



THE ATHENS INSTITUTE FOR EDUCATION AND RESEARCH

Abstract Book

**10th Annual International Conference on
Public Health
24-27 June 2024, Athens, Greece**

**Edited by
George Zahariadis & Olga Gkounta**

2024

Abstracts
10th Annual International
Conference on Public Health
24-27 June 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 10th Annual International Conference on Public Health (24-27 June 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, 2015-2024*

Year	Papers	Countries	References
2024	32	23	Zahariadis and Gkounta (2024)
2023	31	20	Jonas and Gkounta (2023)
2022	33	21	Contoyannis and Gkounta (2022)
2021	15	11	Papanikos (2021)
2020	9	8	Papanikos (2020)
2019	21	17	Papanikos (2019)
2018	44	21	Papanikos (2018)
2017	34	19	Papanikos (2017)
2016	49	28	Papanikos (2016)
2015	77	32	Papanikos (2015)

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.

Gregory T. Papanikos
President

Editors' Note

These abstracts provide a vital means to the dissemination of scholarly inquiry in the field of Public Health. 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 10th Annual International Conference on Public Health accomplished this goal by bringing together academics and scholars from 23 different countries (Australia, Austria, Canada, China, Czech Republic, Denmark, France, Germany, Grenada, India, Israel, Malaysia, Nepal, North Macedonia, Poland, Qatar, Saudi Arabia, Switzerland, Thailand, The Netherlands, Türkiye, 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

10th Annual International Conference on Public Health, 24-27 June 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. George Zahariadis, Director, Health & Medical Sciences Division, ATINER & Associate Professor, Faculty of Medicine, Memorial University of Newfoundland, Canada.
3. 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.
4. Paul Contoyannis, Head, Health Economics & Management Unit, ATINER & Associate Professor, McMaster University, Canada.
5. Steven Jonas, Academic Member, ATINER & Professor Emeritus, Stony Brook Medicine, Stony Brook University, USA.

FINAL CONFERENCE PROGRAM

10th Annual International Conference on Public Health, 24-27 June 2024,
Athens, Greece

PROGRAM

Monday 24 June 2024

07:45-08:30

Registration

08:30-08:45

Opening and Welcoming Remarks:

- o Gregory T. Papanikos, President, ATINER.

08:45-10:30 Session 1

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

1. **Nazmi Sari**, Professor, University of Saskatchewan, Canada.
Title: Potential Role of Local Bylaw Enforcement on Homelessness: Lessons Learned from Unintended Consequences of Bylaw Enforcement.
2. **Melinda Ickes**, Professor, University of Kentucky, USA.
Title: Youth-engaged Research to Support Tobacco Prevention.
3. **Afnan Nassar**, Associate Professor, Umm Al-Qura University, Saudi Arabia.
Title: Fear and Anxiety in Patients Seeking Dental Care in the Makkah Region of Saudi Arabia.
4. **Nahla Eltai**, Researcher, Biomedical Research Centre, Qatar University, Qatar.
Title: Innovative Application for the Mitigation of Airborne Pathogens.

10:30-12:00 Session 2

Moderator: Nazmi Sari, Professor, University of Saskatchewan, Canada.

1. **Henri-Jean Aubin**, Professor, Paris-Saclay University, France.
Title: Prazosin and Cyproheptadine in Combination in the Treatment of Alcohol Use Disorder: A Phase 2 RCT.
2. **Kristina Countryman**, Research Specialist, University of Michigan, USA.
Dongru Chen, Statistician, University of Michigan, USA.
Caron Zlotnick, Professor, Brown University, USA.
Ananda Sen, Professor, University of Michigan, USA.
Golfo Tzilos Wernette, Associate Professor, University of Michigan, USA.
Title: Feeling Less Able to Cope: The Impact of COVID-19 on Reasons for Cannabis Use in a Sample of Cisgender Pregnant Women at Risk for HIV/STIs in the U.S.
3. **Tara Heydari**, Medical Student, St. George's University School of Medicine, Grenada.
Prakash Ramdass, Professor, St. George's University School of Medicine, Grenada.
Title: Darkness in the Light: Circadian Rhythm Disruption and Polycystic Ovary Syndrome.

12:00-13:30 Session 3

Moderator: Safurah Jaafar, Lecturer, International Medical University, Malaysia, Azrin Syahida Abd Rahim, Clinical Intern, National University of Malaysia, Malaysia.

1. **Katarzyna Miszczynska**, Assistant Professor, University of Łódź, Poland.
Elżbieta Antczak, Professor, University of Łódź, Poland.
Title: The Determinants of Presenteeism in Selected European Countries.
2. **Laura Fox**, Visiting Professor and Director, Farmed Animal Advocacy Clinic, Vermont Law and Graduate School, USA.
Title: Igniting Change: Tackling Zoonotic Diseases, Climate Change, and Health Inequities through Sustainable Farming and Legal Reform.
3. **Piotr Miszczynski**, Assistant Professor, University of Łódź, Poland.

Katarzyna Miszczynska, Assistant Professor, University of Łódź, Poland.
Agnieszka Klysik-Uryszek, Assistant Professor, University of Łódź, Poland.
Title: Cultural Background of Employees Presenteeism – European Countries Perspective.

4. **Simrin Kafle**, PhD Student, Aarhus University, Denmark.
Title: Catastrophic and Impoverishment Impact of Health Expenditures Associated with Non-Communicable Diseases in Nepal.

13:30-14:30 Lunch

14:30-16:00 Session 4

Moderator: Goran Stevanovski, Technical Officer, Health Systems Strengthening, WHO North Macedonia, North Macedonia.

1. **Catriona Ooi**, Director Sexual Health, Northern Sydney Area Health Service, University of Sydney, Australia.
Title: Crossing The Bridge: Exploring Risk for Female Partners of Men Who Have Sex with Men - The Public Health Implications.
2. **Deepika Bara**, Manager, Program Learning and Training, Population Services International (PSI) India, India.
Title: Optimizing Family Planning Services: A Pilot Evaluation of Digital Follow-Up and Counselling by UPHC Staff in Collaboration with TCI India in Jharkhand, India.

16:00-17:30 Session 5

Moderator: Kristina Countryman, Research Specialist, University of Michigan, USA.

1. **Safurah Jaafar**, Lecturer, International Medical University, Malaysia.
Azrin Syahida Abd Rahim, Clinical Intern, National University of Malaysia, Malaysia.
Nour El Huda Abd Rahim, Assistant Professor, International Islamic University Malaysia, Malaysia.
Title: Exploring the Landscape of Thalassemia Prevention: From Screening Strategies to Economic Impact.
2. **Goran Stevanovski**, Technical Officer, Health Systems Strengthening, WHO North Macedonia, North Macedonia.
Title: Cultural Bottlenecks in Healthcare Workforce Planning and Implementation: Insights from North Macedonia.
3. **Katerina Denediou Derrer**, Assistant Professor, The Ottawa Hospital, Canada.
Title: Lifestyle Medicine and Health Economics.
4. **Feng Da**, Associate Professor, Huazhong University of Science and Technology, China.
Title: The Intervention Effect of Co-Management of Three Highs (Hypertension, Diabetes and Hyperlipidemia) – A Pilot Study in Qingdao, Shandong Province in China.

17:30-18:30 Session 6 – A Round-Table Discussion on The Future of Sciences and Engineering Education & Research

Moderator: Gregory T. Papanikos, President, Athens Institute

1. **Glen Bright**, Dean, Head of the School of Engineering, University of KwaZulu-Natal, South Africa.
Title: The Impact of Disruptive Technologies on Science and Engineering.
2. **Timothy Young**, Emeritus Professor, The University of Tennessee, USA & CEO and President, T.M. Young Institute, LLC, USA.
Title: The Future of Human Activity in Work as The Application of Innovation and Artificial Intelligence Research Accelerates.
3. **Theodore Trafalis**, Professor, The University of Oklahoma, USA.
Title: Artificial Intelligence in Sciences and Engineering Education & Research.
4. **Dimitrios Goulias**, Associate Professor, University of Maryland, USA.
Title: Integrating Sustainability and Resilience in Engineering & Sciences through Experiential Learning.
5. **George Zahariadis**, Associate Professor, Faculty of Medicine, Memorial University of Newfoundland, Canada.

Title: Why Are Educational Institutions Suing Social Media Providers?

6. **Evangelos Kaisar**, Professor, Florida Atlantic University, USA.

Title: Integrating Research and Teaching in the Classroom: Benefits for Instructors and Student.

21:00-23:00

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

Tuesday 25 June 2024

08:30-10:00 Session 7

Moderator: Laura Fox, Visiting Professor and Director, Farmed Animal Advocacy Clinic, Vermont Law and Graduate School, USA.

1. **Carine Milcent**, Professor, Paris School of Economics, France.
Title: Frailty Index over the Adult Life as a Predictor of Healthcare and Mortality at Short to Midterm.
2. **Lisa Maness**, Professor, Winston-Salem State University, USA.
Title: Discussions about Racial Health Disparities, Reasons they Still Exist, and Potential Approaches.
3. **Sezgin Gunes**, Professor, Ondokuz Mayıs University, Türkiye.
Title: Evaluation of the Semen Microbiome for Fertility in Obese Men with Next-Generation Sequencing.
4. **Koko Wangjam**, Assistant Professor, NG Mani College, Manipur, India.
Title: Effects of Socio-Economic and Health Variables on Survival Time of HIV/AIDS Patients in Manipur.

10:00-11:30 Session 8

Moderator: Koko Wangjam, Assistant Professor, NG Mani College, Manipur, India.

1. **Abdullah Almutairi**, Population Health Advisor, Johns Hopkins Aramco Healthcare, Saudi Arabia.
Hayat S. AlMushcab, Lead, Research Office, Johns Hopkins Aramco Healthcare, Saudi Arabia.
Title: A Lifestyle Intervention to Prevent Hypertension in Primary Healthcare Settings: A Saudi Arabian Feasibility Study.
2. **Mayurin Laorujisawat**, Lecturer, Sukhothai Thammathirat Open University, Thailand.
Title: Assessment of Fourth Grade School Students' Rabies Protection Motivation and Preventive Behavior in Chonburi Province, Thailand.
3. **Andrew Harbit**, General Practitioner Registrar, South Tees Hospitals NHS Foundation Trust, UK.
J Herron, Plastic Surgery Registrar, Guy's and St Thomas' NHS Foundation Trust, University of Sunderland, UK.
A Gilliam, Consultant General Surgery and Upper GI Surgery, County Durham and Darlington NHS Foundation Trust, University of Sunderland, UK.
Title: 'Time Is Tissue' – Improved Resuscitation During the COVID-19 Pandemic via Simulation with PPE.
4. **Ajaya Dev Lamsal**, Researcher, Shree Krishna Health Center, Nepal.
Title: Formulation and in-Vitro Evaluation of Floating and Unfolding Type Gastroretentive Expandable Film of Cinnarizine.

11:30-13:00 Session 9

Moderator: Mohan Tanniru, Adjunct Professor, University of Arizona, USA.

1. **Richard Dumont**, Senior Policy Officer, Province of Noord-Brabant, The Netherlands.
Title: Health in Noord-Brabant: Three Extra Healthy Life Years by 2030.
2. **Carsten Colombier**, Economic Adviser, Federal Department of Finance, Switzerland and FiFo Institute for Public Economics, University of Cologne, Germany.

- Benjamin Lerch**, Economic Adviser, Federal Department of Finance, Switzerland.
Thomas Brändle, Head of Economic and Budgetary Policy Analysis, Federal Department of Finance, Switzerland.
Title: The Impact of Ageing on the Sustainability of the Swiss Healthcare System: Healthcare Expenditure Projections Up To 2060.
3. **Vasileios Nittas**, Postdoc, Brown University, USA.
Title: Public Health for All through Cultural Adaptions of Digital Health Interventions: Current Practice and Challenges.

13:00-14:00 Lunch

14:00-15:30 Session 10

Moderator: Paul Contoyannis, Head, Health Economics & Management Unit, the Athens Institute & Associate Professor, McMaster University, Canada.

1. **Mohan Tanniru**, Adjunct Professor, University of Arizona, USA.
Title: Community Model to Address Population Health by Leveraging Collaboration and Communication Capabilities across Organizations.
2. **Martina Luskova**, Researcher, PhD student, Charles University, Czech Republic.
Title: The Effect of Face Masks on Covid Transmission: A Meta-Analysis.
3. **Roland Polacsek-Ernst**, Course Director/Lecturer, MBA Health Management and Digital Health, University of Applied Sciences BFI Vienna, Austria.
Christine Plötz, University of Applied Sciences BFI Vienna, Austria.
Title: Medical Students' Views on Robotic Surgery.
4. **Daniel Weishut**, Senior Lecturer, Hadassah Academic College, Israel.
Ruth Soffer Elnekave, Lecturer, Hadassah Academic College, Israel.
Sara Zalcberg, Lecturer, Hadassah Academic College, Israel.
Anat Vass, Lecturer, Haifa University, Israel.
Title: Exploring the Relationship Between Intimate Partner Violence and Forced Intimacy and Religion: Insights from Social Work Students.

17:00-20:00 Session 11

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

Wednesday 26 June 2024
An Educational Visit to Selected Islands
or Mycenae Visit

Thursday 27 June 2024
Visiting the Oracle of Delphi

Friday 28 June 2024
Visiting the Ancient Corinth and Cape Sounion

Abdullah Almutairi

Population Health Advisor, Johns Hopkins Aramco Healthcare, Saudi Arabia

&

Hayat S. AlMushcab

Lead, Research Office, Johns Hopkins Aramco Healthcare, Saudi Arabia

**A Lifestyle Intervention to Prevent Hypertension in
Primary Healthcare Settings:
A Saudi Arabian Feasibility Study**

Background: Hypertension is a leading cause of morbidity and mortality in Saudi Arabia, causing a significant public health challenge in the kingdom. In this study, we aimed to assess the feasibility of the Blood pressure LifeStyle Management (BLSM) program for preventing hypertension by making a significant change in lifestyle interventions through controlling some risk factors such as behavior, diet, physical activities, and weight in Primary Care.

Aim: the aim of this study is to evaluate the effectiveness of the Blood pressure LifeStyle Management (BLSM) program in reducing blood pressure.

Methods: This is a cohort of three-month period feasibility study in a primary care setting in a before-and-after study design.

Results: A total of 100 individuals were recruited for the study, and 73 have completed the program. The overall systolic (SBP) and diastolic (DBP) blood pressure showed an increment of 0.75 and 1.67 mmHg, respectively. The subgroup analysis exhibited a decrease in SBP (-6.5 mmHg) for patients with hyperlipidemia, while a DBP average increased (+2 mmHg). Females showed a decrease in SBP (-1.04 mmHg) compared to males, who increased in their SBP (+1.69). Smokers showed a significant improvement in SBP and DBP with $p < 0.05$.

Conclusion: lifestyle intervention can improve and control blood pressure in primary care settings. The program can be tailored to include more participants, the length of the program could be modified, and the frequency of follow-ups could be increased to enable participants to change their habits and incorporate better life choices in their daily routines.

Henri-Jean Aubin
Professor, Paris-Saclay University, France

Prazosin and Cyproheptadine in Combination in the Treatment of Alcohol Use Disorder: A Phase 2 RCT

Preclinical investigations have indicated that the concurrent inhibition of $\alpha 1b$ and 5HT2A receptors holds promise in mitigating alcohol consumption. Building upon this premise, our study sought to evaluate the effectiveness and safety of a combined regimen comprising prazosin (an $\alpha 1b$ blocker) and cyproheptadine (a 5HT2A blocker) in reducing total alcohol consumption (TAC) among individuals diagnosed with alcohol use disorder (AUD). Spanning across 32 addiction treatment centers in France, this double-blind, parallel-group, placebo-controlled, phase 2, randomized clinical trial enrolled a total of 108 men and 46 women presenting severe AUD.

Participants were randomly assigned to one of three treatment arms, each spanning a duration of three months: 1) a low-dose group (LDG) receiving daily doses of 8 mg cyproheptadine and 5 mg prazosin extended-release (ER) formulation; 2) a high-dose group (HDG) administered daily doses of 12 mg cyproheptadine and 10 mg prazosin ER; and 3) a placebo group (PG) receiving placebo versions of both cyproheptadine and prazosin ER. In total, 154 patients were randomized, with 54 allocated to the PG, 54 to the LDG, and 46 to the HDG.

The primary outcome was 28-day TAC change from baseline to Month 3. Analysis of the intent-to-treat population unveiled a significant main treatment effect in TAC change ($p=0.039$). Both the HDG and LDG demonstrated notable reductions in TAC compared to the PG: -23.6 g/day ($p=0.016$, Cohen's $d=-0.44$) and -18.4 g/day ($p=0.048$, Bonferroni correction $p<0.025$, $d=-0.36$), respectively. A closer examination within a subgroup characterized by very high-risk drinking levels (>100 g/day for men and >60 g/day for women) revealed a particularly pronounced effect of the HDG compared to the PG, with a difference of -29.8 g/day ($p=0.031$, $d=-0.51$). Both the high and low doses of the combination regimen were well-tolerated, exhibiting similar safety profiles.

In summary, our randomized controlled trial demonstrated that the cyproheptadine-prazosin combination for 3 months effectively reduced alcohol consumption by over 23 g per day compared to placebo. Notably, the higher dose combination yielded a greater magnitude of

reduction in alcohol intake while maintaining a comparable safety profile to the lower dose combination.

Deepika Bara

Manager, Program Learning and Training, Population Services
International (PSI) India, India

Bibhishana Bhuyan

Manager, Monitoring Learning and Evaluation, Population Services
International (PSI) India, India

Mukesh Sharma

Executive Director, Population Services International (PSI) India, India

Hitesh Sahni

Director - Program, Population Services International (PSI) India, India

Samarendra Behera

Deputy Director - Program Implementation, Population Services
International (PSI) India, India

&

Deepti Mathur

Associate Director - Program Learning and Training, Population
Services International (PSI) India, India

**Optimizing Family Planning Services:
A Pilot Evaluation of Digital Follow-Up and Counselling
by UPHC Staff in Collaboration with TCI India in
Jharkhand, India**

The paper presents the findings of a pilot study focused on evaluating the effectiveness of a follow-up and counselling mechanism for injectable family planning services. It was carried out by Urban Primary Health Care (UPHC) staff with the technical support of The Challenge Initiative (TCI) in Jharkhand, India. The study assessed the impact of this mechanism on increasing the uptake of the second and subsequent dosages of injectable contraceptives among women in the target population.

The study utilized a quasi-experimental design with a pre- and mid-intervention comparison. The study was conducted at the selected UPHCs in five TCI supported cities of Jharkhand in collaboration with the local health authorities. The observation included in this study is for the period of October 2022 till September 2023. The coaching model employed by TCI India is dedicated to achieving sustainable transformation in the integration of family planning services through its Lead, Assist and Observe (LAO) model. During this period, TCI India coached and supported the UPHC staff in implementing a systematic follow-up and counselling protocol for women who had received the first dosage of injectable. The follow-up included digital

reminders through telephonic calls and messages by the Auxiliary Nurse Midwife (ANM) for subsequent dosages and personalized counselling sessions addressing any concerns or questions. Quantitative data was collected from the Family Planning (FP) registers and client follow-up card in which the Antara service dosage were mentioned with due date and HMIS to compare the uptake of the second and third dosages during the study period.

The results of the study indicated a significant increase in the uptake of the second and third dosages of injectable family planning following the implementation of the follow-up and counselling mechanism by UPHC staff. The percentage of women who returned for their second, third and fourth dosages during the intervention period exhibited a substantial rise compared to the pre-intervention period. Furthermore, the quantitative data indicated a positive correlation between the frequency of follow-up contacts and adherence to subsequent dosages.

The study highlights the importance of a well-structured follow-up and counselling mechanism in increasing the uptake of the second and subsequent dosages of injectable. The active involvement of UPHC staff in providing personalized counselling and reminders significantly contributed to improving adherence to the injectable contraceptive regimen.

It is recommended to adopt similar follow-up and counselling mechanism at other facilities to reduce the drop-out rates and increase in the uptake of subsequent doses of injectable. This would also help in minimizing the misconceptions associated with injectable contraceptives. Such an intervention has the potential to enhance the efficacy of family planning injectable services and consequently contribute to better family planning outcomes in the target population.

Carsten Colombier

Economic Adviser, Federal Department of Finance, Switzerland and
FiFo Institute for Public Economics, University of Cologne, Germany

Benjamin Lerch

Economic Adviser, Federal Department of Finance, Switzerland
&

Thomas Brändle

Head of Economic and Budgetary Policy Analysis, Federal Department
of Finance, Switzerland

**The Impact of Ageing on the Sustainability of the Swiss
Healthcare System: Healthcare Expenditure Projections up
to 2060**

Objectives

Many European countries such as Switzerland spend a steadily increasing share of their national income on healthcare. This has been reinforced by the pandemic and calls the sustainability of public finances into question. In the longer term, continuous fiscal pressure will build up from the foreseeable ageing of the population and none-demographic cost drivers such as rising income, medical advances and Baumol's cost disease (rising relative prices in healthcare due to wage pressure). Even the risk of an underprovision may result from shortages of healthcare staff. To show the need for economic policy action, this paper provides expenditure projections for Switzerland up to 2060. This paper indicates the additional fiscal burden for the government and MHI and suggests cost-dampening policy levers.

Method

In line with the standard approach used by European Commission and OECD we apply an age-cohort approach to project HCE from 2021 to 2060. We assume that the regulatory status quo remains unchanged and use the reference population scenario by the national statistical office. We decompose HCE by age, sex and area of healthcare. Healthcare is broken down by healthcare excluding long-term care (HeL) and long-term care from the age of 65 (LTC) as cost factors affect these areas differently. To take care of the uncertainty surrounding the cost factors we vary assumptions on the health status of the population, the income effect, the cost disease and draw up alternative scenarios to our reference scenario.

Results

Ageing and non-demographic drivers will put continued fiscal pressure on public finances and MHI. Public finances are stronger affected by ageing than MHI. Our alternative scenarios indicate that the strongest cost pressure comes from the effect of the nondemographic cost drivers, in particular from the rising wage pressure. However, for public finances the latter holds true only from the 2050-ties when the disappearing of the baby boomer generations leads to a weakening impact of ageing. Up to 2050 a deterioration of the health status of the population will exert a similarly strong impact on public finances than non-demographic drivers. Our projections show that the high cost-share of private household in MHI and LTC will also put private household budgets under increasing strain.

Conclusion

An important policy lever to contain HeL cost growth, in particular, hospital expenditure that are co-financed by cantons and MHI is to better exploit the cost inefficiencies in the system, for example, by strengthening coordinated care and controlling costs via tariff partners. Preventive measures such as promoting healthy dietary and exercise behavior can contribute significantly to the prevention of chronic diseases. In LTC, a strengthening of the much lower cost outpatient care would contribute to cost containment. To avoid the risks of sharply rising wage costs and underprovision a forward-looking human resource planning is crucial. The growing cost share of private households poses another looming risk for the sustainability of public finances. To safeguard equal access to healthcare the government might have to expand social allowances even stronger than projected.

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Feeling Less Able to Cope: The Impact of COVID-19 on Reasons for Cannabis Use in a Sample of Cisgender Pregnant Women at Risk for HIV/STIs in the U.S.

Background: Cannabis use during pregnancy is a growing public health concern in the U.S. and is associated with significant health risks for the woman and developing fetus, including low infant birth weight. Cannabis use is associated with condomless sex and sex with multiple partners, placing individuals at risk for sexually transmitted infections (STIs). The COVID-19 pandemic has escalated cannabis use among pregnant women and has been linked with increases in other substance use, perceived stress, and mental illness. The objective of this study is to examine the impact of COVID-19 on cannabis use in our study sample.

Methods: The study design is a two group, randomized controlled trial with 176 cisgender pregnant women living in the Midwestern U.S. endorsing criteria for substance use and condomless sex, and/or sex with multiple partners. Participants were recruited April 2019 to September 2023. We are testing a technology delivered program, the Health Check-up for Expectant Moms, in the reduction of STIs during pregnancy. Among participants reporting use, reasons for using cannabis were compared between the pre- and post- COVID-19 groups ($n = 54$ and $n = 65$, respectively) using logistic regression after adjusting for age, education, employment, income, and marital status.

Results: We report on the baseline data in our ongoing trial. There was no significant differences in cannabis use before and after the COVID-19 pandemic; however, while comparing the cited reasons for cannabis use, participants were found to be significantly more likely to choose "To help me with my feelings or emotions" as a primary reason for cannabis use during the pandemic as compared to prior to the

pandemic (33.85% vs. 16.67%, respectively; Adjusted OR=2.97, p = 0.047).

Conclusions: The finding that participants reported using cannabis primarily to help with their feelings or emotions since the pandemic suggests that the COVID-19 pandemic lowered pregnant women's perceived ability to cope with their feelings and emotions as compared to pre-pandemic. The clinical implication of this finding is that the identification of post-pandemic-related stressors and risk factors for cannabis use during pregnancy could help women to support their mental health and prevent HIV/STIs during this vulnerable time.

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The Intervention Effect of Co-Management of Three Highs (Hypertension, Diabetes and Hyperlipidemia) – A Pilot Study in Qingdao, Shandong Province in China

Objective: To evaluate the effects of co-management of three highs which aimed to improve the life quality of patients diagnosed with diabetes, hypertension and hyperlipidemia through integrated interventions.

Methods: Separate linear mixed models were employed to analyze their impact on diastolic blood pressure, systolic blood pressure, blood glucose values and lipid indicators. Multilevel logistic regression models were applied to analyze the effects of the interventions on the rate of meeting the standard for blood pressure, blood glucose, and blood lipids. A two-period DID model was applied to analyze the effect of the intervention on the number of follow-up visits. The study employed multilevel logistic regression to assess the likelihood of a visit within the sample. Zero-inflated Poisson regression was utilized to examine the frequency of visits within the sample. Furthermore, a generalized linear mixed model with log-links from a gamma-distributed family was applied to analyze healthcare costs within the sample.

Results: A total of 89,000 patients were enrolled in the study. In hypertensive patients, the findings revealed that the average diastolic blood pressure in the experimental group reduced significantly by 2.989 mmHg compared to the control group. The experimental group exhibited a significant reduction of 2.560 mmHg in diastolic blood pressure, along with a notable 58.61% increase in the probability of meeting the blood pressure standard. Following the intervention, the number of follow-up visits in the intervention group increased by 2.109 compared to the control group. It was found that the average fasting blood glucose value per patient in the experimental group decreased significantly by 0.134 mmol/L compared to the control group. Among those diagnosed with diabetes mellitus, fasting blood glucose in the experimental group was significantly reduced by 0.171 mmol/L, and the probability of reaching the blood glucose standard was notably increased by 53.48%. Compared to the control group, the probability of outpatient visits for patients in the intervention group was substantially reduced by 97.57%, while the probability of inpatient visits decreased

significantly by 25.38%. The number of outpatient and emergency visits was also notably reduced by 34.99%, along with a significant decrease of 51.28% in the total number of visits. Furthermore, the number of hospitalization days decreased significantly by 2.044 days, and the cost of outpatient and emergency medical care decreased by 25.21%. Hospitalization costs decreased significantly by 14.01%, and total medical costs decreased notably by 19.60%.

Conclusion: Regarding blood pressure control, the intervention led to a significant reduction in diastolic blood pressure and an increase in the frequency of follow-up visits among the overall population, a significant decrease in fasting glucose levels and an increase in follow-up visits across the entire population, significantly reduced the likelihood of patient visits, the total number of visits, the duration of hospital stays, and the overall cost of care.

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Lifestyle Medicine and Health Economics

Lifestyle medicine is a medical specialty that uses therapeutic lifestyle interventions as a primary modality to prevent, treat, improve and sometimes reverse chronic conditions including, but not limited to, cardiovascular diseases, insulin resistance, type 2 diabetes, cancer and obesity. It can also be effective in reducing the number of costly medications and procedures prescribed. Models of potential economic cost savings show that it can reduce the healthcare costs borne by insurance companies, governments and individuals. Lifestyle medicine can improve chronic conditions, both those leading to premature death, and those contributing to disability and illness throughout life. It has 6 pillars: whole-food, plant-based diet, regular physical activity, restorative sleep, stress management, avoidance of risky substances and positive social connections. There is a growing focus on Remission of Type II diabetes through diet rich in plant-based food. Initiatives such as Food as Medicine and Culinary Medicine involve hands-on food and cooking learning experiences in Teaching Kitchens, where participants learn about Ultra Processed Foods and substitute healthier foodstuff options. Nutritional and metabolic psychiatry proposes that brain-healthy diets, sleep hygiene and stress management can ameliorate mood conditions such as depression. Research on interventions and clinical outcomes of initiatives could provide evidence of the effectiveness of Lifestyle Medicine. This presentation will discuss how to make Lifestyle Medicine interventions accessible and equitable for diverse populations: this includes education of healthcare professionals to make evidence-based therapeutic lifestyle interventions, becoming aware of stigma, educating the public and stakeholders about the importance of nutrition, considering food poverty, social inequities and social determinants of health. It will conclude with a hopeful message that lifestyle medicine can treat root causes of disease through promoting health behaviour change.

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**Health in Noord-Brabant:
Three Extra Healthy Life Years by 2030**

The Dutch province of Noord-Brabant has an explicit policy to improve the health of its 2.6 million inhabitants by adding three additional healthy life years by 2030. This approach, also known as health in all policies, integrates health as an important theme in all provincial policy areas. To make this policy specific and determine the next steps, a visual change theory has been developed. This makes clear how various provincial programs contribute to the shared health goal. The presentation explains how the policy programs contribute to the collective health goal and make their impact visible.

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Innovative Application for the Mitigation of Airborne Pathogens

Introduction: The spread of respiratory illnesses, such as the recent COVID-19 pandemic, has posed a significant threat to millions of lives, leading to thousands of fatalities globally. This has sparked a concerning worldwide health crisis, underscoring the pivotal role of airborne transmission in the spread of infections.

HEPA filters are the current industry standard. Nevertheless, they must be used with other air cleaning methods as they present a high-pressure drop to the airflow and consume fan power. Additionally, HEPA filters are expensive and must be frequently changed. Here, a new device for air cleaning from microbes was developed and evaluated for its efficiency. The device uses Electrically Activated Water (EAW), which could be integrated into current Heating, Ventilation, and Air Conditioning (HVAC) systems in healthcare facilities.

Material and Methods: In this study, a modified integrated air cooling portable unit was developed to accommodate the EAW-wicking system and the HEPA filter that can be used to mitigate airborne diseases. A known amount of *E. coli*, *Aspergillus* spp., and Newcastle virus were nebulized in a contained space using an automatic nebulizer. The efficacy of the prototype and a combination of the developed prototype and HEPA filters were compared and assessed through different techniques. After each cleaning period, the bacteria were quantified by sampling into nutrient agar plates consuming Cascade Impactor. Newcastle virus was collected using an SKC aerosol

sampler, and viral load reduction for SARS-COV-2 virus was determined using TCID₅₀/ml and RT-qPCR, while antifungal activity was determined by inhibiting fungus growth.

Results: A lab air cleaning analysis demonstrated the significant efficiency of the novel prototype. The technology also showed efficacy in the simulated tertiary hospital and stadium environment.

Conclusions: The novel patented application will globally influence infection control strategies in hospitals and indoor public locations by providing a safe, pathogens-free environment.

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Igniting Change: Tackling Zoonotic Diseases, Climate Change, and Health Inequities through Sustainable Farming and Legal Reform

As the world grapples with the escalating threats posed by factory farming, zoonotic diseases, climate change, and global health inequities, the urgency for a comprehensive and multifaceted response has never been clearer. This paper builds upon the intricate relationships and challenges presented in my article "Playing with Fire: Factory Farming, Zoonotic Diseases, Climate Change, and the Global Health Inequity Crisis." It delves into the perilous cycle fueled by industrial animal agriculture, which not only sets the stage for the emergence and rapid spread of zoonotic diseases but also exacerbates climate change and widens the chasm of health inequities across the globe.

At the heart of this crisis are Concentrated Animal Feeding Operations (CAFOs), which, through overcrowding and the misuse of antibiotics, create hotbeds for disease and antibiotic resistance, posing significant threats to both human and animal health. The paper further explores how these practices disproportionately impact marginalized communities, highlighting the pressing environmental justice issues that arise from the location and operation of CAFOs.

Recognizing the interconnectedness of these issues, the paper proposes a holistic approach to mitigation, prevention, and adaptation. Emphasizing the need for a shift towards sustainable and less intensive forms of animal agriculture, it outlines potential legal and policy changes aimed at incentivizing such practices, including rethinking agricultural subsidies and trade agreements. Furthermore, it stresses the importance of strengthening public health systems, particularly in lower-income countries, to enhance early detection and effective response to disease outbreaks.

Education and awareness play pivotal roles in this comprehensive strategy, as public understanding of the link between factory farming, zoonotic diseases, antibiotic resistance, and climate change is crucial for driving change. Through international cooperation and the sharing of knowledge and resources, the paper argues for a global effort to address these challenges.

In conclusion, this paper calls for urgent and collaborative action to reform industrial animal agriculture practices, mitigate the risks of

zoonotic diseases, combat climate change, and address global health inequities. By embracing sustainable farming practices and enacting meaningful legal and policy reforms, we can safeguard our planet's health and ensure a more equitable and sustainable future for all.

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Evaluation of the Semen Microbiome for Fertility in Obese Men with Next-Generation Sequencing

Objective: In the thesis study, it was aimed to examine the microbial content and diversity in semen samples of obese men, to determine the differences between infertile and fertile groups, and to investigate the effects of seminal microbiota on semen parameters, sperm DNA fragmentation, sperm chromatin condensation, and total antioxidant capacity.

Material and method: Thirteen obese infertile men with a BMI above 30 kg/m² and 5 obese fertile men with children younger than two years of age as the control group were included in the study. For microbiome analysis, the V3 and V4 regions of the 16S ribosomal RNA gene were sequenced using the amplicon sequencing method, which is one of the next generation sequencing techniques. Sperm DNA fragmentation was analyzed by TUNEL test, total antioxidant capacity was analyzed by ELISA test and histone-rich sperm percentage was analyzed by aniline blue staining method.

Results: It was seen that the most abundant bacteria in both groups belonged to the phylum of Bacillota, Pseudomonadota, Actinomycetota and Bacteroidota. The most common bacteria at the genus level were Pseudescherichia, Staphylococcus, Paenibacillus, Streptococcus, Klebsiella, and Moraxella, which had similar distributions in both groups. Total antioxidant capacity values were 2.87 ± 0.21 in the infertile group and 2.69 ± 0.20 in the control group. Sperm DNA fragmentation was found to be higher in obese infertile men (mean: 1.39 ± 3.27) than in obese fertile men (mean: 12.10 ± 4.93). It was observed that histone-rich sperm percentage values in the control group (mean: 33.68 ± 15.65) were lower than the infertile group (mean: 48.15 ± 19.14). However, these differences were not statistically significant ($p=0.127$; $p=0.564$; $p=0.172$,

respectively). A negative correlation was observed between the percentage of aniline-positive sperm and motility ($p < 0.0001$), sperm concentration ($p = 0.0001$) and total sperm count ($p = 0.001$). It was determined that *Brevibacterium*, *Paenibacillus*, *Alistipes*, *Lactiplantibacillus*, *Rhizobacter*, *Sphingomonas* and *Venlonella* genera were correlated with SDF; *Pantoea*, *Devosia*, *Bacteroides*, *Acidovorax* genera were correlated with TAC, *Fusobacterium* genera was correlated with percentage of aniline-positive sperm, and *Corynebacterium*, *Hydrogenophaga*, and *Paenalcaligenes* genera were correlated with BMI.

Conclusion: Bacterial species in semen may play a role in male infertility by affecting semen quality, sperm DNA fragmentation or total antioxidant capacity. Considering the relatively small size of the study sample ($n = 18$), more meaningful results can be expected with a larger sample.

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**'Time Is Tissue' - Improved Resuscitation during the
COVID-19 Pandemic via Simulation with PPE**

The WHO declared the Coronavirus disease 2019 (COVID-19) a public health emergency of international concern on 30 January 2020. Its subsequent worldwide spread prompted the WHO to declare COVID-19 a pandemic within 41 days. While the basic principles of clinical practice remain, the international healthcare community have had to adapt to the emerging evidence of this disease process and work in ways to best protect ourselves, our colleagues, and, the patients we treat. Simulation remains key to enable safer practice through rehearsal in a learning environment. Quantitative data was collected to assess the speed to don PPE and initiate CPR following cardiac arrest. Qualitative data was also collected to assess the impact that training had on overall performance in full PPE.

There were ten groups of multidisciplinary clinical staff divided equally from two sites (military and civilian). Participants were randomly allocated to 4 designated roles: team leader, airway lead, runner and a person to take over CPR from the team leader. All roles were clearly demonstrated. They were observed to examine human factors interplay and then debriefed on their performance.

A reduction in time to start CPR in PPE of 93 seconds (mean) was achieved ($P < 0.001$). All participants felt the training would change their practice. 43% of the civilian group did not know where to find PPE in an emergency. 100% of participants felt competent after training to deliver CPR with PPE.

Adopting the new donning method will reduce time to begin compressions when PPE needs to be applied. Team briefings at the start of a shift can streamline human interaction by generating automaticity and reduce the risk of error. CPR training should be practical rather

than e-learning and all resuscitation trolleys should carry appropriate PPE.

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Darkness in the Light: Circadian Rhythm Disruption and Polycystic Ovary Syndrome

Introduction: Polycystic ovary syndrome (PCOS) is an endocrine disorder affecting women of reproductive age both at the hormonal level, due to elevated androgens, and the metabolic level, due to insulin resistance and glucose intolerance. Patients with PCOS usually manifest as hirsutism, obesity, hypertension, type II diabetes mellitus, amenorrhea, and infertility. Moreover, patients with PCOS are subjected to complications including cardiovascular disease, kidney disease, ovarian cancer, and endometrial cancer. Recent studies have estimated the world-wide prevalence of PCOS to range from 8–13%, but the exact mechanism of the condition is unknown. However, there have been several postulated theories regarding the risk factors of PCOS. Because of the intricate interplay between the endocrine system and the brain's sleep center in the hypothalamus, one such theory is the level of circadian rhythm disruption (CRD). Some studies have shown that chronic CRD leads to increased endocrine and metabolic disturbances, which may exacerbate the cycle of symptoms seen in women with PCOS. Nevertheless, recent evidence has shown conflicting results between CRD and PCOS. Thus, the aim of our study was to portray the overall effect of CRD on PCOS.

Methods: We conducted a systematic review and meta-analysis to estimate the mean difference of melatonin levels in women with PCOS versus controls. The melatonin levels were used as a surrogate to estimate the level of CRD. PubMed, Scopus, Embase, and the Cochrane databases were systematically searched using the key terms "circadian rhythm" OR "sleep disturbance" AND "polycystic ovary syndrome." The titles and abstracts were independently screened for eligibility by two researchers, followed by full-text screening for studies that met inclusion criteria. Data was extracted using the following headings: study, site, study design, sample size, PCOS criteria, and criteria for CRD. The Jamovi software was used to create the forest and funnel plots. The random-effects model was used to estimate the mean difference in melatonin levels among women with PCOS and controls.

Results: After duplicates were removed, 130 records were screened for eligibility. This was followed by a screening of 25 full-text articles. Based on our eligibility criteria, 5 articles were included in our meta-analysis. This resulted in a sample size of 576, consisting of 255 women with PCOS and 321 controls. Results obtained from the studies showed that the mean difference in melatonin levels ranged from -2.4 to 4.28 pg/mL. Our pooled analysis revealed that the mean melatonin difference between women with PCOS and controls was 1.47 pg/mL, with a 95% confidence interval of [-0.36, 3.30], and a $p = 0.115$. The I² of 98.07% indicated that there was heterogeneity among the studies included in the analysis. The funnel plot demonstrated that there was no publication bias. This was confirmed by Egger's regression test [$p=0.623$].

Conclusions: Our meta-analysis showed that the mean melatonin level was higher in patients with PCOS when compared to controls, even though the difference was not statistically significant.

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Youth-engaged Research to Support Tobacco Prevention

Background

In response to the e-cigarette epidemic among youth, a peer-led e-cigarette prevention program called #iCANendthetrend (#ICETT) was developed by youth-engaged researchers. The purpose of this presentation is to synthesize the effectiveness of #ICETT and the modification of strategies to best engage the audience through the use of real-time student feedback data.

Methods

The goal of #ICETT is to lead a peer-to-peer model to prevent e-cigarette initiation or encourage those who are using to quit. #ICETT administers surveys to students before and after each presentation. Fall

2023 surveys of middle schoolers included 1,044 responses to the baseline survey and 509 responses to the feedback survey. Every semester, feedback reports are shared with the #ICETT team to determine if strategies need to be adapted.

Results

The majority of students (85%) reported that they learned something new about e-cigarettes. More students thought about vaping's impact on their peers than themselves. Students reported they were most interested in mental health topics (90%), health effects (90%), and the environmental impact (89%) of e-cigarettes. Examples of social media (92%), college facilitator personal stories (91%), and discussions with the college facilitator (91%) were the most engaging components. Over 90% of students felt confident in preventing e-cigarette use in their school.

Conclusion

Data collected from the baseline and feedback reports allow for #ICETT to implement unique lessons that align with students' interests in real time. Disseminating information to youth across Kentucky with an innovative youth-engaged approach requires adaptable material and continuous evaluation of program outcomes.

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Exploring the Landscape of Thalassemia Prevention: From Screening Strategies to Economic Impact

Thalassemia, a long-standing challenge for a century, continues to inflict substantial morbidity and mortality rates. Despite the absence of a comprehensive review on the economic aspects of prevention efforts, this examination illuminates a landscape rich with diverse, yet efficacious strategies aimed at curtailing national thalassemia burdens. Employing the meticulous methodologies outlined in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020), an extensive search across various databases including Scopus, Web of Science, and others yielded a corpus of 5,425 potential articles. Encouragingly, numerous nations have witnessed remarkable declines in thalassemia prevalence subsequent to the implementation of intervention initiatives spanning several decades.

Divergence emerges in screening methodologies, with the pace of reduction contingent upon the screening modality adopted, encompassing blood screenings of adolescents and antenatal mothers, and, in certain jurisdictions, termination of pregnancies. Financial considerations, though multifaceted and challenging to standardize, underscore the overarching conclusion that the costs associated with screening, while substantial, are outweighed by the economic benefits derived from diminished caseloads. Notably, selected countries have conducted cost-effectiveness analyses bolstering the rationale for sustained investment in thalassemia screening and prevention endeavors.

The findings underscore marked disparities in success rates, with jurisdictions embracing comprehensive and proactive prevention and control schemes inclusive of laboratory screening, counseling services, and termination of pregnancies emerging as exemplars of efficacy.

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Catastrophic and Impoverishment Impact of Health Expenditures Associated with Non-Communicable Diseases in Nepal

Background: Universal health coverage is crucial for equitable access to healthcare, particularly in low-resource settings like Nepal, where high out-of-pocket expenditures present barriers to care, notably for non-communicable diseases (NCDs) responsible for 71% of total deaths. This study assessed household catastrophic health expenditures (CHE), impoverishment and determinants in Nepal, with an emphasis on NCDs.

Methods: This study used a cross-sectional household survey in Pokhara Metropolitan City, Nepal, with 1,276 households. We collected data on household consumption, healthcare expenses, and socio-demographics. CHE was identified when out-of-pocket healthcare costs reached 10% or more of total household expenditure, while impoverishment was measured using the poverty headcount ratio. Total household consumption was calculated as the sum of food and non-food consumption. The reported out-of-pocket health care expenditures (OOPHE) associated with acute (in the past 30 days) or chronic (in the past 12 months; later converted into expenditure per month) were aggregated. Healthcare expenses were categorized under non-food consumption, encompassing both acute and non-communicable disease (NCD) expenditures. For households facing illnesses, expenses were based on self-reported data, validated by pertinent documents for tests, treatment, or medications, whatever was available.

Results: Out of 1276 total sample, 853 (66.8%) households reported experiencing any form of illnesses in the past month. Of them, 125 households (15%) faced catastrophic health expenditures within a month, with NCD-related costs accounting for 11% of total CHE. NCD expenditures were double those of acute health expenses, primarily attributed to medication (60%) and curative care (17.3%). The impoverishment rate was 3.8% over the preceding year. Households with more than two NCD members had 3 times higher odds of CHE (95% CI, 1.46-4.37), and those with both acute and NCDs faced odds three times greater CHE (95% CI, 1.92 to 4.89). Households with heart disease were three times as likely (CI at 95%, 1.51-4.38) to experience CHE. Poorest households were three times more likely to suffer from

catastrophic health expenditures than the richest ones (CI at 95%, 1.47-5.22). Households with elderly, under five children, household size, diabetes, hypertension, respiratory problems, and National Health Insurance exhibit statistical insignificance.

Conclusion: Addressing the economic disparities, expanding, and strengthening free health care services including medications and targeting comprehensive financial support to NCD households could alleviate catastrophic health expenditures and prevent households from impoverishment.

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Formulation and in-Vitro Evaluation of Floating and Unfolding Type Gastroretentive Expandable Film of Cinnarizine

Objective: The objective of this study was to formulate and evaluate the floating and unfolding type gastroretentive expandable film of Cinnarizine.

Introduction: Conventional oral route is more frequent route because of its safe and easy administration. However, frequent dosing is necessary for the drugs which get readily absorbed from gastrointestinal tract, possess short half-lives and get easily eliminated from the body in order to gain maximum therapeutic activity. So, to overcome this limitation, oral sustained-controlled release products have been attempted to develop which help in maintaining an optimum drug concentration in the systemic circulation via retention of drug in stomach and release of it in a controlled manner. Cinnarizine is a Histamine H1 receptor antagonist widely used in the treatment of nausea and vomiting associated with inner ear disorders such as Meniere's disease and motion sickness which works by blocking histamine receptors found in various body regions including vomiting centre in the brain. Its elimination half-life is 2-4 h where the metabolites are mainly excreted through urine and faeces.

Materials and methodology: Floating and unfolding type expandable gastro-retentive films of cinnarizine were developed by solvent casting method using two polymers-HPMC K4M (Hydrophilic) and Ethyl cellulose(Hydrophobic) as rate retarding polymer, Sodium Bicarbonate as floating agent and PEG 400 as plasticizer to sustain the drug release from the films. Five different formulations were prepared using different polymer concentration and evaluated for folding endurance, unfolding time, floating characteristics, weight uniformity, thickness, % drug content and in-vitro drug release.

Results: Gastro-retentive film of optimized formulation (F3) showed floatability upto 11 hours with good unfolding action within

20-40 minutes. The in-vitro drug release after 12 hours for Cinnarizine in 0.1 N HCL for F3 is 79.74% which indicates the better sustained release effect of drug with the increasing concentration of ethyl cellulose as compared to HPMC K4M.

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**Assessment of Fourth Grade School Students' Rabies
Protection Motivation and Preventive Behavior in
Chonburi Province, Thailand**

Rabies is one of the most important endemic diseases in Thailand, characterized by a fatality rate approaching 100% in both human and animal populations. A demographic group at elevated risk comprises those below the age of 15. Chonburi province has the highest rate of rabies fatalities in Thailand between 2011 and 2022, according to the statistics. Based on accessible information about fatalities resulting from rabies, the primary cause of death appears to be attributed to a lack of awareness of appropriate post-bite interventions. The Protection Motivation Theory (PMT) has accumulated (garnered) significant acceptance as a conceptual framework for the prediction and manipulation of health-related behaviors. The construction of PMT includes four key components: Perceived Severity (PS), Perceived Vulnerability (PV), Response Efficacy (RE), and Self Efficacy (SE). This study aimed to examine and contrast the levels of Rabies Protection Motivation (RPM) and Rabies Preventive Behavior (RPB) among grade 4 students who attend schools under the Office of the Basic Education Commission (OBEC) (290 students) and attend schools under the Office of the Private Education Commission (OPEC) (268 students) in Chonburi province.

The result of the study indicated that students who enrolled in schools under the OPEC demonstrated significantly higher levels of RPM (= 39.22 SD=4.487, $P < 0.001$) and RPB (= 16.60 SD=3.889, $P < 0.05$) compared to students attended OBEC schools. On the other hand, the students in OBEC schools presented lower scores in RPM (= 37.35

SD=4.923, $P < 0.001$) and RPB ($= 15.81$ SD=3.398, $P < 0.05$), with statistically significant differences observed at the 0.05 level. When examining the components of RPM, it was discovered that students in private school presented remarkably higher levels of Rabies Perceived Vulnerability (RPV) ($= 9.94$ SD=1.560, $P < 0.01$), and Rabies Self Efficacy (RSE) ($= 10.85$ SD=1.426, $P < 0.01$) compared to students in OBEC schools (RPV ; $= 9.38$ SD=1.577, $P < 0.01$, and RSE; $= 9.98$ SD=1.850, $P < 0.01$). These differences were statistically significant at the 0.05 level.

After classifying the scores according to Bloom's criteria, it was noted that a significant proportion of students enrolled in OBEC schools and OPEC schools demonstrated high levels of RPM (51.7% and 66.8%, respectively) while displaying moderate levels of RPB (46.2% and 42.5% respectively). In summary, educational institutions should involve activities that bring up the development of RPM and encourage the adoption of favorable RPB among children in schools. To mitigate the occurrence of rabies, it is imperative to cultivate and reinforce appropriate behaviors related to rabies prevention among pupils. This intervention is expected to enhance pupils' ability to safeguard themselves from rabies in the future.

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The Effect of Face Masks on COVID-19 Transmission: A Meta-Analysis

The effect of face masks on COVID-19 transmission is crucial for the health of populations. The effectiveness of face masks in reducing the transmission of COVID-19 varies across primary evidence. To perform a quantitative meta-analysis, we collected 258 estimates from 44 primary studies together with more than 30 variables reflecting the differences among these studies. We examine publication bias by implementing various statistical tests, revealing mild evidence for the phenomenon. After controlling for publication bias, wearing a face mask is associated with a reduced risk of COVID-19 infection by 18.7% to 44%. Our contribution to other meta-analyses on this topic involves the use of Bayesian and Frequentist model averaging to identify the drivers behind the heterogeneity of the estimates. The results indicate that temperature, geographical latitude, and panel data structure increase the risk of transmission associated with mask-wearing. Furthermore, a positive effect is identified for the healthcare setup. In contrast, wearing masks during aerosol-generating procedures decreases the risk of transmission. After controlling for the heterogeneity of primary studies, the implied estimate suggests that masks reduce the risk of COVID-19 infection by 12.9% to 15.7%.

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Discussions about Racial Health Disparities, Reasons they Still Exist, and Potential Approaches

Health disparities occur among various races in the US, as well as globally, for nearly all areas of health and also includes the major causes of death: heart disease, cancer, diabetes, stroke, and respiratory illnesses among others. Statistics regarding the number of people from each race suffering from each of these illnesses and dying from them must be described. In addition, reasons for each disparity need to be provided to be better able to work toward easing these disparities. Healthcare providers need to be educated on these preventable disparities so that strides can be made toward correcting these gaps. All sectors of health must work together in a sustained effort toward this common goal. Education on this topic needs to begin with students earning degrees in health fields so that they can begin to address the issues immediately upon entering their chosen fields. Additionally, efforts need to be made so that all citizens are educated about health disparities since it will take a sustained effort from one generation to the next to ease the disparities.

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Frailty Index over the Adult Life as a Predictor of Healthcare and Mortality at Short to Midterm

The most commonly used health assessment measure is a self-reported health measure. This measure has the advantage of being easily collected through questionnaires. In addition, many studies have shown that it is predictive of mortality. It is also predictive of health care expenditure. However, abundant literature has focused on the impact of subjectivity biases that can distort self-reported health responses, leading to a parsimonious use for health policy implementation.

A frailty index is a tool used to quantify the accumulation of health deficits in an individual. It is increasingly used as a predictor of health care costs. The higher the frailty index, the greater the likelihood of poor health with consequences such as hospitalization and placement in a long-term care facility or nursing home. The measurement of frailty is associated with direct healthcare expenditure - the costs of care - and indirect costs such as assistance to people identified as frail, health and social services, and caregiver costs. These costs can be considerable. They can have a significant impact on the overall healthcare budget.

As a result, the frailty index also becomes a tool for anticipating the need for healthcare provider offerings. Policymakers use these frailty indicators to allocate resources more effectively, identifying those at the highest risk of health problems who can benefit from early interventions. The goal is to prevent or delay a need for future care that is anticipated to be intensive and costly. Therefore, the frailty index can provide valuable information for understanding the impact of frailty on healthcare spending and can inform decisions about resource allocation and health policy development.

The scientific literature on the frailty index is extensive and growing. It agrees on the usefulness of this tool to detect frailty in individuals at an earlier stage and thus to put in place measures to prevent the onset of frailty and the impossibility of reversing it. However, this tool focuses on the elderly population. This paper considers this indicator over the adult life cycle of a population from 15 years of age and beyond. We study how this indicator could complement the subjective health indicator and thus provide an indicator less sensitive to subjectivity bias.

The frailty index was collected in 2012 on a population aged 15 years and older. Then, information on health expenditures was routinely collected over the next four years. This database allows the study of this indicator's predictive character on the whole population according to their age.

We show that the frailty indicator is a predictor of healthcare expenditure not only for older ages but for the whole life cycle.

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The Determinants of Presenteeism in Selected European Countries

Employees' illnesses have economic implications not only for themselves, but also for companies and other workers. The most commonly mentioned consequence of employee illness is sickness absence from work (known as sickness absenteeism). In addition to absenteeism sickness presenteeism can be distinguished. Presenteeism can be defined in a number of different ways, however, the most common definition refers to working while ill. Whether an employee should stay at home or go to work when sick is not entirely clear. Working while sick is undeniably associated with lower productivity. The magnitude of this impact depends not only on the severity and type of illness, but also on the position held by the employee. We have noted that there are numerous different factors that may determine presenteeism. That is why, in this paper we analyze motives of presenteeism among employees in selected European countries. We assume that there is a differentiation in the nature of motives that drive women and men when choosing to work during illness. We selected questions on presenteeism from European Working Conditions Surveys 2010-2021.

Based on outcomes of preliminary empirical analysis we observed that presenteeism is gender and geographical-dependent. Therefore, we use geographically weighted regression to model determinants of phenomena.

The results indicate that men are more motivated by economic issues (the level of earnings, type of work contract, household financial situation, gender pay gap) but women are guided by so-called emotional factors (having children at home or work requiring direct contact with customers). The type of employment contract and fact of having children at home also has an impact on presenteeism. Moreover, the country policy insurance arrangements contribute to the presenteeism.

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Cultural Background of Employees Presenteeism - European Countries Perspective

The aim of the study was to determine the impact of cultural background (selected cultural dimensions described in national culture models of G. Hofstede and F. Trompenaars) on the propensity of employees to stay at work despite illness or disability (their own or that of a family member under their care). The scope of the study includes 30 European countries from both the EU and non-EU representing significant differences in cultural parameters.

National Culture models' by G. Hofstede and F. Trompenaars were used for the analysis. The former distinguishes 6 dimensions of national cultures: power distance (PDI), individualism (IDV), indulgence (IND), uncertainty avoidance (UAI), masculinity (MAS), and long-term orientation (LTO); while the latter distinguishes 7 categories: universalism vs. particularism, individualism vs. communitarianism, specific vs. diffuse perception of life, neutral vs. affective communication style, achievement vs. ascription of social and professional status, sequential vs. synchronous perception of time, and internal- vs. external direction. All these dimensions characterize social behavior and attitudes in a number of important areas that – be believe – influence the decision to stay at work despite the rationale for moving to layoff.

The cultural models that we used in the survey asses different cultural behavior and attitudes on the scale of 0-100, which makes it possible to quantify cultural diversity and thus verify the existence of relationships by statistical methods for data mining. Using classification trees, the countries in question will be analysed from the perspective of the relationship between their cultural background and the occurrence of presenteeism. The work will result in the identification of groups of countries displaying similar characteristics of presenteeism in relation to cultural models.

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Fear and Anxiety in Patients Seeking Dental Care in the Makkah Region of Saudi Arabia

Introduction: Anxiety toward dental procedures is a challenge to manage and causes patients to avoid dental treatment.

Aim: to identify factors influencing dental fear and anxiety (DFA) and investigate factors reducing DFA among Saudi adult patients in the Makkah region of Saudi Arabia.

Methods: Electronic surveys were sent to patients aged 18 years and older. The questionnaire was composed of five sections related to patients' demographics, fear levels of different dental procedures, factors that may reduce fear and a DASS-21 scale to estimate the DFA score. A chi-square test was performed to compare DFA levels of patients in terms of age, sex, and education level.

Results: Of 631 respondents, 77.3% were females (n=143) and 22.7% were males (n=143). The mean age of the participants was 33 years (SD \pm 13.78). The participants reported tooth extraction to be the most fearful procedure (53.1%, n=335), and tooth drilling found the least fearful procedure (37.4%). Participants with a university degree (69.6%) demonstrated high DFA in terms of depression, anxiety and stress (p-value <0.07 , <0.06 , <0.01) compared to participants with lower educational levels. Anxiety was significantly associated with participants younger than age 40 (p-value <0.05). The participants agreed that a good reputation and attitude of the dentist, as well as good ambience and hygiene of the clinic, helped reduce DFA.

Conclusion: DFA was more noticeable in young age groups and highly educated individuals. It is recommended to take a thorough mental health history for patients because mental health is correlated with DFA. Moreover, further studies should focus on the psychological aspects of dental treatment.

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Public Health for All through Cultural Adaptions of Digital Health Interventions: Current Practice and Challenges

Introduction

Digital health interventions (DHIs) are effective public health tools and promise equitable access for all. In North America, Europe, and other parts of the world, despite almost universal access to the internet and smartphones, culturally diverse racial and ethnic minorities are less likely to access and benefit from DHIs. Together with other factors, culture is a barrier to equitable DHI access, as many DHIs fail to capture the cultural norms of minority populations, leaving them excluded. One way to change that is through cultural adaptations, which is the tailoring of existing DHIs to a group's cultural identity (norms, beliefs, and values). Yet, there is currently a lack of understanding of how to adapt DHIs.

Methods

We conducted in-depth semi-structured interviews (May-July 2023) with researchers who have previously conducted cultural adaptations of DHIs. We aimed to capture current practice, challenges, and their recommendations. Eligible participants were identified through academic publications and snowball sampling. We used an iterative thematic analysis approach, guided by a deductively and inductively derived codebook.

Results

We conducted 15 interviews and identified three broader themes: (1) pre-adaptation, (2) adaptation process, and (3) challenges.

Pre-adaptation: Two questions emerged as important before the start of a cultural adaptation: (1) why must an existing DHI be adapted, and (2) what does culture mean for a specific DHI? If an existing DHI is (a) not relevant or appealing, (b) not understandable, (c) offensive, (d) incompatible with prevailing norms and values, and/or (e) not aligned with their context and lived experiences, then it might benefit from an adaptation. Responses revealed that culture is more than ethnicity/place of origin, and includes (a) community, (b) shared experience, (c) shared values, and (d) shared context and living conditions.

Process: We found that involving prospective users (of the focal cultural group) in the adaptation process as the gold standard. Good

user involvement is (a) timely (from the start), (b) iterative (with multiple feedback loops), and (c) continuous. This must be complemented by feedback from experts and other stakeholders, specifically technology experts (e.g., software designers). Responses revealed the following three key adaptation areas: (1) language (tone, narrative, complexity), (2) lived experience, and (3) technology (design, functions). That ensures that DHIs are understandable, relatable, appealing, and easy to adhere to. The adaptation team must ideally be multi-professional and culturally competent. There is currently no systematic guidance on how to choose what to adapt, and the overall process was described as iterative.

Challenges: We identified five DHI-relevant challenges, including (1) technology, (2) uncertainty, (3) user involvement, (4) communication, and (5) sustainability. Overall, DHIs were described as harder to adapt than non-digital interventions, because changing hardware and software often requires more resources (expertise, time, and money).

Conclusions

Cultural adaptations of DHIs are emerging and can support public health initiatives for underserved communities, such as racial/ethnic minorities. Our work is one of the first to describe current practice, underline existing gaps, and identify technology-specific challenges. We call for dedicated research and the development of DHI-specific cultural adaptation frameworks.

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Crossing the Bridge: Exploring Risk for Female Partners of Men Who Have Sex with Men – The Public Health Implications

Background

In Australia, men who have sex with men (MSM) are targeted to curb the spread of HIV and STIs. 'Non-gay' identifying MSM (NGMSM) may not identify with health messages, impacting knowledge of HIV/STI harm minimisation and result in poorer health-seeking behaviours. NGMSM and other MSM and women are often hidden to clinical services. These men may act as bridges for HIV/STI transmission to female partners. Novel strategies to reach this group include opportunistic HIV/STI screening at sex on premises venues (SOPV). We compared the demographics, testing and sexual behaviour of MSM attending a SOPV to MSM attending an established sexual health clinic (SHC).

Method

A daytime SOPV HIV/STI screening service was conducted 2-3 consecutive days per month from November 2015 for 12 months. All patrons were offered testing. The comparison group were MSM attending a local SHC for screening the week following each SOPV clinic. The SHC operates weekdays with appointment and walk-in options. At both sites, participants consented to provide demographic information, contact details and a brief sexual history. Demographics, sexual behaviour and testing practices were compared between the 2 groups.

Results

During the study period 84 men tested at the SOPV and 108 at the SHC. SOPV testers were older (mean age, 48.4 yrs. vs 34.6 yrs.; $p<0.001$) and were more likely to have had sex with a female in the past 12 months (49/84, 58% vs. 19/105, 18%; $p<0.001$). Compared with SHC testers, more SOPV testers had never had an HIV test (23/84, 27% vs. 12/108, 11%; $p<0.01$). In the previous 3 months, 100% condom use with regular partners was similar in both groups (SOPV 33/84, 39% vs. SHC 37/105, 35%; $p=0.67$).

Conclusions

Inconsistent condom use with casual and regular sex partners, combined with higher reported rates of sex with females, may enable SOPV testers to act as bridges for STI/HIV transmission between MSM and heterosexual populations. Our findings have implications for public health risk, HIV/STI service provision, contact tracing and local health promotion initiatives.

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Medical Students' Views on Robotic Surgery

Robotics in the surgical field is constantly being developed further. The research often focuses on ethical aspects. Little can be found in literature about the associations and preferences of prospective medical professionals. Within the complex hospital sector, however, information on this would be important in order to be able to include this in strategies for recruiting specialists.

The aim of this thesis is therefore to investigate the associations, attitudes and digital competence of medical students in Germany with regard to surgical robots.

To this end, a quantitative study was conducted in the form of an online survey among medical students in Germany. This was preceded by a literature review on theory formation. The analysis was carried out using SPSS.

This resulted in a population of n=126 participants. There was a high acceptance of 94 percent regarding the technology of surgical robots, regardless of the respondents age or gender ($p>0.05$). Only around 14 percent considered the use of this technology to be ethically questionable. However, 83 percent of n=126 were unable to correctly identify the type of artificial intelligence used by surgical robots. A further 87 percent were unable to correctly assess the degree of autonomy. The respondents seemed to be aware of their key competence; 90 percent of the respondents maintained that informing patients comprehensively about the role the surgical robots will play in the procedure is essential for raising willingness to undergo such surgery. When choosing their future employer, the respondents attached little importance to the availability of a surgical robot. Here, just under 10 percent of n=126 thought that this was a decisive criterion when choosing an employer.

The study shows that the presence of surgical robots does not guarantee the recruitment of specialists. Similarly, the generation of digital natives does not automatically have the necessary digital skills. Consequently, a need has crystallized in the area of knowledge

management, which should be incorporated into the resource planning of every hospital in its role as an employer.

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Potential Role of Local Bylaw Enforcement on Homelessness: Lessons Learned from Unintended Consequences of Bylaw Enforcement

Inadequate housing is a critical social determinant of health, profoundly impacting the well-being of individuals and communities. As we develop new policies to prevent and decrease homelessness, there are other policies that may create unintended consequences leading to an increase in homelessness. There are municipal governments tasked with enforcing the National Fire Code and local bylaws on private properties and dwellings that are deemed to be unsafe and inadequate, and therefore cannot be inhabited until the contraventions are remedied. The practice of closing such dwellings under the National Fire Code and local bylaws potentially leads to a further increase in homelessness.

The objective of this collaborative research project is to evaluate the implications of this particular policy, and develop alternative policies with an objective to return people to their homes once their homes are deemed safe to be inhabited again. Specifically, this research project aims to evaluate the implications of the current policy on homelessness, and to develop a collaborative approach to identify alternative policies in improving housing stability for underrepresented and vulnerable populations.

The data for this research is derived from the City of Saskatoon Fire Department inspection reports, using this database compiled from the inspection reports over the last 10 years, and the city level publicly available data sources for homelessness, and neighborhood and individual characteristics, our study estimates the social determinants of homelessness and how the policy contributes to the issue in the city.

The preliminary results indicate that the practice of suggested policy has a moderate level of impact on homelessness. Even after controlling for other time invariant variables, the impact of the policy does not get washed out. These results suggest that existing policy needs to be reviewed and revised.

This evidence also suggests that there needs to be constant review of existing policies and development of new policies to fight against the issue of homelessness.

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Cultural Bottlenecks in Healthcare Workforce Planning and Implementation: Insights from North Macedonia

Background: The effectiveness of healthcare workforce planning and implementation is deeply influenced by cultural contexts. This study delves into the cultural bottlenecks in healthcare workforce planning in North Macedonia, guided by Hofstede's Cultural Dimensions Theory, to uncover the nuanced ways in which culture shapes workforce dynamics.

Methods: Employing a qualitative approach, this research engaged healthcare professionals and policymakers within North Macedonia. Data were examined through thematic analysis, concentrating on Hofstede's cultural dimensions – power distance, individualism versus collectivism, masculinity versus femininity, uncertainty avoidance, long-term orientation, and indulgence versus restraint – to understand their influence on healthcare workforce strategies.

Findings: Initial analysis reveals that cultural dimensions such as high power distance and strong uncertainty avoidance significantly influence leadership styles and openness to change, creating bottlenecks in adopting innovative workforce planning strategies. The collectivist orientation underscores the role of community and familial support in healthcare, affecting both staffing models and care delivery methods, while showing perils in individual improvement and self-actualization. Furthermore, insights into masculinity versus femininity dimensions have unveiled preferences for assertiveness over cooperation, which impacts teamwork and collaboration within healthcare settings.

Expanding Cultural Insights: The identification of these cultural bottlenecks using Hofstede's framework not only aids in pinpointing specific areas for improvement, but also threats in the endeavors of workforce planning in North Macedonia. These findings also serve as a valuable lens for other countries to emphasize local and cultural aspects when doing workforce planning and development. This analysis offers a blueprint for recognizing and navigating cultural barriers in healthcare workforce planning, promoting a more adaptable and efficient global health system.

Wider Implications: Beyond North Macedonia, this study's findings emphasize the critical role of cultural understanding in global

healthcare workforce planning. It advocates for a culturally informed approach to policy-making and strategy development, suggesting that aligning workforce initiatives with cultural values can significantly enhance the effectiveness of healthcare delivery worldwide. Such alignment promises to mitigate challenges in workforce sustainability, improve patient care, and foster innovation in healthcare practices.

Conclusion: This investigation highlights the crucial impact of cultural dimensions on healthcare workforce planning and implementation. By integrating cultural considerations, North Macedonia and other nations can navigate cultural bottlenecks more effectively, paving the way for improved healthcare outcomes and a more resilient healthcare workforce.

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Community Model to Address Population Health by Leveraging Collaboration and Communication Capabilities across Organizations

Health care organizations have begun to engage in the digital transformation of their population health strategies to become patient or health care client centric by extending their care coordination into the client ecosystem using advanced technologies. Such transformation requires the engagement of an inter-organizational network of clinical and non-clinical partners and clients, as part of a community model. This community model needs a relationship governance capability to engage the partners to address shared health outcome goals, as well as a resource orchestration capability to share resources needed to create, fulfill, and assess care plans to achieve these outcomes. This paper uses network and communication theories to build agility in the community model to address the evolving needs of clients. Using several cases of community models developed in the US, we propose a framework and methodology for building and implementing community models. We apply this methodology to several community models used to address the health needs of Indigenous populations in Western Ontario to identify potential gaps that can be further investigated. In the last section, we discuss the role of the digital leadership process in helping organizational and IT leaders develop and implement community models and identify several questions that need further exploration through future research. We conclude the paper with some final remarks.

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Effects of Socio-Economic and Health Variables on Survival Time of HIV/AIDS Patients in Manipur

Background: The survival time of patients with human immunodeficiency virus (HIV)/ acquired immune deficiency syndrome (AIDS) is associated with many socio-economic, education, employment and socio-cultural factors. High prevalence rates of HIV/AIDS are observed in some Indian States including Manipur. Objectives: It is to examine the effects of socio-economic and health related variables on the survival time of HIV and Hepatitis-C virus (HCV) patients.

Materials and Methods: Under simple random sampling without replacement (SRSWOR), it analysed a sample of 200 HIV+ patients attending the ART Centre of Jawaharlal Institute of Medical Science (JNIMS), Imphal during March - July 2016. Using multiple regression models, the significant covariates of the survival time of patients are explored.

Findings: The five factors - sex of patient ($P < 0.05$), marital status ($P < 0.05$), family income ($P < 0.05$), patient type ($P < 0.01$) and CD4 count ($P < 0.05$) are found to be significantly influencing the dynamics of survival duration of the patients.

Conclusion: In Manipur, the average survival time of the HIV/AIDS patients is observed to be about six years varying with their sex, marital status, size of family, employment and CD4 count.

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Exploring the Relationship between Intimate Partner Violence and Forced Intimacy and Religion: Insights from Social Work Students

Background: Intimate Partner Violence (IPV) is a critical issue in public health, with various dimensions including physical violence, verbal and emotional abuse, and manipulation tactics related to intimacy and religious practices. Understanding the dynamics between forms of violence is vital for developing comprehensive interventions.

Aim: This study aimed to explore the relationship between IPV, as measured by the Hurt, Insult, Threaten, and Scream (HITS) questionnaire and aspects of forced intimacy and religion to shed light on less discussed facets of IPV.

Method: 130 Jewish students studying in an undergraduate social work program in Israel participated in this research. 90 participants reported being in an intimate relationship at the time of the study; 34% identified as secular, 20% as traditional, and 46% as (ultra)orthodox. Participants completed an online questionnaire, including the Hebrew version of the HITS questionnaire, along with additional questions assessing experiences of forced intimacy and the use of religion as a tool of coercion. The study focused on whether participants' partners had forced or refused intimacy and had enforced or prohibited religious practices.

Results: The analysis of the data revealed a low positive correlation between HITS scores and both forced intimacy ($R=0.28$, $p<0.01$) and the refusal of intimacy ($R=0.29$, $p<0.01$). However, there was no significant relationship between the two tactics of abuse through intimacy, suggesting that though both are related to more general forms of IPV, they represent distinct experiences of abusive relationships. We found no significant relationship between HITS scores and forced religious practices, indicating that religion as a tool of coercion is a distinct category within IPV. Nevertheless, there was a low positive correlation

between religion and both forced intimacy ($R=0.29$, $p<0.01$) and the refusal of intimacy ($R=0.37$, $p<0.01$), implying that attempts to control one's partner through intimacy or religion tend to be employed together. Contrary to our expectations, there were no gender differences in the use of intimacy or religion as forms of abuse, but this could be an artifact of the relatively low number of men studying social work and participating in this research.

Conclusion: The findings underscore the complex interplay between different forms of IPV, highlighting the role of forced intimacy and religious coercion as significant aspects of partner violence. These insights call for a broadened perspective on IPV, emphasizing the need for targeted interventions that address these specific dynamics. Implications for public health strategies, policy, and future research to enhance the support systems for individuals affected by IPV are discussed.

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