Loma Linda University Health, USA
14:20-14:40	**Title: Satisfaction with customizable 3D-printed finger orthoses compared to commercial finger orthoses** **Natasha Irani,** Rush University Medical Center, USA
14:40-15:00	**Title: Effects of screenings in reducing colorectal cancer incidence and mortality differ by polygenic risk scores** **Jungyoon Choi,** Vanderbilt University Medical Center, USA
15:00-15:20	**Title: Sentinel lymph node does not prevent lymphedema** **Alexandre Pissas,** Hospital Center of Bagnols sur Ceze, France
End of Day 2	

KEYNOTE PRESENTATIONS

DAY 1

PEERS ALLEY MEDIA

2nd International Conference on Future of Preventive Medicine and Public Health

March 24-25, 2022
London, UK

BIOGRAPHY

Angela Benfield is an occupational therapist who has over 23 years of clinical experience with children. She currently teaches in an entry-level master's degree occupational therapy program. She has spoken on clinical reasoning, measuring outcomes and EBP internationally. Her research interest explores the skills required to be a competent allied health professional and the development of expertise. She has developed an interprofessional model of evidence-informed professional thinking which identifies activities which support the development of expertise. She has also operationalized the model through the development of the measure of evidence-informed professional thinking using Rasch analysis.

Angela Benfield
University of Wisconsin-La Crosse, USA

EBP Skill: Improving outcome measurement through item response theory

Even though evidence-based healthcare providers have been required to measure the impact of their interventions with consistent and sound outcome measurement, implementation rates continue to be low (Colquhoun et al., 2017), complicating the process of comparing local outcomes to population outcomes (Bozic, 2013). Evidence suggests that healthcare providers continue to rely on informal and unsystematic approaches to outcomes measurement, even when guidelines suggest tools and timelines for collection of data (Colquhoun et al., 2017). One barrier identified is that selecting tools can be especially difficult as it requires the integration of disparate knowledge: understanding of measurement theory and principles, ability to use evidence to identify factors that are remediable to change, ability to appraise the psychometric qualities of tools, and ability to combine different types of tools in a consistent, efficient, and feasible manner in order to gather strong local data to support analysis of effectiveness(Moore et al., 2018). Therefore, healthcare providers need to systematically and routinely use a combination of tools to support analysis of the change scores in local practice (D Steenbeek, Ketelaar, Galama, & Gorter, 2008). This process is complex-requiring the application of measurement theory, intervention theory and evidence-based process knowledge and skills.

Importantly, effective strategies have been identified which increase the use of standardized outcome measures including: a) evaluating current practice, b) comparing local practice to suggested assessment routines in guidelines, c) developing skills for locating, appraising and selecting potential tools for applicability and utility in the setting; and d) developing a minimum data set to use with all clients who present with the problem/condition in the local setting (Moore et al., 2018). The objectives of this presentation is to increase the capacity of individual healthcare setting to develop a standardized outcome measurement strategy for a local setting by taking them through the process.

BIOGRAPHY

Dr Roger Worthington has a PhD in philosophy from the State University of New York (Buffalo) and an MA in medical ethics from Keele University (UK). Specializing in medical education and global health policy, Roger now works as an independent researcher. He previously held academic positions in the UK as well as honorary positions in Australia and the USA (at Yale University School of Medicine), plus advisory roles with public bodies in several countries. Based in the UK, he runs professional development workshops within the NHS; in addition, he mentors young scholars from around the world. He is an associate editor for BMC (Springer) *Globalization and Health* and Editor-in-Chief for *Scholarly Review.*

Roger Worthington

Royal Stoke University Hospital, UK University Hospitals of North Staffordshire, UK

Educating to address healthcare needs for refugees and displaced persons

Refugee health is a matter of growing concern, made worse by events in Afghanistan, Yemen, Syria, Myanmar, Libya, Central America and elsewhere. While according to international convention, meeting the healthcare needs of refugees can be asserted as a human right, obligations to satisfy that right are necessary but not sufficient to ensure that those needs are met. In addition to political will and social commitment, a well-trained workforce is also needed. Nurses and other healthcare professionals need the right skills to treat this vulnerable and culturally diverse population. Given the nature and scale of the problem, there is a case for making refugee health a key component in global health education programs, especially in relation to nurses' continuing education and professional development. Displaced persons could find themselves seeking treatment in cities far removed from the situations that drove people from their homes, and while education may not change political realities on the ground, it could help nurses and other healthcare professionals respond more effectively to local needs for healthcare provision. Refugees and displaced persons eventually become part of the community (outside of camps and settlements), meaning that any healthcare professional could be asked to provide care, for instance, in areas of London with well-established refugee communities. However, these patients are sometimes hard to reach because of language, cultural and other types of barriers, and a broad mix of skills could be needed, not all of which may be included in current curricula. I produced a set of intended learning objectives to help fill this gap.

PEERS ALLEY MEDIA

YOUR FIRST CHOICE FOR RESEARCH INGENUITY

PROGRAM-AT-A-GLANCE

FUTURE OF PMPH 2022

WORKSHOP

DAY 1

PEERS ALLEY MEDIA

2nd International Conference on Future of Preventive Medicine and Public Health

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FUTURE OF PMPH 2022

BIOGRAPHY

Judith Hantl-Merget B.B. A., M.A.: Director of Nursing in the RoMed clinics

The ideal case of an executive manager combines leadership and management.

This principle is a daily reminder for my operative work as a member of the management and director of nursing. In this role, I intensively explore the culture of New Work and apply these elements to drive the cultural change at the RoMed clinics for the last four years. Especially helpful was my advanced training in Future and Digital Leadership at SGMI. With this background, I enabled frontline staff to independently solve a multitude of problems with the innovation framework Design Thinking.

Judith Hantl-Merget

RoMed Kliniken, Germany

BIOGRAPHY

He works intensively in the innovation and development of nursing care. Matthias Scherm is a Surgical Assistant, Health Manager, Design Thinking Facilitator, Bachelor of Science in Public Health and currently a part-time student enrolled in a Master of Arts, Business Psychology. He is fascinated by the challenges in healthcare and likes to change the processes around the patient with new tools. Further, he has successfully established the first robot support in the RoMed clinics.

Matthias Scherm

RoMed Kliniken, Germany

Design thinking for a patient-centered innovation in the nursing industry: How hospitals can use the design thinking tool for processes, services and infrastructure around the patient

The market-focused willingness for innovation ensures the success of the clinics. Hospitals need the ability to recognize customer needs, develop solutions and advertise accordingly. The current hospital structures imply only a little willingness for innovation in nursing care, while the demands are changing. The clinics need to adapt to the ever changing needs of patient as the average innovation development process is not efficient enough due to traditional project management. The transformation method

"Design Thinking" offers a holistic identification of customer's ideas and needs through a user-oriented and systematic approach to complex problems. Creative solutions are sought and tested in the form of a prototype. In addition, ongoing feedback is provided by the end-user in order to develop or improve user-oriented concepts. At the Health Forum, the basics of Design Thinking are being presented. Qualitative and quantitative research results are introduced in regards to the opportunities and risks of Design Thinking in nursing and in addition, the possible uses of Design Thinking in nursing are reported and the projects that have been accomplished are presented. In the RoMed clinics, various topics have already been established using Design Thinking like the successful implementation of attractive learning areas for trainees, the decrease of patient accidents, the integration of nursing assistants in every nursing department, the work-life-balance, an innovative application tracking system, improved patient care for cognitively impaired patients and optimized discharge management with a rehabilitation clinic. Helpful recommendations for a successful implementation of Design Thinking is given at the end of the presentation and an open discussion around is promoted.

BIOGRAPHY

Angela Benfield is an occupational therapist who has over 23 years of clinical experience with children. She currently teaches in an entry-level master's degree occupational therapy program. She has spoken on clinical reasoning, measuring outcomes and EBP internationally. Her research interest explores the skills required to be a competent allied health professional and the development of expertise. She has developed an interprofessional model of evidence-informed professional thinking which identifies activities which support the development of expertise. She has also operationalized the model through the development of the measure of evidence-informed professional thinking using Rasch analysis.

Angela Benfield
University of Wisconsin-La Crosse, USA

BIOGRAPHY

Dr. Robert Krueger is the Doctoral Capstone Coordinator and Associate Professor in the Doctoral Occupational Therapy Program at Whitworth University. Robert earned his PhD in Health Promotion Wellness and Post-Professional Doctorate in Occupational Therapy in the Hand Therapy Elective Track at Rocky Mountain University of Health Professions. Dr. Krueger has been an educator in health science graduate-level programs for 11 years. He has both clinical and business management experience in occupational therapy and hand therapy practice as well as board certification in hand therapy. His scholarly activities include national presentations and published articles on evidence-based practice (EBP), self-reflection in clinical decision-making, and curricular redesign in occupational therapy graduate education.

Robert Krueger
Whitworth University, USA

Making decision-making visible- teaching the process of evaluating interventions

Significant educational efforts to increase evidence-based practice have emphasized increasing knowledge, however these efforts have had minimal effect on sustained engagement of working healthcare professionals. Critically, many new interventions with limited evidence of effectiveness continue are readily adopted-indicating that openness to change is not the problem. The selection of an intervention is the outcome of an elaborate and complex process, which is shaped with how they represent the problem and their knowledge. This process is mostly invisible to others. An alternative strategy for increasing EBP use is to teach healthcare professionals to make their thinking

visible to themselves, explicitly teaching how to develop an evidence-informed cognitive model, and explicitly teach the thinking process of deciding how to assess and provide a specific intervention with clients (See figure 1: the simple view of intervention selection). This complex thinking process has many places where errors in thinking can lead to adverse decisions. However, it also identifies where specific EBP activities are implemented to be able to make quality decisions and not just when confronted with a clinical dilemma. The objective of this presentation is to: a) explain why teaching how students develop richer cognitive model increases their implementation of EBP activities; b) explain how developing an evidence-informed cognitive model of client problems improves heuristic reasoning, and c) describe the criteria which can be used to understand and integrate new interventions with previous strategies. Making the process visible to clinicians/students increases the skills required to judiciously select one intervention over others.

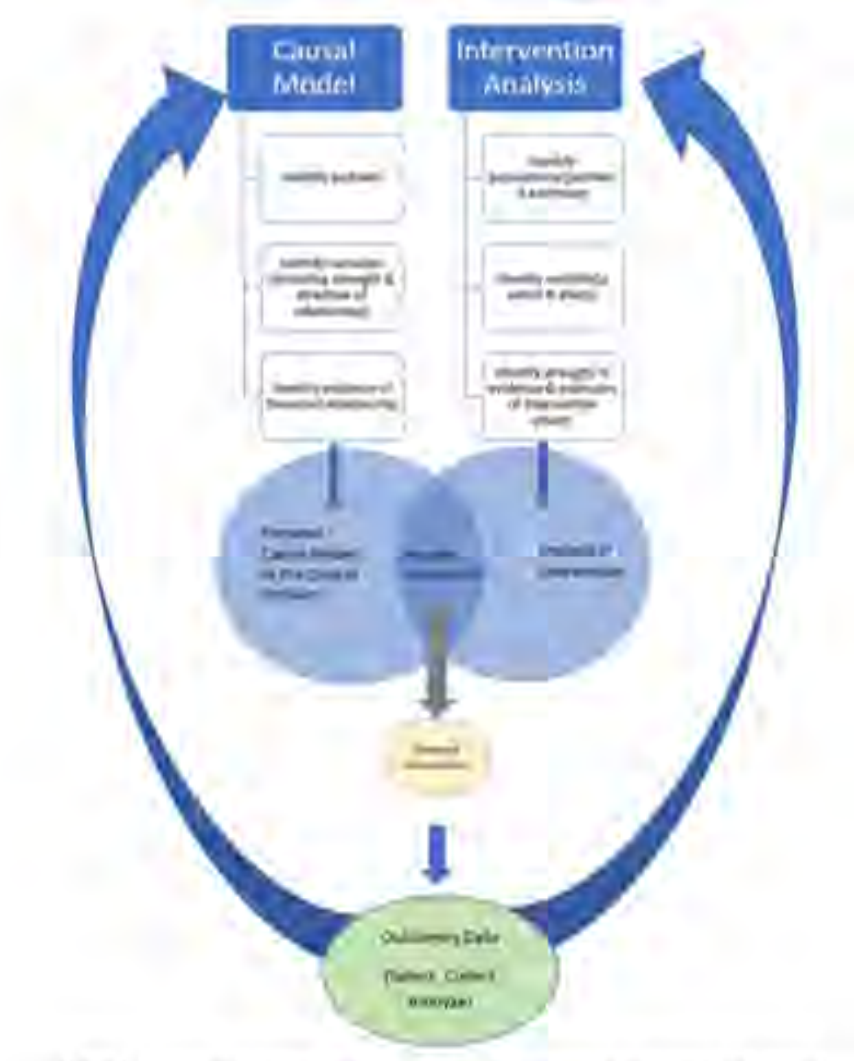

Figure 1.

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PROGRAM-AT-A-GLANCE

FUTURE OF PMPH 2022

SCIENTIFIC ABSTRACTS

DAY 1

PEERS ALLEY MEDIA

2nd International Conference on Future of Preventive Medicine and Public Health

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London, UK

Building a peer group community

A. Cole
Mid South Essex NHS Trust / Barts Health NHS Trust, UK

Aim: To build a network of professional communities that engage, participate and facilitate in supporting each other with the key shared principles to promote a safe space for well-being, sharing good clinical practice, identifying quality improvement projects and working together to support each other in order to support compassionate care giving.

Background: Nursing as a profession has for many years struggled with the retention of nurses in the NHS, the period of restoration and recovery following the Covid 19 pandemic is required to ensure that nurses are supported and wellbeing is central to the recovery to promote retention of a compassionate nursing workforce. Nursing by nature undertakes clinically complex work that can stimulate many emotional responses that can be hard to process and understand, leading to the inner critic take over a phenomenon that encourages self-blame, self dis-trust and compassion burnout.

Methodology: Using Clinical Supervision to build resilience and restoration within a work based community, promoting a tool kit that can be used to pro-actively enhance a community of peer support, check in skills, mindfulness and a safe space to reflect, learn and promote self-care as well as compassionate care. Implementing a clinical supervision cycle as well as building support networks in multiple clinical settings and with multiple peer groups. Clinical supervision has been implemented as group clinical supervision within the preceptorship groups and individual supervision for ward based nurses. Alongside building peer support communities as a tool to support and promote quality and compassionate care. Outcome measured by qualitative feedback and engagement.

Results: Qualitative feedback revealed positive themes and identified engagement in the process to promote well-being and maintaining compassionate care to avoid burnout and promote improvement projects.

Conclusion: The nature of clinical supervision and building peer group communities facilitated with an element of mindfulness and positive reframing gives nurses the time, space and skills to recognise the importance of their own wellbeing and that of their peers, in turn encouraging the identification and development of projects to promote working and caring as a team to build on and demonstrate that clinical supervision can increase peer group support and in turn compassionate care giving as well as leadership.

Biography

Angela Cole is a Clinical Nurse Specialist for Children with Intestinal Failure at The Royal London Hospital. During the Covid 19 Pandemic Angela developed and facilitated a peer support group for paediatric nurses redeployed to adult ITU areas, this experience has developed a passion for Clinical Supervision and the positive outcome this toolkit holds in keeping steady in the midst of chaos. Building peer group communities to really fulfil the term resilience to promote restoration is a forever aim. Well-being and compassionate care at the heart of nursing care.

Bereavement needs of critical care nurses: A qualitative study

Taline Omran
Vanguard University, USA

Background/Introduction: Bereavement and grief in critical care nurses remain an under studied phenomenon. As a way of self-protection, nurses may compartmentalize their own feelings and need assistance and support in processing feelings of bereavement. Nurses spend much of their time caring for patients and their family members, while guiding them through the dying process, however they may not take adequate time to address their own bereavement needs.

Objective/Aims: To explore the bereavement needs of critical care nurses after experiencing the expected or unexpected death of a patient. From their lived experiences, gain insight as to how nurses perceive, process and cope with the death of a patient.

Methodology: A qualitative, phenomenological focus group was conducted with critical care nurses (N = 10) after gaining Internal Review Board (IRB) approval. The group discussion was audio-recorded and transcribed. Content analysis was performed to identify common themes.

Results: Seven themes emerged a) Emotional Distress, leading to compassion fatigue, burnout, moral distress, b) Empathy, c) Resurfacing Personal Loss leading to secondary traumatic stress in the workplace, d) Unrealistic Expectations placed on the nurse, e) Detachment leading to compartmentalization, f) Lack of Formal Education, and g) Selfcare and Available Resources. (See Table 1 and 2)

Discussion/Conclusion: More education for nurses in undergraduate and continuing education programs is needed to assist nurses in the bereavement process. More interventional studies are needed to explore programs of nurses' selfcare both in the workplace and in nurses' personal lives to more effectively support their emotional needs.

Table 1 : Participant Demographic Information

Demographic Variable	Total (N=10)	Frequency (%)
Age	M = 40	
	SD = 7.62	
Gender	Female	7 (70%)
	Male	3 (30%)
Ethnicity	Asian	3 (30%)
	Caucasian	5 (50%)
	Pacific Islander	1 (10%)
	Asian and Caucasian	1 (10%)
Marital Status	Divorced	2 (20%)
	Life partner	1 (10%)
	Married	5 (50%)
	Single	2 (20%)
	Chinese	1 (10%)
Primary Language	English	8 (80%)
	Other & English	1 (10%)
Grew up in the USA	Yes	9 (90%)
	No/Other	1 (10%)
Religion	Buddhist	1 (10%)
	Catholic	1 (10%)
	Christian	6 (60%)
	Other	2 (20%)
Highest Degree in Nursing	ADN/Diploma	1 (10%)
	BSN	6 (60%)
	MSN	3 (30%)
Years of Experience	M =	10.85
	SD =	7.04
Years of Critical Care Experience	M =	8.65
	SD =	6.12
Work Status	Full Time	9 (90%)
	Part Time	1 (10%)
Shift Worked	Day Shift	8 (80%)
	Night Shift	1 (10%)
	Both Shifts	1 (10%)
Role in the Unit	Charge	1 (10%)
	Rapid & Relief & Staff2	2 (20%)
	Relief & Staff	2 (20%)
	Staff Nurse	5 (50%)
Certifications/Professional Memberships	AACN	2 (20%)
	AACN & CCRN	3 (30%)
	AACN & CCRN & other	1 (10%)
	AACN & other	1 (10%)
	CCRN	1 (10%)
	None	2 (20%)
Type of Unit	CIVCU	1 (10%)
	Neuro ICU	9 (90%)

Table2 : Critical Care Nurse Bereavement Themes

Core Themes	Subthemes	Critical Care Nurse
		Statements/Expressed thoughts
Emotional Distress	Compassion fatigue, burnout, moral distress, anxiety, coping with bereavement	"I don't like it when they have little kids..." "It was extremely draining; I think I cried a couple of times in my car..."
Empathy	Sympathy Sadness	"since the passing away of my mom last year…I now having the empathy, I feel honored caring for people and patients." "you are sad this is happening to them; you hear from the family they are a great person"
Nurse's Personal Loss	Re-surfacing Personal Loss Secondary Traumatic Stress	"the first patient I had was just like my grandma, it was probably one of the hardest patients I have ever taken care of because of the connection." "I almost felt like a family member by the time I was done" "When my brother got cancer some of the physicians were not honest with his poor outcome. Because I know how it feels, I am honest with my patients and families." "My mom passed away of cancer… I had a patient who reminded me exactly of my mom, I couldn't be in the room, I couldn't separate myself from the situation" Because of my personal loss, I am able to understand grief better

Expectations placed on Nurses by Patient's Families/or job requirements	Prognostic Conflict Unrealistic Patient Outcomes Changing the way nurses communicate with the patients and their families	I am relieved when they can pass peacefully Expectations of the job-following protocols when it does not seem appropriate "I no longer say, everything is going to be ok, I now say, we will do our best, or we are doing everything we can"
Disconnecting, Nurse Detachment	Suppressing personal feeling Compartmentalize	"it's easier to be more detached" "I don't get attached to families"
Education on grief/bereavement	No formal education on grief/bereavement	"I had no idea there would be so much poop and so much death, I expected a lot more blood" "we focused more on critical skills"
Selfcare	Available Resources for staff Processing through the day's events	"I use social workers and pastoral care to deal with the more emotional parts" "I don't, I just do it." (and deal with it later, there's always the stairwell) "it's a different culture than in other areas of the hospital, we have to be that close"

Biography

Taline Omran, Vanguard University; MSN, Point Loma Nazarene University; BSN, PHN (Public Health Nursing). Certifications and Competencies include: BLS, ACLS, NIH stroke certification. Relief charge nurse, sepsis nurse, rapid response nurse. She has passionately been working in critical care nursing for 15 years. Her love of nursing has allowed her to travel all over the world participating in humanitarian relief aid. The topic for this article was prompted by witnessing co-workers having a difficult time processing and coping with personal and work- related losses.

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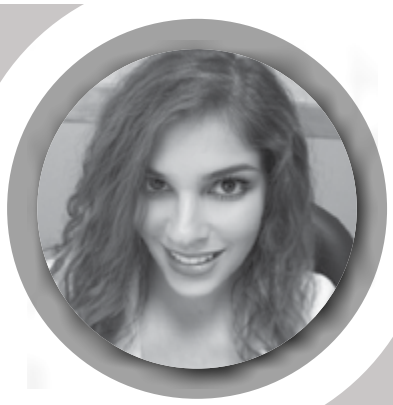

Direct to consumer genetic and genomic testing with associated implications for advanced nursing practice

A. Hughes[4], K. Aleman[1], M. Chipman[2], J. Peck[3] and **C. Murphey[5]**

[1]*Wellmed, USA*
[2]*Thomas Spann Clinic, USA*
[3]*National Association of Pediatric Nurse Practitioners, Baylor University, USA*
[4]*Department of Veterans Affairs, USA*
[5]*College of Nursing and Health Sciences, Texas A&M University-Corpus Christi, USA*

Direct-to-consumer genetic and genomic testing (DTCGT) has paved the way for consumers to gain information about their genetic makeup. Consumers may seek DTCGT to estimate ethnic background, identify genetic relations, or obtain raw DNA information that can be used for other purposes, such as testing for paternity and identifying genetically linked illnesses. Despite robust progress in genetic and genomic testing, most people have a low exposure threshold to DTCGT. Patient consumers may unnecessarily experience anxiety if they do not have a health care provider (HCP) to consult and review their results. Presently, there is a knowledge gap in how accurately HCPs can interpret and communicate genetic test results to patients compared with genetic specialists who may be inaccessible to underserved populations. Genetic and genomic information is rapidly progressing in health care and can identify patients at increased risk for certain diseases and improve patient care and outcomes. Appropriate use of genetic and genomic testing and knowing the limitations and difficulties of current testing available are integral to the success of HCPs in using these results in health promotion and improving quality of life. Health care providers should be aware of DTCGT recommendations and implications for patients, be prepared to counsel patients who present with testing results in hand, seeking advisement, and be competent in determining the need for further diagnostic testing or referral to a specialist genetic counselor.

Biography

Dr. Ashley Kate Hughes has been an employee of the Department of Veterans Affairs for over 14 years. Additionally, she selflessly serves as a reservist in the United States Air Force, holding the rank of Major. She has a dynamic background in the nursing field. She has held many nursing positions, including medical-surgical nurse, assistant nurse manager, nurse manager, nurse supervisor, nurse practitioner, clinical faculty nurse, academic faculty nurse, and military nurse. Dr. Hughes has experience in inpatient, outpatient, and deployed treatment settings. Her research includes opioids, ethics, genomics, genetics, access to healthcare, employee satisfaction, quality improvements, and program evaluations. Dr. Hughes is an expert Family Nurse Practitioner with outstanding professional organizational involvement at the local, state, and national levels. She drives innovative, visionary leadership, developing nurse practitioner-led inclusive and diverse interprofessional teams to produce impactful quality health care outcomes, particularly for vulnerable and underserved populations.

Impact of waterpipe educational program on university students' who are active waterpipe smokers

Mahmoud Ogla Al-Hussami

Community Health, Univeristy of Jordan, Jordan

Background: Water-pipe smoking (WPS) is considered as one of the most dangerous patterns of tobacco smoking. It is expected by the end of this century to kill a billion people or more unless urgent action is taken. Jordan is ranked as the fourth highest Arab country in regards to smoking rates. It aims to investigate Jordanian university students' knowledge and beliefs towards WPS; explore factors that are associated with being a WPS smoker; and evaluate the effectiveness of a WPS cessation program.

Method: A randomized clinical trial design was used to evaluate the effectiveness of a WPS cessation educational program. The sample included 400 students. Ethical approval was obtained from the target universities before data collection, and each participant was asked to sign a written consent form. Invitations was posted through internet websites and announcement boards in the universities.

Results: The difference in the educational program posttest total score (dependent variables) were statistically significant: motivation (F {1, 257}=1365, p = 0.000), attitudes (F{1,257}= 276, p = 0.000), knowledge of health effects (F{1, 257}= 307, p = 0.000), health risks (F{1,257}= 329, p = 0.000), and intention to quit smoking shisha (F{1,257}= 318, p = 0.000).

Conclusion: It was found to be effective in promoting students' knowledge and attitudes towards WPS and intention to quit WPS. Therefore, health faculties have the obligation to conduct frequent educational sessions using various teaching approaches as part of the campaigns to fight against the epidemic of the WPS within this age group.

Biography

Dr. Mahmoud Al-Hussami, a professor of epidemiology and leadership at the University of Jordan, School of Nursing. His teaching has a wide range of undergraduate and graduate modules in the school of nursing and school of medicine. His research includes leadership in healthcare and infectious disease epidemiology. He published over 52 research articles in distinguished and prestigious journals. Al-Hussami has been awarded his PhD (2007) from Barry University, for his research in leadership. Also, he received his DSc. in Health Science, specialized in Epidemiology, from Nova Southeastern University in 2005 and MPH in Epidemiology from Florida International University. As a faculty member at the university of Jordan Dr. Al-Hussami has some hopes and plans to improve the ultimate goal for his school beside his personal long life learning goals, which represent a more advanced stage of renewal and build the sense of self-esteem by enhancing the store of knowledge, thus promoting on increased level of competence and efficacy in approaching work related problems.

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Estimating nickel exposure in respirable dust from nickel in inhalable dust

C. Wippich, D. Koppisch, K. Pitzke and **D. Breuer**

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At different workplaces, the dust exposure and associated metal constituents, e. g. nickel, can be immense, and can cause occupational diseases. They range from allergic reactions to different forms of cancer. From early years of exposure measurement, only data of nickel in one dust fraction (mainly inhalable instead of respirable and inhalable) were measured. For retrospective evaluations of exposure levels or of occupational diseases, this is problematic. For this purpose, it is desirable to convert nickel concentrations from inhalable to respirable dust. Therefore, a total of 234 202 respirable fraction measurements, 123 118 inhalable fraction measurements and 32 882 nickel measurements in total were extracted from the exposure database MEGA. After several parameters and restrictions (e.g. same industrial sector, working activity and sampling duration or type of sampling) were considered, 551 parallel measurements of nickel concentrations in inhalable (c_I(Ni)) and respirable dust (c_R(Ni)) fractions from 2011 to 2020 could be determined and investigated by linear regression analysis. Inhalable dust is the most important predictor variable, showing an adj. R^2 of 0.767. To refine the conversion of nickel concentrations, the total dataset was divided into working activity groups 'high temperature processing', 'filling/ transport/storage', and 'machining/abrasive techniques'. From these groups, more task-specific subgroups were formed: 'welding (grinding time fraction [GTF] < 5 %)', 'welding (GTF > 5 %)', 'high temperature cutting' and 'grinding'. The nickel concentrations were transformed using the natural logarithm. For each group an individual conversion function with its relating confidence interval could be calculated. All conversion functions (except for 'welding GTF < 5 %') are power functions with adj. R^2 between 0.628 and 0.924: $c_{R(Ni)} = c_{(I(Ni}^{k} * e^{c}_{0}$), where k and C_0 are regression coefficients.

Thus, there is no linear correlation between $c_{I(Ni)}$and $c_{R(Ni)}$, no single conversion factor and the conversion must always refer to the individual workplace.

Biography

Cornelia Wippich graduated in 2016 with a master's degree in analytical chemistry and quality assurance at the University of Applied Sciences Bonn-Rhein-Sieg, Germany. As a part of her doctoral thesis, she conducted research on the conversion of inhalable and respirable dust and metal dust constituents in different industry sectors. Since 2019 Ms. Wippich is working as a scientific employee in the section metal analysis at the Institute for Occupational Safety and Health of the German Social Accident Insurance.

Covered-stent treatment of an extracranial internal carotid artery pseudoaneurysm in a 3 years-old child with 12-years follow-up: A case report

Roberto Sanchez

University of Concepcion Faculty of Medicine, Section of Vascular Surgery, Chile

Introduction: Extracranial internal carotid artery (ICA) pseudoaneurysms in children, although uncommon, are life-threatening. Covered stents are a good alternative treatment, as they avoid the risk of open surgery and preserve the internal carotid artery. Long- term outcomes were unknown until recently.

Report: In August 2008, a 3-years-old child was treated with a covered stent for a pseudoaneurysm in the extracranial ICA. A long-term follow up is presented.

Results: The child was discharged with full recovery and without neurological sequelae. He has been followed-up and has remained asymptomatic for 12 years, with CTA-confirmed internal carotid artery patency, without deformation or evidence of significant re- stenosis.

Conclusion: This the first report of the long-term outcome of a covered stent in a child treated at 3 years of age, with a 12-year follow-up. The good performance of the covered stent in this case reinforces its adoption as a first-line option in the treatment of extracranial ICA pseudoaneurysms in children.

Biography

Prof. Roberto Sánchez, MD Professor of Surgery
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Can you train the neck to help prevent concussion?

Theo Versteegh
Western University, Canada

Over the past 20 years there has been a significant increase in the awareness of the devastating impact concussions can have on athletes, military personnel and our youth. There is a lot of discussion around the problem, but very little progress has been made on prevention. Fortunately, mother nature has already found the solution and provided us with our very own shock-absorption system. This is the role of the neck muscles. In fact, research in high school athletes has shown that every one pound of increased neck strength leads to a 5% decreased risk in concussion. However, best evidence does not recommend traditional neck strengthening as an effective means to lower concussion risk. Why is that? Because muscles respond very specifically to the type of training they are exposed to. Traditional neck strengthening involves taking a heavy weight and pushing the head against it. This will improve the neck's ability to take a heavy weight and push against it. However, it will not necessarily improve the neck muscles' ability to respond and react quickly to stabilize the head against a potentially concussive blow. This presentation will provide a scoping review of the current evidence around the role the neck muscles play in mitigating concussion risk. It will examine whether these neck muscles can be trained to help decrease an individual's concussion risk. With an understanding of muscle physiology, it will outline the six key training principles that must be incorporated into a training program aimed at providing the best opportunity for the neck muscles to help protect against concussion

Biography

Dr. Theo Versteegh is a physiotherapist with over 20 years' experience in sports medicine. During his undergraduate training in physiotherapy at Western University, he was a member of the National championship Mustang football team. He has worked clinically across Canada and internationally in the United Kingdom and Saudi Arabia. In 2010, he completed his Master of Science in Physiotherapy researching the effects of dynamic warm up in older golfers. In 2016 he completed his PhD in Physiotherapy at Western University exploring the role neck muscles play in protecting the head from concussion. He has been conducting primary research in the field of neck training and injury prevention ever since.

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The acceptability and use of mind-body interventions among african american cancer survivors: An integrative review

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Mind-body interventions have been shown to improve physical and mental health outcomes among cancer survivors, and African Americans have one of the highest cancer mortality rates of all racial/ethnic groups, while often facing considerable barriers to quality healthcare. African American cancer survivorsreport difficulty accessing mind-body practices, and few studies have focusedexclusively on African American populations. The purpose of this integrative review is to explore the acceptability and use of mind-body interventions among African American cancer survivors. This review seeks to determine if current research indicates that mind-body interventions may be helpful in improving outcomes for African American cancer survivors. Search terms included: "African American," "intervention," "cancer," "survivor," "mind-body," "focus group," "complimentary medicine," "integrative medicine," "meditation," "yoga," and "mindfulness." The literature search resulted in 118 studies, of which 10 met the inclusion criteria. Inclusion critera were articles published in or after 2011 and written in the English language. Other reviews, meta-analyses, or studies without results were excluded. Results indicate that African American cancer survivors have expressed receptiveness to interventions incorporating mindfulness, meditation, yoga, Tai Chi, and other mind-body or complimentary/alternative medicine interventions, but few studies have offered such interventions exclusively to African American breast cancer survivors. This review indicated that African American cancer survivors across demographic backgrounds are interested in and view mind-body practices as an acceptable way to improve quality of life, pain interference, fatigue, anxiety, depression, and physical health; however, the interventions should be culturally appropriate and accessible. In conclusion, despite a growing interest in mind-body interventions, African American communities are often unaware of opportunities to engage in these practices in their communities, andmind-body practices are inaccessible due to cost or geographical location. Additional research that offers such interventions specific to African American cancer survivors is warranted.

Biography

My research and scholarly career focuses on the multi-disciplinary evaluation of integrative medicine with a focus on mind-body exercise interventions, objective and subjective measures of symptom outcomes, and health disparities, all within a bio-behavioral approach to cancer survivorship. I currently serve as an Assistant Professor of Nursing at the University of Houston, College of Nursing, where I conduct research on the effectiveness of mind-body interventions to improve the quality of life of those affected by cancer. I have over 13 years of experience in the development and implementation of interventions focusing on mind- body interventions and symptom outcome assessment. My leadership in the field of health disparities and mind-body exercise research has been recognized internationally, and my commitment to translating my research to educate my peers is reflected through my position as Research Consultant for new research proposals for Houston Methodist West Hospital.

Multithreaded variant calling elPrep 5 and future developments in genomics analysis

R. Wuyts, C. Herzeel and **W. Verachtert**
Imec's ExaScience Life Lab, Belgium

We present elPrep 5, the latest release of our software framework for analyzing sequencing data. The main new feature of elPrep 5 is the introduction of variant calling. This allows elPrep 5 to execute the full pipeline described by the GATK best practices for variant calling, which consists of PCR and optical duplicate marking, sorting by coordinate order, base quality score recalibration, and variant calling using the haplotype caller algorithm. elPrep 5 produces identical BAM and VCF outputs as GATK 4, while parallelizing and merging the computation of the different pipeline steps to significantly speed up the runtime. Concretely, elPrep speeds up the variant calling pipeline by a factor 8-16x compared to GATK on both whole-exome and whole-genome data without requiring specialized or proprietary accelerator hardware. elPrep 5 is developed as an open-source project on Github and is designed for use with community-defined standards and file formats for NGS analysis. While computational performance is a main focus of elPrep, we also strive to improve the user experience with the software. elPrep is distributed as a single stand-alone binary, making it easy to install, and has a simple user interface where a full variant calling pipeline can be expressed as a singled command-line invocation. elPrep has an active user community, mainly at hospitals, research facilities, but also companies. This community actively supports elPrep by making it available on platforms such as Bioconda (over 15k downloads) and Seven Bridges genomics who have independently validated elPrep. In this talk, we present an overview of the elPrep software, as well as future developments for our sequencing software. We will in particular address the challenges we see with further optimizations and privacy preservation for supporting population genomics.

Biography

Roel Wuyts leads imec's ExaScience Life Lab, a lab focused on scaling software solutions for data-intensive high-performance computing problems, primarily in the life sciences domain. The lab has extensive experience with high performance computing technologies (distributed computing, parallel computing, concurrent computing, vectorization, NUMA optimizations), programming languages (Go, C++, Python, Lua, Rust, and many more), and usage of hardware accelerators (GPU, TPU, FPGA). By leveraging their high performance computing skills. imec's ExaScience Life Lab frequently helps companies in developing prototype software solutions for complex problems involving multiple disciplines. The lab has successfully done this for large-scale machine learning for pharmaceutical companies, DNA sequencing software for hospitals and pharmaceutical companies, large scale image feature extraction from high throughput screening, or advanced biostatistics and data analytics. With privacy and protection of IP becoming paramount when doing AI on health data, the lab is proposing innovative privacy-preserving amalgamated machine learning techniques to reason across data silos. Roel is also part-time professor at KU Leuven. His academic achievements include publications in PLOS One, IEEE Software, TOPLAS, ECOOP, OOPSLA or AOSD.

Reproductive health counseling in CKD

Ivie O Okundaye, Margaret R Stedman, Jinnie J Rhee, Michelle O'Shaughnessy and **Richard A Lafayette**

Stanford University Medical Center, USA

Reproductive health issues are an important aspect of caring for patients with chronic kidney disease; however, it is unclear how frequent these conversations take place during a clinic visit. Discussions about pregnancy, fertility, and contraception will shape family planning and impact renal disease management. The goal of this study was to determine the frequency of contraception and pregnancy counseling in nephrology clinic visit using chart review of the electronic medical records. Sixty percent of the 125 female patients (n=74) seen in a general nephrology clinic received reproductive health counseling. Of the 125 patient charts reviewed, 30 received comprehensive counseling (24%), 44 received intermediate counseling (35.2%), and 51 received no counseling (40.8%). Patient factors including age, race, and severity of renal disease did not impact of counseling in this study. Dialysis patients were disproportionately not counseled. Continued discussions about women's health issues continue to be a pivotal part of caring for patients with chronic kidney disease.

Biography

Dr. Okundaye is a native from Wisconsin, born in Chicago IL to immigrant parents from Nigeria. She attended Wake Forest University in Winston-Salem, NC under the "Joseph G. Gordon" Scholarship", where she studied Biology and Chemistry. She earned her medical degree from University of Wisconsin School of Medicine and Public Health in 2015 and then completed her internal medicine residency training at Loyola University, Chicago, IL where she was appointed a research scholar and developed a curriculum for medical student education. This year Dr. Okundaye finished her nephrology fellowship at Stanford University for advanced clinical and research training in kidney disease. Her area of interest is women's health with focus on fertility, pregnancy, and contraception. She has authored research manuscripts, case reports, book chapter and presented her research at numerous conferences including at the International Society of Nephrology Frontiers Meeting in Tokyo, Japan. Dr. Okundaye has hosted and produced a health radio show and a community health podcast in order to expand her outreach to those seeking answers to health problems. In 2019, she developed the Ivie O. Appiah Medical Arts Institute that produced a short film about the kidney patient experience. The Institute is currently developing future projects in film and media. Dr. Okundaye was also featured on the cover of Women magazine where her story was showcased in the article "Queen for a Day" in the October 2019 issue. For. Ultimately, she hopes to empower people to be their own health advocates

Citizen participation and new practices and meanings for the development of healthy public policies

Jorge Mandl Stangl

Ministerio Popular para la Salud, Venezuela

Background: From 1994 to 1999, the Ministry of Health, together with the Pan American Health Organization and supported by the leadership of the mayors, promoted the project "Municipalities Towards Health" in Venezuela, whose main objectives focused on the implementation of healthy public policies that sought to reduce and mitigate the consequences of social inequalities; through the interaction of governmental and non-governmental sectors such as agriculture, commerce, education, sport, industry, among others; and in this way, establish a local culture of governance for health and wellbeing through community projects, for which a methodology was designed.

This effort, which had been advanced in 75% of the country's federal regions, was interrupted due to a change in government and project management; however, thanks to iteration in inclusive citizen participation, health promotion activities became sustainable over time. Among the facilitating factors that marked these processes, the strengthening and consolidation of social capital stands out.

Methodology: In this qualitative research, we attempt to demonstrate the importance of social capital in this process. The knowledge emerged from the focus groups conducted in the five municipalities with the greatest unsatisfied basic needs at the beginning of the project and involved a total of 200 actors, who recounted their inter-subjective relationships experienced between 1994 and 2013.

This evidence was systematized into four constructs that characterize social capital as a determinant of health: sense of community, collective efficacy, community capacity and community competence. We also compared the results in relation to its impact on life expectancy and infant mortality.

Results: Psychological sense of community or sense of community. Solidarity and social responsibility were the cardinal principles that facilitated the organization of communities through the union of networks that privileged the promotion of health. From this emerged a group identity to generate their own political culture, promoting social roles, customs and ethical norms such as co-responsibility, freedom with shared social objectives, commitment or the capacity to promise, critical capacity based on trust and the constant will to practice justice; in this framework, they built a participatory agenda through dialogue and agreement with all social, political and economic forces.

Collective efficacy. Through a series of acquired values and behaviours such

as mutual trust, an inclusive higher identity that allows social identities to overlap, and cooperation for the common good, organised

communities gained greater access to decisions, driving negotiated projects that guaranteed their citizenship rights. In this perspective, the government committed itself to facilitating technical and political decision-making through deliberative actions leading to negotiated proposals. To consolidate this process, a number of joint mechanisms for monitoring targets were formalised in different types of collective spaces to inform communities of progress over time.

Community capacity. Participants built and coalesced around networks through which they acquired new competencies and skills, and various advocacy mechanisms and technical procedures were established to assist in the implementation of these initiatives. In this way, communities, local government teams and government agencies consolidated their leadership style.

Community competences. In these initiatives, the community acquired the competencies to articulate with the government and various public and private institutions. This organisation, a product of the balance between solidarity, social justice and the rights of communities, allowed for targeted, planned and constructive behaviour that provided the triggers and political legitimacy for the elaboration of the social contract that privileged the promotion of health and well-being.

Health impact. Life expectancy at birth increased between 0.6 and 4.5 years. The infant mortality rate decreased between 4% and 44%. In this sense, the municipalities with the greatest basic needs satisfied made impressive progress, as evidenced by the fact that the interactions carried out in populations with greater social capital provide greater possibilities of intervening on avoidable and unfair factors that condition differences in life opportunities.

Conclusion: The research highlights the need for early recognition of the role that community networks and other citizen activities can play in promoting positive health and wellbeing outcomes through participation

An active and resilient citizenship was able to build participatory agendas to interact on the social determinants of health, whose fundamental political objectives were the satisfaction of basic needs in vulnerable populations;

The effective development of these agendas was associated with an accelerated process of building social capital to achieve positive health/quality of life outcomes in various sectors through the implementation of healthy public policies;

The empowered and effective citizens who helped bring about these democratic gains and benefits did not automatically achieve their goals. New forms of governance and the mobilization of extraordinary public and private resources were also very important;

Strengthening these citizen participation processes along with political will and supporting mechanisms, such as interactive methodologies and broader legal instruments, created opportunities to improve government responsiveness; and

It is from the sustainability of these events that citizen participation took on a new cultural significance for the governance of health and well-being.

Recommendations: These findings have a number of implications for community associations and policy makers as well as donors and development agencies, which in turn can contribute as a resource for political negotiation in building responsive governments towards health-in-all-policies approaches:

A long-term social pact that consolidates political support from the highest authority at each level of government is needed to develop different legal, social and economic structures that engage organised communities;

The conceptual and methodological capacity of the different actors involved needs to be strengthened in order to systematically preserve the model in the context of conflicts of interest exacerbated by strictly sectoral judgements in public institutions and the community in general; and

Financial sustainability needs to be ensured to maintain structures and processes in the presence of economic uncertainty and the discretionary will of the government of the moment.

Biography

Venezuelan/German doctor with a PhD in Political Science and a Masters in Public Health Administration; with courses in Local Development and Social Management in Health and in Management Design of Social Policies and Programmes. He has held various positions in the Venezuelan Ministry of Health at local, state and federal level. He has also represented Venezuela as Temporary Advisor to PAHO/WHO in several countries. He is currently Advisor to the National Academy of Medicine of Venezuela and the Venezuelan Society of Public Health.iedad Venezolana de Salud Pública.

Ethical aspects of AI in healthcare

Christoph Lutge

TUM Institute for Ethics in Artificial Intelligence, Germany

A recent survey in Germany found that people increasingly would like to see AI deployed in a variety of application fields, and in particular in healthcare-related sectors. This is most probably due to the multiple opportunities AI can offer. However, serious, especially ethical, issues arise with its use. Not least the Covid-19 pandemic has taught us how technologies which could help solve demanding challenges, however need to be carefully reflected on and designed to foster trust and well-being of society. To address and manage the risks arising from such ethical concerns, researchers have developed recommendations, such as the Ethics Guidelines for Trustworthy Artificial Intelligence by the European Commission, or the Ethical Framework for a Good AI Society by the AI4People Committee. However, these frameworks tend to be rather broad and need to be adapted to the specific application contexts. One of the current challenges for AI ethics research, and even more so for responsible AI use in sensitive areas such as healthcare, is therefore to develop concrete and applicable guidelines that can be used and implemented directly on specific AI systems. Examples will be given.

Biography

Christoph Lütge is Full Professor of Business Ethics at TU Munich and the Director of the Institute for Ethics in Artificial Intelligence (IEAI). He is Distinguished Visiting Professor of Tokyo University and has held further visiting positions at Harvard, Stockholm, Taipei and Kyoto. His most recent book is "Business Ethics: An Economically Informed Perspective" (Oxford University Press, 2021, with Matthias Uhl). He is a member of the European AI Ethics initiative AI4People and of the German Ethics Commission on Automated and Connected Driving.

Waterpipe smoking and the coronavirus syndemic

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[2]*Independent Researcher, UK*

This paper aims to provide a background to the phenomenon of waterpipe smoking during the present COVID-19 syndemic. In the context of a syndemic, it seeks to summarise what research findings have revealed to date of the specific dangers of this form of tobacco use in the current situation, in terms of the particular dangers of the use of the apparatus itself, social settings in which waterpipes are smoked, and the perceptions of smokers themselves on the potential harms at this time.

A narrative review, based on a focused search of electronic databases, was conducted, which resulted in a final list of 49 articles which were selected for inclusion in the paper. The results obtained from this review provided strong confirmatory evidence of the specific dangers both of transmitting infection via the waterpipe apparatus, whatever its regional variation, and the social milieu in which transmission of the COVID-19 virus was likely to be increased. The discussion of the results of the research was then widened to include what is known about the beliefs of smokers in general, and waterpipe smokers in particular, on the health risks of waterpipe smoking and the likely transmission and severity of the COVID-19 virus.

Introduction: A number of published studies have investigated diverse aspects of the impact of COVID-19 on various aspects of the behaviour of individuals during lockdowns. These include a survey conducted in Italy into eating habits and lifestyle changes (Di Renzo et al, 2020), sedentary time and behaviour (Runacres et al, 2021). cannabis use in Spain (Fernandez-Artamendi et al, 2021) and smoking. It is those studies relevant to waterpipe (hookah) smoking behaviour during the present COVID-19 syndemic which form the basis of the discussion in this paper.

First, however, the choice of the term syndemic rather than pandemic should be explained (Horton, 2020; Medenhall, 2020; Courtin and Vineis, 2021). What drives the coronavirus to spread through the population of a specific region or country is an interaction of particular political, social, economic and cultural factors. Patterns of social inequality exacerbate the adverse effects of the disease. Recognising these determinants of health is central to the concept of a syndemic., rather than the narrower perception of the COVID-19 outbreak as a biomedical issue.

Synergistic failures cannot be omitted from the discussion of forms of tobacco use or a wide range of causes of ill-health, including viral diseases, and how to combat them in the future. For example, Gaiha and colleagues (2020) conducted an online national survey of over 4000 adolescents and young adults (aged 13-24) in the USA in May 2020, investigating a possible association between cigarette and e-cigarette use and COVID-19. One finding

was that some ethnic groups, especially among African American, Hispanic and other multi-race youth, were at an increased risk of contracting COVID-19. In their communities, crowded living conditions made social distancing difficult, they experienced greater economic stress, having to work in service-industries rather than self-isolate working from home, and problems of accessing health care were all contributory factors. In addition, numerous studies have found a positive association between tobacco use itself and low-income (e.g. Sreeramareddy and Acharya, 2021; Hosseinpoor et al, 2012; Casetta et al, 2017).

Methodology: This study aimed to provide a background of the potential dangers of waterpipe smoking during the COVID-19 syndemic. In order to achieve this objective, a narrative review (Pare and Kitsiou, 2017) of the literature relating to this topic was conducted from October to December 2021. This review aimed to synthesize existing findings not only on the dangers of wateripe smoking during the syndemic, but also on the behaviour of waterpipe smokers, and official actions to control or influence such behaviour. All articles relating to the practice of waterpipe smoking published since the beginning of the syndemic were included. In addition, literature relating to the prevalence of waterpipe smoking prior to the start of the syndemic was also consulted, to provide a necessary background for the evaluation of recent changes.

A search was made of electronic databases, to include both primary studies and systematic reviews. PubMed, ISI Web of Science, CrossRef and the World Health Organisation (WHO) websites were searched from 1990 to December 2021. AK and PW conducted this search and a cross-referenced short list of 76 articles was compiled, based on the following search terms: waterpipe smoking, hookah, COVID-19, health effects. Not all studies were excluded which related to cigarette smoking and COVID-19 – in particular, the abstracts of articles which examined smoking and health behaviour during the syndemic were reviewed and, where relevant to the objective of this paper, were included in the final shortlist. Out of 76 screened articles, a final list of 49 was selected for inclusion in this review. In terms of the data extraction, author, year/month of publication, type of study and design, sample size, duration of the study, the setting and principal outcomes were all recorded.

Results: Shekhar and Hannah-Shmouni (2020) argue that waterpipe smoking is associated with an increased risk of transmitting the COVID-19 virus. As circumstantial evidence for this, they cite the study by Alagaili and colleagues (2019) which investigated the link between Middle East Respiratory Syndrome coronavirus (MERS) and waterpipe smoking. This was a surveillance study, testing samples from almost 2,500 waterpipe hoses throughout several regions in Saudi Arabia. Repeated sampling was carried out between winter 2015 and spring 2016 at cafes near sites of MERS-CoV emergence. The screening results for the presence of MERS-CoV were negative. The authors concede that these results may be the result of inadequate sampling. There is thus no firm evidence to date of a direct association between waterpipe smoking and the transmission of COVID-19. However, despite the need for more research, the WHO is urging that strict measures be imposed in member countries to ban the use of waterpipes (2022(i)) as one of the necessary measures to control the transmission of the virus.

There are a number of reasons why the WHO is concerned about changing the behaviour of waterpipe smoking specifically in the context of the present syndemic. Of the direct association which is posited both by Alagaili and colleagues (2019) - in the case of MERS-CoV - and the WHO (2022), the following reasons are given.

Firstly, the smoking of waterpipes in cafes presupposes communal use – the sharing of a single mouthpiece and hose, and the impossibility of physical distancing in this social environment. Secondly, in waterpipe cafes Alagaili and colleagues (2019) noted the lack of routine cleaning of the waterpipes after each smoking session, further increasing the risk of transmission of infectious microbial agents. In addition, these cafes throughout the world tend to be densely occupied and badly ventilated (Kalan et al, 2020). Daniels and Roman (2013) note that sharing a waterpipe contributes to a range of tuberculosis, viral and bacterial infections when an infected user shares a mouthpiece with non-infected individuals through the transmission of oral secretions.

The contention of Daniels and Roman, of course, precedes the COVID-19 syndemic. Corroborative evidence is provided, in the context of COVID-19, in a study by Sinclair and colleagues (2021). This was a convenience sampling study conducted in the Lao People's Democratic Republic in July 2011 where, although the waterpipe has a simple bamboo construction, the parts still perform the same function as the Eastern Mediterranean waterpipe. In this study, samples were taken from the water bowl of the waterpipe, and the field assessment of water quality indicators showed that the water inside the Lao waterpipes had the potential to be contaminated by various types of micro-organisms. In addition to microbial mechanisms, infectious disease exposure – such as to the COVID-19 virus – was identified as a potential risk. The virus thrives in dark, humid environments and will be spread through communal use in the smoking process.

In Turkey, Altindis and colleagues (2020) analysed culture samples from 182 waterpipes used in public places. The inside and outside of the mouthpiece were sampled, along with water from the waterpipe bowl. The mouthpiece – inside and outside – and the handle were found to be the most affected parts in terms of bacterial contamination. The role played by hand contact is evident in the results found from analysis both of the handle and the outside of the mouthpiece. The significance of the findings – that microbiological growth in the waterpipe samples collected from the public establishments was very high – is that they indicate that waterpipe smoking increases the likelihood of the transmission of respiratory pathogens, including viruses as well as tuberculosis (Sinclair et al, 2021), fungi and a range of other bacteria. The study did not analyse samples from the interior of the hoses, although the authors cite other earlier research which tends to confirm

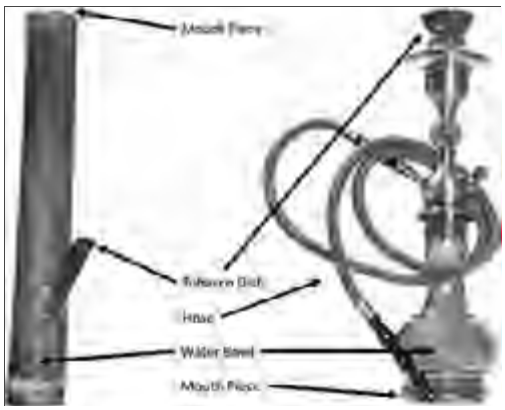

Figure 1: *Waterpipe components in the Lao PDR (left) and the Middle East*

their findings (Safizadeh el al, 2014; Alaidarous et al, 2017; Shakhatreh et al, 2018).

Although the majority of these studies, therefore, pre-date the outbreak of the COVID-19 syndemic, they clearly underpin the concerns expressed by Shekhar and Hannah-Shmouni and the WHO about the potential risks of waterpipe smoking for increased transmission of the virus. A summary is provided in Table 1 below.

Discussion: Evidence for the many harms resulting from cigarette smoking has been furnished by innumerable studies, to the effect that the best efforts of the tobacco industry have been unable to contest the findings, which are now universally acknowledged. In terms of cigarette smoking and health risk beliefs during the COVID-19 syndemic, Brown (2021) has published a useful review of the findings to date. As he indicates, some studies have concluded that current or former cigarette smokers are at higher risk of contracting more severe symptoms of COVID-19, or even mortality, than never-smokers. The proponents of the opposing case argue that nicotine may have a protective role in those who contract COVID-19 (Simons et al, 2021, Lippi and Henry, 2020: Rossato et al, 2020). Several articles have considered the evidence for both claims, including Cattaruzza et al (2020), Samet (2020) and Shastri et al (2021).

The survey results obtained by Brown (2021) indicate that – in the UK, at least - that the perceived probability of contracting COVID-19 correlated with motivation to quit cigarette smoking. Having reviewed the findings of studies on the dangers of cigareete smoking in relation to COVID-19, it remains to discuss the perceptions of waterpipe smokers on the risks posed by the syndemic.

As in the case of cigarette smoking, the evidence for the harms occasioned by waterpipe smoking is overwhelming. These harms include significant association with lung cancer, respiratory illness, bladder and oral cancers, and heart disease among its many serious risks (Akl et al, 2011; El-Zaatari et al, 2015; Waziry et al, 2017). A full and recent appraisal of these harms may be found in Darawshy et al (2021). The waterpipe smoke – a mixture of tobacco and molasses known as 'maasel' - is cooled as it passes through the base of the waterpipe, enabling smokers to inhale it deeper into their lungs.

However, despite such evidence, waterpipe smoking is widely considered to be less harmful than cigarette smoking (Jaam et al, 2016). There is a misconception that passing smoke through the water acts as a cleaning process to remove toxins (El-Zaatari et al, 2015) along with the view that the intermittent practice of waterpipe smoking is less harmful compared with the constant use of cigarettes (Qasim et al, 2019; Maziak, 2008). A single waterpipe smoking session typically lasts for 30-90 minutes, during which time a large volume of smoke is produced. This contains the equivalent of 80 times more toxicants than those found in the smoke of a single cigarette (Al Ali et al, 2020). The effect on smokers, and second-hand smokers, in cafes, homes or meeting places has serious health implications. The tobacco industry has played a role in promoting this confusion (Ahmad & Dutra, 2019; Maziak, 2008). In fact, waterpipe users are exposed to many of the same toxic compounds as cigarette users, although at levels which are much higher (Qasim et al, 2019; Rezk-Hanna & Benowitz, 2019)

While there are estimates of 100 million waterpipe smokers globally (Al Ali et al, 2020; Ward et al, 2005), these are less useful than national and regional studies in identifying trends. The WHO Tobacco Atlas (2015) adopts such a national approach to the prevalence of waterpipe use, for example to identify trends in Syria, 1955-2000. Jawad et al (2018) adopt the same approach for the Middle East and Europe.

Maziak (2008) summarises the principal trends. Although prevalence is highest in the Middle East and North Africa, waterpipe use is growing rapidly in Europe and the Americas (Babaie et al, 2021; Akl et al, 2011). The practice declined during most of the 20th century, but waterpipe smoking saw a rapid increase in popularity in the 1990s coinciding with the introduction of sweetened waterpipe tobacco ('maasel'). The tobacco industry commercialised and glamourised the practice on the internet and mass media, especially targeting the youth market. Studies of waterpipe smoking indicate increases since that time in most countries both for daily use and ever-use, with the greatest increases among the youth, both boys and girls (Maziak et al, 2014). A growing number of national studies confirm this trend and Jawad et al (2016) provide confirmatory evidence from the Global Youth Tobacco Surveys.

In their systematic review, Babaie et al (2021) draw attention to the management and prevention of waterpipe tobacco use, noting that waterpipe products are still tax exempt, but although taxation has been effective in controlling cigarette smoking, this may not be the case with waterpipe use (Jaam et al, 2016; Maziak et al, 2014). In the present situation of the presence of COVID-19, the association of waterpipe smoking with the restaurant and cafe culture – an influential factor in its growth and popularity – has induced some authorities to institute bans on these places. The Eastern Mediterranean Regional Office (EMRO) of the WHO has reminded its 19 member states that, as signatories to the Framework Convention on Tobacco Control, they have a legal obligation to ban smoking in all indoor public places. 17 of the member countries have banned waterpipe use temporarily in public places (WHO, 2022 (i)), though full implementation of the legislation is necessary to put this into effect. The WHO EMRO has publicised the measures taken in Iran to ban waterpipe use in public places to limit the spread of COVID-19 (WHO, 2022 (ii)) as an instance of what can be achieved through determined policy implementation.

The Eastern Mediterranean Region still has the highest prevalence of waterpipe smoking in the world (Shihadeh et al, 2004). Two recent studies from this region investigated the relationship between beliefs and tobacco use behaviours and the risk of COVID-19 infection among samples of smokers and never-smokers. Both studies included waterpipe smoking in their surveys. Firstly, in Iran, Kalan and colleagues (2020) included 89 waterpipe smokers among respondents in their online national survey. From the responses, 38.2% of waterpipe smokers considered that waterpipe smoking was related with spreading infection of COVID-19, compared with 14.6% of cigarette smokers who believed that cigarette smoking was related with spreading infection of COVID-19. Of all the 944 study participants as a whole, 29.1% thought that cigarette smoking was related with spreading COVID-19 infection, compared with 49.4% who believed that waterpipe smoking and spreading COVID-19 were related. The survey also found that waterpipe smokers (approximately 1 in 4) were more likely than cigarette smokers and never-smokers to believe that smoking waterpipe at home was safe during the syndemic, and that smoking waterpipe would have a protective effect and lead to more rapid recovery if they were to be infected with COVID-19. This is all the more concerning, since in Iran waterpipe-home delivery services have become popular with the closure of cafes due to government bans (Kalan et al, 2021). Such perceptions of the safety of waterpipe smoking will increase risk for the smokers themselves and those – such as the family in the home – with whom they interact.

A second study into health beliefs and tobacco use during the syndemic also included waterpipe

TABLE: **Waterpipe Use and Risks of Infections. A Literature Summary**

Authors	Date conducted	Sample size	Place conducted	Type of study	Aim of study
Alagali et al 2019	2015-2016	2500 hoses	Saudi Arabia – cafes in various regions	surveillance	Test for presence of MERS-CoV
Alaidarous et al 2017	unspecified	264 culture samples	Saudi Arabia – 3 cities (10 cafes)	Random sampling	Identify bacteria contaminating waterpipe bowls, mouthpieces
Altindis et al 2020	2020	728 culture samples (182 waterpipes)	Sakarya provice, Turkey (7 public lounges)	surveillance	Identify bacteria colonising waterpipes
Daniel & Roman 2013	unspecified	389 students	Western Cape, South Africa	Cross-sectional, descriptive	Assess behaviours, beliefs re. health risks of waterpipe smoking
Safizadeh et al 2014	unspecified	285 culture samples	Kerman, Iran (15 cafes)	Random sampling	Bacterial contamination of waterpipes
Shakhatreh et al 2018	unspecified	100 participants	Irbid, Jordan (cafes)	Random sampling	Bacterial contamination of waterpipes
Sinclair et al 2021	July 2011	43 participants in 5 rural villages	Lao People's Democratic Republic	Survey type unspecified	Test for microbial survival and growth in waterpipes

smokers among the participants. In Jordan, an online survey conducted in March 2021 by Al-Tammemi and colleagues (2021) included 2424 participants. Among the findings related to waterpipe smoking, respondents recorded their opinions on the relationship between smoking and domains of COVID-19 such as risk and spread of infection, safety concerns of smoking in public places and the home, clinical outcome and the belief in the protective effective of nicotine. Approximately 38.2%, 72.9% and 44.6% of respondents believed that cigarette smoking, waterpipe smoking and e-cigarette smoking respectively were related to the risk of contracting COVID-19. Clearly, participants considered that waterpipe smoking constituted a much higher risk. About 74% also considered that severity of COVID-19 would be worse for waterpipe smokers, ans almost 80% believed that waterpipe smoking in public places was unsafe during the syndemic.

Conclusion: All the evidence suggests that waterpipe smoking poses its own unique set of risks and hazards during the COVID-19 syndemic. When combined with the well-established dangers of tobacco use in causing mortality and morbidity, contributing to a wide range of illnesses, the particular features of waterpipe smoking – the social setting, the apparatus used, the perceptions of waterpipe smokers themselves – all present a cause for concern.

This review has concentrated on the research conducted in the Middle East region, both before and during the COVID-19 syndemic. While this region constitutes the highest use of waterpipe smoking, it is necessary to emphasise again that current research has alerted health authorities on the growing widespread use of waterpipes as a global problem, along with e-cigarettes and even e-hookah innovative products promoted by the tobacco industry. Misinformation disseminated by the industry has aided in influencing perceptions and endangering lives.

More information is now required on motivation specifically to quit waterpipe smoking since the start of the syndemic, along with an appraisal of the effect of bans on waterpipe cafes in those countries where such bans have been applied.

Biography

Khaled Alturki:

M. Phil., University of Huddersfield, 2014: The perceptions of smokers and health care professionals on the smoking cessation program in Saudi Arabia.

M.A. University of Bradford, 2006: Strengthening the relationship between the social worker and drug addicts.

1996-2005: various senior administrative positions in the Northern Area Armed Forces Hospital, Saudi Arabia, relating to logistics and patient affairs.

2007-2012 and 2015-2018: senior administrative roles within the Prince Sultan Military Medical City, Riyadh, Saudi Arabia.

2019- present: attached to the Saudi Arabian Embassy, London.

Peter Walton:

M.A. Honours History, University of Edinburgh, 1969.

M.A. Latin America Studies, University of London, 1970.

1972-present: teacher of English as a Foreign Language (EFL) in schools and colleges in Chile, Portugal and the UK. Online contributor to international EFL websites.

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PEERS ALLEY MEDIA

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Efficacy and cost-feasibility of the Timely Chest Compression Training (T-CCT): A contextualized cardiopulmonary resuscitation training for personal support workers participating during in-hospital cardiac arrests

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[4]*Critical Care Division, Department of Medicine, CHUM, Canada*

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Objectives: The Timely Chest Compression Training (T-CCT) was created to promote more frequent training in chest compressions for personal support workers. This study aims to assess the efficacy of the T-CCT on the chest compression performance and to examine costs related to this intervention.

Methods: A prospective single group, before-after study was conducted at a university-affiliated hospital. The T-CCT is adapted for support workers and lasts 20 min during working hours. Guided by peer trainers, live feedback devices and mannikins, the T-CCT targets chest compression training. Using an algorithm, chest compression performance scores were gathered before and after the intervention.

Results: Of 875 employed support workers, 573 were trained in 5 days. Prior to the intervention, the median performance score was 72%. Participants significantly improved after the intervention ($p < 0.001$) and the median of the differences was 32% (95% CI 28.5–36.0). Support workers in critical care units and those with an active basic life support (BLS) certification performed better at baseline and were less inclined to have large changes in performance scores after the intervention. When compared to basic life support training, the T-CCT is over three times less expensive.

Conclusions: The T-CCT was an effective and low-cost initiative that allowed to train a large group of support workers in a short amount of time. Since they are actively involved in resuscitation efforts in Quebec (Canada), it may promote the delivery of high-quality compressions during in-hospital cardiac arrests. Our inquiry can incite and guide other organizations in the implementation of similar interventions.

Biography

Catalina Sokoloff is an Emergency and Intensive Care Physician working at the CHUM, a tertiary academic hospital in Montreal, Canada. She has completed a 1-year Fellowship program in Clinical Simulation and Medical Education in Sydney, Australia, and is now in charge of the In Situ Simulation Committees of both services at her institution. She shares her clinical practice between the Emergency Room and the Intensive Care Unit, and she fills the rest of her time developing training programs for healthcare workers to improve patient care and cardio-pulmonary resuscitation performance. Her academic and research interests lie in the fields of Crisis Resource Management, teamwork efficiency, and optimal teaching methods.

Using mobile phones in health behaviour change: Perceptions among adolescents

A. Seitero, K. Thomas, M. Lof and **U. Mussener**

Department of Health, Medicine and Caring Sciences, Linkoping University, Sweden

Health promotion interventions delivered via mobile phones (mHealth) need to be carefully tailored to end-users to optimize engagement and effects on health outcomes. However, tailoring requires an in-depth understanding of the users' context and under which circumstances end-users are willing to engage. The aim of this study was to identify and describe how high school students perceive health behaviour change and how mobile phones are used in the process of change. Thematic analysis was used to analyse data collected through 6 focus groups with 21 Swedish high school students (16–19 years). The results showed that behaviour change among adolescents were promoted by having an open approach, being able to be independent, and self-accepting. Mobile phones can provide resilience in long-term behaviour change. These findings may be useful in the development of mHealth interventions, but also for professionals in promoting healthy behaviours among adolescents.

Biography

I am a PhD-student with an interest in health behaviours among adolescents and in promotion of healthy behaviours through interventions delivered via mobile phones (mHealth). My research interest involves qualitative as well as quantitative methods. Before my PhD-studies, I worked as a school nurse and that was why I became interested in the public health area of reaching many individuals at a time, and at any place, and across socio economic strata, by use of digital tools to support healthy behaviours. My first manuscript was accepted and published in June 2021. Orcid: 0000-0002-7780-8417.

Assessing understanding of caregivers on immunization and COVID-19 vaccines using a survey instrument

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Sancaktepe Education and Research Hospital, University of Health Sciences, Turkey

Background: Preventive medicine and immuniation are crucial to preserve public health. In this study, it was aimed to determine the perspectives of the caregivers against the immunization services and awareness of the vaccine for the Covid-19 pandemic, which is the most critical challenge in nowadays.

Methods: In this cross-sectional descriptive study, parents who applied to the pediatric outpatient clinic of our hospital for any reason during one-week period were evaluated. A questionnaire was administered to 205 parents about their knowledge and perceived on immunization and Covid-19 vaccines. Demographic characteristics of families, income and education levels, number of children and presence of Covid-19 vaccination of the parents were sought. The questionnaires were filled in by face-to-face interview method after informing the participants about the study and obtaining consent from the participants. SPSS software was used for analysis. Content analysis method was used to evaluate the data at qualitative stage.

Result: In the study, 205 questionnaires were included. Of the parents who participated, 174 were mothers, 42.4% (n:87) were between the ages of 30-39, 48,8% (n:100) were housewives and 21,0% (n:43) were primary school graduates and 21% were unvaccinated. Majority of the parents (42%) believe that there are other ways to prevent diseases which can be prevented by a vaccine and 37% of them assume to get not enough information on vaccines. Thirty eight percent of parents presume the vaccine causes the diseases. It was found 70% of the parents assume that not be vaccinated is an individual right. It was observed that as the level of education of the parents increased, the rate of being aware of vaccines and getting them increased.

Conclusion: It was concluded that majority of the parents believed that not getting vaccinated is an individual right. A significant number of parents were found to lack information about vaccines. Getting vaccinated is not an individual decision. To increase awareness of caregivers about vaccines can be achieved by providing accurate and appropriate information by health professionals and extended immunization programs to the public.

Biography

I- Personal Information

Name, Surname: Gözde Ercan

II- Educational Information

Speciality in Medicine 2016-2020	University of Health Sciences Ümraniye Training and Research Hospital / Department of Child Health and Diseases / Department of General Pediatrics
Medical Faculty 2009-2015	Kocaeli University Medicine Faculty

III- Work Experiences

Medical Intern 2012	Faculty Hospital Mickiewiczova, Deparment of Dermatology, Slovakia
Medical Intern 2013	University of Crete, Heraklion, Greece
General Practitioner 2015-2016	Gaziosmanpaşa Community Health Center, İstanbul
Observer Doctor 2017	Mcgill University Health Centre, Department of Pediatric Genetic, Canada
Physician Associate 2016-2020	Ümraniye Training and Research Hospital / Department of Child Health and Diseases
Specialist Doctor 2020-	Sancaktepe Şehit Prof. Ilhan Varank Training and Research Hospital / Department of Child Health and Diseases

IV- Scientific Organizations

Turkish Pediatric Institution (Türk Pediatri Kurumu), 2019

SCIENTIFIC ABSTRACTS

DAY 2

PEERS ALLEY MEDIA

2nd International Conference on Future of Preventive Medicine and Public Health

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Privacy-preserving federated clinical analytics

R. Wuyts, C. Herzeel and **W. Verachtert**
Imec's ExaScience Life Lab, Belgium

Related health data is sometimes dispersed over multiple data silos, each controlled by a different entity (GP, hospital, lab, health insurer, pharma company, …). While each of these entities can apply their own machine learning on their data, their models could potentially benefit from the data held in other silos. However, for practical, business, IP or legal reasons, directly sharing the data (such as with federated data approaches) or the models (such as with federated learning) is often difficult. This talk explains the concept of federated analytics, that lets each participating entity build their own model using only locally available data whilst indirectly incorporating information from other data silos in a way that doesn't compromise privacy. We illustrate this with two cases in a clinical setting. In the first we introduce amalgamated machine learning (PAML), a federated analytics approach that only calculates and shares PAML features, that are meant to preserve privacy and IP of the underlying data as well as models. We show how we can apply PAML in application on predicting acute kidney injury (AKI) prediction models where early results using the MIMIC-III data set show that the performance of federated analytics is significantly better than purely local models, and close that of models built by ignoring privacy and pooling all data. Next we also introduce the Athena research project where multiple leading hospitals in Flanders, pharma industry and research partners are developing a federated analytics platform for clinical oncology research.

Biography

Roel Wuyts leads imec's ExaScience Life Lab, a lab focused on scaling software solutions for data-intensive high-performance computing problems, primarily in the life sciences domain. The lab has extensive experience with high performance computing technologies (distributed computing, parallel computing, concurrent computing, vectorization, NUMA optimizations), programming languages (Go, C++, Python, Lua, Rust, and many more), and usage of hardware accelerators (GPU, TPU, FPGA). By leveraging their high performance computing skills. imec's ExaScience Life Lab frequently helps companies in developing prototype software solutions for complex problems involving multiple disciplines. The lab has successfully done this for large-scale machine learning for pharmaceutical companies, DNA sequencing software for hospitals and pharmaceutical companies, large scale image feature extraction from high throughput screening, or advanced biostatistics and data analytics. With privacy and protection of IP becoming paramount when doing AI on health data, the lab is proposing innovative privacy-preserving amalgamated machine learning techniques to reason across data silos. Roel is also part-time professor at KU Leuven. His academic achievements include publications in PLOS One, IEEE Software, TOPLAS, ECOOP, OOPSLA or AOSD.

PEERS ALLEY MEDIA

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Integrated management of HIV/NCDs: Knowledge, attitudes, and practices of health care workers in Gaborone, Botswana

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[2]Department of Biomedical Sciences, Faculty of Medicine, University of Botswana
[3]School of Nursing, Faculty of Health Sciences, University of Botswana
[4]Ministry of Health, Government of Botswana

Background: The unprecedented epidemiologic transition and double burden of disease due to chronic infectious and chronic non-communicable diseases (NCDs) worldwide require health systems to rethink their healthcare delivery mechanisms. This will mandate healthcare workers (HCWs) adopting and adapting to new integrated disease management approaches.

Objectives: The study aimed to determine healthcare worker knowledge, attitudes, capacity and skills required for screening and management of chronic NCDs among HIV patients, in order to identify existing gaps on their clinical practice which could affect provision of integrated HIV/NCDs care in Botswana.

Methods: This study employed mixed quantitative and qualitative approaches. This paper reports on the quantitative study, which was a descriptive cross-sectional survey of nurses and doctors caring for HIV patients at randomly selected government facilities in Gaborone, Botswana.

Results: Of the 100 questionnaires analysed, only 6% healthcare workers could fully define NCD. HCWs demonstrated good general awareness of diabetes (98%), hypertension (98%), cancer (96%) and cardiovascular diseases (86%) but inadequate in-depth knowledge on all these four NCDs. Surprisingly HIV (11.8%) and malaria (58%) were classified as NCDs (table 1)

Disease	NCD-Yes		NCD-No	
	Count	%	Count	%
High Blood pressure	90	97.8	2	2.2
diabetes	90	97.8	2	2.2
road Traffic Injuries	60	69.0	27	31.0
Heart Attack	86	93.5	6	6.5
Cancer	87	95.6	4	4.4
Malaria	49	57.6	36	42.4
Depression	80	88.9	10	11.1
tuberculosis	4	4.8	80	95.2
HIV	10	11.8	75	88.2

Table 1: Respondent's ability to identify NCDs from a list of diseases

Most (88%) believed that integrating HIV/NCD care would be good use of resources and welcomed it while 62% did not believe that HIV patients with NCDs should be managed at different clinics (figure 1)

In practice, over 60% of the HCWs already screened HIV patients for common NCD risk factors including smoking (87.2%), alcohol consumption (90.8%), diet (84.9%), and physical activity (73.5%).

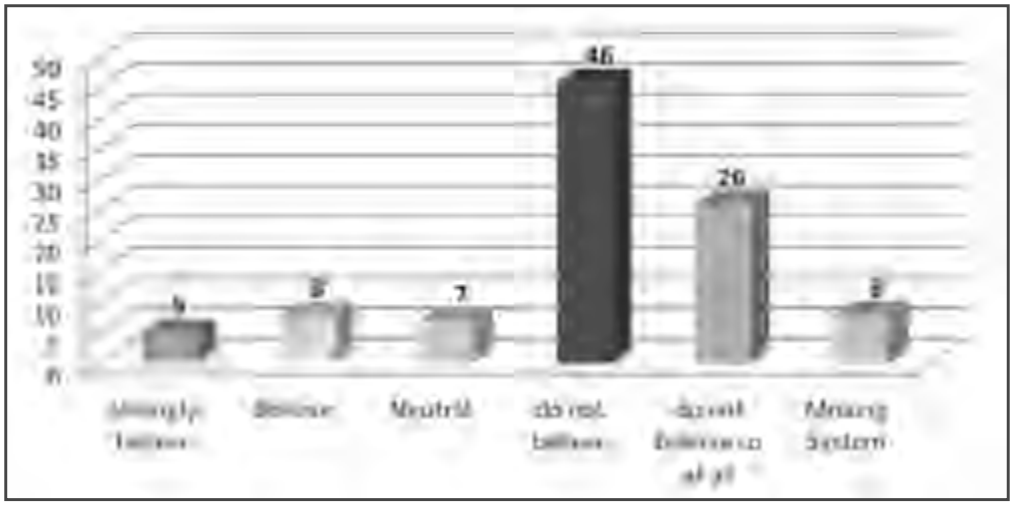

Figure 1: Should HIV patients with co-existent NCDs be treated at separate facilities

Conclusion: There was a gap in detailed knowledge on NCDs among surveyed HCWs in Botswana, but a positive attitude towards integrated HIV/NCD management. HCWs already routinely screen HIV patients for NCD risk factors but only for purposes of HIV risk management. Integrated HIV/NCD care is likely to be positively implemented by healthcare workers if they are provided with relevant training and support.

Biography

Dr Masupe is a senior lecturer & assistant program director for the Master of medicine (MMed) Public Health at the University of Botswana (UB). Dr Masupe's qualifications include a Bachelor of Medicine & Bachelor of Surgery (MBBCh) from Cardiff UK, Master's in Public Health from South Africa, Master of Science in Occupational Medicine from Manchester UK and currently a PhD fellow in NCDs focusing on type 2 diabetes and hypertension, at the University of the Western Cape, South Africa. She is a fellow alumni of the AFYABORA Global Health Leadership fellowship. She is the first recipient of the Neil Nathanson AfyaBora Global Health leadership award. She has previously worked as a medical doctor and an occupational health physician in UK. Other leadership roles which came about in her capacity as a medical educator include Chair of the national technical working group for Quality And Safety Of Care; Country lead for the May Measurement Month Hypertension project in collaboration with the International Society for Hypertension. She is a fellow of the International Society of Hypertension, Member of the ISH committee for research and education.

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Comparing knowledge, attitudes and practices regarding COVID-19 amongst Cameroonians living in urban versus rural areas

Atabong Emmanuel Njingu[1,2], Fombo Enjeh Jabbossung[1,3], Tambe Emilia Ndip-Agbor[4] and **Ankwatia Guisilla Dedino[5,6]**

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[5]Faculty of Medicine and Biomedical Sciences, Cameroon
[6]Muea Medicalized Health Center, Cameroon

Introduction: adherence to preventive measures to curb the spread of COVID-19 depends on the people´s knowledge, attitudes and practices (KAP) towards COVID-19. Living in rural areas may be associated with poor KAP towards COVID-19. This study compares the KAP regarding COVID-19 of people living in rural and urban areas in Cameroon.

Methods: this was a comparative cross-sectional study, using data obtained through an online survey of 1,345 Cameroonians amongst which were 828 urban and 517 rural dwellers. The survey questionnaire consisted of; demographic characteristics, 10 questions on Knowledge, 4 on attitudes and 3 on practices. Data was analyzed using SPSS version 25.

Results: overall, about two-thirds of participants had correct knowledge of COVID-19. The mean knowledge score for urban dwellers was about twice that of rural dwellers (15.77 ± 5.25 vs 8.86 ± 7.24 respectively, $p < 0.001$). Furthermore, when compared to people who live in urban areas, rural inhabitants are less optimistic about COVID-19 pandemic in Cameroon (OR = 3.43, P<0.001), less likely to accept a trial vaccine for COVID-19 (OR = 1.14, P<0.05), less likely to avoid going to crowded places (OR = 7.42, P<0.01), less likely to wear face mask outdoor (OR = 11.84, P<0,001), and less likely to practice hand hygiene (OR = 1.13, P<0.05).

Conclusion: our findings suggest a big gap in COVID-19 related knowledge, attitudes, and practices between rural and urban inhabitants in Cameroon. This highlights the need for increase sensitization of Cameroonians, especially rural dwellers on COVID-19 related knowledge, attitudes and appropriate practices.

Biography

Atabong Emmanuel Njingu was born on 02/11/1991 in Limbe, Cameroon. He is the last of his parents' five children, amongst which are two brothers and two sisters. Emmanuel attended Catholic Primary School in Newtown, Limbe where he obtained his First School Living Certificate. After primary education, Emmanuel was admitted into Government Bilingual High School, Limbe where he obtained his General Certificate of Education (GCE) Ordinary and Advanced Levels as the best student in the school at each of the examination in 2008 and 2010 respectively. Emmanuel went on to succeed in the competitive entrance examination into University of Buea medical school where he spent the next seven years of his live studying medicine. He graduated from medical school in 2017 and have since then committed his life to scientific research and practice of clinical medicine. He currently works with Doctors Without Borders in Cameroon.

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Gender differences in the association between serum uric acid, body mass index, blood pressure and kidney functions in a population with prehypertension history: A cross-sectional study

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[4]Department of Mathematics, Universitas Gadjah Mada, Indoneisa
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Background: Serum uric acid (SUA) levels is related with body mass index (BMI). The increased of SUA levels has been shown to be associated with obesity and hypertension. This study aims to observe the differences of the association between SUA levels, BMI, blood pressure (BP), and kidney functions in men and women.

Methods: This study used "Mlati Study" database in 2007 to select a total of 417 patients with a history of prehypertension by simple random sampling using statistical software. Patients were interviewed and underwent both physical and laboratory examinations for data collection (including body weight, body height, BP, blood samples, and urine samples) in two days. High SUA levels were defined as ≥ 7 mg/dL and normal SUA levels as < 5 mg/dL. Additional analysis's were performed using high SUA cut-off point of ≥ 6 mg/dL for women (n=450).

Results: SUA levels were significantly associated with gender, where men tended to have high SUA levels compared to women ($p<0.001$, RR=12.39, 95%CI=6.21-24.74). Patients with overweight and obesity were significantly associated with high SUA levels, both in men and women ($p<0.001$, RR=2.33, 95%CI=1.34-4.05 and $p=0.016$, RR=1.05, 95%CI=1.00-1.09, respectively). Regarding kidney functions, neither uric acid excretion nor uric acid concentration had significant association with SUA levels, both in men and women. Moreover, high SUA levels were proven to be significantly related to prehypertension or hypertension, but only in women ($p<0.05$). Additionally, analysis for different cut-off point of high SUA levels for women also showed the same results for BMI, BP and kidney functions.

Conclusion: We concluded that SUA levels in men tended to be higher than in women. Overweight and obesity were associated with high SUA level, either in men and women. Furthermore, high SUA levels were related to prehypertension and hypertension, but only in women.

Table 1A. Gender differences in the association between SUA levels, BMI, and kidney functions

Variables (n=417)	SUA[a]		P-value	RR	95% CI
	High (%)	Normal (%)			
Gender					
Men	39 (9.3)	69 (16.5)	<0.001	12.39	6.21-24.74
Women	9 (2.1)	300 (71.9)			
Age (Years)					
Men					
30-39*	6 (1.4)	11 (2.6)	-	1	-
40-49	18 (4.3)	22 (5.2)	0.140	0.68	0.41-1.12
50-59	15 (3.6)	36 (8.6)	0.170	1.43	0.84-2.41
Women					
30-39*	2 (0.4)	85 (20.3)	-	1	-
40-49	2 (0.4)	128 (30.7)	0.221	2.54	0.53-12.03
50-59	5 (1.2)	87 (20.8)	0.086	0.33	0.09-1.23
BMI[b]					
Men					
Overweight-obese	19 (4.5)	9 (2.1)	<0.001	2.33	1.34-4.05
Underweight-normal	20 (4.8)	60 (14.3)			
Women					
Overweight-obese	8 (1.9)	145 (34.7)	0.016	1.05	1.00-1.09
Underweight-normal	1 (0.2)	155 (37.1)			
Uric acid excretion[c]					
Men					
High	16 (3.8)	33 (7.9)	0.495	1.19	0.71-1.99
Normal	23 (5.5)	36 (8.6)			
Women					
High	3 (0.7)	97 (23.2)	0.950	0.95	0.24-3.74
Normal	6 (1.4)	203 (48.6)			
Uric acid concentration[d]					
Men					
High	16 (3.8)	40 (9.5)	0.090	1.54	0.92-2.58
Normal	23 (5.5)	29 (6.9)			
Women					
High	3 (0.7)	127 (30.4)	0.590	1.45	0.37-5.70
Normal	6 (1.4)	173 (41.4)			

* reference category
[a] SUA in men normal <5 mg/dL and high ≥7 mg/dL, SUA in women normal <5 mg/dL and high ≥7 mg/dL
[b] BMI= body mass index, <18.5kg/m^2 = underweight, 18.5-24.9 kg/m^2 = normal, 25-29.9 kg/m^2 = overweight, >30 kg/m^2 = obese
[c] Uric acid excretion, <435.08 mg/day = normal, ≥435.08 mg/day = high
[d] Uric acid concentration (mg per 100 ml of urine), <46.63 mg% = normal, >46.63 mg% = high

Table 1B. Gender differences in the association between SUA levels, BMI, and kidney functions (with different SUA levels cut-off points for women)

Variables (n=450)	SUA[a]		P-value	RR	95% CI
	High (%)	Normal (%)			
Gender					
Men	39 (8.6)	69 (15.3)	<0.001	2.94	2.01-4.29
Women	42 (9.3)	300 (66.7)			
Age (Years)					
Men					
30-39*	6 (1.3)	11 (2.4)	-	1	-
40-49	18 (4.0)	22 (4.8)	0.140	0.68	0.41-1.12
50-59	15 (3.3)	36 (8.0)	0.170	1.43	0.84-2.41
Women					
30-39*	5 (1.1)	85 (18.9)	-	1	-
40-49	13 (2.9)	125 (27.7)	0.185	1.50	0.81-2.79
50-59	24 (5.3)	90 (20.0)	<0.001	0.37	0.21-0.66
BMI[b]					
Men					
Overweight-obese	19 (4.2)	9 (2.0)	<0.001	2.33	1.34-4.05
Underweight-normal	20 (4.4)	60 (13.3)			
Women					
Overweight-obese	32 (7.1)	145 (32.2)	0.001	1.14	1.06-1.24
Underweight-normal	10 (2.2)	155 (34.4)			
Uric acid excretion[c]					
Men					
High	16 (3.5)	33 (7.3)	0.495	1.19	0.71-1.99
Normal	23 (5.1)	36 (8.0)			
Women					
High	18 (4.0)	97 (21.5)	0.176	0.67	0.38-1.19
Normal	24 (5.3)	203 (45.1)			
Uric acid concentration[d]					
Men					
High	16 (3.5)	40 (8.9)	0.090	1.54	0.92-2.58
Normal	23 (5.1)	29 (6.4)			
Women					
High	19 (4.2)	127 (28.2)	0.722	0.90	0.51-1.59
Normal	23 (5.1)	173 (38.4)			

* reference category
[a] SUA in men normal <5 mg/dL and high ≥7 mg/dL, SUA in women normal <5 mg/dL and high ≥6 mg/dL
[b] BMI= body mass index, <18.5kg/m^2 = underweight, 18.5-24.9 kg/m^2 = normal, 25-29.9 kg/m^2 = overweight, >30 kg/m^2 = obese
[c] Uric acid excretion, <435.08 mg/day = normal, ≥435.08 mg/day = high
[d] Uric acid concentration (mg per 100 ml of urine), <46.63 mg% = normal, ≥46.63 mg% = high

Biography

Mochammad Sja'bani graduated as a Medical Doctor at the Faculty of Medicine Public Health and Nursing, Universitas Gadjah Mada (UGM), Indonesia. He became an Internist Specialist and Nephrologist in the same University. He obtained his Medical Science degree in Clinical Epidemiology and Biostatistics at the University of Newcastle, Australia. He received his doctor of Philosophy degree and Professor in UGM. He became the Head of Internal Medicine Department and Vice Head of Ethical Committee, UGM. He was also accepted as a visiting-professor to Internal Medicine, Juntendo University, Japan. He is currently as a Professor of the Doctoral Program in the Faculty of Medicine Public Health and Nursing in UGM and Faculty of Medicine and Health Sciences in Universitas Muhammadiyah Yogyakarta, Indonesia.

Exploring maternal health in Ethiopia using indigenous approaches: Policy and practice implications

A. Ibrahima

Northeastern Illinois University, USA

The World Health Organization reports reveal that the average risk of dying from pregnancy-related causes in sub-Saharan Africa is about 1 in 45 compared to 1 in 5,400 in high-income countries. In Ethiopia, maternal mortality remains a tremendous problem. Several studies associate the high maternal mortality ratio to the widespread practice of home birth, household income, and lack of transportation. Absent from the findings of these studies is any discussion of the sociocultural contexts that might influence maternal health service utilization. Birthing bears cultural significance accompanied by rituals. Thus, any solution to maternal health problems must consider the sociocultural and grassroots context. To this end, the needs and priorities of mothers should be central.

This study utilized Indigenous approaches to explore gaps in maternal health services in Ethiopia from the grassroots perspective. Indigenous approaches require participant-level engagement and acceptance of autonomy of the grassroots as research collaborators (Denzin & Lincoln, 2000; Smith, 2012). The study occurred in North Wollo Zone, Ethiopia. Gatekeepers were used to identify potential research collaborators. Data were collected using in-depth, semi-structured individual interviews with 27 research collaborators. The interviews were conducted in Amharic, the native tongue. Visual dialogue was also used during the interview. Research collaborators were asked to express certain concepts through drawings or using natural settings as a metaphor or a symbol. Their representation was photographed and saved along with their interviews. Then, all interview data were de-identified and transcribed verbatim in Amharic. The transcribed data was then imported into computer-based qualitative analysis software, ATLAS.ti (Version 7.5.11), to manage, sort and code the data. This data was analyzed using, Miles, Huberman, and Saldana's (2013) interactive model. Circles were used for member checks. In a nutshell, this study explored the gaps in the implementation of Ethiopian maternal health policies and programs and identified culturally relevant solutions that could bridge these gaps and address the needs of communities based on the recommendations of research collaborators.

Biography

Aissetu Barry Ibrahima, Ph.D, is an Assistant Professor at Northeastern Illinois University, Social Work Department, Graduate Program. In addition, Dr. Aissetu is an interim director for the Center of Genocide and Human Rights Research in Africa and the Diaspora at NEIU. She also coordinates the African Studies Institute. Dr. Aissetu's research is focused on Indigenous knowledge and approaches, community-based grassroots development, international health policies, and maternal health behavior and practices. Dr. Aissetu is actively involved in different programs that engage African immigrants and refugee communities in the greater Chicago area. She is an Executive Board Member at the African Diaspora Sixth Region Association of Illinois. Aissetu earned her PhD at University of Illinois at Chicago (UIC), Maters in Social Work (MSW) and BA in Sociology and Social Administration at Addis Ababa University.

Empowering digital transformation: A human biomonitoring (HBM) global registry framework

Maryam Zare Jeddi

National Institute for Public Health and the Environment (RIVM), The Netherlands

Data generated by the rapidly evolving human biomonitoring (HBM) programmes are providing invaluable opportunities to support and advance regulatory risk assessment and management of chemicals in occupational and environmental health domains as well as supporting One Health policy needs. One Health is an umbrella concept that involves the evaluation and monitoring of the impact of environmental hazards on public health. However, heterogeneity across studies, in terms of design, terminology, biomarker nomenclature, and data formats, limits our capacity to compare and integrate data sets retrospectively (reuse). Registration of HBM studies is common for clinical trials; however, the study designs and resulting data collections cannot be traced easily. We are learning that it is not enough to deepen our knowledge of each individual scientific domain in ever increasing detail, we must also be able to bring these research topics together during public health and life sciences research! We argue that an HBM Global Registry Framework (HBM GRF) could be the solution to several of challenges hampering the (re)use of HBM (meta) data. The aim is to develop a global, host-independent HBM registry framework based on the use of harmonised open-access protocol templates from designing, undertaking of an HBM study, data generation and collection to information dissemination for decision-making.

This framework should apply FAIR (Findable, Accessible, Interoperable and Reusable) principles as a core data management strategy to enable the (re)use of HBM (meta) data to its full potential through the data value chain. The HBM GRF would encompass internationally harmonised and agreed open access templates for HBM study protocols, structured web-based functionalities to deposit, find, and access harmonised protocols of HBM studies. Registration of HBM studies using the HBM GRF is anticipated to increase FAIRness of the resulting (meta)data. As a consequence, data wrangling activities to make data ready for analysis will be minimised. In addition, this framework would enable the HBM (inter)national community to trace new HBM studies already in the planning phase and their results once finalised. The HBM GRF could also serve as a platform enhancing communication between scientists, risk assessors, and risk managers/policy makers. Moreover, we believe that implementation of FAIR principles is a fundamental enabler for digital transformation within environmental health that support and acknowledge the shift from big data to smart data highlighting the importance of making full use of the potential of data, technology and digitalisation across the coming decade.

Biography

I am supporting science to policy strategies boosting transition towards a climate-neutral economy to enhance public health. As an scientific officer, my scientific research focuses on human health risk assessment and management of chemicals with a strong emphasis on integrating epidemiology and high-quality exposure information.

PEERS ALLEY MEDIA

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The deployment of k9 detection dogs in screening for COVID-19 virus SARS-COV-2

Mohammed Hag-Ali[1], Abdul Salam AlShamsi[2], Linda Boeijen [3], Yasser Mahmmod[1,4,7], Rashid Manzoor[1,7], Harry Rutten[3], Marshal M. Mweu[5], Mohamed El-Tholoth[1,6] and **Abdullatif Alteraifi AlShamsi[1]**

[1]Higher Colleges of Technology, United Arab Emirates
[2]Federal Customs Authority, United Arab Emirates
[3]DiagNose Netherlands B.V. and Four Winds K9 Solutions LLC UAE, United Arab Emirates
[4]Department of Animal Medicine, Faculty of Veterinary Medicine, Zagazig University, Egypt
[5]School of Public Health, College of Health Sciences, University of Nairobi, Kenya
[6]Department of Virology, Faculty of Veterinary Medicine, Mansoura University, Egypt

The ancient-time use of dogs for hunting as well as their modern-time use for the tracking, detection of bodies from disaster struck areas, drugs and explosives mark witness to the success and efficacy of their sense of smell. The use of dog olfaction sense for the detection of disease is relatively new and included the dog`s ability to detect malignant tumors, many non-infectious and infectious diseases, diabetes, epilepsy, bacteriuria, malaria and viral cell cultures. The Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV2) is a novel virus infecting human globally causing the Coronavirus disease 2019 (COVID-19). On 11 March 2020, World Health Organization declared COVID-19 as pandemic. Initially, thermal scanners were introduced at the ports of entry to control the spread of the virus. Currently, quantitative reverse-transcription polymerase chain reaction (RT-qPCR) is being widely used. The benefit of widespread testing depends on the accuracy of the test, however, current available evidence suggests that the test has very high specificity, but the specificity is moderate (63%-78%). Moreover, high expense incurred on training of staff, equipment and reagents for continued and long-term mass screening is also problematic. Therefore, search for alternate options was due. Keeping in view the success of canine olfaction in detecting human disease with ample scientific evidence,

Fig. 1. *A dog trainer is introducing the covid-19 smell to an explosive detection dog*

we evaluated the use of trained explosives detection dogs for the screening of COVID-19 virus asymptomatic individuals visiting a COVID screening center in Abu Dhabi. We showed that the dogs were able to successfully screen out individuals who tested negative for the SARS-CoV-2, from a cohort of more than 3000 individuals. Additionally, using Bayesian analysis, we demonstrated that the K9 test done on sweat swabs was superior to the RT-PCR test performed on nasal swabs from the same cohort.

Fig. 2. *The K9 test is more sensitive than RT-PCR in screening for SARS-CoV-2 in asymptomatic individuals.*

Biography

Name: Professor Mohammed Hag-Ali
Current Position: Academic Advisor to the HCT President and CEO
Past Position: Executive Dean, Faculty of Health Sciences, HCT
Education: George Washington University, PhD, Immunopathology of infectious disease and
Research Fellowship in Medicine at Harvard Medical School, USA in Immunology and Molecular biology.

Previous Positions:

- Health Sciences Advisor and Head of Academic Affairs, the Institute of Applied Technology and Fatima College of Health Sciences, UAE.
- Consultant, Preventive Medicine, Public Health and the Pathology and Laboratory Medicine Departments, Medical Services Corps and Zayed Military Hospital, UAE Armed Forces.
- Chair of the Genetics, Molecular Biology and Immunogenetics Division and Organ Transplantation Laboratory in King Fahad National Guard Hospital, Riyadh, Saudi Arabia.
- Director of the Medical Research Council, the Institute for Tropical Medicine Research and the NIH/ Michigan State University Laboratory for Infectious Disease Research.

Research Interests:

- Infectious disease diagnosis and prevention
- Non-communicable disease health promotion and prevention

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Can CO_2 emissions and energy consumption determine the economic performance of South Korea? A time series analysis?

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[4,5]Department of Business Management, Faculty of Economics and Administrative Sciences, Girne American University, Turkey

Following the United Nations Sustainable Development Goals (UN-SDGs), which place emphasis on relevant concerns that encompass access to energy (SDG-7) and sustainable development (SDG-8),this research intends to re-examine the relationship between urbanization, CO_2 emissions, gross capital formation, energy use, and economic growth in South Korea, which has not yet been assessed using recent econometric techniques, based on data covering the period between 1965 and 2019. The present Study utilized the autoregressive distributed lag (ARDL), dynamic ordinary least square (DOLS), and fully modified ordinary least squares (FMOLS) methods, while the gradual shift and wavelet coherence techniques are utilized to determine the direction of the causality. The ARDL bounds test reveals a long-run linkage between the variables of interest. Empirical evidence shows that CO_2 emissions trigger economic growth. Thus, based on increasing environmental awareness across the globe, it is necessary to change the energy mix in South Korea to renewables to enable the use of sustainable energy sources and establish an environmentally sustainable ecosystem.

Conclusion: The current study adds to the previously existing literature by assessing the linkage between economic growth, CO_2 emissions, energy usage, urbanization, and gross capital formation in South Korea using yearly data stretching between 1965 and 2019. To accomplish the stated objectives, the ARDL bounds test, the gradual shift causality test, and the novel wavelet coherence test are utilized. Furthermore, the outcomes of the ARDL long-run and short run estimations show that energy usage, urbanization and CO_2 emissions enhance the economic performance of South Korea, while gross capital formation

exerts an insignificant impact on the economic performance of South Korea. Furthermore, the wavelet coherence test outcomes provide further support for the ARDL, FMOSL, and DOLS tests. The gradual shift causality test outcomes provide intuition and credibility to the linkage among economic growth and urbanization, energy usage, gross capital formation, and CO_2 emissions.

Biography

Gbenga Daniel Akinsola was born in the 1980s. He received a BSc in Computer Engineering in 2012 from European University of Lefke in Northern Cyprus. He also received his MBA in Business Administration from Cyprus Science University in 2018, and also MSc in Management Information system from Cyprus International University in 2020. He is currently writing his thesis for his PHD degree in Business management at Grine American University.

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Making safety training stickier: A richer model of safety training engagement and transfer

Tristan Casey[1], Nick Turner[2], Xiaowen Hu[3] and **Kym Bancroft[4]**

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[2]Haskayne School of Business, University of Calgary, Canada
[3]QUT Business School, Queensland University of Technology, Australia
[4]Serco Asia Pacific, Australia

Aim: Compared to other types of occupational training, safety training suffers from several unique challenges that potentially impair the engagement of learners and their subsequent application or "transfer" of knowledge and skills upon returning to the job. However, existing research on safety training tends to focus on specific factors in isolation, such as design features and social support. The aim of this research is to develop an overarching theoretical framework that integrates factors contributing to training engagement and transfer.

Method: We conducted a comprehensive qualitative review of safety training research that was published between 2010 and 2020). We searched Web of Science, Scopus, and Google Scholar, yielding 147 articles, and 38 were included. We content analyzed article summaries to arrive at core themes and combined them with contemporary models of general occupational training to develop a rich model of safety training engagement and transfer.

Results: Organizations should prioritize pre-training readiness modules to address existing attitudes and beliefs, optimize the safety training transfer climate, and critically reflect on their strategy to design and deliver safety training so that engagement is maximized.

Conclusions: There are practical factors that organizations can use before training (e.g., tailoring training to employees' characteristics), during training (e.g., ensuring trainer credibility and use of adult learning principles), and after training (e.g., integrating learned concepts into systems).

Practical Applications: For safety training to 'stick', workers should be affectively, cognitively, and behaviorally engaged in the learning, which will result in new knowledge and skills, improvements in attitudes, and new safety behaviors in the workplace. To enable engagement, practitioners must apply adult learning principles, make the training relevant, and tailor the training to the job and individual needs. After training, ensure concepts are embedded and aligned with existing systems and routines to promote transfer.

Biography

Dr Tristan Casey is an expert in safety leadership and organisational culture. With a career in workplace health and safety spanning 12 years, he has consulted nationally and internationally across a diverse range of industries such as law enforcement, local government, utilities (water and power, including renewables), offshore oil and gas, construction, and manufacturing (wood and metals). Dr Casey is an endorsed Organisational Psychologist with two doctoral degrees, including his PhD that involved development and validation of the LEAD model under the mentorship of Prof Mark Griffin. His passion is translating abstract/theoretical concepts into practical tools that have measurable impact. Dr Casey is skilled at forming collaborative and mutually beneficial partnerships between government, industry, and academia. He is also a highly regarded international speaker, having keynoted at more than 15 industry events and presented at over 100 conferences, workshops and forums.

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Determining the effect of group flower arranging sessions on caregiver self-efficacy and stress levels in an in-patient hospice

Lavin Joanne[1], Claire Lavin[2], Bai Xin[3], Mastropaolo Stephanie[4] and **Feldman Debbie[4]**

[1]CUNY School of Professional Studies, USA
[2]Collage Of New Rochelle, USA
[3]York Collage, USA
[4]Family Care Center Calvary Hospital, USA

This study was designed to promote enhanced self-efficacy and decreased stress levels for family caregivers at a hospice care hospital, thus increasing their quality of life. This is achieved through group flower arranging sessions. Flowers evoke many responses including love, caring, and beauty. Human reactions to flowers involve smell, texture and color which provide an aesthetic attraction. Family and friends often become the informal caregivers to terminally ill spouses, siblings, and others. They support and supplant the role of professionals resulting in personal stress and compassion fatigue. The objectives are to 1) Enhance self-efficacy scores for family caregivers of Calvary patients. 2) Decrease stress levels for family caregivers of Calvary patients and 3) Disseminate results to other hospices. 71 caregivers were recruited to the study. Their family members or friends became terminally ill and were receiving care in the Calvary Hospital. Results show the flower arranging sessions resulted in significant increased self-efficacy and decreased stress and associated problems for the caregiver participants. Implications and suggestions for future research are discussed. Family member feedback consistently supported that the program was relaxing, healing, comforting therapeutic, and educational. Family members reported that they loved to be able to bring the flowers back to their loved ones at times brightening the patients' moods and at other times simply brightening the room itself. This type of program allowed family members the opportunity to actively do something for their loved ones while simultaneously taking time for themselves to engage in a stress-reducing activity

Biography

Joanne Lavin retired as Associate Director of the CUNY SPS Nursing Programs June 2020. Currently she continues as an Adjunct Professor in the RN to BS program. Previously she was the Director of the Nursing Programs at York College CUNY. Dr. Lavin has been involved in research with 3D for health care students as well as a Test Coordinator for the National League for Nursing.

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Obesity myths and facts

Jaqua E

Loma Linda University Health, Loma Linda, USA

The goal of this talk is to explain and clarify some misconceptions about obesity.

1. Obesity is a choice, not a disease: Myth. Obesity is a chronic, relapsing, multifactorial, and neurobehavioral disease. An increase in body fat endorses abnormal fat mass physical forces and dysfunction, resulting in unfavorable metabolic, biomechanical, and psychosocial health consequences.1,2,3,4

2. Obesity can be attributed to genetics: Fact. In 2007 a genome-wide association study (GWAS) identified the Fat mass and obesity-associated gene (FTO), an established obesity-susceptibility locus located at chromosome 16 q12.2. Specific alleles of the FTO gene may be associated with adiposity.5,6,7

3. Being overweight is never healthy: Fact. For BMI ≥ 25, each 5 kg/m^2 increased in BMI is associated with 30% higher mortality. It is also related to an increased risk of cancer, diabetes mellitus type 2, hypertension, and thrombosis. To every 1 kilogram in weight gain, the risk of developing diabetes type 2 may increase by 9%.8,9 An alternative way to categorize obesity and diseases caused by obesity is between fat mass and sick Fat.

4. Obesity is not associated with sleep. Myth:"Sleep is the 'most sedentary activity' yet may be the only sedentary one that protects from weight gain" .10,11 World Health Organization (WHO) and Center for Disease Control and Prevention (CDC) recommend 7-8 hours of sleep a night.8

5. There is no relationship between breastfeeding as an infant and obesity. Myth: Rates of obesity are significantly lower in breastfed infants. There would be a decrease of about 15-30% in obesity rates for teenagers and adults if any breastfeeding happened in infancy compared with no breastfeeding.12

Biography

Being in love with medicine her whole life, Ecler Ercole Jaqua began at only age 17 her medical school at The Lutheran University of Brazil. Fascinated with the comprehensive care of all ages, and the continuing care of the individual and family, she naturally embraced and pursued her focus in Family Medicine. After completing a Family Medicine Residency at Loma Linda University Health, as well as being chief resident during her last year of training, she decided to specialize in Geriatric Medicine at UCLA. Soon after completing her fellowship in LA, she returned to Loma Linda to pursue her passion for teaching residents, caring for her family and geriatric patients. Additionally, she had the opportunity to complete the Lifestyle Medicine Board and the Obesity Medicine Board certification while working as an Assistant Professor at Loma Linda University Family Medicine Residency.

Satisfaction with customizable 3D-printed finger orthoses compared to commercial finger orthoses

N. Irani and **R. Ozelie**

Department of Occupational Therapy, Rush University Medical Center, USA

Introduction: Emerging research in rehabilitation/occupational therapy primarily supports 3D-printing as a low-cost, customizable option for prosthetics and adaptive equipment. However, more research is necessary to inform clinicians of its use for orthoses.

Purpose of the Study: (1) To develop a visually attractive 3D-printed anti-swan neck finger orthosis design that can be adjusted, customized, and manufactured quickly, easily, and cost-effectively (Figure 1), (2) To assess orthotic users' satisfaction with customizable 3D- printed finger orthoses compared to commercial finger orthoses.

Methods: Forty persons without prior upper extremity conditions were recruited at an academic medical center in the United States. After wearing each orthosis for 8 hours (or as long as tolerated), participants completed post-satisfaction surveys to measure satisfaction with different aspects of both orthoses worn.

Results: Forty participants (21 females, 19 males, mean age = 24.98 years) were enrolled in the study. Satisfaction scores (N=40) were not statistically significant for 3D-printed orthoses compared to SilverRing™ Splints

Figure 1. (A) *12 color palette for customization,* ***(B)*** *Orthotic design via Autodesk Fusion 360,* ***(C)*** *Multicolored orthoses and Adventurer 3 3D-printer used.*

across all domains except for Affordability, which was rated significantly higher for 3D-printed orthoses (M = 10.00, SD = 0.000) compared to SilverRing™ Splints (M = 5.28, SD = 2.35), $t(39) = 12.70$, $p < .001$. The mean difference in satisfaction scores was 4.72, with a 95% confidence interval ranging from 3.97 to 5.48 and large effect size ($r = .90$).

Conclusions: Findings provide novel evidence supporting the use of this customizable 3D-printed prototype as a cost-effective, alternative option (~$0.10) to established commercial finger orthoses. This study has potential to assist clinicians' decision-making as they navigate best orthoses options for individuals with rheumatoid arthritis and swan neck deformities while considering orthotic wear compliance and client satisfaction.

Biography

Natasha Irani recently received her doctorate degree in Occupational Therapy (OTD) from Rush University Medical Center in Chicago, IL, USA. She has clinical experience working in hand therapy, physical disabilities, and mental health. Through her research interest in customizable 3D printed upper limb orthotics and background in business, psychology, and chronic health conditions, she aims to personalize client care to holistically improve clients' orthotic wear compliance, performance in meaningful life activities, and overall physical and mental wellbeing.

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Effects of screenings in reducing colorectal cancer incidence and mortality differ by polygenic risk scores

Jungyoon Choi[1,2], Guochong Jia[1], Wanqing Wen[1], Jirong Long[1], Xiao-Ou Shu[1] and **Wei Zheng[1]**

[1]Division of Epidemiology, Department of Medicine, Vanderbilt Epidemiology Center, Vanderbilt-Ingram Cancer Center, Vanderbilt University Medical Center, USA

[2]Division of Oncology/Hematology, Department of Internal Medicine, Korea University Ansan Hospital, Korea University College of Medicine, Korea

Introduction: Colorectal cancer (CRC) screening reduces CRC incidence and mortality. However, it is unclear whether the reduction in CRC risk may differ by genetic susceptibility.

Methods: We evaluated this question in a cohort of 304,740 participants of European descent aged ≥ 50 years. Genetic susceptibility was measured using a polygenic risk score (PRS) constructed with risk variants identified in genome-wide association studies. Cox models were used to estimate hazard ratios (HRs) and 95% confidence intervals (CI) of CRC risk.

Results: Over a median follow-up of 7.0 years, 2,261 incident CRC cases and 528 CRC deaths were identified. CRC screening was associated with a significantly reduced CRC incidence among individuals with a high (HR, 0.80; 95% CI, 0.71-0.92) and intermediate PRS (0.84, 0.71-0.98) but not among those with a low PRS (1.03, 0.86-1.25; Pinteraction, 0.005). A similar but more evident difference was observed for mortality (Pinteraction, 0.046), with more than 30% reduced mortality observed in the high PRS group (0.69, 0.52-0.91). Among the younger group (age 50-60 years), CRC screenings were associated with a slightly (but non-significantly) elevated incidence and mortality in the low PRS group but a reduced risk in the high PRS group (Pinteraction, 0.043 [incidence]; 0.092 [mortality]). No significant interaction was observed in the older group (age > 60 years).

Conclusion: Individuals with a higher genetic risk benefited more substantially from CRC screenings than those with a lower risk. Our findings suggest that PRS may be used to develop personalized CRC screening to maximize its effect on CRC prevention.

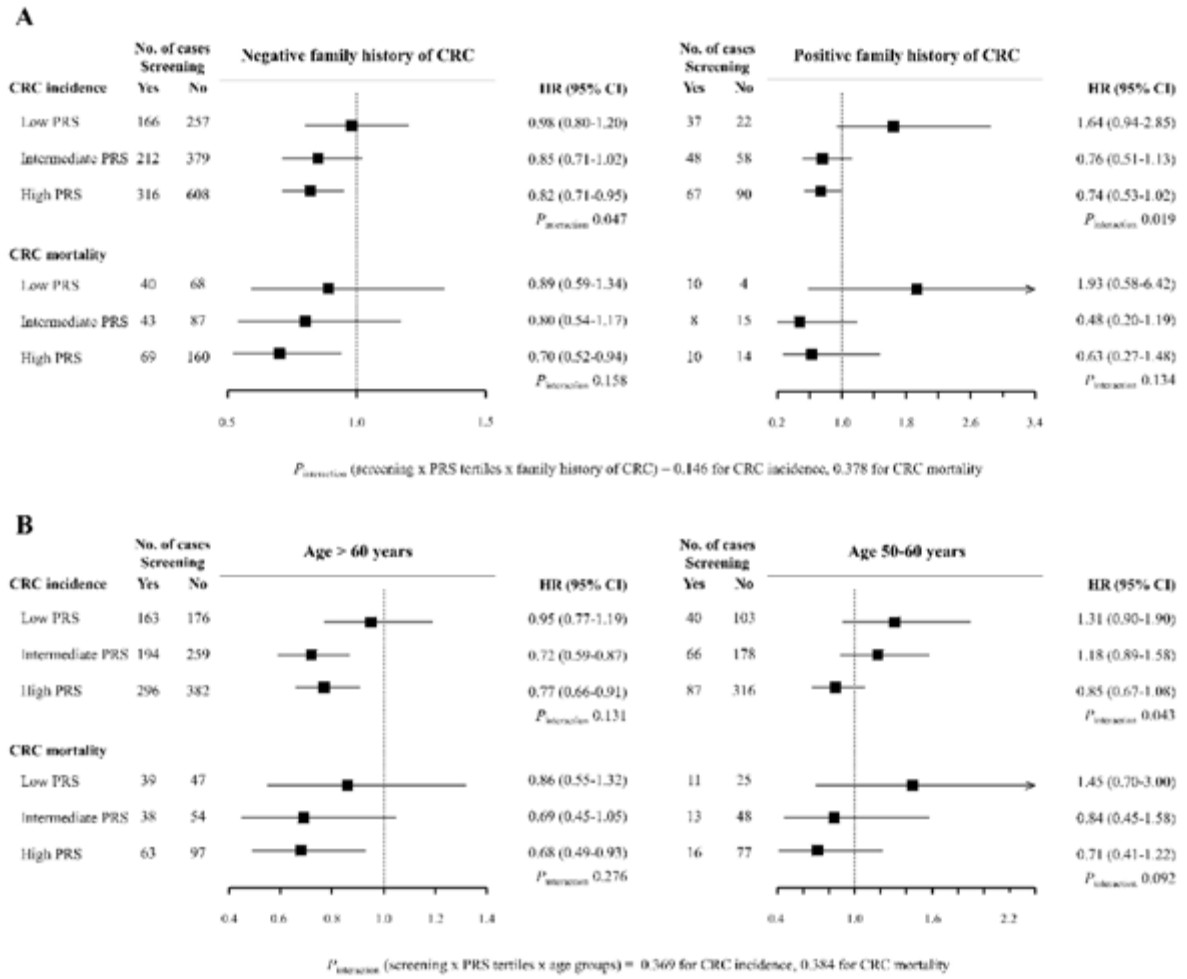

***Figure 1**. Hazard ratios for the associations of colorectal cancer incidence and mortality with screenings, according to polygenic risk score group and (A) family history of colorectal cancer and (B) age group.*

Biography

Dr. Jungyoon Choi (MD, PhD: Korea University) is currently working as a clinical assistant professor at Korea University Hospital. Her doctoral thesis investigated the genomic profiles of colorectal cancer. From 2019-2021, she joined Dr. Wei Zheng's laboratory as a postdoctoral fellow at the Vanderbilt University Medical Center, where her research encompassed big data, bioinformatics, cancer genetics/genomics, and cancer epidemiology. Her research interests include the use of bioinformatics to understand the epidemiology and etiology of cancer, with a focus on the role of genetics and genomics to identify prognostic and predictive biomarkers. A medical oncologist, Dr. Choi also has clinical experience in treating patients with various types of cancer (especially colorectal, stomach, esophageal, hepatobiliary, and pancreatic cancers). She is eager to bridge the gap between genome research and clinical practice.

Sentinel lymph node does not prevent lymphedema

A.Pissas, M.H.Girault and F.Gallon
Hospital Center of Bagnols sur Ceze, France

It is admitted that secondary lymphedema is explained by axillar lymphadenectomy .This idea represents for many authors a justification of sentinel lymph node to prevent lymphedema .But many patients who underwent this technic develop secondary lymphedema The destruction of vicariant ways or the constitution of lymphocela are of prime importance in the constitution of lymphedema Our experience is based upon the study of lymphatic vessels on corpses or fetuses since 1985 and on the treatment of 3150 patients with lymphedema

Biography

- MD, Phd, Surgeon, Visceral and Oncologic Surgery
- Chief of department of digestive surgery Hospital center of Bagnols sur Cèze
- Associated professor of anatomy Faculty of medicine of Montpellier
- Thesis of medicine and thesis of science on lymphatic system
- Chief of unite of treatment of edema
- Scientific activity 220 publications: 62 anatomy, 98 lymphology, 60 surgery
- Founder secretary of European society of lymphology 1979
- President of European Society of lymphology 1987 - 2001
- President of ISL international society of lymphology 2001-2003
- Treasurer ISL till 2005, Member of Executive Committee or Nominating Committee of ISL
- Civic activity: Major till 2001, President of region GARD; President of nuclear committee of information, President of fire-men of GARD

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Assessment of the rationality of gender studies from the perspective of Bochenski's concept of philosophical superstition

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In recent years, the issue of the determinants of human gender identity has been lively discussed. In such discussions, there are numerous supporters of the belief that a person's gender identity does not depend directly on a given individual's biological endowment with sex, but is the result of various socio-cultural circumstances in which a given person lives. This view began to gain popularity in the scientific community in the late 1960s and early 1970s. It is now considered paradigmatic in the rapidly evolving interdisciplinary study of cultural gender development, which is commonly referred to as gender studies. Representatives of gender studies often present the findings obtained in the course of their research as brilliant and modern. However, when viewed through the concept of philosophical superstition, authored by the Polish logician Józef Maria Bocheński (1902–1995), it can be concluded that the proponents of gender studies significantly exaggerate the intellectual momentum of their conclusions and postulates. Furthermore, one can even say that according to Bocheński's concept of philosophical superstition, gender studies is a discipline which only creates a semblance of rationality (truth). This is because gender studies fail all six criteria which, as Bocheński maintains, distinguish beliefs, views, and theories which are manifestly irrational from those which are not philosophical superstitions. The article consists of three parts. In the first part, Bocheński's concept of philosophical superstition is discussed and, in particular, the criteria are outlined which, in Bocheński's opinion, allow one to identify philosophically superstitious thinking. This section also provides examples of philosophically superstitious beliefs, views and theories that fall under each of the criteria. In the second part, gender studies are characterized in terms of the basic assumptions adopted within this trend, as well as its theses and postulates. The third part of the article is devoted to the assessment of gender studies with the use of criteria which, according to Bocheński, make it possible to distinguish theories, beliefs and views without the hallmarks of rationality from those that are not philosophically superstitious.

Biography

Zdzislaw Kieliszek - was born on November 11, 1973 in Kętrzyn and is a Catholic priest. He was ordained a priest in 1999 in Olsztyn. In the years 1993-1999 he studied at the Higher Theological Seminary of the Warmia Metropolis "Hosianum" in Olsztyn, obtaining a master's degree in theology. In the years 2001-2009 he studied at the John Paul II Catholic University of Lublin, obtaining a doctorate in humanities in the field of philosophy, on the basis of the dissertation entitled "Anthropology and nationalism in the thought of Johann Gottlieb Fichte". He is the author of one monograph and several dozen scientific articles, and since 2011 the editor-in-chief of the scientific journal "Studia Warmińskie". He has been a member of the Kant-Gesellschaft since 2019. The subject of his interests are: political and social thought, philosophy of man and the history of philosophy - in particular in relation to the achievements of Immanuel Kant. In the years 2012-2016 he was the vice-dean for student affairs at the Faculty of Theology of the UWM in Olsztyn. Currently, he is an assistant professor at the Department of Philosophy and Canon Law, and since 2016, he is also vice-dean for education and students at the Faculty of Theology at UWM in Olsztyn.

Reproductive medicine: Advanced sperm separation

L. Barad and **R. Barad**

Technion – Israel Institute of Technology, Israel

Introduction: Infertility has been recognized as a public health issue worldwide by the World Health Organization (WHO). Intrauterine insemination (IUI) is the first therapeutic step in assisted reproductive techniques and is especially appropriate for cases with mild male factor infertility. Among the assisted reproductive techniques, IUI is considered a first-line procedure due to its simplicity, easy management, low cost, and absence of potentially serious complications.

As part of the IUI process, a sperm sample is required. The male partner provides a sperm sample, which then processed by the laboratory. Sperm separation procedure is used for separation of motile sperm cells from debris and non-motile sperm cells from the semen sample. The sperm preparation process is used in various assisted reproductive procedures such as IVF (in vitro fertilization), IUI and intra-cervical insemination (ICI).

The problem: Sperm preperation must be right after ejaculation (max 1 hr)

Sperm preparation requires certified lab and qualified technician. Far from patient's home

3 different stations (ejaculation place, lab, doctor)

These causes: Inaccessibility, Inconvenience, Embarrassment, Anxiety

The solution: To overcome the unmet need for a simple convenient and accessible way for sperm preparation, prior to fertility treatments, we have developed the ASPS (Automated Sperm Preparation System) device. The ASPS is an automated and controlled device for sperm preparation, that could be available at the doctor's clinic, or even at local laboratories, near the patients' home. With the ASPS, no training is required, the sperm preparation procedure is fully automated and controlled, simple to operate, and results in a high quality pure and clean sperm, ready for use for fertility treatments. ASPS facilitates the preparation and separation of the best performing alite sperm.

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