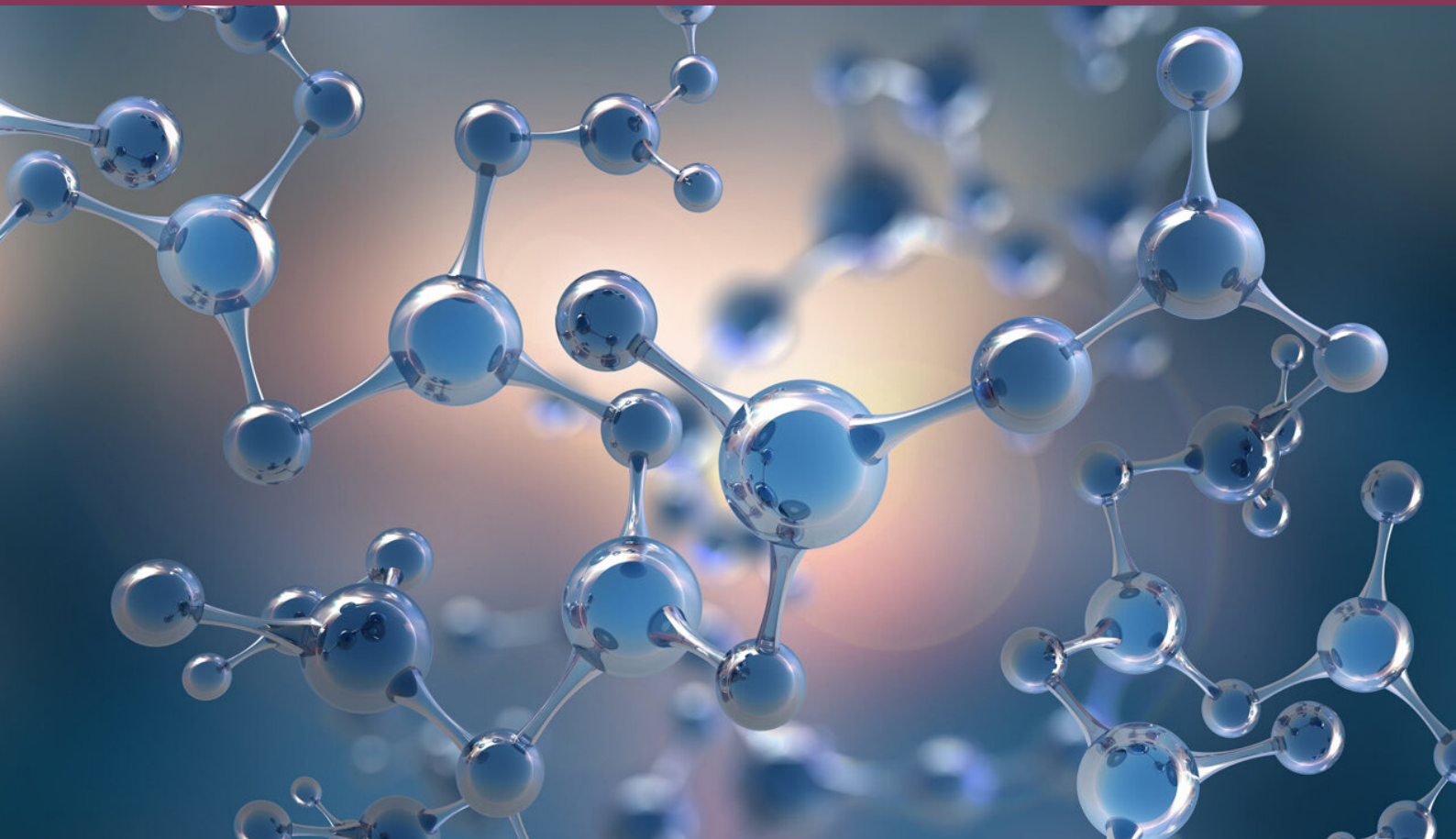




ABSTRACT BOOK



September 19, 2022 | Online

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Constantinos Sioutas

University of Southern California

Investigation of chemical and toxicological characteristics of ambient fine particulate matter during COVID-19 lockdown in the Milan metropolitan area

The main objective of this study was to examine the toxicological and chemical characteristics of PM_{2.5} in the absence of major mobile source emissions during the COVID-19 outbreak in the Milan metropolitan area. PM_{2.5} samples were collected on quartz filters at the suburban site of Bareggio during the national COVID-19 restriction periods: full-lockdown (FL) encompassing April 11th to May 4th, the followed partial-lockdown (PL) spanning from May 5th to May 18th, and full-relaxation (FR) from May 19th to June 3rd. The collected PM_{2.5} samples were analyzed for their elemental and organic carbon (EC/OC), redox-active metal, water-soluble organic carbon (WSOC), and individual organic species contents. The PM_{2.5} oxidative potential was also evaluated using the 2',7'-dichlorodihydrofluorescein (DCFH) and dithiothreitol (DTT) assays. Our results showed that the ambient concentrations of the traffic-related PM_{2.5} components, including traffic-related polycyclic aromatic hydrocarbons and road dust markers (e.g., Fe, Mn, Cu, Cr, and Ti), were reduced during FL and PL compared to those measured in the year 2019. Additionally, the adopted COVID-19 restrictions on road traffic significantly reduced the PM_{2.5} oxidative potential and the mass concentration of the above-mentioned species during FL compared with PL and FR. In agreement with this finding, a decrease in the levels of atmospheric pollutants, including nitrogen dioxide (NO₂) and benzene (C₆H₆), during the entire COVID-19 period in comparison to the year 2019 was observed. Nonetheless, ambient concentrations of PM_{2.5} and black carbon (BC) during the lockdown phase were comparable (Pvalue= 0.10-0.75) with those measured at the same period in 2019, due to the enhanced domestic biomass burning emissions as a result of the adopted stay-home strategies. Therefore, results from this study confirm the impact of traffic restrictions on the oxidative potential of PM_{2.5} in the Milan area and can be helpful in adopting mitigation policies to reduce the exposure to PM_{2.5}.

Keyword: COVID-19, Coronavirus, Po Valley, PM_{2.5} characterization, PM_{2.5} oxidative potential.



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Biography:

Dr. Constantinos Sioutas, Sc.D., is the first holder of the Fred Champion Professorship in Civil and Environmental Engineering at the University of Southern California (USC), starting in 2006, and the director of the University of Southern California Aerosol Laboratory at the department of Civil and Environmental Engineering Utilizing an integrated approach in his research, over the past twenty-five years Dr. Sioutas has generated a well-publicized body of work demonstrating the significant effects that particulate air pollution has on human health and the environment. According to the World Health Organization (WHO), outdoor particulate air pollution is estimated to cause roughly 4 million premature deaths worldwide, making it the sixth non-injury related cause of mortality globally. Dr. Siouta's research has focused on investigations of the underlying mechanisms that produce the health effects associated with exposure to particulate air pollutants that are generated by a variety of combustion sources, most notably traffic (including light- and heavy-duty vehicles, natural gas buses and biodiesel vehicles), harbor and airport operations and power plants, as well as the degree to which photochemical processing of these emissions alters these particle's physical, chemical and toxicological properties. A unique aspect of Dr. Siouta's research has been his use of feedback from ongoing biological and toxicological in vivo, in vitro, epidemiological and risk assessment research studies that use combustion-generated aerosols in order to identify strategies that would reduce health risks. Such information is crucial in implementing effective control strategies and environmental regulations that would reduce public exposure to toxic particulate pollutants and, the enforcement of which, in fact, has led to improvements in air quality. His research activities have been recognized internationally, resulting in a number of collaborations studying the characterization as well as the health and environmental effects of particulate air pollution across the globe. The complex and dynamic multi-pollutant atmosphere of Southern California, which is comprised of particulate matter (PM) of various sizes and chemical constituents (i.e., vapor-phase semi-volatile organic compounds (SVOCs) that are in equilibrium with their particle phase, gas-phase constituents including volatile organic compounds (VOCs) and other gaseous co-pollutants), has been the focal point of Dr Siouta's research. These anthropogenic pollutants, emitted by the abundant traffic sources of the Los Angeles basin are in dynamic equilibrium, and their chemical composition as well as partitioning between the PM and vapor phases vary according to sources, season and temperature, as well as the atmospheric transformations that take place over distance and time. In collaboration with his colleagues at University of California Los Angeles, Dr. Sioutas and his group at USC were the first to study the formation and dynamics of traffic-generated particulate air pollutants near freeways, demonstrating the more than ten-fold increase in exposure to toxic pollutants near freeways and busy thoroughfares. These studies have produced highly cited publications (including the Hagen-Smit award of Atmospheric Environment for seminal paper in 2011) and have been used as a criterion for placing schools near roadways as part of the state of California Senate Bill 25 (SB25). Moreover these studies served as the impetus for the design of numerous "near-roadway" studies, first in the U.S. and more recently in Europe and Asia, investigating the association between elevated exposures and adverse health effects in humans who live in the proximity of roadways and busy thoroughfares. Dr. Sioutas has also developed state-of-the-art particle concentrator technologies that allow for the assessment of the relative toxicity of particulate pollution from a variety of sources and formation mechanisms which use, for the first time in the literature, realistic atmospheres in vivo and in vitro studies undertaken by multimillion-dollar research centers funded by the U.S. EPA, NIH and CARB in Southern California.



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September 19, 2022 | Online*

Stefaan W. Van Gool

Immun-Onkologisches Zentrum Köln

Individualized multimodal immunotherapy for glioblastoma multiforme

The prognosis of glioblastoma multiforme (GBM) has not improved over the last decades, in spite of intensive research in the domain of targeted therapies, anti-angiogenesis, checkpoint inhibitors, etc. We developed integration of individualized multimodal immunotherapy (IMI) during and after standard of care. A synergistic activity between maintenance temozolomide (TMZm) and IMI during/after first-line treatment was suggested for improving the overall survival (OS) of adults with IDH1 wild-type MGMT promoter-unmethylated (unmeth) GBM. We here retrospectively analyzed OS of MGMT promoter-methylated (meth) adults with GBM. Unmeth (10 f, 18 m) and meth (11 f, 10 m) patients treated between 27/05/2015 and 01/01/2022 were included. There were no differences in age or Karnofsky performance index. IMI consisted of 1/ 5-day immunogenic cell death (ICD) therapies during TMZm: Newcastle disease virus bolus injections and sessions of modulated electrohyperthermia; 2/ subsequent active specific immunotherapy: dendritic cell vaccines plus modulatory immunotherapy; and 3/ maintenance ICD therapy. There were no differences in number of vaccines, total number of DCs, number of ICD treatments. The median OS of 29 unmeth patients was 22m (2y-OS: 39%) confirming previous results. OS of 21 meth patients was significantly better (logrank: $p=0.0414$) with OS of 33m (2y-OS: 82%). The OS in both unmeth and meth patients strongly exceeded reported (Lancet Oncol 2009) data with radiochemotherapy and TMZm alone (median OS 12.6 resp. 23.4m; 2y-OS 14.8% resp. 48.9%). The addition of IMI during/after standard of care for adults with GBM, unmeth or meth, should be prospectively explored.

Biography:

Stefaan W. Van Gool is Medical Director of the Praxis für Immunonkologie & Translationale Medizin, Immun-Onkologisches Zentrum Köln. He is also the Qualified Person and the Medical Responsible Person in the Good Manufacturing Practice Laboratories of the Immun-Onkologisches Zentrum Köln. He trained as pediatric neuro-oncologist in Leuven (Belgium) and Münster (Germany), got his PhD degree in

immunology and became Clinical Head of pediatric neuro-oncology and full professor at the KU Leuven. Till 2022 he published 167 peer-reviewed papers. For his work, he received several national and international awards.



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Chee Kong Yap

Department of Biology Faculty of Science, 43400 UPM Serdang, Selangor, Malaysia

Human Health Risks of Essential but Potentially Toxic Metals in the Surface Sediments and Topsoils: The Need for Continuous Assessments

Surface sediments and topsoil metal pollution different land uses has detrimental impacts on human health. Despite the growing numbers of publications on the human health risk assessments (HHRA) of essential but potentially toxic metals in the surface sediments and topsoils, a more detailed understanding of HHRA of the surface sediments and topsoil metals is still relatively scarce. Therefore, this paper aims to review and highlight the importance of sediment and soil pollution of essential Cu and Zn for the HHRA. According to selected literature, land uses with high anthropogenic inputs usually exhibited higher hazard quotient values for three pathways (ingestion > skin contact > inhalation ingestion) of the metals. Increasing levels of sediment and topsoil metal pollution in recent years have concerned scientists and environmental managers because of their significant impacts on the ecosystem and human's health entering the body systems of adults and children. It was evident that the non-carcinogenic risks of essential Cu and Zn had no substantial negative health implications on adults and children. Nevertheless, continuous HHRA of these essential metals in the polluted sediments and soils of different land uses is still necessary to preserve human health and well-being.

Keywords: Health Risk; Essential Metals; Topsoils.

Biography:

Chee Kong Yap is working as a full professor in Universiti Putra Malaysia (UPM) since 2021. Prof Yap is an academician for more than 18 years in UPM and 23 years as a researcher. Prof Yap has supervised more than 80 undergraduates and 30 postgraduate students in the fields of ecotoxicology, environmental biology, environmental sciences, water quality and ecotoxicological genetics. Prof Yap has published more than 320 papers in refereed academic journals, 5 books (three of them published in NOVA Science Publishers, USA) and 32 book chapters. Until July 2021, 204 of them have now been indexed in Elsevier's Scopus with an H-index of 30 (>2761 citations). Prof Yap has also been invited to honorary Editorial Board members for more than 31 international academic journals. Prof Yap has been an invited visiting researcher at the National Institute of Environmental Studies, Tsukuba (Japan). Internationally, Prof Yap has been an invited visiting professor at Nihon University (Japan) and Hokkaido University (Japan), and an invited visiting researcher at Kobe University (Japan) and Kobe College (Japan).



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Genein Letford

CAFFE Strategies, LLC, USA

Intercultural Creativity - Building Classroom Connections Across Cultural Lines

Creative thinking is now the #1 skill needed in the workforce so our students need to be prepared. Why? With the advancement of AI technology and now the effects of the pandemic, companies need employees who can imagine, create and courageously contribute fresh ideas to the market.

Genein is a national voice on creative thinking and reigning a 'child-like' imagination. Her keynotes (which are full of stories, laughs and wow moments) help build the foundational creative skills needed to produce innovative ideas for an unknown future. She shares her signature 7 Gems of Intercultural Creativity™ and encourages your educators and administrators that they too can regain their creative genius and develop their students innate intercultural creativity.

Students that build a culturally creative mindset are more engaged, creative and productive at work. Let Genein inform, inspire and transform your educators to fulfill their creative potential while achieving your educational goals.

Attendees will learn how to:

- rebuild their innate creative mindset
- build culturally creative connections within their curriculum
- expand the imaginative abilities of their students to increase cultural competence.

Biography:

Genein Letford is an award-winning educator, best-selling author and global speaker on the Intercultural Creativity™. As a TEDx speaker and top creativity trainer, she has inspired many educators to be aware of their cultural lenses and creative abilities in order to produce innovative ideas for the classroom and workspace. She is the founder and Chief Creative Officer of CAFFE Strategies, LLC which trains administrators, educators and employees to unleash their Intercultural Creativity™ for themselves and in their classrooms. Pulling from her fifteen years of working with creative geniuses, her unique curriculum utilizes metaphorical strategies, heightened observation techniques and the creative arts to reawaken intuitive thinking in her attendees. Genein believes creative thinking paired with cultural competency are critical 21st Century skills and she is often called 'America's Creativity Coach' for her work in reigniting Intercultural Creativity™ and in our youth and in our workforce.



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Gerardo Enrique Guillen Nieto

Center for Genetic Engineering and Biotechnology, Cuba

Impact of innovative therapeutic drugs and vaccines developed at the Center for Genetic Engineering and Biotechnology of Havana, to support the National Protocol to combat COVID-19

With the first case of COVID-19 on April 11, Cuba began an extensive research program to control the epidemic. As everywhere else, the quickest route was to select among the products already available from other indications or in clinical development those that due to their mechanism of action, proven safety, or clinical evidence could have an effect against the new coronavirus. Along with extended use of injectable interferon-alpha 2b as early treatment in positive cases, the Center for Genetic Engineering and Biotechnology (CIGB) developed a nasal interferon formulation for preventive use, and two vaccines, one for systemic administration “Abdala” (CIGB-66) and one mucosal vaccine “Mambisa” (CIGB-669). The Jusvinza peptide (CIGB-258) for its effect against the cytokine storm received an Emergency Use Authorization (EUA) from the Cuban regulatory authority and had a significant impact in reducing mortality in severely ill and critically ill patients. The Abdala vaccine received the EUA on July 2021, the mucosal vaccine candidate “Mambisa” continues on clinical development as a booster dose of individuals previously immunized and for convalescent subjects.

Biography:

Gerardo Guillen is currently Biomedical Research Director at the Center for Genetic Engineering and Biotechnology (CIGB) in Havana. He received his Bachelor in Science degree in Chemistry and his Master in Chemistry in 1986 in Odessa University I.I. Mechnikov, and his PhD degree in Biological Sciences in 1995 from Havana University.

He joined the CIGB in 1986. For more than twenty five years, he was supervisor of several projects related to prophylactic and therapeutic vaccine developments on hepatitis, dengue, meningitis, pertussis, cancer and COVID as well as drug development against infectious diseases, cancer, cardio protection, neuro protection and wound healing.

Dr. Guillen is a Senior Researcher at CIGB, Full Professor at the Havana University and Latinoamerican School of Medicine, Distinguished Professor-at-Large at the University of Science and Technology of China and Member of the Cuban Academy of Science since 2012. He is also member of several scientific societies, editorial boards and advisory committees. He has published 212 scientific papers and held 56 patents. He has been honored with 52 National Awards from the Cuban Academy of Science, the Third World Academy of Science award on Biology, the Annual Award of the Cuban Chemistry Society, the Carlos J. Finlay Medal granted by the Cuban State Council, and the patent award of the World Office of Intellectual Property..



Prevalence of Diabetes Mellitus and Associated Factors in Southern Ethiopia: A Community Based Study

Alemayehu Zekewos¹, Eskindir Loha², Tariku Egeno³, Kindie Wubshet³, Zelalem Merga⁴

OPEN ACCESS

Citation: Zekewos A, Loha E, Egeno T, Wubshet K, Merga Z. Prevalence of Diabetes Mellitus and Associated Factors in Bona District, Sidama Zone: A Community Based Study. *Ethiop J Health Sci*. 2017; 28 (4):451. doi:<http://dx.doi.org/10.4314/ejhs.v28i4.11>

Received: February 3, 2018

Accepted: February 6, 2018

Published: July 1, 2018

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Funding: Bona District Health Bureau and Abem private clinic.

Competing Interests: The authors declare that this manuscript was approved by all authors in its form and that no competing interest exists.

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ABSTRACT

BACKGROUND: Like in all populations of the world, recently, diabetes became serious health problem in Ethiopian population, as indicated by few community- and institution-based studies. As high as 6.5% diabetes prevalence was reported in Addis Ababa while 5.1% in urban setting and 2.1% in rural setting of Northwest Ethiopia have been reported. This study aimed to provide additional data on the magnitude of diabetes and associated risk factors. The study aimed to determine the prevalence of diabetes in Bona District and identify contributing risk factors.

METHODS AND MATERIALS: A cross-sectional community based survey for diabetes and associated factors was done from February-June, 2016 on a total of 2670 participants in the age range of 15-110 years. Participants were recruited to the study by using a two-stage simple random sampling technique. Data were collected by using structured questionnaire from consented participants. Data were entered, checked for quality and analyzed using SPSS for Windows version 20.0. Since the outcome variable was ordered categorical, we used ordinal regression model to identify associated factors. There was no multicollinearity among the independent variables included in the model. All the independent variables with $p < 0.25$ during bivariate analysis were included in the multivariate model. The level of significance was set at P value < 0.05 .

RESULTS: The overall prevalence of diabetes (1.9%) from our survey was so high in rural setting that prevention and control mechanisms should be designed. The risk factors include advanced age ($\beta=1.04(0.57-1.50)$), systolic hypertension ($\beta=0.59(0.01-1.18)$), high waist circumference ($\beta=0.86(0.34-1.39)$) and postsecondary education ($\beta=0.87(0.03-1.71)$).

KEYWORD: Diabetes, prevalence, risk factors



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September 19, 2022 | Online

Dr. Brittany Barreto

Co-Founder and Executive Director of FemTech Focus, Co-Founder of Coyote Ventures

Women Health Solutions

This session will discuss the latest solutions and innovations in women's healthcare with a particular focus on the solutions that are enhancing women's health conditions that are shared among the largest group of populations including chronic conditions, reproductive health, breast health, uterine health, cardiovascular health and fertility health. With \$1T market size, there are opportunities for profound growth and innovation across the FemTech industry for women globally. There are innovations being created for these largest areas of women's health including medical devices, healthcare software, therapeutic drugs, consumer products, consumer services and consumer apps. Women's health is everyone's health, and this session will discuss the exciting innovations being created for the conditions affecting the largest groups of the woman population.

Biography:

Brittany Barreto, Co-Founder and Executive Director of FemTech Focus

Every day Dr. Barreto dedicates her work to advancing women's health by equipping founders, investing in ideas, and engaging key stakeholders to create better healthcare for women, females, and girls. She is an unconventional scientist, entrepreneur, and consultant that proves that anything is possible with hard work and heart. Her journey in women's health began as a distributor and educator for Athena's Home Novelties (SexTech). She has engaged in HHMI-funded research on potential correlations between Estrogen and Alzheimer's, which disproportionately affects women. While finishing her doctorate in Genetics, she founded a venture-backed startup, Pheramor, the world's first DNA-based dating app. The algorithm incorporated factors that increase sexual compatibility and fertility between matches. Dr. Barreto shifted into investments as Senior Venture Associate and launched Capital Factory's Gulf Coast branch. Dr. Barreto noticed how underserved the FemTech industry was and set out to bring awareness, resources, and capital to it via her new organization, FemTech Focus. Today she hosts the #1 FemTech podcast, produces data-driven industry reports, co-founded the 6th femtech fund, is recognized globally as a women's health leader, and is a highly sought-after speaker and industry consultant.



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September 19, 2022 | Online*

Camila Hamond

National Veterinary Services Laboratories, APHIS, U.S. Department of Agriculture, Ames, IA, U.S.A.

Animal and environmental sources of pathogenic *Leptospira*: a risk for public health

Leptospirosis is a neglected zoonotic disease of worldwide importance caused by pathogenic spirochetes belonging to the genus *Leptospira* and causes significant morbidity and mortality in both humans and domestic animals. Animals excrete these bacteria in their urine, resulting in environmental contamination and potentially leading to zoonotic transmission. This study showed the importance of using of lipL32 rt-PCR to identify animal carriers of *Leptospira* spp and environmental water samples contaminated with pathogenic *Leptospira* spp. A total of 747 kidney (471 rodents and 276 mongooses) and 279 cattle urine samples and 110 water samples were tested by lipL32 rt-PCR. Positive carrier status was identified in 186/747 (24.9%) kidney samples by lipL32 rt-PCR: 150 rodents and 36 mongooses and in 34/279 (12.2%) cattle urine, we also identified 5/110 (4.5%) water samples positive. These findings indicate that those animals are reservoir hosts of this zoonotic disease, showing how various species of animals play a role in the epidemiologic cycle of leptospirosis. As well as showing the potential risk for exposure and infection to humans, domestic animals, and other species. Water sources are also important sources of pathogenic *Leptospira* spp. Our findings suggest that those additional studies to isolate leptospirae from naturally infected animals is essential to better understand the epidemiology of leptospirosis and to update diagnostics and bacterin-based vaccines.

Biography:

Camila Hamond is currently an ORISE Postdoc Researcher at the National Veterinary Services Laboratories (NVSL), Animal and Plant Health Inspection Service (APHIS), United States Department of Agriculture (USDA), USA. She grew up in Brazil and received her Doctor of Veterinary Medicine from Estacio de Sa University in 2005, master's degree in microbiology (2010) and PhD in clinical and animal reproduction (2014) from Federal Fluminense University. While working on her PhD, she had the opportunity to perform an internship at the Biology of Spirochetes Unit at the Institute

Pasteur (Paris, France). During the past fifteen years, her studies and professional experience have focused on animal leptospirosis, working on its clinical aspects, and a high dedication to performing research in the laboratory. She received the 2019 Early Career Research award from the International Leptospirosis Society and in 2022 was named Honorary Diplomate of the American Veterinary Epidemiology Society.



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DusaneeSuwankhong,

Department of Public Health, Thaksin University, Thailand

Experiences of Injury among Vulnerable Muay Thai Fighter in Thailand

This study explored experiences of injuries risk and how this could affect lives of muay Thai fighters in Thailand. Qualitative study comprised in-depth interview and photovoice methods were employed among 43 muay Thai fighters across Thailand, to gain insight their experiences of injuries, ways of careseeking when they come to injury, its effect and how they overcome the difficulty. Thematic analytical method was used to analyse qualitative data. Most common injuries reported in this study were cut wound around eye brown and bruise of lower extremity parts whereas the serious injury was bone damage. Most tended not relying on a single healing practice. Rather they combine healing service of modern medical care and traditional healing forms to restore and improve ill health. Injuries affected lives of muay Thai fighters in many ways. They cannot follow training programs as usual and received no competition schedule organised by muay Thai promoters. Some has to resign from the profession. This situation decreases family income and increase life uncertainty of individuals, leading them vulnerable capacity. Relevant sectors should understand their experienced injuries and its affect, to develop more suitable support for individuals' contexts. It is hoped that it can maintain and improve wellbeing of muay Thai fighters.

Keywords: Experiences of injury, muay Thai fighter, vulnerable capacity, seeking care, Qualitative research.



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September 19, 2022 | Online

Giulia Simonetti

Department of Chemistry, Sapienza University of Rome, 00185 Rome, Italy

Environmental and health concerns in e-waste recycling plants: the VAISAL project

Waste of electrical and electronic equipment (WEEE) is considered a secondary raw material for the recovery of valuable components, such as precious metals, plastics, glass, etc. Nevertheless, it is characterized by the occurrence of toxic chemicals that can cause health adverse effects to workers involved in disposal operation. Risks associated are mostly due to waste disassembly and shredding steps because of formation of high amounts of dust on which harmful substances can be absorbed. The VAISAL Project deals with identifying potential toxic inorganic and organic compounds in some e-waste treatment plants and investigating their toxicity and their metabolic response. For this purpose, airborne particulate matter (PM) was collected in disassembly and shredding area of three plants where different WEEE are processed. The treated e-waste includes large household appliances, TV and monitors, small household appliances and gas discharge lamps. Organic compound determination and toxicological study were performed on samples collected with 14-stage cascade impactors. Samples for inorganic compound detection were collected with a 1-h resolution sampler in two dimensional fractions, fine (PM_{2.5}) and coarse (PM_{2.5-10}) and analyzed with PIXE (Particle-Induced X-ray Emission). 149 organic compounds, belonging to emerging (NBFR, OPE, PFAS) and non-emerging (PAH, nitro-PAH, oxy-PAH, PCB, PBDE) classes of pollutants and 23 inorganic elements were identified. In PM coarse fraction, OPE were the most abundant class of compounds; while, in the fine fraction, both OPE and NBFR showed significant concentrations. Among the inorganic compounds, Si, Zn, Pb were the more abundant elements. Toxicity of some target compounds was evaluated on hepatocytes, alveolar cells and keratinocytes. No evidence of cytotoxicity was observed for PM extracts. Metabolic degradation studies were carried out with human liver microsomes and human hepatocytes and some metabolites were identified. This work was supported by INAIL BRiC 2019 –ID13.

Biography:

Giulia Simonetti, Assistant professor.

Giulia Simonetti is Assistant professor at Sapienza University of Rome, Department of Chemistry. She received MD degree in Analytical Chemistry in 2014, from Sapienza University of Rome. She obtained Ph.D. degree in Chemical Science in 2017 from the same University. She was Post-doc Researcher from 2018/01/01 to 2019/12/31. She was Visiting Research Scholar in USA at University of Southern California, Los Angeles, working at the “Development and field evaluation of an online monitor for near-continuous measurement chromium in coarse airborne particulate matter (PM)”. Her research activity is addressed to the study of airborne organic and inorganic pollutants both to perform source apportionment studies and to investigate public and occupational health problems. She was scientific coordinator and responsible for the University of Rome Sapienza “Starting Grants for Young Researchers” and she was research team member of several Italian Project.



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Jake J. Wen

University of Texas Medical Branch, Galveston

Burn-induced cardiomyopathy: pathogenetic mechanisms

Burn injury induced heart dysfunction, but it's not known what pathogenesis as well as the molecular mechanisms are involved in the heart problems. Our omics studies including transcriptomics, proteomics, Reverse Phase Protein Array (RPPA) and microarray indicated the differentially expressed genes/proteins are related to NO-cGMP-PKG1 α pathway/The mitochondrial PARP1-POLG-mtDNA axis/NFE2L2-ARE pathway/PGC-1 α -SIRT-mt biogenesis pathway and so on. We have hypothesis that the pathways are potentially associated with burn injury. To test our hypothesis, we employed modern state-of-the- biotechnologies to examine the expression and functions of the pathways in burn-induced rat/mouse cardiac responses with/without specifically related activators/inhibitors. We also test our hypothesis by applied for transgenic/knockout mice. Our studies not only explore the potentially mechanisms, but also identify the drugs worthy of clinical translation such as Sildenafil, ZLN005, A769662, Oltipraz, SRT2183 Mito-TEMPO. PJ34 and E7449.

Biography:

I obtained my PhD degree in 2001 at Sichuan University (top research university in Southwest of China) and was immediately recruited as Associated Independent Investigator by Key Laboratory of Marine Biogenetic Resources, State Oceanic Administration (SOA), Xiamen, China due to my excellent achievements for my Ph.D. (4 peer-reviewed publications). I joined Dr. Nisha Garg's Lab in 2003 as a postdoctoral fellow to study parasite-induced cardiomyopathy. I have since been promoted to Research Scientist and an assistant professor because of my higher quality publications' record (28 papers and 45 meeting abstracts) from groundbreaking discoveries that oxidative stress was the major etiopathogenesis of Chagas Disease and evidenced a mitochondrial-related disease. I have been involved in basic scientific research for over 28 years and have studied in the field of heart for over 18 years. I have widespread experience in the fields of biochemistry, molecular biology, immunology, cell biology, mitochondrial biology, pathophysiology and animal models including mice, rats, rabbits, swine, sheep and cow. In the field of rodent heart/cardiomyocyte mitochondria, my studies on cardiac mitochondria have resulted in 39 peer-reviewed publications in higher-impact factor journals as a 1st author such as International Journal of Molecular Sciences, Journal of the American College of Surgeons, Journal of the American College of Cardiology (JACC), Antioxidants & Redox Signaling (ARS), Molecular and Cellular Proteomics (MCP) and PLoS Pathogen, and as a corresponding author i.e., J Am Coll Surg, Biomedicine, Innate Immun, Int. J. Mol. Sci., Cells, and 15 publications as co-authors. My current research interests are to understand 1) if burn injury induces cardiomyopathy by using our established rodent models in vivo and primary cardiomyocyte in vitro; 2) the mechanisms of cardiomyocyte response to burn injury via a) why does burn injure heart-, and cardiac-mitochondria by examining the omics including nano-LC MS/MS, Functional Proteomics Reverse Phase Protein Array and next gene sequences; b) what mitochondrial-related pathways will involve in burn injury induced heart dysfunction by identification of potential pathways related gene/proteins expression; and 3) screening the potentially therapeutic agents to protect heart function. I anticipate my research will provide insight into the mechanisms of heart dysfunction in cardiomyopathy development and identify the proteins, which specifically interact with heart response to burn injury.



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Brandon Lucke-Wold

University of Florida, USA

Respiratory Patterns in Neurological Injury. Pathophysiology, Ventilation management, and Future Innovations

Homeostatic mechanisms for respiratory control are diverse, sophisticated, and redundant, relying on both central and peripheral mechanisms. However, the orchestrated process of breathing under both physiological and pathologic conditions (i.e., stressors and/or illness) relies on intact neurological anatomy and physiology. The overarching goal is titrated ventilatory rate, depth, and rhythm to achieve proper gas exchange. The clinical syndrome known as Cushing's triad (intracranial hypertension, bradycardia, and irregular respirations) [1] is a classic teaching point of the devastating clinical consequences of neuro-deterioration. Furthermore, 60% of patients with acute brain damage showed abnormal breathing patterns including periodic, irregular, and rapid respirations [2]. This paper will summarize the neurological basis and regulation of breathing as well as pathologic perturbations of this process. We will also highlight ventilatory management clinicians may use as an adjunct to improve respiratory control in neurologic injury. Lastly, we will discuss both preclinical and proposed experimental treatment approaches for respiratory distress in the context of neurologic injury.

Biography:

Brandon Lucke-Wold was born and raised in Colorado Springs, CO. He graduated magna cum laude with a BS in Neuroscience and distinction in honors from Baylor University. He completed his MD/PhD, Master's in Clinical and Translational Research, and the Global Health Track at West Virginia University School of Medicine. His research focus was on traumatic brain injury, neurosurgical simulation, and stroke. At West Virginia University, he also served as a health coach for the Diabetes Prevention and Management program in Morgantown and Charleston, WV, which significantly improved health outcomes for participants. In addition to his research and public health projects, he is a co-founder of the biotechnology company Wright-Wold Scientific, the pharmaceutical company CTE cure, and was a science advocate on Capitol Hill through the Washington Fellow's program.

He has also served as president of the WVU chapters for the American Association of Pharmaceutical Scientists, Neurosurgery Interest group, and Erlenmeyer Initiative Entrepreneur group. In addition, he has served as vice president for the graduate student neuroscience interest group, Nu Rho Psi Honor Society, and medical students for global health. He was an active member of the Gold Humanism Honor Society and Alpha Omega Alpha Honor Society. He is currently a member of the UF House Staff Council and Positive Culture Committee. He is married to Noelle Lucke-Wold and has two children. As a family, they enjoy running with their dogs, rock climbing, and traveling. In his spare time, Brandon frequently runs half marathons and 10ks together with his wife. Brandon also enjoys reading and discussing philosophy and playing chess. He is currently a Pgy4 neurosurgery resident at University of Florida with R25 funding and plans to pursue endovascular training.



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September 19, 2022 | Online*

Min Yue

Zhejiang University, China

WGS bridges Public Health surveillance

Genomic sequencing and corresponding big-data analytic toolkits are beginning to make a significant impact on food safety by providing a more precise platform for pathogen characterization, tracking, and streamline therapeutical treatment suggestions. Here, we focus on an emerging multi-drug resistance clone ST45 in Salmonella in China and many other countries. By using the 1800 genomics data from local sequenced strains and global datasets, with a well-characterized meta-data, we use the core SNPs from these datasets to build a global galaxy server for pathogen tracking and found it is efficient for tracking the origin and other phenotypical results in the context of the global food supply chain. Interestingly, We also found most of the multi-drug resistant strains showed a significant association with domesticated animals, mainly bovine, which was indicated as a probable reservoir for the multi-drug-resistant clone. We also use Random Forest, a machine learning toolkits, to prioritize the SNPs to associate with the antimicrobial resistance patterns in all the 1800 strains, and develop a molecular qPCR test, using the eight SNP markers, to predict the antimicrobial resistance pattern based on the newly established genotypes. This approach could be used to guide the risk assessments for the biohazard, i.e. Salmonella, along the food transmission chain and ultimately provide rational antimicrobial options for the clinicians. Together, our big-data platform provides an efficient way for Salmonella tracking and antimicrobial resistance pattern forecasting.

Keywords: Salmonella, Genomic epidemiology, Antimicrobial resistance, Molecular diagnostics.

Biography:

Prof. Min Yue is interested in applying the integrative “Omics” approach to understand the functional diversity of bacterial virulence factors and mechanisms, particularly the impact of population genomics on diversity and evolution of Salmonella pathogenesis. He is also interested in adopting the above knowledge in the creation and development of predictive, preventive, or therapeutic measures. He has published over 70 SCI-index journal, including Nature communications. He serve as the Associate Editor for Frontiers in Microbiology, Frontiers in Veterinary Science, and editorial board for Foodborne Pathogens and Disease, Animal Diseases, Journal of Zhejiang University (Agriculture and Life Science)



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International Forum on Public Health and Health Care Management

September 19, 2022 | Online

Mirza Muhammad Faran Ashraf Bai

Hong Kong University of Science and Technology

Recent Advances of Magnetic Gold Hybrids and Nanocomposites, and Their Potential Biological Applications

Magnetic gold nanoparticles (mGNP) have become a great interest of research for nanomaterial scientists because of their significant magnetic and plasmonic properties applicable in biomedical applications. Various synthetic approaches and surface modification techniques have been used for mGNP including the most common being the coprecipitation, thermal decomposition, and microemulsion methods in addition to the Brust Schiffrin technique, which involves the reduction of metal precursors in a two-phase system (water and toluene) in the presence of alkanethiol. The hybrid magnetic–plasmonic nanoparticles based on iron core and gold shell are being considered as potential theranostic agents. In this critical review, in addition to future works, we have summarized recent developments for synthesis and surface modification of mGNP with their applications in modern biomedical science such as drug and gene delivery, bioimaging, biosensing, and neuro-regeneration, neuro-degenerative and arthritic disorders. I shall discuss the techniques and biological applications of mGNP majorly based on my own research.

Keywords:

nanohybrids; magnetic gold nanoparticles; nanocomposites; surface functionalization; core-shell nanocomposites; magnetic-plasmonic nanoparticles; biological applications.

Biography:

My research work mainly focuses on the construction and function of DNA nanomachines, which are cutting edge and challenging topics. I designed and constructed unique DNA molecular tension probes using a short circular DNA nanotechnology technique and functionalized these probes with fluorophores, gold nanoparticles, small molecular drugs, and peptide ligands. I achieved nano-specific precision in organizing plasmonic nanoparticles on the nano DNA frameworks to achieve plasmon resonance effects. My work on the DNA nanomachines provided an efficient mechanism of fluorescence resonance energy transfer that realizes the bio-imaging, and detection of biological events, and functions of the biomolecules. I have been working on multilayered hybrid magnetic nanoparticles for applications in nanomedicine from last two years.



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*International Forum on Public Health and Health Care Management
September 19, 2022 | Online*

Rosenfeld Yaakov

University of Haifa, Israel

Violence of physicians against physicians – really?

Background: Violence of patients against physicians is a wrongful phenomenon that earns headlines every once and a while. At the same time under our RADAR another wrongful phenomenon, with much less public attention often take place, i.e., workplace harassment (WH). WH can lead to disastrous results on both individual and organizational level. It is estimated that 10% of adult suicide acts are related to WH.

Purpose: The purpose of this study was to delineate a preliminary picture of the scope and severity of this phenomenon in the Israeli Medical System.

Methods: The study was conducted at the annual national convention of physicians' unions representatives. The issue of WH was presented to the attendants of the convention by an industrial psychologist, specialized in the subject. They were later asked to fill a self-administered questionnaire in order to evaluate to what extent they were exposed to that kind of behavior.

Results: 113 delegates participated in the convention. 80% of the participants were men, and 20% were women. 88 [78%] responded to the questionnaire. Amongst them 85% mentioned that they were exposed to, or witnessed WH. Management response oftentimes was ignoring these incidences, or even supporting the offender, in a way that worsened the victim's situation. Most of the participants thought that WH has a detrimental effect on quality of care and patients' safety.

Conclusion: WH is a common and severe phenomenon in the Israeli Health care System.

Discussion

A systematic and effective dealing with WH is difficult because of several reasons:

1. There is no clear definition of what is considered WH as opposed to legitimate assertive management.
2. Oftentimes offenders drill their way to the highest levels of the organizational level, thus the victim has no-one to turn to for support.
3. There is a concern that creating a system to manage employees complains will cause a flood of unjustified complains of unsatisfied employees to revenge their superior or the organization.
4. The lack of specific legislation to deal with this issue.
5. Thus far though, Israeli Medical Association, issued a declaration of intolerance towards WH, being the first, and so far the only, national organization to take such a step.



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*International Forum on Public Health and Health Care Management
September 19, 2022 | Online*

Biography:

Dr. Rosenfeld is an Israeli physician, Board Certified in Obstetrics and Gynecology, and in Health Care Management. Dr. Rosenfeld is a graduate of the Technion – Institute of technology [MD – Cum laude] and of Harvard School of Public Health [MPH]. He also has a Diploma from Tel-Aviv University – School of Continued Medical Education, in Obstetrics & Gynecology [Cum-laude]. Dr Rosenfeld was involved in the development and implementation of a pre-authorization system for IVF treatments in General Health Services – the largest HMO of the state. The system was later adopted by other three HMOs of the country. Out-come studies and Cost-Effectiveness analyses enabled management to re-direct patients to units with the highest success rates, and lowest costs. Dr. Rosenfeld was also involved in the development and implementation of the program to diagnose and manage women with Post-Partum-Depression for more than 20 years now. He was also involved in academic research in this field, exploring the effectiveness of Art Therapy, with outstanding results. Dr. Rosenfeld was a teacher and lecturer in the School of Public Health at Haifa University for fifteen years, three of which as the Head of Health Care Management Program. His last appointment was Acting Deputy Manager of Poriya-Padeh Hospital, near Tiberias.



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*International Forum on Public Health and Health Care Management
September 19, 2022 | Online*

Sarah Archer

Indiana University, USA

Recognizing and Addressing Moral Injury

Purpose: We will discuss Moral Injury to help us:

- Better understand how to help to prevent, reduce, and/or mitigate service member's or veteran's risk of Moral Injury before they encounter traumatic situations that may contribute to Moral Injury. This can help us help service members and veterans to be better prepared for and more resilient to the risks of Moral Injury that they have or will experience these risks.
- Provide opportunities for service members to debrief after they experience a potentially morally injurious event to recognize and externalize their moral responses to what they have done, have not done, and/or have witnessed. Timely externalization and nonjudgmental and supportive listening to the service member can help prevent or at least reduce their risk of developing Moral Injury caused by morally injurious experiences.

Contents: Definitions of Moral Injury (MI), Comparison of Moral Injury and Post Traumatic Stress Disorder (PTSD), Causes of MI, Symptoms of MI, Treatment of MI, References.

Definition of Moral Injury: is an evolving psychological construct, so no definitive definition of Moral injury has yet been adopted by the American Psychological Association. The following are descriptive of Moral Injury.

- Moral Injury results from damage done to one's conscience or moral compass by potentially morally injurious situations including when the person perpetrates, witnesses, and/or fails to prevent acts that transgress his/her moral values or codes of conduct about what is right and what is wrong
- Also occurs when a person perceives betrayal of what is right by people in legitimate authority in a high-stakes situations
- In the military context, moral injury refers to the emotional and spiritual impact of participating in, witnessing, and/or being victims of actions or behaviors that violate a service member's or veteran's moral values and behavioral expectations of self and others although it is as old as war
- Is a deep wound that pierces a person's identity, sense of morality and social relationships
- Is an internal wound that kills from the inside out
- Appears to be more prevalent than PTSD and is often overlooked or misdiagnosed
- Moral Injury and PTSD can both occur in the same individual simultaneously
- Is disruption of an individual's confidence and expectations about one's own or others' motivation or capacity to behave in a just or ethical manner
- Is called by some the signature mental, moral, and emotional risk for soldiers in 21st Century.
- Follows perpetrating, failing to prevent, failing to bear witness to, or learning about acts that transgress one's own deeply held moral beliefs and expectations
- Although Moral Injury is as old as war and killing, we are only beginning to understand Moral Injury is to some extent inevitable whenever killing occurs. "In war, the dead go dark in death; the killers go dark in



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International Forum on Public Health and Health Care Management
September 19, 2022 | Online

life”

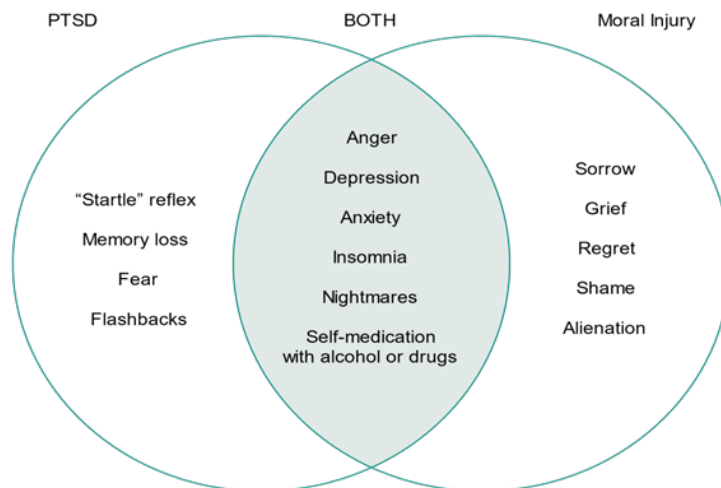
- There is no threshold or time frame for developing Moral Injury; at any given time, a service member or veteran may have no symptoms, can develop mild symptoms, or have extreme manifestations of Moral Injury

What is Missed by Current Conceptions of PTSD?

	PTSD	Moral Injury
Triggering event (A1 Criterion)	Actual or threatened death or serious injury	Acts that violate deeply held moral values
Individual’s role at the time event	Victim or witness	Perpetrator, victim, or witness
Predominant painful emotion Reexperiencing (B criterion)?	Fear, horror, helplessness Yes	Guilt, shame, anger Yes
Avoidance or numbing (C criterion)	Yes	Yes
Physiological arousal level (D Criterion)	Yes	No
What necessarily is lost	Safety	Trust

Litz, B. T., Stein, N., Delaney, E., Leibowitz, L., Nash, W. P., Silva, C., & Maguen, S. (2009). Moral injury and moral repair in war veterans: A preliminary model and intervention strategy. *Clinical Psychology Review*, 29, 695–706. doi:10.1016/j.cpr.2009.07.003

The definition of Post-Traumatic Stress Disorder doesn’t cover all the symptoms of moral injury which is the lasting wounds to the soul caused by participation in morally ambiguous combat or other experiences.



Source: <http://projects.huffingtonpost.com/moral-injur>



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International Forum on Public Health and Health Care Management

September 19, 2022 | Online

Causes of Moral Injury include:

- Committing transgressions which shatter moral and ethical expectations that are rooted in religious or spiritual beliefs, culture-based norms, organizational ethics, and group-based rules about fairness, the value of life, and right and wrong
- Unintentional errors leading to killing or injuring others, especially non-combatants/children.
- Using deadly force in combat that causes harm or death of civilians even when it is within ROE and there are no feasible alternatives to the use of lethal force
- failing to provide medical aid or other assistance to an injured service member or civilian
- Survivor's guilt—feeling guilty for being alive or unhurt after an event where comrades were killed or injured; often includes feelings of wrong-doing and/or guilt for failure to help others, even if giving help was impossible. “Why am I alive and they are dead?”
- Returning home and hearing about executions of cooperating local national facilitators
- Failing to report knowledge of sexual assault or other injury against oneself, a fellow service member, or civilians
- Following orders that were perceived to be illegal, immoral, and/or against the ROE or Geneva Conventions and the Laws of Armed Conflict (LOAC). This also adversely affects respect for and confidence in leader's moral authority and legitimacy to lead
- A change in belief about the necessity or justification for war during or after one's service
- Coming to question whether any war is a “just war”
- Emotions felt and questioning by service members to war's inevitable ethical and moral challenges
- Sending comrades on missions where many of them were hurt and killed
- Betrayal on a personal, leadership, and/or on an organizational level
- Failure to live up to one's own moral standards
- Disproportionate violence such as mistreatment or revenge against enemy combatants, prisoners of war, detainees, civilians, and/or other service members
- Destruction of civilian property or assault on non-combatants, especially women, children, and the elderly, that are perceived as unnecessary; realizing the “criminality of war”
- We train our military personnel to kill before they go to war; we seldom untrain them before they go back to civilian society. Part of that training must be how to cope with Moral Injury
- Inability to forgive oneself and others for having been an agent of killing
- Failing to prevent death or injury is related more strongly than other roles of general psychiatric distress and suicide attempts
- Within-service violence such as sexual assault, trauma, friendly fire, or fragging.
- Cognitions related to hindsight bias and wrongdoing among those endorsing atrocities

Symptoms of moral injury:

- Symptoms may not present for days or years after an incident
- Guilt—most significant predictor of suicide and person's preoccupation with suicide
- Shame, humiliation, loss of face, mortification
- Anxiety about possible consequences of actions
- Anger about betrayal-based moral injuries, such as leaving buddies behind
- Anomie—alienation, purposelessness, social instability resulting from a breakdown of values
- Withdrawal and self-condemnation
- Self-harming, including self-cutting, thoughts about suicidal and suicide especially by OIF and



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International Forum on Public Health and Health Care Management

September 19, 2022 | Online

ORF veterans, as well as veterans of the wars in Vietnam, and Syria, where many feel we abandoned and left our allies behind.

- Survivor's guilt—feeling guilty for being alive or unhurt after an event where comrades were killed or injured; often includes feelings of wrong-doing and/or guilt for failure to help others, even if giving help was impossible. “Why am I alive and they are dead?”
- Self-handicapping and harmful behaviors, such as drug and alcohol abuse, and cutting
- Self-sabotaging relationships and other activities
- Self-deprecation and loss of self-esteem “I’m no good/useless/worthless”
- Depression and other psychological problems
- More guilt and shame-based reactions than fear-based
- Inability to forgive oneself for actions committed or omitted or permitted/enabled
- Demoralization
- Debility that prevents living full, healthy lives
- Responses that impinge on family and community life
- Feelings of betrayal following a transgression of deeply held beliefs resulting from actions taken, not taken or prevented, and/or witnessed in combat
- Inability to make difficult decisions
- Acts of avoidance, intrusive thoughts, numbness, and loss of interest in activities
- Inability to trust self, others, superiors, relatives, and institutions
- Problems coping effectively with stress
- Spiritual/existential issues—loss of faith, “there is no God”
- Inability to forgive oneself for committed or omitted
- Guilt-based rather than fear-based reactions
- Violent behaviors including domestic abuse and self-abuse
- Eating disorders
- Frequent physical symptoms include: Hypertension and obesity; other physical abnormalities specific to individuals are also found on physical examination. Therefore, all service members with Moral Injury and/or PTSD should also have a comprehensive physical work up
- Increasing incidence of suicides if the service members do not receive appropriate help.

Examples of Evolving Treatment for Moral Injury:

- Moral injury often overlaps with PTSD, but is a different phenomenon. Because moral injury is an evolving phenomenon, effective therapies are also evolving.
- Moral Injury requires different treatment approaches than PTSD.
- Treatment should begin as soon as possible after the service member is exposed to potential sources of Moral Injury.
- Six session Impact of Killing in War plan that includes education about the interplay of biopsychological aspects of killing in war (KIW); identifying meaningful elements and cognitive therapy related to KIW; spiritual or faith-based religious practices for self-forgiveness; writing forgiveness letters and planning actions to make amends or atonement
- Adaptive Disclosure is based in cognitive behavioral therapy and uses phenomenology of military service in war to address difficulties such as Moral Injury and traumatic loss not addressed in evidence-based treatments. Includes exposure to uncover core features and operational trauma as a means of articulating these events' meaning and implications and guiding the service member or veteran through dialogue with a forgiving and compassionate moral authority about the transgression. The service members discuss the



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International Forum on Public Health and Health Care Management

September 19, 2022 | Online

cause of their Moral Injury with a trusted non-judgmental listener who responds with compassion not condemnation. This helps those with Moral Injury to develop self-compassion in addition to accepting their past actions. Doing this in groups helps service members realize that she/he is not alone or the only one and fosters peer support.

- Extent of Moral Injury must be defined by each individual according to his/her beliefs and needs.
- Individual and/or group therapy with non-judgmental listening and support encourages externalization and coping
- Exercise, especially strenuous exercise outdoors.
- Art, music, poetry—any form of creative self-expression.
- Spiritual discussions and direction with those who are religious.
- Help to accept that although he/she has done something difficult to reconcile or forgive, the act does not have influence on rest of his/her life.
- Group therapy to enable service members and veterans to communicate with others with similar experiences and to be able to verbalize their emotions and pain. San Diego Naval Medical Center uses this therapy technique in its Moral Injury/moral repair program where participants who have become comfortable with each other tell their stories to non-judgmental peers. This helps participants accept their wrong doing but also to understand and learn to deal with their morally wrong actions.
- Moral injury/Moral Repair and Adaptive Disclosure are used to treat service members facing redeployment to enable them to continue healing from Moral Injury on their own.
- Encourage person effort for self-forgiveness to help reestablish personal worth as a human being. This requires person effort to help oneself through helping others—community service projects, volunteering to help others, and any acts of kindness. This helps the person to rebuild self-esteem and feelings of self-worth as a contributing member of society. Helping others, helps us.



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*International Forum on Public Health and Health Care Management
September 19, 2022 | Online*

Sizett Shahbarat

University of Haifa, Israel

The added value of Y-Micro-Deletion test In men with abnormal sperm count

Background: Infertility is defined as the inability to conceive after 12 months of unprotected sexual relationships. The overall rate of infertility, in the reproductive age, is about 15%. In 30-40% of cases, men are the source of the problem; sometimes it is possible to identify the problem, especially when the cause is genetic (in 25% of the cases), as in Klinefelter's syndrome; however, sometimes the genetic defect is minor, which makes it impossible to identify by regular tests. For example, Y-Micro-Deletion (YMD), test that may have a central prognostic value, in determining the treatment plan for conceiving, or otherwise recommending a sperm donor or for adoption. In the current literature, the effectiveness of performing YMD tests is widely described. However, to date, to the best of our knowledge, it is not known to what extent the testis performed according to the indications described in the literature. Also, the comparison between a treatment strategy that includes YMD test with a treatment strategy that does not include the test in men with abnormal sperm count is not emphasized in the literature.

Purpose: Determining the prevalence of infertility in men which (NOA/SO), in the Israeli population in general, and among men in the North in particular. A secondary purpose is to evaluate the prevalence of performing YMD test according to the indications in the relevant literature.

Methods: Data used in this study was extracted from Ben-Zion Hospital fertility clinic, archive, from December 2014, till December 2015. A comparison was made between pregnancy rates and the birth of a healthy infant in the group of patients who underwent the genetic diagnosis of YMD before the Testicular Sperm Extraction (TESE) and Intra Cytoplasmic Sperm Injection (ICSI + IVF) procedure, and among the group of patients who did not undergo the genetic examination of YMD before TESE and ICSI + IVF.

Results: The general prevalence of infertility in the male population were 33%, respectively, to the overall incidence. Of these men, 38% had SO and 8% NOA.

87% NOA patients, who undergo the YMD test, with average results, were able to conceive five healthy, donor sperm, infants.

From SO group 73% did not undergo any YMD test. The rest of them, undergone YMD testing, with average results, all were treated. However, only 21% infants were successfully conceived.

In conclusion: anyone who was a candidate for the TESE technique (especially in the NOA group), underwent the YMD test to predict the likelihood of the genetic defect and its transmission to the offspring, and to assess the chances of finding sperm in the TESE procedure. that's the good side. The less fortunate side is that all



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International Forum on Public Health and Health Care Management

September 19, 2022 | Online

those who had a minority in the sperm cells, SO group did not perform an YMD test, contrary to the recommendations of the world.

Biography:

Mrs Shahbarat graduated from the Technion - Israel institute of Technology -Medical Laboratory Sciences (B.Sc), and holds a master's degree in research from the Faculty of special welfare and health science, School of public health University of Haifa.

Mrs Shahbarat specializes in, among other, Molecular biology and Molecular genetics.

Also, Mrs Shahbarat plays an important role in the establishment and conducting several advanced genetic methods of Next-Generation-Sequencing (NGS) and deals mainly with research in the field of embryonic and genetic mutations.



PublicHealthForum2022

*International Forum on Public Health and Health Care Management
September 19, 2022 | Online*

Dr. Steven Sek-yum Ngai

Department of Social Work, The Chinese University of Hong Kong

Relationship between Group Interaction, Emotional Support Reception and Provision, and Psychological Well-being among Young Patients with Chronic Health Conditions

The present study seeks to investigate the dynamic mechanism of how psychological well-being improves through mutual aid groups of young patients with chronic health conditions. In connection with several existing theories (i.e., the helper therapy principle, equity theory, the norm of reciprocity, and the concept of communal relationships), this study aims to: 1) evaluate whether emotional support exchanges (i.e., emotional support reception and provision) mediate the relationship between group interaction and psychological well-being; and 2) compare three potential underlying mechanisms—the mediating role of emotional support provision, equitable reciprocity (i.e., a balance of receiving and providing emotional support, where no party over-benefits or under-benefits), and sequential reciprocity (i.e., repaying the helper or a third party in the future after receiving help)—through a path analysis model. A stratified random sampling procedure with chronic health conditions as the stratifying criterion was used to recruit 391 individuals aged 12–45 years from mutual aid groups in Hong Kong, who completed both the baseline and follow-up surveys over a 12-month interval. The results of the path model revealed significant mediating roles of emotional support provision and sequential reciprocity, not equitable reciprocity. The present study offers theoretical and practical implications for promoting the psychological well-being of young patients with chronic health conditions.

Keywords

Mutual aid group; emotional support reception/provision; psychological well-being; young patients; chronic health conditions

Biography:

Dr. Steven Sek-yum Ngai is Professor of the Department of Social Work at The Chinese University of Hong Kong (CUHK). His current research interests are in the areas of career and life development of disadvantaged youth, mutual aid and youth empowerment, and service-learning and leadership development. In total, he has published over 200 articles on these areas, including 160 refereed publications in journals, books, and conference proceedings. Since 2000, he has conducted 34 research projects. Among them, four are funded by the Research Grants Council (RGC) of Hong Kong and another 25 commissioned by government bureaus/nongovernmental organizations in Hong Kong or Macau. Given his ongoing efforts and contributions in teaching and research, he received CUHK Faculty of Social Science Exemplary Teaching Award in 2000, CUHK Research Excellence Award in 2011, and CUHK University Education Award in 2014.



PublicHealthForum2022

*International Forum on Public Health and Health Care Management
September 19, 2022 | Online*

Tesfaye Dagne

Ethiopian Public Health Institute, Ethiopia

Reducing Road Traffic Accident in Low and Middle Income

Background: The number of roads traffic death remains unacceptably high. A Global estimate shows that about 1.35 million people die and millions are seriously injured by a road traffic accident. A road traffic accident is the 8th leading cause of death among people of all ages and it is the leading cause of death for children and young adults of 5-29 years of age. Such disastrous problems are worsening with the increasing number of vehicles.

Objective: To summarize the best available evidence on interventions that can reduce road traffic accidents.

Method: A rapid evidence synthesis approach adapted from the SURE Rapid Response Service was applied to search, appraise and summarize the best available evidence on effective intervention in reducing road traffic injury. To answer the question under review we searched for relevant studies from databases including PubMed, the Cochrane Library, TRANSPORT, Health system evidence, Epistemonikos, and SUPPORT summary. The following key terms were used for searching: Road traffic accident, RTA, Injury, Reduc*, Prevent*, Minimiz*, "Low and middle-income country", LMIC. We found 18 articles through a search of different databases mentioned above. After screening for the titles and abstracts of the articles, four of them which satisfy the inclusion criteria were included in the final review. Then we appraised and graded the methodological quality of systematic reviews that are deemed to be highly relevant using AMSTAR

Finding: The identified interventions to reduce road traffic accidents were Legislation and enforcement, Public Awareness/Education, Speed Control/ rumble strips, Road Improvement, Mandatory motorcycle helmet, graduated driver license (GDL), Street lighting.

Legislation and enforcement: Legislation focusing on mandatory motorcycle helmet usage, banning cellular phone usage when driving, seat belt laws, decreasing the legal blood alcohol content (BAC) level from 0.06 g/L to 0.02 g/L bring the best result where enforcement is there.

Public Awareness/Education: focusing on seat belt use, child restraint use, educational training in health centers and schools/universities, and public awareness with media through the distribution of videos, posters/souvenirs, and pamphlets are effective in the short run.

Speed Control: through traffic calming bumps, or speed bumps, rumbled strips are effective in reducing accidents and fatality.

Mandatory motorcycle helmet: Is associated with reduction in mortality.

Graduated driver's license (GDL): reduce road traffic injury by 19%.

Street lighting: is a low-cost intervention which may reduce road traffic accidents.

Key words: Reducing, RTA, Road traffic accident, Evidence synthesis, evidence summary, Rapid Review.

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