



THE ATHENS INSTITUTE FOR EDUCATION AND RESEARCH

Abstract Book

**11th Annual International Conference on
Pharmacy and Pharmaceutical Sciences
6-9 May 2024, Athens, Greece**

**Edited by
George Zahariadis & Olga Gkounta**

2024

Abstracts
11th Annual International
Conference on Pharmacy and
Pharmaceutical Sciences
6-9 May 2024, Athens, Greece

Edited by
George Zahariadis & Olga Gkounta

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Preface

This book includes the abstracts of all the papers presented at the 11th Annual International Conference on Pharmacy and Pharmaceutical Sciences (6-9 May 2024), organized by the Athens Institute for Education and Research (ATINER).

A full conference program can be found before the relevant abstracts. In accordance with ATINER's Publication Policy, the papers presented during this conference will be considered for inclusion in one of ATINER's many publications only after a blind peer review process.

The purpose of this abstract book is to provide members of ATINER and other academics around the world with a resource through which they can discover colleagues and additional research relevant to their own work. This purpose is in congruence with the overall mission of the association. ATINER was established in 1995 as an independent academic organization with the mission to become a forum where academics and researchers from all over the world can meet to exchange ideas on their research and consider the future developments of their fields of study.

To facilitate the communication, a new references section includes all the abstract books published as part of this conference (Table 1). I invite the readers to access these abstract books –these are available for free– and compare how the themes of the conference have evolved over the years. According to ATINER's mission, the presenters in these conferences are coming from many different countries, presenting various topics.

Table 1. *Publication of Books of Abstracts of Proceedings, 2014-2024*

Year	Papers	Countries	References
2024	32	19	Zahariadis and Gkounta (2024)
2023	31	16	Boutsioli and Gkounta (2023)
2022	21	11	Boutsioli and Gkounta (2022)
2021	19	9	Papanikos (2021)
2020	22	12	Papanikos (2020)
2019	27	16	Papanikos (2019)
2018	33	16	Papanikos (2018)
2017	39	17	Papanikos (2017)
2016	35	18	Papanikos (2016)
2015	37	19	Papanikos (2015)
2014	33	15	Papanikos (2014)

It is our hope that through ATINER's conferences and publications, Athens will become a place where academics and researchers from all over the world can regularly meet to discuss the developments of their disciplines and present their work. Since 1995, ATINER has organized more than 400 international conferences and has published over 200 books. Academically, the institute is organized into 6 divisions and 37 units. Each unit organizes at least one annual conference and undertakes various small and large research projects.

For each of these events, the involvement of multiple parties is crucial. I would like to thank all the participants, the members of the organizing and academic committees, and most importantly the administration staff of ATINER for putting this conference and its subsequent publications together. Specific individuals are listed on the following page.

Gregory T. Papanikos
President

Editors' Note

These abstracts provide a vital means to the dissemination of scholarly inquiry in the field of Pharmacy and Pharmaceutical Sciences. The breadth and depth of research approaches and topics represented in this book underscores the diversity of the conference.

ATINER's mission is to bring together academics from all corners of the world in order to engage with each other, brainstorm, exchange ideas, be inspired by one another, and once they are back in their institutions and countries to implement what they have acquired. The 11th Annual International Conference on Pharmacy and Pharmaceutical Sciences accomplished this goal by bringing together academics and scholars from 19 different countries (Australia, Brazil, Canada, Georgia, Germany, Hong Kong, Iraq, Israel, Italy, Kuwait, Nepal, New Zealand, Norway, Poland, Saudi Arabia, Spain, Switzerland, UK, USA), which brought in the conference the perspectives of many different country approaches and realities in the field.

Publishing this book can help that spirit of engaged scholarship continue into the future. With our joint efforts, the next editions of this conference will be even better. We hope that this abstract book as a whole will be both of interest and of value to the reading audience.

George Zahariadis & Olga Gkounta
Editors

11th Annual International Conference on Pharmacy and Pharmaceutical Sciences, 6-9 May 2024, Athens, Greece

Organizing & Scientific Committee

All ATINER's conferences are organized by the Academic Council. This conference has been organized with the assistance of the following academic members of ATINER, who contributed by reviewing the submitted abstracts and papers.

1. Gregory T. Papanikos, President, ATINER & Honorary Professor, University of Stirling, U.K.
2. Adel Zeglam, Deputy Director, Health & Medical Sciences Division, ATINER and Consultant Neurodevelopment Pediatrician & Professor of Pediatric and Child Health, Tripoli University Hospital & Faculty of Medicine Tripoli University, Libya.
3. Robert Sindelar, Head, Pharmaceutical Unit, ATINER & Professor and Dean Emeritus Faculty of Pharmaceutical Sciences, The University of British Columbia, Canada.

FINAL CONFERENCE PROGRAM

11th Annual International Conference on Pharmacy and Pharmaceutical Sciences, 6-9 May 2024, Athens, Greece

PROGRAM

Monday 6 May 2024

08.30-09.15

Registration

09:15-10:00

Opening and Welcoming Remarks:

- o Gregory T. Papanikos, President, ATINER.

10:00-11:30 Session 1

Moderator: George Zahariadis, Director, Health & Medical Sciences Division, ATINER & Associate Professor, Faculty of Medicine, Memorial University of Newfoundland, Canada.

1. **Beat Ernst**, Emeritus Professor, Molecular Pharmacy Group, University of Basel, Switzerland.
Title: A New Option for Treatment of Urinary Tract Infections (UTI).
2. **Parisa Gazerani**, Professor, Oslo Metropolitan University, Norway.
Title: Sexually Distinct Responses to Abortive and Prophylactic Pharmacotherapy of Migraine.
3. **Ludmil Benov**, Professor, Kuwait University, Kuwait.
Title: Development of Efficient Photosensitizers for Photodynamic Therapy.
4. **Najwa Alharbi**, Associate Professor, King Abdulaziz University, Saudi Arabia.
Title: Characterization of a Multidrug-Resistant Escherichia Coli Lytic Bacteriophage Isolate as a Safe Alternative to Synthetic Antibiotics.

11:30-13:00 Session 2

Moderator: Ludmil Benov, Professor, Kuwait University, Kuwait.

1. **Richard Yi Tsun Kao**, Associate Professor, The University of Hong Kong, Hong Kong.
Title: Treating Staphylococcus Aureus Infections Using Novel Anti-Virulence Approach.
2. **Khatia Mikeladze**, PhD Student, Ivane Javakhishvili Tbilisi State University, Georgia.
Nino Gachechiladze, Associate Professor, Ivane Javakhishvili Tbilisi State University, Georgia.
Marina Tediashvili, Professor, Head of the Laboratory for Microbial Ecology, G. Eliava Institute of Bacteriophages, Microbiology and Virology, Georgia.
Nino Chikadze, Head of Immunology and Microbiology Laboratory, Ivane Javakhishvili Tbilisi State University, Georgia.
Title: Bacterial Microflora in CLL Patients: Exploring Opportunities for alternatives to Antimicrobial Drugs.
3. **Ana Claudia Sueiro**, PhD Candidate, Universidade Estadual de Campinas (UNICAMP), Brazil.
Priscila Gava Mazzola, Professor, Universidade Estadual de Campinas (UNICAMP), Brazil.
Title: Development and Evaluation of Naratriptan-Loaded Microemulsions for Enhanced Transdermal Migraine Treatment.
4. **Anke de Haas**, Senior Scientist Medical Affairs, Haleon plc, Germany.
Title: Real World Evidence Study: Diclofenac Gel to treat Musculoskeletal Pain.

13:00-14:30 Session 3

Moderator: Beat Ernst, Emeritus Professor, Molecular Pharmacy Group, University of Basel, Switzerland.

1. **Bertha Ochieng**, Professor, De Montfort University, UK.
Carol Chamley, Researcher, De Montfort University, UK.

Title: Exploring the Impact of Dance Activities on the Educational Aspirations and Wellbeing of Young Girls in East Midlands, UK.

2. **Lu Qi**, Professor, Tulane University, USA.
Title: Adding Salt to Foods and Type 2 Diabetes. (DIA)
3. **Siddharth Gupta**, Professor, Kathmandu University, Nepal.
Title: A Research Study on Tobacco Associated with Potentially Malignant Disorders Prevalent in Oral Mucosa of Lumbini Province/District Rupandehi Population of Nepal.
4. **Ali Alhaqwi**, Consultant, King Abdulaziz Medical City, Ministry of National Guard Health Affairs, Saudi Arabia.
Ibrahim Almesned, Consultant, King Abdulaziz Medical City, Saudi Arabia.
Abdulrahman Alaql, Consultant, King Abdulaziz Medical City, Saudi Arabia.
Title: Pattern and Determinants of Physical Activity among Adults in a Saudi Community.

14:30-15:30 Lunch

15:30-17:00 Session 4 – Special Session on “Human Rights and Ethics”

Moderator: Bill Ikonopoulou, Barrister, Ikonopoulou Legal, Australia.

1. **Gregory T. Papanikos**, President, ATINER.
Title: Are Human Rights a Luxury or a Normal Good?
2. **Assaf Meydani**, Professor, The Academic College of Tel Aviv-Yaffo, Israel.
Title: Human Rights between Non-governability and Political Culture – A New Paradigm in Human Rights Analysis.
3. ***Emmanuel Nartey**, Senior Lecturer, Bath Spa University, UK.
Title: Corporate Human Rights Abuses and Environmental Damage: Towards a Comprehensive Remedy Framework.
4. **Neville Rochow KC, Barrister**, Adelaide Law School, University of Adelaide, Australia.
Title: The Constitutional Role of Human Dignity in Promoting Ethical Outcomes in The Law.

17:00-20:00 Session 5

Old and New-An Educational Urban Walk

The urban walk ticket is not included as part of your registration fee. It includes transportation costs and the cost to enter the Parthenon and the other monuments on the Acropolis Hill. The urban walk tour includes the broader area of Athens. Among other sites, it includes: Zappion, Syntagma Square, Temple of Olympian Zeus, Ancient Roman Agora and on Acropolis Hill: the Propylaea, the Temple of Athena Nike, the Erechtheion, and the Parthenon. The program of the tour may be adjusted, if there is a need beyond our control. This is a private event organized by ATINER exclusively for the conference participants.

20:30-22:00

Dinner

Tuesday 7 May 2024

09:00-10:30 Session 6

Moderator: Kostas Spyropoulos (ATINER Administration).

1. **Franz-Josef Meyer-Almes**, Professor, Hochschule Darmstadt, Germany.
Title: Identification of Unprecedented Binding Sites for Covalent HDAC8 Inhibitors.
2. **Fatima Regina Silva**, Full Professor, Federal University of Santa Catarina, Brazil.
Ana Karla Bittencourt Mendes, Researcher, Federal University of Santa Catarina, Brazil.
Graziãni Candiotto, Professor, Federal University of Rio de Janeiro, Brazil.
Valdelúcia Maria Alves de Souza Grinevicius, Professor, Federal University of Santa Catarina, Brazil.
Fernanda Carvalho Cavalari, Professor, Federal University of Santa Catarina, Brazil.
Margarida Gaspar, Professor, Federal University of Santa Catarina, Brazil.

Rozangela Curi Pedrosa, Professor, Federal University of Santa Catarina, Brazil.
Title: Prediction of 1 α ,25-Dihydroxyvitamin D₃ and Its Isomers Binding to ER α and PKC Triggering Downstream Survival Signaling of β -cells: A Combined Experimental and in silico Study.

3. **Greta Camilla Magnano**, Postdoctoral Fellow, University of Trieste, Italy.
Title: Local Delivery of Sildenafil Citrate: Innovative Models for Testing New Topical Formulations. (Tuesday)
4. **Michal Meisner**, PhD Student, Medical University of Silesia in Katowice, Poland.
Beata Szulc-Musioł, Professor, Medical University of Silesia in Katowice, Poland.
Beata Sarecka-Hujar, Professor, Medical University of Silesia in Katowice, Poland.
Title: Evaluation of Photostability of Clindamycin Tablets Using Hemispherical Directional Reflectance Analysis.

10:30-12:00 Session 7

Moderator: Rosemarie Wright-Pascoe Williams, Professor, The University of the West Indies, Mona, Jamaica.

1. **Theodore Trafalis**, Professor, University of Oklahoma, USA.
Title: Privacy in Health Data: A Federated Machine Learning Approach.
2. **Mohemid Al-Jebouri**, Professor/Consultant, Al-Qalam University College, Iraq.
Title: Modelling of Infectious Diseases and Cancers under Wars and Pollution Impacts in Iraq with Reference to a Novel Mathematical Model and Literature Review.

12:00-13:30 Session 8

Moderator: Olga Gkounta, Researcher, ATINER.

1. **Enrique Jesus Saez Alvarez**, Professor, Universidad Católica de Valencia, Spain.
Title: Do Nursing Studies Modulate the Fear of Death in Nursing Students? A Within-Subjects Study.
2. **Sarah Weaver**, Senior Lecturer, University of Worcester, UK.
Title: Joy and Happiness at Work for UK Nursing Academics: As Simple as ABC.
3. **Claire Fullerton**, RN, Research Associate, University of Victoria, Canada.
Lorelei Newton, Assistant Professor, University of Victoria, Canada.
Title: eHealth Literacy and Digital Information Needs of Older Adults with Cancer: A Canadian Study to Inform Undergraduate Nursing Curricula.

13:30-15:00 Lunch

15:00-16:30 Session 9

Moderator: Carolina Facioni, Research Assistant, Italian Institute of Statistics (ISTAT), Italy.

1. **Nicole Banton**, Assistant Professor, Stetson University, USA.
Title: The Birth Connection: An Examination of the Relationship Between Her Birth Event and Infant Feeding among African American Mothers.
2. **Meridith Burles**, Lecturer & Research Coordinator, University of Saskatchewan, Canada.
Title: Using a Sociological Lens to Enhance Cultural Safety in Pediatric Healthcare: A Qualitative Study of Indigenous Family Caregivers' and Health Care Providers' Experiences.
3. **Mariia Vasiakina**, EU Researcher, Max Planck Institute for Demographic Research, Germany.
Christian Dudel, Researcher/Deputy Head, Research Group Labor Demography, Max Planck Institute for Demographic Research, Germany.
Title: Health Outcomes of Risk of Automation at Work: Evidence from Germany.
4. **E. Wairimu Mwangi**, Chair and Assistant Professor, Trinity Washington University, USA.
Daniel Sarpong, Executive Director, Office of Health Equity Research; Senior Research Scientist, Yale School of Medicine, USA.
Title: Food Insecurity and Other Correlates of Individual Components of Metabolic Syndrome in Women Living with HIV (WLWH) in the United States.

16:30-18:00 Session 10

Moderator: Jason L. Cummings, Assistant Professor, Loyola University Chicago, USA.

1. **Stavroula Kyriakakis**, Associate Professor, Adelphi University, USA.
Title: Safe Qualitative Interviewing Techniques in Research with At-Risk, Oppressed and Historically Marginalized Communities: Applying Trauma Informed Social Work Practice Skills and Knowledge Working with Survivors of Gender-Based Violence to Research.
2. **Ian Hyslop**, Senior Lecturer, University of Auckland, New Zealand.
Title: Sociological Insight and Political Limitations: Pushing the Contemporary Boundaries of Anglophone Social Work.
3. **Daniel Holman**, Lecturer, The University of Sheffield, UK.
Alan Walker, Professor, The University of Sheffield, UK.
Title: Healthy Ageing Through the Prism of Intersectionality: Integrating Intersectionality and the Life Course Perspective to Illuminate Complex Inequalities.

20:30-22:30

Athenian Early Evening Symposium (includes in order of appearance: continuous academic discussions, dinner, wine/water, music)

Wednesday 8 May 2024
An Educational Visit to Selected Islands
or Mycenae Visit

Thursday 9 May 2024
Visiting the Oracle of Delphi

Friday 10 May 2024
Visiting the Ancient Corinth and Cape Sounion

Mohemid Al-Jebouri

Professor/Consultant, Al-Qalam University College, Iraq

**Modellings of Infectious Diseases and Cancers under Wars
and Pollution Impacts in Iraq with Reference to a Novel
Mathematical Model and Literature Review**

NOT AVAILABLE

Ali Alhaqwi

Consultant, King Abdulaziz Medical City, Ministry of National Guard
Health Affairs, Saudi Arabia

Ibrahim Almesned

Consultant, King Abdulaziz Medical City, Saudi Arabia

&

Abdulrahman Alaql

Consultant, King Abdulaziz Medical City, Saudi Arabia

Pattern and Determinants of Physical Activity among Adults in a Saudi Community

Introduction & Background: The objective of this study is to determine the pattern of physical activity among adults visiting a major primary health-care center in Riyadh, Saudi Arabia and to identify the determinants and barriers of performing physical activity

Methods: A cross-sectional study in a major primary health-care center in King Abdul-Aziz Medical City, Ministry of National Guard Health Affairs, Riyadh, Saudi Arabia. Participants were interviewed using the short version of the International Physical Activity Questionnaire. The analysis was performed to identify the pattern of physical activity and possible influencing factors.

Results: The study included 305 participants with a mean age of 33.18 ± 11.45 years. The pattern of physical activity among participants was as follow: highly active (8.9%), minimally active (15.1), and physically inactive (76.1%). There was no significant association between activity levels and gender, age, presence of chronic disease, and indication of facing barriers. The total time spent in physical activity is far below recent recommendations. Male participants were more likely (69.2%) to sit more than 6 h/day compared to the 58.9% of the females. The mean body mass index of our sample was 27.63 with 64% of the participants being either overweight or obese.

Conclusion: This study confirmed previously published low level of physical activity among males and females in the Saudi community. There was also a noted high prevalence of overweight and obesity. The combination of physical inactivity and prolonged total sitting time will certainly contribute to adverse metabolic and general health outcomes and increased morbidity and mortality.

Najwa Alharbi

Associate Professor, King Abdulaziz University, Saudi Arabia

Characterization of a Multidrug-Resistant *Escherichia Coli* Lytic Bacteriophage Isolate as a Safe Alternative to Synthetic Antibiotics

The control of pathogenic bacteria depends mainly on the use of antibiotics; however, several problems can arise due to the overuse of broad-spectrum antibiotics that destroy not only pathogens, but also natural beneficial microbes in the gut micro-flora. Furthermore, the development of antibiotic resistance poses a major challenge in clinical medicine. Therefore, there is an urgent therapeutic need to develop safe alternative bactericidal or bacteriostatic approaches that will selectively kill only pathogens without disrupting the micro-flora. One such approach is the use of bacteriophages to suppress the growth of bacterial pathogens in humans and other animals. Sewage water can be a rich source of pathogenic bacteria and their lytic phages; thus, we sampled sewage water in this study and successfully isolated an *Escherichia coli* strain and its lytic phage. We demonstrated that the phage could repress bacterial growth of *Salmonella enterica* (ATCC 14028), *Klebsiella oxytoca* (ATCC49131), *Shigella sonnei* (ATCC 25931), and *E. coli* (ATCC25922). The isolated phage was stable at room temperature, but survival declined with an increase in temperature to 70 °C, and complete inhibition was observed at temperatures ≥ 80 °C. In addition, the phage was stable over a pH range of 6–8, and was completely inactivated at pH 14.

Nicole Banton

Assistant Professor, Stetson University, USA

The Birth Connection: An Examination of the Relationship Between Her Birth Event and Infant Feeding among African American Mothers

There is an epidemic of maternal and infant death rising in plain sight in the United States. The maternal and infant mortality rate of Black/African-American mothers is three times that of White/ European Americans in the US. Current research indicates that breastfeeding lowers both. While African-American mothers had the highest breastfeeding rates through the start of the twentieth century, by its close of the century, their rates precipitously declined. Presently, they have the lowest rates of breastfeeding in the United States. In this paper, I examine how the ideas that Black/African American mothers had about breastfeeding before, during, and after pregnancy (postpartum) affected initiation and duration of breastfeeding. Also, I investigate how mothers' healthcare providers affect their decision making, as well as how the type of birth that a mother has, e.g., preterm, vaginal, c-section, full term, affects her actual versus idealized infant feeding practice. I present a discussion of how doctors, nurses, breast pumps, etc., affect breastfeeding practice and how the practice impacts mothers' beliefs about themselves as "good" mothers. In order to understand the interplay of the decision-making process and these constructs, I conducted a qualitative study in which I participated in face-to-face interviews with a diverse group of thirty African-American mothers. They ranged in age from 18 years-old to 50-years-old. At the time of her interview, each mother had at least one child who was three years old or younger. Through our discussions, we explored how pre-pregnancy perceptions, lived experiences as a mother, familial influences, and the discourses surrounding motherhood within an African-American context affected the perceptions and experiences that the mothers in the study had with their infant feeding practice(s). Findings suggest that pregnancy and birth experiences of the mothers in the study influenced whether or not they breastfed exclusively, combined breastfeeding and infant formula use or used infant formula exclusively. Specifically, the interplay of invocation of agency (the ability to control their bodies before, during, and after birth), birth outcomes and the interaction that the mothers in this study had with resources, human and material, had the highest on the initiation, duration, and attitude toward breastfeeding.

Ludmil Benov

Professor, Kuwait University, Kuwait

Development of Efficient Photosensitizers for Photodynamic Therapy

Photodynamic therapy (PDT) is a minimally invasive therapeutic modality used for the treatment of cancers, localized infections, and other diseases. It combines three harmless components, a non-toxic, light-absorbing compound called photosensitizer (PS), visible or near infrared light, and atmospheric oxygen. Upon illumination, the photo-excited PS generates singlet oxygen and other reactive species, which damage and kill the target cells. Because such species have short life in biological environment, damage is limited to the proximity of the PS. Different cellular organelles and structures show dramatic differences in sensitivity to photodynamic treatment. Location and extent of the photo-damage trigger signaling pathways, which define cellular responses and mechanisms of cell death and determines the overall organismal response. Thus, efficiency and selectivity of PDT depend on the properties of the PS. PSs currently in clinical use suffer a number of drawbacks, which stimulates the search for new photosensitive compounds. Due to their high affinity for tumor tissues, almost limitless possibilities for modifications, and high yield of photo-generated reactive species, porphyrins are at the forefront of the PSs currently used in clinical practice. In general, optimization of PSs can be achieved by metalation and by introducing different *meso*-substituents at tetrapyrrole periphery. Such modifications change PS's electronic structure, photophysical properties, shape, size, flexibility, lipophilicity, charge, and other molecular features, which directly affect PDT outcome. Detailed discussion about the contributions of the chelated metal, tridimensional shape, lipophilicity, size, number of charges, their position and exposure, symmetry, and stability of the PS molecule on PDT efficiency will be presented.

Meridith Burles

Lecturer & Research Coordinator, University of Saskatchewan, Canada

Using a Sociological Lens to Enhance Cultural Safety in Pediatric Healthcare: A Qualitative Study of Indigenous Family Caregivers' and Health Care Providers' Experiences

While sociologists recognize various social determinants that shape health and well-being, access to healthcare remains a critical challenge in everyday life for some communities and populations. Persistent social inequities in many societies prevent adequate health management which can adversely impact infants, children, and youth, as well as their families. In particular, Indigenous peoples in Canada face ongoing social and health disparities resulting from the legacy of colonialism, creating a high level of health needs. However, despite the universal healthcare system in Canada, there are numerous barriers to healthcare that can impact access to appropriate and timely health services for Indigenous peoples and their families. Through a qualitative approach that drew upon sociological theory, and interpretive and Indigenous methodological principles, we explored the experiences of Indigenous families who required healthcare and support for a child with a life-threatening or life-limiting illness. As well, we examined the perspectives of healthcare providers involved in delivering health services to such families. The overall purpose of the research was to better understand participants' subjective experiences and identify strategies for enhancing cultural safety in pediatric healthcare and support services in one Canadian province.

In this presentation, themes arising from qualitative interviews and an arts-based project with Indigenous family caregivers of ill children, and focus groups and individual interviews with pediatric healthcare providers will be discussed. Additionally, strategies for facilitating improved communication, mutual understanding, and increased respect within pediatric healthcare and support will be outlined, as well as directions for broader institutional change. As such, the findings of this research reflect the value of a sociological lens for identifying macro-, meso-, and micro-level factors that problematize access to healthcare for populations facing marginalization, and contributing to inequity-responsive healthcare and support. We will also discuss future directions for research including opportunities for community engagement and interprovincial collaboration.

Anke de Haas

Senior Scientist Medical Affairs, Haleon plc, Germany

**Real World Evidence Study:
Diclofenac Gel to treat Musculoskeletal Pain**

NOT AVAILABLE

Beat Ernst

Emeritus Professor, Molecular Pharmacy Group, University of Basel,
Switzerland

**A New Option for Treatment of Urinary Tract Infections
(UTI)**

The remarkable impact of antibiotics on human health is being eroded at an alarming rate by multidrug resistant pathogens. Therefore, new strategies to tackle infections are urgently needed. One new class of antimicrobials are compounds that target virulence factors to disrupt the pathogenic potential of bacteria without impacting their viability.

FimH antagonists are an example of this new class of antimicrobials. Urinary tract infections (UTI) belong to the most common infections worldwide and are predominantly caused by uropathogenic *E. coli* (UPEC). UPEC initiate the infection cycle by adhering to the high-mannose glycoproteins uroplakin 1A on urothelial cells through their adhesin FimH. Preventing the initial adhesion by blocking FimH offers a promising alternative to the conventional antibiotic treatment, which has become increasingly inefficient due to antibiotic resistance.

The FimH-mannose interaction is shear stress dependent, meaning that FimH mediates weaker binding at low shear stress and stronger binding at high shear stress. This type of bond is called catch-bond and results from the ability of FimH to adopt two distinct bound conformations, a medium- and a high-affinity conformation. In the urinary tract, the shear stress-induced switch from medium- to high-affinity becomes an effective tool for UPEC to evade clearance by the bulk flow of urine.

So far, efforts to develop FimH antagonists have been focused almost exclusively on the high-affinity conformation. Clinical FimH variants, however, exhibit the low-affinity state and are highly mobile on a mannosylated surface, a prerequisite for optimal colonization in the bladder. However, by switching to the high-affinity conformation, they can resist upcoming shear stress and are thus protected from being washed out through urination. In contrast, a variant locked in the high-affinity state, which is often used for *in vitro* and *in vivo* studies, forms long-lived interactions with mannose also in the absence of shear stress, rendering bacteria immobile.

It becomes evident that dynamic FimH variants are pathophysiologically favored and represent the dominant therapeutic target. To further elucidate this conformational issue, antagonists with

high affinities to both affinity states were synthesized and broadly characterized by ITC studies as well as in a mouse model.

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eHealth Literacy and Digital Information Needs of Older Adults with Cancer: A Canadian Study to Inform Undergraduate Nursing Curricula

Across the globe, older adults are surviving cancer at unprecedented rates. Although older adults (70+ years) are disproportionately affected by cancer, they are also more likely than ever to survive cancer in countries with universal healthcare coverage. Emerging research around the transition of Canadian older adults to cancer survivorship suggests that a key concern is the availability and provision (or lack thereof) of relevant and reliable information. However, little evidence exists as to how older adults use digital information to supplement understandings of their unique situation in order to manage their ongoing cancer related concerns.

Contrary to persistent ageist assumptions, recent research highlights that digital information is a substantial source of information for this group. Despite increased uptake, there are aspects of digital information sources that may be suboptimal, as simply having access to health information does not necessarily equate to being able to understand or use it. Expectations that older people have difficulty parsing medical information persist, yet digital tools may be creating or exacerbating barriers to use and understanding. To this end, we will share findings of our study regarding the digital information needs and experiences of older adults, including digital health literacy, during the survivorship phase of their cancer journey. We will discuss how this is relevant to undergraduate and specialty nursing education in light of geriatric oncology emerging as an oncology nursing sub-specialty. There is little research available to guide practitioners to support the digital information needs of this group as they transition from active treatment to survivorship. This project will contribute to a better understanding of the digital information needs of this population, as such knowledge is crucial to include in nursing education in order to enhance care and quality of life of older adults across the trajectory of their cancer care.

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Sexually Distinct Responses to Abortive and Prophylactic Pharmacotherapy of Migraine

Migraine, a prevalent neurological disorder, stands as a significant global health challenge, ranking among the top 10 causes of disability worldwide. Characterized by sensory-motor disturbances, heightened sensitivity to touch and light, and manifestations such as extremity heaviness or weakness, and speech or language disabilities, this enigmatic condition exhibits sexual dimorphism. The prevalence is notably two to three times higher in women than in men, with the gravity of migraine attacks, including duration, intensity, frequency, and associated symptoms, consistently more pronounced in women. Sex-specific differentials extend to migraine-related disability and comorbidities, particularly psychiatric disorders, supported by population-based studies. The sex-dependent nature of migraine is suggested to be intricately linked to several factors, with hormonal influences being a focal point of investigation. However, research delineating sex-specific responses to migraine pharmacotherapy and potential underlying reasons remains constrained. This investigation aims to amass and scrutinize existing knowledge regarding sexually distinct responses to both abortive and prophylactic pharmacotherapy for migraine. The synthesis includes basic experimental data alongside clinical findings, elucidating potential mechanisms contributing to sex-based differences in responses to migraine treatments. Recognizing sex-based responses in migraine pharmacotherapy underscores the impact of biological profiles, extending beyond hormonal effects, on treatment outcomes for both men and women. The scarcity of research in this realm signals a need for deeper exploration to refine migraine management based on sex-specific considerations. Additionally, women exhibit a higher propensity to consume migraine medication compared to men, despite the apparent similarity in strategies for employing abortive and preventive medications between the genders. This discrepancy accentuates the need to scrutinize factors such as responsiveness to medication, dosing, and the selection of medications in individuals affected by migraine. The working hypothesis suggests an interplay between sex, hormones, migraine pathophysiology, and the pharmacokinetics and pharmacodynamics properties of diverse medications, influencing differentiated responses. Acknowledging this interplay holds promise for guiding more informed choices of treatments for both women and men. This, in turn, sets the stage for the development

of precise and targeted treatment strategies, amplifying the efficacy and precision of migraine management by incorporating sex-specific factors into the therapeutic paradigm or novel drug development strategies.

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**A Research Study on Tobacco Associated with Potentially
Malignant Disorders Prevalent in Oral Mucosa of Lumbini
Province/District Rupandehi Population of Nepal**

Background: Oral mucous membrane is an integral part of the complex oral cavity which is associated with maintenance of oral as well as general body health. The theme of "Oral Health for Overall Health", is gaining more importance in today's challenging times wherein optimal health is of the paramount importance.

Tobacco associated Oral mucosal lesions (OML), potentially oral malignant disorders comprising of oral sub mucous fibrosis, oral leukoplakia, tobacco pouch keratosis, chewer's mucositis, pan encrustation are the most prevalent diseases in Rupandehi district, Lumbini province (Province Five) of Nepal, which is caused by consumption of smokeless and smoked forms of tobacco.

Smoking, drinking and chewing tobacco product, are the common prevalent habits in Nepal and have been positively associated with oral mucosal lesions. This research study has been conducted in this Nepalese part of Rupandehi district (Province Five) regarding the prevalence of oral lesions in relation to the prevalent habits.

Aim of the Research Study: To assess the prevalence of Oral mucosal lesions and their association with pattern of tobacco use among patients visiting outpatient department in Rupandehi district of Nepal (Province Five).

Research Methods and Material: This descriptive, cross-sectional prevalence study included five hundred (500) participants who visited the Department of Oral Medicine, Diagnosis and Radiology, and fulfilled the inclusion criteria, and the study data was carried out from August to December 2003. Self-designed proforma was used for recording demographic details, and WHO (**World Health Organization**) **Assessment Form for Oral Mucosal Lesions** was used to record the tobacco use status and findings of the clinical and laboratory investigation. Statistical analysis was performed using IBM SPSS version 23, and the mean, frequency, and percentage were calculated.

Research Study Results: Among the 500 (five hundred) participants, 78.26% were male and 21.74% were female. The mean age of the study population was 44.19 ± 12.33 years. The prevalence of tobacco use among study participants was 41.25% and that of the OML was 39.28%. Homogenous leukoplakia, oral sub mucous fibrosis were the most prevalent oral mucoal lesions: potentially malignant disorders, followed by tobacco pouch keratosis and chewer's mucositis and pan-encrustation. The prevalence of smoking, drinking alcoholic beverages and tobacco chewing was 25.08%, 28.78% and 6.99% respectively. Tobacco chewing (areca anut) were significant predictors of oral submucous fibrosis in this population.

Research Study Discussion: The prevalence of oral leukoplakia, Oral sub mucous fibrosis and oral lichen planus in our study Nepalese population is prevalent and attributable to use of tobacco. The prevalence of consumption of alcoholic beverages in our study population was higher when compared to the South-East Asian National Sample Survey study. Smokers were more likely to develop oral leukoplakia, smoker's melanosis compared to other tobacco associated lesions. Among those who consumed alcoholic beverages alone, the prevalence of leukoplakia was higher compared to other lesions. Oral sub mucous fibrosis was the most prevalent potentially malignant disorder condition among those who chewed tobacco or betel quid with or without tobacco.

Conclusion: The prevalence study emphasizes the deleterious effects of tobacco use toward oral mucous membrane and also serves as a path for future tobacco cessation programs that would be helpful to prevent potentially malignant disorders in Nepalese population.

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Healthy Ageing through the Prism of Intersectionality: Integrating Intersectionality and the Life Course Perspective to Illuminate Complex Inequalities

In recent years, the concept of intersectionality has gained prominence in the exploration of health inequalities, emphasising the complexity of social positions and identities, and the multifaceted discrimination individuals may face. This approach challenges the traditional analysis of social axes of inequality—such as age, gender, ethnicity, and socio-economic status—in isolation, advocating instead for a recognition of the interconnected nature of these characteristics. Despite its rising importance, the intersectionality discourse has largely overlooked the dynamics of ageing and the intricate patterns of life experienced over time. Similarly, studies of ageing have been slow to integrate the rich insights offered by intersectionality.

This paper proposes a synthesis of intersectionality with a life course perspective to shed light on the nuances of ageing inequities, particularly in health contexts. We begin with an examination of intersectionality's utility in researching inequality, exploring the roles of intersectional subgroups, discrimination mechanisms, categorisation processes, and the diversity inherent in individual experiences. We examine different analytical strategies, including the application of interaction terms in standard models and the deployment of multilevel models that have set a new 'gold standard' in identifying complex differences among different subgroups. By initiating a conceptual dialogue with the life course perspective, we explore several key notions: social roles, life stages, transitions, age and cohort effects, the accumulation of advantages or disadvantages, and the trajectories individuals follow throughout their lives. We argue that merging intersectionality with life course analysis opens up innovative avenues for understanding the complexities of ageing and the associated health inequalities. This synthesis not only enriches our theoretical frameworks but also promises to enhance the practical approaches to addressing health inequalities across the life course.

Building upon these theoretical foundations, this paper will also demonstrate the practical application of the proposed framework through empirical examples drawn from recent research projects. These projects,

both empirical and methodological in nature, serve as illustrative case studies for how intersectionality, when combined with a life course perspective, can be operationalised to uncover deeper insights into health inequalities experienced in ageing populations.

Ultimately, this paper emphasises the transformative potential of combining intersectionality with the life course perspective, not just in conceptual terms, but as a powerful empirical tool for dissecting and addressing the multifaceted nature of health inequalities in ageing societies.

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**Sociological Insight and Political Limitations:
Pushing the Contemporary Boundaries of Anglophone
Social Work**

Social work is, perhaps inevitably, enmeshed with the power relations that structure liberal capitalist states. These relations shape both the function of social work and the boundaries of legitimate dissent. Despite the political ideology of economic and social opportunity associated with liberal societies, capitalist states inevitably generate inequality due to the exploitative relationship between capital and labour. Although professional social work associations routinely claim a commitment to human rights and social justice, historical and contemporary practice is far less benign. Arguably social work has done as much, perhaps more, harm than it has done good over time. The role of social work is generally focused on resocialising failing individuals rather than changing the structural conditions which reproduce poor social outcomes. More than this social work can be connected with classed and raced practices of state care, supported by overt and covert eugenic ideology. Abolitionist scholarship, particularly in the U.S, and particularly in the child protection arena, links social work with the carceral state. In Aotearoa / New Zealand we have our own punitive history in relation to coloniality, assimilation and state care. Much of this discriminatory practice was performed under the umbrella of supposedly enlightened Welfare State. This presentation explores the implications of this analysis for the future of social work as a form of applied sociology. Given its location within the liberal political state, can social work ever be a significant force in the development of a more socially just society. What conditions are necessary for social work to become a more significant force for social justice? This issue is explored with specific reference to the question of decolonising practices in Aotearoa/New Zealand. Social work is not a free-floating activity. It is mired in relations of power. However, to understand this is not that the same as accepting the inevitability of exploitative capitalist social relations and of the institutions which uphold the status quo. Is there, for example, potential to form genuine partnerships with resistance communities – such as Indigenous Collectives. Against a backdrop of troubled times and right wing populism globally, what are the limits and possibilities for a social work focussed on socially just processes and outcomes.

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Treating Staphylococcus Aureus Infections Using Novel Anti-Virulence Approach

Antibiotics have been widely used for almost a century to treat bacterial infections since the discovery of penicillin by Alexander Fleming. However, the improper use of antibiotics has led to the rapid spread of antibiotic resistance and other negative effects. One such effect is the ability of certain antibiotics to unintentionally promote bacterial virulence, especially at lower concentrations. This unintended promotion of virulence during treatment can complicate patient outcomes. We conducted studies using various methicillin-resistant *S. aureus* (MRSA) strains to demonstrate that certain classes of antibiotics can induce bacterial virulence and worsen infections under *in vivo* conditions. Specifically, our *in vitro* and *in vivo* studies using a community-acquired MRSA strain called USA300 have shown that β -lactam antibiotics and tetracyclines can stimulate the expression of multiple surface-associated virulence factors and the secretion of toxins, thereby enhancing bacterial pathogenicity. To confirm the antibiotic-induced pathogenicity, we utilized mouse peritonitis and bacteremia models and found that sub-inhibitory concentrations of β -lactam antibiotics and tetracyclines aggravated the infection by inducing staphylococcal virulence *in vivo*. Additionally, using a previously characterized anti-virulence agent (Gao et al., PNAS, 2018), we demonstrated in animal studies that the combined use of antibiotics and anti-virulence agents significantly increased the survival rate of mice infected with MRSA. This highlights the potential benefits of combining anti-virulence agents with antibiotics for the treatment of *S. aureus* infections and introduces a new perspective on the development of antibiotic adjuvants. Through our exploration of non-antibiotic antivirulence therapy, we have identified a natural, potent, broad-spectrum antivirulence compound called ABL-1. In a mice skin model, we assessed the efficacy of ABL-1 in treating CA-MRSA infected wounds. The results of our study indicate that ABL-1 effectively prevented the formation of abscesses in mice skin caused by USA300 and promoted wound healing. Based on our findings, it is evident that antibiotic-based therapy for staphylococcal infections may carry the risk of inducing pathogenicity. Therefore, antivirulence therapy, either alone or in combination with antibiotics, represents a promising alternative therapeutic option for staphylococcal infections.

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Safe Qualitative Interviewing Techniques in Research with At-Risk, Oppressed and Historically Marginalized Communities: Applying Trauma Informed Social Work Practice Skills and Knowledge Working with Survivors of Gender-Based Violence to Research

Motivated by the profession's central commitment to promoting social justice, social work research elucidates the experiences, as well as the policy and social service needs of oppressed and historically marginalized communities. This includes migrant communities fleeing impoverished conditions, political persecution and discrimination. Nevertheless, sociologists, psychologists and other social science researchers are conducting research with many of these same communities who, due to conditions of oppression and limited access to power and resources, are at increased exposure to violence and exploitation. Consequently, social science researchers must be prepared to encounter participants that have survived trauma and may be experiencing post-traumatic stress responses, depression, suicidality and psychosis. Social workers possess skills developed in their practice with these same communities which can be applied to conducting in-depth research interviews in a manner that is safe, trauma informed, and honors the autonomy, expertise and dignity of the participants. The presenter has extensive social work practice experience in New York assisting immigrant and refugee survivors of domestic violence, and successfully lead feminist, decolonized research with immigrant and multiply marginalized communities in the United States and in the Caribbean. This research methods presentation on qualitative interviewing introduces trauma informed practice principles used in providing treatment and services to survivors of trauma, and applies them to conducting in-depth research interviews with historically oppressed and marginalized communities.

The introduction of the presentation specifies the similarities and differences between clinical assessments typically conducted in a social work practice setting and in-depth qualitative research interviews. The principles of trauma informed practice are then described, a main tenet of which is an attention of the role of power and agency embedded within the socio-cultural and economic context. Methodological guidelines for recruitment and in-depth interviewing are then detailed. Starting from the design phase of the study, the researcher must become thoroughly familiar with the socio-political context of the study location and life

conditions of the participants, including a deep understanding of likely study participants' needs and risks for exposure to violence. With attention to the experience of trauma and associated symptoms, and an awareness of the risk for exploitation inherent to research interviews, specific qualitative interviewing techniques that provide study participants with control over the interview conditions and information they share are presented alongside case examples.

The distinction provided between clinical and research interviewing, description of a trauma informed framework, and interviewing techniques contained in this presentation are useful to social workers and psychologists tasked with conducting qualitative research interviews. Moreover, the presentation content provides critical interviewing guidance for sociology researchers to safely conduct research with historically marginalized and economically disadvantaged communities that are at increased risk for exposure to violence and exploitation.

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Local Delivery of Sildenafil Citrate: Innovative Models for Testing New Topical Formulations

Sildenafil citrate is an approved drug used for the treatment of erectile dysfunction and premature ejaculation, acting as a selective and competitive inhibitors of phosphodiesterase type 5 (PDE5), the predominant isoenzyme which inactivates the cyclic guanosine monophosphate (cGMP) in the corpus cavernosum of the penis. Due to a series of drawbacks arising from peak plasma drug concentrations after oral administration, local transdermal delivery of this drug is being explored as an interesting and noninvasive alternative administration method. Although human and animal skin represent the most reliable models for performing penetration studies, beside a series of ethical issues and restrictions, their application for understanding the efficacy of topical formulations containing sildenafil is difficult. For these reasons new *in vitro* approaches based on artificially reconstructed human skin or "human skin equivalents" are being developed as possible alternatives for transdermal testing of sildenafil. The validation and implementation of these 3D experimental models as alternative methods in the evaluation of the molecule permeation, therefore, are strongly promoted, representing a promising scientific innovation. The aim of this work was to investigate the sildenafil citrate loaded in three commercial transdermal vehicles using 3D full-thickness skin equivalent developed from human foreskin, compare the results with the permeability experiments using Franz's diffusion cells and bull glans tissue as model membrane in order to correlate these data with the *in vivo* human tests. For pharmacokinetic

analysis a non-linear mixed effects modelling approach was applied using NONMEM software. Our findings demonstrated that the 3D skin equivalent adopted in this work is able to provide a rapid initial estimation of the amount of sildenafil citrate permeated through the skin, with the potential of being a valid alternative for *ex-vivo* skin absorption experiments.

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Evaluation of Photostability of Clindamycin Tablets Using Hemispherical Directional Reflectance Analysis

Introduction: Clindamycin is an antimicrobial drug used for bone and joint infections, respiratory tract infections, skin and tooth infections as well as after dental procedures [1]. This antibiotic can also be used in the treatment of foot infections in diabetic patients and to prevent endocarditis [2]. Photodegradation of the drugs occurring as a consequence of photoexposure is one of the key factors affecting their content in the drug form. The resulting products may cause undesirable side effects due to their increased activity [3]. One of the key requirements for new drugs is photostability which confirms that exposure to light does not lead to unacceptable changes in the drug structure. Such changes could lead to reduced efficacy of the pharmacotherapy or even harmful effects on the human body. This study aimed to analyze the photostability of commercial clindamycin tablets exposed to UV light by measuring the directional hemispherical reflectance.

Materials and Methods: Two types of clindamycin tablets available on the Polish market were tested, i.e. tablets with a good expiration date (2025) and expired tablets (2016) stored at ambient conditions. Unexpired tablets were exposed to UV light and analyzed on day 0, day 3, and day 7. UV exposure was carried out at 22°C using a SolarBox 1500 aging chamber (Cofomegra.srl, Milan, Italy). For each tablet tested, the total hemispherical reflectance (THR) was measured three times with a 410-Solar Reflectometer (Surface Optics Corporation, San Diego, CA, USA). This device allows to obtain THR values in seven wavelength ranges, i.e. 335-380nm, 400-540nm, 480-600nm, 590-720nm, 700-1100nm, 1000-1700nm, and 1700-2500nm. Statistical analysis was performed with Statistica 13 software (StatSoft; Statistica, Tulsa, OK, USA).

Results: Comparing unexpired and expired clindamycin tablets, we found that unexpired tablets showed significantly higher THR values within 400-540 nm, 480-600 nm, 590-720 nm, 700-1100 nm, and 1000-1700 nm spectral ranges ($p < 0.001$ each). In turn, expired tablets had statistically higher THR within the range of 335-380 nm than unexpired tablets

($p < 0.001$) while in the wavelength range of 1700–2500 nm, the reflectance values were comparable between the tested types of clindamycin tablets. A significant decrease in THR values between day 0 and day 7 was observed for spectral bands of 335–380 nm ($p < 0.001$), 700–1100 nm ($p < 0.001$), 1000–1700 nm ($p = 0.008$), and 1700–2500 nm ($p = 0.003$). In turn, the THR values were higher on day 7 compared to day 0 for 400–540 nm, and 480–600 nm ($p < 0.001$ each). On the other hand, no significant difference in THR for day 0 vs day 7 comparison was demonstrated in the 590–720 nm band. We also observed significant differences between day 3 vs day 7 for spectral bands of 335–380 nm, 480–600 nm, and 590–720 nm ($p < 0.001$, $p = 0.005$, and $p = 0.032$, respectively).

Conclusions: The proposed study suggests the influence of UV radiation on the structure of clindamycin tablets. For spectral bands of UV and infrared more light crossed through the tablet during the UV exposure. The proposed analytical technique allows a rapid, screening assessment of the stability of the solid form of the drug.

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Human Rights between Non-governability and Political Culture – A New Paradigm in Human Rights Analysis

This article calls for a new paradigm in human rights analysis focusing on a new definition of human rights as a collection of practices in the policy areas of the right by analyzing the politics and strategies of defending human rights within social and political context. To do so, it integrates the tools of social choice theory with a unique institutionalist perspective that looks at both formal and informal, and local and international factors. The analysis is novel in two important aspects. based on institutional theory and social choice we develop a theory that explains the political as well cultural aspects of human rights policies in general as well as the functions of several players in the political arena, particularly politicians, bureaucrats, interest groups and the public. These political players operate amid three structural variables. The first is *non-governability*, the inability of the political system to formulate and implement systematic policy plans. Non-governability arises in an environment with a sectarian electoral system that is restricted to a particular group and a traditional public management system that is not oriented towards outcomes and efficiency. The second characteristic is a *political culture* that serves long term calculation over the short term. In its extreme form, this culture gives rise to alternative politics, a semi-legal pattern of do-it-yourself behavior that favors outcomes over process. The third characteristic is the *judicialization of politics*, the situation in which the legal system partially replaces the other authorities in a state. Our analysis also explains the processes through which Israel is struggling to promote human rights within a specific institutional environment in general, thus determining the scope of human rights in particular. From this twofold analysis we draw conclusions about the future of Israeli democracy and its attitude towards human rights.

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Identification of Unprecedented Binding Sites for Covalent HDAC8 Inhibitors

Screening of ultra-low-molecular weight ligands successfully identified viable chemical starting points for a variety of drug targets. Here we report electrophilic fragments that allow the mapping of potential binding sites for covalent inhibitors by biochemical screening and mass spectrometry. Small electrophilic heterocycles and their N-

quaternized analogues were first characterized in the glutathione assay to analyze their electrophilic reactivity. Next, the library was used for systematic mapping of potential covalent binding sites available in human histone deacetylase 8 (HDAC8). The covalent labeling of HDAC8 cysteines has been proven by tandem mass spectrometry measurements, and the observations were explained by mutating HDAC8 cysteines. As a result, screening of electrophilic MiniFragments identified three potential binding sites suitable for the development of allosteric covalent HDAC8 inhibitors. One of the hit fragments was merged with a known HDAC8 inhibitor fragment using different linkers, and the linker length was optimized to result in a lead-like covalent inhibitor.

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**Bacterial Microflora in CLL Patients:
Exploring Opportunities for Alternatives to Antimicrobial
Drugs**

Introduction: Chronic lymphocytic leukemia (CLL) is an oncohematological disease characterized by accumulation of a large number of lymphocytes in the central and peripheral lymphatic organs and tissues that results in decline in humoral and cellular immunity and development of opportunistic infections, the most common cause of death for CLL patients. The identification of infectious agents and effective methods of their elimination is one of the key aspects of CLL patient's therapy. Antibiotic treatment still remains one of the main approaches, but nowadays, selection of an effective antimicrobial drug is problematic because of increased antibiotic resistance. Phage therapy is considered as a promising, safe alternative to antibiotics, although it's potential for treatment or prevention of bacterial infections in patients with CLL hasn't been investigated.

The aim of the study was to isolate and identify prevalent infectious agents, colonizing upper respiratory tract in patients with CLL and to study their susceptibility to antibiotics and phages.

Research Methodology: Swabs from the nasopharynx of 20 CLL patients (both-males and females, age 60-67) were subjected to standard bacteriological analysis, through primary 4 quadrant striking on SBA and TSA plates followed by sub-culturing of developed colonies on a number of selective- differential media. The phenotypic identification was done using API test systems (bioMerieux, France). Antibiotic sensitivity was studied by Kirby-Bauer disc-diffusion method according to the EUCAST standards, and phage susceptibility (6 commercial phages, produced by Eliava Biopreparations) - by Spot-Test technique. The control group

comprised 6 healthy donors matched for age and gender parameters with the study group.

Results: A total of 46 bacterial strains were collected from 40 nasopharyngeal swabs of CLL patients and identified at species level. Among these, 37 strains were classified as opportunistic pathogens such as *P.luteola*; *S.epidermidis*; *S. salivarius*; *S. lentus*; *S. capitis*; *S. warneri*; *S. hominis*; *S. xylosus*; *S. heamoliticus*; *S.saprophyticus*; *S. cohnii* spp; *Kocuria varians/rosea*; *A.viridans*; *B.subtilis*, while 9 were identified as pathogens (*S.aureus*, *E.coli*). The antibiotic sensitivity testing involved the following antibacterial drug groups: tetracyclines, glycopeptides, oxazolidinones, cephalosporins, fluoroquinolones and aminoglycosides. Our study indicated that the most effective antibiotics against isolated pathogenic agents (*S.aureus*; *E.coli*) were tetracyclines, fluoroquinolones, and aminoglycosides (susceptibility range - 89- 100%). For the isolates of opportunistic flora (*P.luteola*; *S.epidermidis*; *S. salivarius*; *S. lentus*; *S. capitis*; *S. warneri*; *S. hominis*; *S. xylosus*; *S. heamoliticus*; *S. saprophyticus*; *S. cohnii* spp; *Kocuria varians/rosea*; *A.viridans*; *B.subtilis*) the promising susceptibility was shown towards all antibiotic groups ($\geq 56\%$ susceptibility), with the higher efficacy of oxazolidinones (86%). However, for pathogenic agents (*S.aureus*; *E.coli*), high resistance (up to 100%) to glycopeptides was registered while susceptibility to other antibiotic classes remained high. None of the commercial phages exhibited lytic activity against the isolated strains from CLL patients.

Conclusion: the obtained results showed the possibility for elimination of bacterial colonization in CLL patients by rational use of antibiotics. At the same time it became clear that in case of need a customized phage treatment of CLL patients, it can be done through selection of active phages (monophages, or mixtures) from the Eliava Institute's collection and preparing autophages. In addition, an investigation can be initiated to reveal the presence of natural anti-phage antibodies in CLL patients' sera that might negatively influence the phage therapy outcome in CLL patients.

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Food Insecurity and Other Correlates of Individual Components of Metabolic Syndrome in Women Living with HIV (WLWH) in the United States

Background: Access to effective antiretroviral therapy in the United States has resulted in a rise in longevity in people living with HIV (PLHIV). Despite the progress, women living with HIV (WLWH) experience increasing rates of cardiometabolic disorders compared with their HIV-negative counterparts. Studies focusing on the predictors of metabolic disorders in this population have primarily focused on the composite measure of metabolic syndrome (METs). This study seeks to identify the predictors of composite and individual METs factors in a nationally representative sample of WLWH. In particular, the study also examines the role of food security in predicting METs.

Methods: The study comprised 1800 women, a subset of participants from the Women's Interagency HIV Study (WIHS). The primary exposure variable, food security, was measured using the U.S. 10-item Household Food Security Survey Module. The outcome measures are the five metabolic syndrome indicators (elevated blood pressure [systolic BP > 130 mmHg and diastolic BP \geq 85 mmHg], elevated fasting glucose [\geq 110 mg/dL], elevated fasting triglyceride [\geq 150 mg/dL], reduced HDL cholesterol [$<$ 50 mg/dL], and waist circumference > 88 cm) and the composite measure - Metabolic Syndrome (METs) Status. Each metabolic syndrome indicator was coded one if yes and 0 otherwise. The values of the five indicators were summed, and participants with a total score of 3 or greater were classified as having metabolic syndrome. Participants classified as having metabolic syndrome were assigned a code of 1 and 0 otherwise for analysis. The covariates accounted for in this study fell into sociodemographic factors and behavioral and health characteristics.

Results: The participants' mean (SD) age was 47.1 (9.1) years, with 71.4% Blacks and 10.9% Whites. About a third (33.1%) had less than a high school (HS) diploma, 60.4% were married, 32.8% were employed, and 53.7% were low-income. The prevalence of worst dietary diversity, low, moderate, and high food security were 24.1%, 26.6%, 17.0%, and 56.4%, respectively. The correlate profile of the five individual METs

factors plus the composite measure of METs differ significantly, with METs based on HDL having the most correlates (Age, Education, Drinking Status, Low Income, Body Mass Index, and Health Perception). Additionally, metabolic syndrome based on waist circumference was the only metabolic factor where food security was significantly correlated (Food Security, Age, and Body Mass Index). Age was a significant predictor of all five individual METs factors plus the composite METs measure. Except for METs based on Fasting Triglycerides, body mass index (BMI) was a significant correlate of the various measures of metabolic syndrome.

Conclusion: HDL cholesterol was significantly correlated with most predictors, while BMI was a significant predictor of all METs factors except fasting triglycerides. Food insecurity, the primary predictor, was only significantly associated with waist circumference. These findings provide insights into identifying predictors of individual metabolic syndrome factors in WLWH and addressing food security in managing metabolic syndrome in this population.

Emmanuel Nartey

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Corporate Human Rights Abuses and Environmental Damage: Towards a Comprehensive Remedy Framework

In contemporary legal discourse, addressing remedies for corporate human rights abuses and environmental damage has become increasingly paramount. This study delves deeply into the foundational principles of tort law to explore the concept of remedy, with a particular focus on the application of the "Eggshell Skull Rule" in cases involving human rights violations and environmental harm perpetrated by corporations. By drawing upon established legal precedents and scholarly analyses, the study proposes a systematic three-step approach for determining liability in such cases, with a central emphasis on restoring victims to their pre-violation state. Furthermore, the study meticulously examines the nuances of judicial remedies, underscoring the pivotal role of aggravated and exemplary damages in cases of corporate wrongdoing. It asserts that these forms of damages serve not only compensatory but also punitive and deterrent functions, essential for addressing the deliberate or negligent actions of corporations that result in harm to individuals and the environment. Through a thorough analysis of case law and legal principles, the study advocates for the application of exemplary damages as a potent means of punishing corporate misconduct and deterring future transgressions. Moreover, the study navigates the complexities inherent in applying the "*Rookes v Barnard Categories*" to corporate wrongdoing, stressing the need for a nuanced approach that accounts for the defendant's conduct's oppressive, arbitrary, or profit-driven nature. Additionally, it engages with the challenges and controversies surrounding the use of exemplary damages, evaluating arguments both for and against their application in civil proceedings. This study contributes significantly to the ongoing discourse on remedies for corporate human rights abuses and environmental damage, offering valuable insights into the legal principles and considerations guiding the determination of liability and the awarding of damages in such cases. By advocating for a comprehensive remedy framework encompassing both compensatory and punitive elements, the study endeavours to uphold accountability and justice in the face of corporate misconduct.

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&

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Exploring the Impact of Dance Activities on the Educational Aspirations and Wellbeing of Young Girls in East Midlands, UK

Introduction

There is a growing body of evidence that supports dance as an effective strategy which has the potential to reduce mental ill health and concomitantly improve self-esteem, confidence, body image and interpersonal and communication skills. Whilst at the same time provide a mechanism to engage in physical activity (Burkhardt & Rhodes 2012) that can have a wide range of beneficial effects on health and wellbeing. Dance has been shown to be particularly effective in engaging adolescent girls, as cited by Jago et al (2013) who asserts that dance was classified as the favourite form of physical activity among UK secondary school aged girls. However, most of the studies examining the influence of dance focus on physical and mental wellbeing and tended to use either survey approaches, questionnaires, or small focus groups to assess the links between dance and a wide range of both evaluative and affective mental health and physical health wellbeing measures. The studies have also focused on adults and adolescents from 13 years of age.

Study Aims

The aim of this research study is to determine the influence of peer-based dancing activities on the wellbeing and educational aspirations of Year 7 and Year 8 girls, participating in the **Square Mile 'Moving Together'** dance programme supported by De Montfort University Leicester, United Kingdom.

Research Questions

- How does active participation in the 'moving together dance activity' associate with self-reported positive wellbeing?
- What is the perceived impact of the 'moving together dancing activity' at DMU on young girls' wellbeing and educational aspirations?

Ethics, Methods and Data Collecting Instruments

Ethical principles were integral to all phases of this project and are not reflected as a purely stand-alone element. Therefore, to comply with this ethical approval was sought, and approval conferred through De Montfort University (DMU), Faculty of Health and Life Sciences, Faculty Research Ethics Committee

This is a non-experimental correlational study, which is the most common strategy for evaluation of an intervention and will integrate mixed methods and several layers of data collecting activities. Each phase will be piloted to test the design and the logistics of the data collecting instruments, whilst engaging the instruments with the participants. This also provides the research team with experience of engaging the data collecting instruments across an eclectic target population.

This presentation will therefore exemplify and explore in more detail the importance of the pilot study in negating ambiguities and testing the instruments, whilst empowering young people to take ownership and a voice in this innovative study.

Gregory T. Papanikos

President, ATINER

Are Human Rights a Luxury or a Normal Good?

One of the most controversial and thorny issues in international politics is the issue of human rights violations. Governments are criticized for consistently and willingly violating human rights. This approach assumes that governments have the option to violate or respect human rights. However, many governments may face a different dilemma, namely the eradication of poverty or a war that threatens their existence as a nation. Thus, governments should not be judged solely on their human rights record but also on their performance in reducing the number of their citizens who live below the poverty threshold. As rightly pointed out by the UNDP (2023), "poverty is a denial of human rights". All other indicators may be considered as luxury goods that will be pursued only when a country reaches a certain level of economic development (income per capita). The aim of this paper is to investigate the association between human rights indicators and per capita Gross Domestic Product (GDP) and to examine whether human rights, deemed a commodity, can be considered a luxury good, a normal good, or a necessity. It is found in this paper that the income elasticity of human rights is positive but less than one and at very high levels of income, close to zero, indicating that the commodity human rights is a necessity. Based on this evidence, countries are classified according to whether, given their per capita income, their human rights record aligns with expectations. The evidence identifies overperforming and underperforming countries.

Lu Qi

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Adding Salt to Foods and Type 2 Diabetes

High intakes of sugar have been related to risk of type 2 diabetes (T2D), while studies on the relations between salt intake and diabetes risk are lacking. To fill the knowledge gap of the relation between long-term dietary sodium intake and T2D, we evaluate the association between the frequency of adding salt to foods, a surrogate marker for evaluating the long-term sodium intake, and incident T2D risk. A total of 402,982 participants from UK Biobank who were free of diabetes, chronic kidney disease, cancer, or cardiovascular disease at baseline, and had completed information on adding salt were analyzed in this study. We found that compared with participants who "never/rarely" added salt to foods, the adjusted HRs were 1.11 (95% CI, 1.06 to 1.15), 1.18 (95% CI, 1.12 to 1.24), and 1.28 (95% CI, 1.20 to 1.37) across the groups of "sometimes," "usually," and "always," respectively (P-trend<.001). In addition, we found that the observed positive association was partly mediated by body mass index, waist to hip ratio, and C-reactive protein, with a significant mediation effect of 33.8%, 39.9%, and 8.6%, respectively. The significant mediation effect of body mass index was largely driven by the body fat mass rather than the body fat-free mass. Our findings for the first time indicate that higher frequency of adding salt to foods, a surrogate marker for a person's long-term salt taste preference and intake, is associated with a higher T2D risk.

Neville Rochow KC

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**The Constitutional Role of Human Dignity in Promoting
Ethical Outcomes in the Law**

NOT AVAILABLE

Enrique Jesus Saez Alvarez
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Do Nursing Studies Modulate the Fear of Death in Nursing Students? A Within-Subjects Study

Aim: To determine the way in which nursing studies modulate the fear of death in nursing students. **Background:** Nursing training, with a serious and programmed approach toward grief and death, can modulate the fear of death and indirectly improve the predisposition of students to deal with people in the process of dying and their relatives. **Design:** An intrasubject design with paired repeated measures. **Methods:** 118 students answered the the Collet-Lester Fear of Death Scale questionnaire at the beginning of the first year of studies and during the fourth year of the nursing degree. **Results:** The students present a greater fear of their own death and dying process at the end of the nursing studies than at the beginning; in the first year, the highest and lowest scores are observed for the Fear of Others' Death and the Fear of Own Death, respectively, while the Fear of Others' Death and Fear of Others' Dying Process have the highest and lowest scores, respectively, in the fourth year. **Conclusions:** Fear of death scores at the beginning of nursing studies are an acceptable predictor of fear of death scores at the end of the studies.

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**Prediction of 1 α ,25-Dihydroxyvitamin D₃ and its Isomers
Binding to ERp57 and PKC Triggering Downstream
Survival Signaling of β -cells: A Combined Experimental
and *in silico* Study**

Vitamin D exhibits a key role in cell proliferation, differentiation and in the regulation of glucose-related metabolism. The enzyme ERp57, known as PDIA3 or 1,25-D₃-MARRS is a membrane-associated protein and is target to interact with 1,25-D₃ isomers to elicit non-genomic responses. The interactions between isomeric forms of 1,25-D₃ with ERp57 and PKC were investigated through computational simulations. Immunofluorescence analyses were employed to study the effect of 1,25-D₃ in the protein immunoccontent of MAPK/ERK1/2 in rat pancreatic islets. *In vitro* treatment with 1,25-D₃ (1 nM) showed approximately a 38% increase in the phosphorylation of MAPK/ERK1/2 proteins. The inhibitor (PD 98-059) of MAPK/ERK1/2 reversed this effect by 34% compared to the 1,25-D₃ treated group. *In silico* experiments predicted that ERp57 and PKC had favorable energetic interactions with isomers of 1,25-D₃. Protein-ligand complexes stability was reflected on lower variation on RMSD values. Results showed that 1,25-D₃ isomers are H-bonded with ERp57 in a hydrophobic pocket and related surface area. These isomers interact with PKC which trigger and activate non-genomic rapid responses (MAPK/ERK1/2 pathway), as observed *in vitro* on isolated rat pancreatic islets. Altogether, these results point to 1,25-D₃ a regulatory mechanism of action on β -cells and a promising therapeutic target.

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&

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Development and Evaluation of Naratriptan-Loaded Microemulsions for Enhanced Transdermal Migraine Treatment

Introduction: Approximately 15% of the global population suffers from migraines, a debilitating condition. Naratriptan, a triptan used in migraine treatment, is known for its selectivity as a serotonin selective agonist. While currently administered orally in tablets, effectiveness may be compromised in patients with nausea and vomiting associated with migraines. Transdermal administration emerges as a promising alternative to enhance treatment efficacy and increase patient adherence. This study aims to develop a transdermal microemulsion containing naratriptan and assess its physicochemical characteristics, including release profile, encapsulation efficiency (EE), analysis of microstructures using Dynamic Light Scattering (DLS), and cytotoxicity assays.

Methodology: The microemulsions (F2N and F4N) were prepared using the low-energy temperature inversion method, containing Naratriptan (active ingredient), Capryol PGMC, Kolliphor RH 40, Transcutol-P, and water. Physicochemical characteristics were evaluated through encapsulation efficiency tests using ultrafiltration. *In vitro* release assays were conducted employing vertical Franz diffusion cells. To determine the Hydrodynamic Size (DH), Polydispersity Index (PDI), and Zeta Potential (ZP) of the microstructures, the Zetasizer Nano ZS equipment was utilized. The antiproliferative activity of loaded and unloaded formulations (F2, F2N, F4, F4N), Naratriptan in solution (N), and the drug Doxorubicin (positive control) were investigated using an immortalized keratinocyte cell line (HaCat).

Results and Discussion: The microemulsions showed appropriate parameters after production. All formulations exhibited a clear gel-like appearance without phase separation, with an average size of approximately 18 nm, a polydispersity index (PDI) below 0.2, indicating a uniform particle size distribution and reducing the likelihood of nanostructure aggregation. The Zeta potential (ZP) close to neutrality at around 0.32 mV. Encapsulation efficiency (EE) was 72.5% for F2N and 73.7% for F4N, and the release profile indicated that 51% of the drug was released for F2N and 48% for F4N, which were lower than the free drug in

solution (72%) in 48 hours. In cytotoxicity assays, the drug proved to be safe, but the formulations displayed antiproliferative activity affecting the investigated cell line.

Conclusion: Stable microemulsions were produced with physicochemical characteristics, including particle size, PDI, encapsulation efficiency, and release profile suitable for transdermal application in a controlled and sustained drug delivery system. However, formulation optimization may be required as the microemulsions exhibited cytotoxic effects in cell culture.

Theodore Trafalis

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**Privacy in Health Data:
A Federated Machine Learning Approach**

NOT AVAILABLE

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&

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Health Outcomes of Risk of Automation at Work: Evidence from Germany

Automation is transforming work at a rapid pace, and its significance goes far beyond labor and labor markets. However, little is known about its socio-economic consequences. This study contributes to the scarce literature on sociodemographic outcomes of technological change by investigating the impact of risk of automation at work on subjective and objective health measures of German employees.

We exploit the longitudinal structure of the German Socio-Economic Panel (GSOEP) (2013-2018) and merge it with occupational information from the expert database BERUFENET of the Federal Employment Agency (Grienberger et al., 2022). Our main explanatory variable - risk of automation - follows the task-based approach of Autor et al. (2003) and builds on the distribution of different tasks within occupations. We define occupations with less than 30 percent of routine tasks as having a low risk of automation, occupations with 30-69 percent of routine tasks have a medium risk of automation, and occupations with at least 70 percent of routine tasks are considered to have a high risk (Dengler and Matthes, 2015). We estimate fixed effects regressions in order to assess gender-specific differences in self-reported health, anxiety (frequency of being worried in the last month) and healthcare use (visiting a doctor in the last three months) among the workers employed in occupations with the medium and high risk of automation and those dealing with the low risk. Along with our main specification, we also estimate random effects, pooled models, conditional fixed-effects logit, and (dynamic) correlated random effects probit (the so-called Mundlack correction).

Our findings indicate that both men and women employed in occupations with the high risk of automation tend to be worse off in terms of self-reported health and anxiety than their counterparts employed in occupations with the low risk. No significant effect of risk of automation on healthcare use is found in both gender groups. These findings are consistent across model specifications. In addition, we

stratify our sample by the region of settlement (West vs East Germany), respondent's migration background and some important work-related characteristics (i.e. sector of employment, company's size, type of the working contract, and type of employment with respect to working hours). Although our findings from the sensitivity analysis are mostly in line with the main results, some heterogeneity in effects is observed among the compared groups.

Overall, the results of this study highlight potential threats of automation to health and the need for policy measures which might prevent its negative spill-over effects.

Sarah Weaver

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Joy and Happiness at Work for UK Nursing Academics: As Simple as ABC

Background: This research study contributes to the overall understanding of the factors that promote joy and happiness in the working lives of UK nursing academics. Against a background of increasing workloads, stress, burnout and retention challenges in the global nursing academic sector, the ability to flourish at work is critical to reframing this negative discourse. This research for an MA in Education sought to extend knowledge of higher education working environments by journeying into staff experiences and perceptions of factors that promote moments of joy, happiness and fulfilment. By analysing academic staff perceptions of the essence, 'nuances' or 'eudaimonia' of joy and happiness at work the researcher sought to identify and understand positive elements of the nursing academic role.

Aim: To explore and identify the facilitators of joy and happiness for nursing academics working in the UK Higher Education setting through a qualitative, interpretative phenomenological approach.

Method: A qualitative, interpretative study within a constructivist paradigm sought to establish the essence or nuances of staff perceptions of factors promoting and inhibiting joy and happiness in their working lives as nursing academics. A purposive sample of nurse academics from a UK university resulted in 11 respondents. A pilot study was undertaken to test the interview schedule. Semi-structured interviews were undertaken, audio recorded and transcribed verbatim by the researcher. Data was analysed using a reflexive thematic approach, drawn from Braun and Clarke's logical six-phase method (2006, 2019).

Findings: The researcher actively interpreted the data to identify and create initial themes that reflected the research aims. Four key overarching themes were identified; the importance of academic life, belonging, contribution and the organisational culture of the HEI. Teaching, supporting student success, interaction with colleagues and the intellectual challenge of academia were important subthemes that promoted joy and fulfilment at work.

Conclusion/Implications for Practice: By analysing staff perceptions of factors and activities that promote positive emotions at work, implications for practice were identified. Encouraging a personal and organisational culture of joy at work promotes staff retention,

development and wellbeing. A career as a nursing academic should be celebrated and promoted.

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