

REVES 2026



— 37th CONFERENCE —
March 11–13, 2026
Tokyo, Japan

Hosted by Sophia University



上智大学
SOPHIA UNIVERSITY

TABLE OF CONTENTS

MEETING SCHEDULE	2
WEDNESDAY, 11TH MARCH	2
THURSDAY, 12TH MARCH	3
FRIDAY, 13TH MARCH.....	5
POSTER PRESENTATION	6
WEDNESDAY, 11TH MARCH	6
THURSDAY, 12TH MARCH	6
ABSTRACT FOR ORAL PRESENTATION	8
SESSION 1. LONGEVITY AND CENTENARIANS	8
SESSION 2. SOCIAL VULNERABILITES, MENTAL HEALTH AND HEALTHY AGING	11
SESSION 3. SOCIODEMOGRAPHIC FACTORS AND HEALTH.....	15
SESSION 4. WORK, RETIREMENT, AND HEALTH.....	18
SESSION 5. CROSS-COUNTRY COMPARISONS OF HEALTH EXPECTANCY	21
SESSION 6. COMORBIDITIES AND MORTALITY	25
SESSION 7. LIFE AND HEALTH EXPECTANCY ACROSS POPULATIONS	29
SESSION 8. METHODOLOGY.....	31
SESSION 9. SOCIAL INEQUALITIES IN HEALTH AND MORTALITY	33
ABSTRACT FOR POSTER PRESENTATION	38
WEDNESDAY, 11TH MARCH	38
THURSDAY, 12TH MARCH	46

MEETING SCHEDULE

Wednesday, 11th March (room 2-414)

8:30 a.m. – 9:00 a.m. Registration

9:00 a.m. – 9:20 a.m. Welcoming remarks

9:20 a.m. – 10:40 a.m. Session 1: Longevity and centenarians

Chair: Toshiyuki Ojima, Hamamatsu University School of Medicine, Japan

(1) *Longevity profiles: Unraveling how perceptions of aging shape physical activity among adults nearing the century mark*

Michelle Pannor Silver, University of Toronto, Canada

(2) *GDF15 as a novel marker of healthy aging and longevity: Evidence from the US and Ireland*

Eric T. Klopach, Indiana University, USA

(3) *Sex ratio differences among centenarians in high-income countries*

Elder Lara Castañeda, Sciences Po Paris - Centre for Research on Social Inequalities, France

(4) *What sets centenarians apart? Unpacking the determinants of extreme longevity: Data from 30 years of follow-up of the French Paquid cohort*

Karine Perez, University of Bordeaux, France

10:40 a.m. – 11:10 a.m. Break

11:10 a.m. – 12:30 p.m. Session 2: Social vulnerabilities, mental health and healthy aging

Chair: Aïda Solé-Auró, Universitat Pompeu Fabra, Spain

(5) *Are older adults in China living longer happy years? A cohort-based multistate analysis, 2002–2018*

Yunxiang Wan, Max Planck Institute for Demographic Research, Germany
Presenter: Marília Nepomuceno

(6) *Impact of loneliness on disability-free life expectancy among older adults: A comparative analysis between France and Japan*

Yvanna Simon, Bordeaux University, France

(7) *Reciprocal relationship between loneliness and depression in older adults*

Md Ismail Tareque, Sultan Qaboos University, Oman

(8) *Functional inequalities by social vulnerability: Functional trajectories and disability-free life expectancy*

Camille Ouvrard, University of Bordeaux, France

12:30 p.m. – 12:40 p.m. Group photo

12:40 p.m. – 1:40 p.m. Lunch

1:40 p.m. – 3:00 p.m. Session 3. Sociodemographic factors and health determinants

Chair: Chi-Tsun Chiu, Academia Sinica, Taiwan

(9) *Factors influencing well-being of foreign domestic workers caring for older adults in Singapore*

Mayo Ono, Nagasaki University, Japan

(10) *Aging under climate stressor: How extreme temperatures shape multi-system biological aging*

Eunyoung Choi, University of Southern California, USA

(11) *Cardiovascular disease-free longevity in Finland by gender and education from 2000–04 to 2016–20: A register-based multistate decomposition of changes*

Shubhankar Sharma, University of Helsinki, Finland

(12) *Is obesity an accelerator of aging?*

Solveig Argeseanu Cunningham, Emory University and NIDI, USA

3:00 p.m. – 3:20 p.m. Break

3:30 p.m. – 5:00 p.m. George Meyers Lecture

Katsunori Kondo, Chiba University, Japan “Social Participation as a Key Determinant of Health Expectancy”

6:00 p.m. Conference Dinner

Thursday, 12th March (room 2-414)

9:00 a.m. – 10:20 a.m. Session 4. Work, retirement, and health

Chair: Reiko Hayashi, National Institute of Population and Social Security Research (IPSS), Japan

(13) *Healthy and unhealthy working life expectancy across emerging welfare states: How micro- and macro-level factors shape who works longer in poorer health*

Anastasia Lam, Humboldt University of Berlin, Germany

(14) *Burden or blessing? Evidence on job quality of older unhealthy workers*

Christian Dudel, Max Planck Institute for Demographic Research, Germany

(15) *The causal effect of retirement on cognitive functioning: exploring the role of gendered employment histories*

Thomas Arnhold, International Institute for Applied Systems Analysis (IIASA), Austria

(16) *Working life expectancy and unpaid caregiving: How working lives differ across caregiver groups*

Paola Zaninotto, University College London, UK

10:20 a.m. – 10:50 a.m. Break

10:50 a.m. – 12:10 p.m. Session 5: Cross-country comparisons of health expectancy

Chair: Zachary Zimmer, Mount Saint Vincent University, Canada

(17) *Health inequalities and health expectancy among Roma populations in Europe: A cross-national comparison*

Lina Lasar, Vienna Institute of Demography (VID), Austria

(18) *Trends in life expectancy and disability-free life expectancy in France and Japan before, during, and after the COVID-19 pandemic*

Jean-Marie Robine, University of Montpellier, France

(19) *Unpacking divergent morbidity in Europe: Functional resilience and indicator-dependent patterns*

Tamara Vaz, VID, Austria

(20) *Comparison of health expectancy between Japan, France, and European countries*

Toshiyuki Ojima, Hamamatsu University School of Medicine, Japan

12:10 p.m. – 1:10 p.m. Lunch

12:10 p.m. – 1:00 p.m. Luncheon seminar

Kazuhiko Uchida, MCBI, Inc., Japan. “The Latest Research on the Relationship between Matcha and Cognitive Functions.”

1:10 p.m. – 2:50 p.m. Session 6. Comorbidities and mortality

Chair: Emmanuelle Cambois, French Institute for Demographic Studies (INED), France

(21) *Lessons from a laggard? Study of CVD incidence and survival inequalities in Finland, 2000–2020, based on novel bivariate health-death distributions*

Chiara Micheletti, Max Planck Institute for Demographic Research, Germany

(22) *International birth cohort patterns in cancer mortality in high-income countries the 21st Century: A Cross-national comparative analysis using Lexis Surfaces*

Octavio Bramajo, University of Zurich, Switzerland

Presenter: Leah Abrams

(23) *Midlife diabetes, mortality trajectories and long-term survival*

Tirna Purkait, Emory University, USA

(24) *Comparing healthy life expectancy indicators and their related factors across prefectures in Japan*

Yuri Akamatsu, Hamamatsu University School of Medicine, Japan

(25) *Community wealth protects cognitive health for older adults*

Connor Sheehan, Arizona State University, USA

2:50 p.m. – 3:10 p.m. Break

3:10 p.m. – 4:10 p.m. Session 7. Life and health expectancy across populations

Chair: Shubhankar Sharma, University of Helsinki, Finland

(26) *Does longer life mean a life of better quality? An examination of trends in expected 'Years of Good Life' in the U.S.*

Zachary Zimmer, Mount Saint Vincent University, Canada

(27) *Scenario projections of healthy life expectancy in Japan until 2040 with consideration to the COVID-19 pandemic*

Yoshitaka Murakami, Toho University, Japan

(28) *Disability-free life expectancy in France over the 2010s: What can be learned from trends and occupational disparities*

Emmanuelle Cambois, INED, France

4:20 p.m. General Assembly

Friday, 13th March (room 2-414)

9:00 a.m. – 10:00 a.m. Session 8. Methodology

Chair: Christian Dudel, Max Planck Institute for Demographic Research, Germany

(29) *Further applications and clarification of the multistate life table decomposition method*

Tianyu Shen, Vienna Institute of Demography, Austria

(30) *Healthy outsurvival probabilities*

Iñaki Permanyer, Centre for Demographic Studies, Spain

(31) *Joint multistate models for interval censored data*

Magdalena Muszynska-Spielauer, Austrian Academy of Sciences, Austria

10:00 a.m. – 10:15 a.m. Break

10:15 a.m. – 11:35 p.m. Session 9. Social inequalities in health and mortality

Chair: Marc Luy, VID, Austria

(32) *Educational inequalities in healthy life expectancy in Catalonia: Evidence of a decline in healthy years from a population-based study*

Aïda Solé-Auró, Universitat Pompeu Fabra, Spain

(33) *Disability and physical performance across social and economic development*

Benjamin Seligman, University of California, Los Angeles, USA

(34) *Caregiver-specific life expectancies: educational and racial inequalities in family care resources at older ages*

Zoey Wang, University of Michigan, USA

(35) *Assets, debts, and health: Disaggregating the wealth–health gradient in Japan*

Dina Maskileyson, University of Luxembourg, Luxembourg

11:35 p.m. – 12:00 p.m. Closing Remarks

12:00 p.m. Social Event, Green Tea Ceremony at Kioi Tei

POSTER PRESENTATION

Wednesday, 11th March (9:00a.m – 5:00p.m. room 2-415)

(1) *Occupational-class trends in diagnosis-specific sickness absence among natives and migrants in Finland*

Waseem Haider, University of Turku, Finland

(2) *What it Means to Lose a Child for Fertility Measurement: Survival- Adjusting the Completed Cohort Fertility Rate*

Natalie Nitsche, Australian National University, Australia

(3) *Cohort life expectancy convergence between Latin American and high-income countries*

José Andrade, Max Planck Institute for Demographic Research, Germany

(4) *Inequality in healthy longevity: Global evidence from distributional metrics*

Pietro Belloni, University of Padua, Italy

(5) *Am I less worried if I can afford it? Socioeconomic moderation of the mental health effects of children's unemployment*

Jordi Gumà-Lao, Center for Demographic Studies, Spain

(6) *The hidden costs of technological change: Investigating pathways through which highly automatable jobs undermine workers' health in Germany*

Mariia Vasiakina, Max-Planck Institute for Demographic Research, Germany

(7) *Regional inequalities in healthy life expectancy in Spain: Exploring the role of health resources*

Elisenda Renteria, Centre d'Estudis Demografics, Spain

(8) *Changes in diabetes-free life expectancy among older adults by race, sex, and education between 2000 and 2016*

Francisco Rios Casas, University of Texas at Austin, USA

(9) *Explaining the recent rise in infant mortality in France*

Nikita Kupska, INED, France

(10) *Relationship between underweight and overweight/obesity and disability-free life expectancy: A systematic review*

Anna Tsutsui, Toho University, Japan

(11) *Mapping mental health inequities: The invisible costs of racialized stressors*

Zaza Zindel, German Centre for Integration and Migration Research, Germany

Thursday, 12th March (9:00a.m – 5:00p.m. room 2-415)

(1) *Cholera mortality and morbidity in Spain, 1885: The role of environmental and public health factors*

Joana Maria Pujadas-Mora, Open University of Catalonia & Center of Demographic Studies, Spain

(2) *How pre-existing diseases shape multimorbidity in the aging population: Mapping the development of chronic disease networks*

Zixuan Wang, Utrecht University, Netherlands

(3) *Health change in older age: Linear decline or irregular paths? Insights from The Cloister Study*

Marc Luy, VID, Austria

(4) *Small area life expectancy and expected years lived with depression estimates for the Spanish Basque Country*

Jacob Martin, Universidad del Paris Vasco/INED, France

(5) *Morbidity-Mortality Paradox in India: An analysis of sex-gap in health of older adults through disability free life expectancy by rural-urban location and geographical region*

Sadanand Karun, International Institute for Population Sciences, India

(6) *Clustering of NCDs in couples in India: A multilevel analysis of shared household determinants*

Sandra Sebastian, International Institute for Population Sciences, India

(7) *Healthy migrant, healthy couple? Health and quality of life by type of union across Europe*

Jeroen Spijker, Universitat Internacional de Catalunya & Centre for Demographic Studies, Spain

(8) *Quality of life among older adults who experienced war—The case of Vietnam*

Yvette Young, Max Planck Institute for Demographic Research, Germany

ABSTRACT FOR ORAL PRESENTATION

SESSION 1. LONGEVITY AND CENTENARIANS

Chair: Toshiyuki Ojima, Hamamatsu University School of Medicine, Japan

(1) Longevity profiles: Unraveling how perceptions of aging shape physical activity among adults nearing the century mark

Michelle Pannor Silver

Background: Longevity research increasingly recognizes that perceptions of aging influence how individuals engage with health-promoting behaviors, such as physical activity. However, the psychosocial mechanisms through which mature adults adopt, sustain, or abandon physical activity remain insufficiently understood, particularly in the context of global inequalities in health and morbidity.

Methods: This longitudinal study examined risk-profile trajectories among diverse adults who were nearing the centenarian mark (aged 65–99) across four continents, including former elite athletes, coaches, individuals with chronic pain or mobility impairments, sedentary adults, and late-life fitness adopters. The analysis integrated biographical, psychosocial, and behavioral data to assess how perceptions of aging, health disparities, and social context interact to influence physical activity and resilience in later life.

Results: Findings revealed distinct mobility patterns influenced by perceptions of aging that shaped the risk profile trajectories. Participants with positive aging mindsets and flexible self-concepts demonstrated higher adherence to physical activity and lower self-reported morbidity. Conversely, exposure to negative role models sometimes acted as a paradoxical catalyst, motivating individuals to maintain or enhance mobility. Cross-cohort comparisons revealed that socioeconomic position and lifetime access to health-promoting resources moderated protective effects of positive self-perceptions, underscoring persistent inequalities in aging outcomes.

Conclusions: By elucidating how perceptions about aging shape physical engagement and functional health, this study advances understanding of psychosocial resilience and social determinants of longevity. Risk profiles highlight pathways through which individuals influenced by negative role models developed adaptive strategies that sustained physical activity. Findings highlight the need for creative models as we aim to mitigate morbidity and extend health span among people approaching the century mark.

(2) GDF15 as a novel marker of healthy aging and longevity: Evidence from the US and Ireland

Eric T. Klopack, Cathal McCrory, and Eileen M. Crimmins

Background: Research on biomarkers of aging have been highly fruitful, enriching our understanding of determinants of healthy lifespan and biological processes underlying social differences in longevity. The utility of these findings has been stymied by the challenge of finding practical ways of assessing aging in large studies. We focus on growth/differential factor 15 (GDF15), which has been proposed as a biomarker of mitochondrial dysfunction, specifically and healthy aging more broadly. GDF15 is a protein associated with stress response and inflammatory processes. It has been linked to cardiovascular and heart disease and has been shown to be responsive to senolytics. Emerging work suggests that it plays a key role in linking experiences of stress to metabolic functioning, physiological dysregulation, and ultimately morbidity and mortality.

Methods: In the current study, we investigate GDF15 as a biomarker of health and aging using the US nationally representative Health and Retirement Study (HRS; N = 4018) and The Irish Longitudinal Study of Ageing (TILDA; N = 876). We control for age and sex/gender in TILDA and age, sex/gender, and race/ethnicity in HRS.

Results: In both Ireland and the US, GDF15 was significantly associated with critical determinants of healthy longevity, including educational attainment and loneliness. GDF15 was also associated with health behaviors, including smoking, BMI, drinking, and exercise. It was associated with health in older adults, including depression symptoms, physical functioning (using activities of daily living), cognitive functioning, and importantly mortality. Interestingly, in both studies, the directly measured GDF15 was more strongly associated with these variables than a DNAm-based surrogate.

Conclusions: We find in two independent large national studies from Ireland and the US that GDF15 appears to be an excellent marker of healthy aging and longevity. It is, thus, a strong candidate marker for future large studies of health and aging.

(3) Sex ratio differences among centenarians in high-income countries

Elder Lara Castañeda

Background: Even though it is well known that female centenarians outnumber males worldwide), it remains unclear when these differences emerge. This research seeks to advance the understanding of how mortality differences impact population size and sex imbalances in the later stages of life, shedding light on the demographic processes influencing longevity disparities. This aim of this study is to explain differences in sex ratios among centenarians in high income countries.

Methods: We used Human Mortality Database cohort data from 12 high-income countries and decomposition methods. We apply decomposition techniques to

identify the respective contribution of the sex ratio at age 60 and of subsequent mortality. The first factor captures the balance between men and women who have already survived into late middle age, while the second reflects the mortality rates after age 60 that determine how many individuals of each sex reach extreme old age.

Results: Our results suggest that for the cohort born between 1900 and 1904, in five countries (Japan, Australia, Canada, Sweden, and Finland) the SR at age 100 was largely determined by the sex ratio at age 60. In the other seven countries (Spain, Norway, Italy, the United States, Denmark, France, and the United Kingdom) mortality at older ages contributed more to the differences observed at age 100. Mortality after age 90 was especially relevant.

Conclusions: The results of our research reveal heterogeneity in sex ratios over the life course of these cohorts. This diversity is evident in the timing of the sex ratio crossover, which occurred at early ages in some countries, while in others, such as Australia and Canada, it happened after age 60. Even in very old ages, reducing mortality disparities between women and men may be crucial for achieving a more balanced sex composition among centenarians.

(4) What sets centenarians apart? Unpacking the determinants of extreme longevity: Data from 30 years of follow-up of the French Paquid cohort

Karine Perez, Simon Y, Mendez-Ramirez P, Robine JM, Dartigues JF, and Ouvrard-Brouillou C

Background: With the growing number of centenarians, identifying the determinants of extreme longevity is becoming a major scientific and public health issue. While many factors have been proposed, few studies have been able to compare future centenarians to older adults with similar initial characteristics over such long periods. This study aimed to identify the distinguishing features of future centenarians, compared to a matched “control” group of older adults who died before reaching 100 years, using 30 years of follow-up from the French Paquid cohort.

Methods: We conducted a nested case-control study within the Paquid population-based cohort on aging. Controls were matched to cases on sex, age, and IADL-disability at baseline. To provide a comprehensive understanding of longevity, we assessed a wide range of determinants, including sociodemographic variables, social and material environments, personality traits, health behaviors, and physical and cognitive health. Both baseline characteristics and their changes over time were considered. Multivariate logistic regression models were used to identify factors independently associated with becoming a centenarian.

Results: Among the 3,777 participants of the cohort, 567 met the criteria for this analysis: 143 future centenarians and 424 matched controls. At baseline, the mean

age was 78 years (SD = 7.6), 80% were women, and 18.5% had IADL disability, with no significant differences between groups. In multivariate analyses, future centenarians were more likely to live in a rural area (OR = 2.19, 95%CI: 1.25–3.85), to show higher global cognitive functioning, and to have lower BMI at baseline. Higher activity levels and never having smoked were borderline significant. No differences were identified for educational level, perceived health, or number of medications.

Conclusions: Baseline environmental, behavioral, and cognitive factors appear to contribute to extreme longevity. Longitudinal analyses will help clarify whether evolving trajectories in these domains further differentiate individuals who ultimately reach exceptional ages.

SESSION 2. SOCIAL VULNERABILITES, MENTAL HEALTH AND HEALTHY AGING

Chair: Aïda Solé-Auró, Universitat Pompeu Fabra, Spain

(5) Are older adults in China living longer happy years? A cohort-based multistate analysis, 2002–2018

Yunxiang Wan, Marília Nepomuceno, and Marwân-al-Qays Bousmah

Background: As China's population ages rapidly and life expectancy increases, a critical question emerges: are these added years also happy years? While period-based analyses suggest improvements in happy life expectancy (HapLE), cohort perspectives—which capture actual generational experiences—are lacking. Furthermore, whether socioeconomic disparities in HapLE are narrowing or widening across successive cohorts remains unknown. This study examines cohort trends in HapLE among Chinese older adults and quantifies the evolution of socioeconomic inequalities.

Methods: Using nationally representative data from the Chinese Longitudinal Healthy Longevity Survey (CLHLS, 2002–2018), we applied multistate life table methods to estimate partial-cohort HapLE (PC-HapLE) across four age ranges (68–73, 74–79, 80–85, and 86–91 years). We compared cohorts born 10 years apart, stratifying by gender, education, and urban-rural residence. Happiness was assessed using validated life satisfaction measures. Annual transition probabilities between happy, unhappy, and dead states were estimated via multinomial logistic regression, with PC-HapLE derived through microsimulation of 100,000 individuals. Inverse probability weighting addressed differential attrition.

Results: Later-born cohorts experienced significant increases in both absolute (0.39–0.60 years) and proportional (7.0–11.5 percentage points) happy years, driven by "compression of unhappiness" rather than increase in longevity. However, gains were

largely unequal. Urban residents showed substantial improvements across all ages, while rural gains were modest and often non-significant. Women experienced larger improvements than men (HapLE% increases: 8.8–15.3 vs. 2.9–7.7 percentage points). Educational disparities widened similarly, with literate individuals outpacing illiterate peers (14.4 vs. 6.8 percentage points at ages 80–85).

Conclusions: While later cohorts of Chinese older adults live longer happy lives, a widening "happiness gap" reveals profound inequities. Socioeconomic development benefits have disproportionately favored advantaged populations. Policies must shift from merely extending lifespan to promoting equitable aging by addressing structural disparities in healthcare access, social security, and community resources."

(6) Impact of loneliness on disability-free life expectancy among older adults: A comparative analysis between France and Japan

Yvanna Simon, Yuka Minagawa, Jean-Marie Robine, Toshiyuki Ojima, and Karine Perez

Background: Loneliness is a major risk factor for poor health in later life, linked to increased risk of chronic disease and mortality. However, its impact on health expectancy, a key indicator of healthy aging, remains largely unexplored. While France continues to face challenges in implementing policies to address loneliness, countries such as Japan have already introduced targeted public measures. Understanding health consequences of loneliness across different social contexts, such as France and Japan, is important for designing effective policy responses.

Objective: To estimate disability-free life expectancy (DFLE) by the level of loneliness for men and women aged 65 and older in France and Japan.

Methods: Data came from two longitudinal surveys from France (Paquid N=3,700) and Japan (Japanese Aging and Health Dynamics Study, N=4,747). Loneliness was assessed via a single question categorizing responses as never, occasionally, and often feeling lonely. The Interpolated Markov Chain approach was used to compute DFLE by the three states of loneliness.

Results: While TLE was similar between the two countries, Japanese older adults enjoyed significantly higher percentages of disability-free life, irrespective of loneliness status. Men and women who often felt lonely were consistently the most disadvantaged in both France and Japan in terms of TLE and DFLE. In France, DFLE at age 65 showed little variation between those who were never or occasionally lonely, but declined markedly among those often feeling lonely (men: 10.9 years; women: 12.9 years). In contrast, in Japan, DFLE declined progressively, with the lowest results among those who often feel lonely (men:12.7 years; women: 13.7 years).

Conclusion: Loneliness is closely associated with DFLE among older adults in both France and Japan, highlighting adverse health consequences of feeling lonely at advanced ages. These findings suggest the need for continued policy efforts to enhance older people's well-being by reducing the risk of loneliness.

(7) Reciprocal relationship between loneliness and depression in older adults

Md Ismail Tareque, Md. Nahedul Islam, Waad Ali, Mohammad Hamiduzzaman, Chi-Tsun Chiu, et al.

This study aims to examine the longitudinal relationships between loneliness and depression among older adults in the United States over a 16-year period. Data were drawn from the Health and Retirement Study, specifically Waves 8 (2006) and 16 (2022). Two analytical samples were created: (1) participants aged 60 years and older without depression in 2006 ($n = 790$) to assess the influence of baseline loneliness on subsequent depression, and (2) participants who were not lonely in 2006 ($n = 788$) to evaluate the effect of baseline depression on later loneliness. Loneliness was measured using the 3-item Revised UCLA Loneliness Scale, while depression was assessed with a modified 7-item CES-D scale. Descriptive statistics and binary logistic regression models were employed. Older adults who reported feeling lonely in 2006 had nearly twice the odds of developing depression by 2022 compared to their non-lonely counterparts (AOR = 1.98, 95% CI: 1.06–3.69). Conversely, baseline depression increased the likelihood of experiencing loneliness later on (AOR = 1.70, 95% CI: 1.04–2.79). Additionally, cognitive impairment was linked to later loneliness, with women and individuals with poorer self-rated health at higher risk of developing depression. The findings suggest a reciprocal and enduring relationship between loneliness and depression in later life, emphasizing the need for coordinated interventions that address both conditions. The study's extensive follow-up and bidirectional approach offer new insights into gerontological research, highlighting the public health importance of tackling these interconnected psychosocial challenges faced by the aging population.

(8) Functional inequalities by social vulnerability: Functional trajectories and disability-free life expectancy

Camille Ouvrard, Yvanna Simon, Viviane Philipps, Luc Letenneur, and Karine Perez

Background: Functional health is central to healthy aging, yet strong social inequalities persist in disability. While several social determinants have been linked to functional decline, the cumulative impact of social deficits, captured by the Social Vulnerability Index (SVI) and which offers a more integrated assessment of social environment, remains insufficiently explored. This study examines how social

vulnerability (SV) shapes long-term functional trajectories and disability-free life expectancy (DFLE).

Methods: We used data from the PAQUID cohort, a 30-year population-based study of 3,616 adults aged ≥ 65 . SV was assessed with a 26-item SVI and categorized into tertiles. Instrumental activities of daily living (IADL) were measured with Lawton's scale. Sex-stratified analyses included: (1) linear mixed-effects models to estimate 15-year functional trajectories at ages 65, 75, and 85; (2) total life expectancy (TLE), DFLE, and disability life expectancy (DLE) estimated with the Interpolated Markov Chain (IMaCh) model. Models were adjusted for demographics, cognition, comorbidities, sensory impairments and dyspnea.

Results: A strong gradient emerged: higher SVI was associated with greater baseline disability and steeper decline. Inequalities persisted through most of follow-up, narrowing only at advanced ages. Women had poorer trajectories overall and surpassed men in disability after age 80. Life expectancy analyses showed a "double penalty" for socially vulnerable older adults. At age 65, low-SVI men lived 4.6 years longer and spent 5.6 more years disability-free than high-SVI men; corresponding gaps in women were 2.9 and 3.9 years. Women, regardless of SV level, lived nearly twice as many years with disability as men.

Conclusions: SV is strongly associated with poorer functional aging, reflected in accelerated disability trajectories and reduced disability-free longevity. Findings support a cumulative deficit model and highlight marked sex-specific inequalities, with women living longer but with more disability. Further research should examine causal pathways and interventions targeting modifiable social deficits."

SESSION 3. SOCIODEMOGRAPHIC FACTORS AND HEALTH

Chair: Chi-Tsun Chiu, Academia Sinica, Taiwan

(9) Factors influencing well-being of foreign domestic workers caring for older adults in Singapore

Mayo Ono, Ayumi Honda, Yasuhiko Saito, and Sumihisa Honda

Background: Foreign domestic workers (FDWs) are essential contributors to community-based long-term care for older adults in Singapore. FDWs are not allowed to bring their families or marry, which can lead to feeling isolated and lonely. They also lack personal space, and caring for older adults can be challenging. Moreover, approximately 24% of FDWs have been reported to experience poor mental health. This study aimed to examine the factors influencing FDWs' well-being and their associations with sociodemographic characteristics.

Methods: A cross-sectional online survey was conducted among 296 female FDWs from the Philippines and Indonesia (age range, 23–59 years) providing stay-in care for older adults in Singapore. The World Health Organization Five Well-Being Index (WHO-5) was administered. This study was approved by the Parkway Independent Ethics Committee in April 2024, Singapore, and the Institutional Ethics Committee of the Nagasaki University Graduate School of Biomedical Sciences in October 2022, Japan.

Results: Overall, 48.6% of the participants had a WHO-5 score < 13, reflecting poor well-being. Bivariate analyses showed that poor well-being was associated with higher educational attainment, earning < S\$800 per month, having fewer years of caregiving experience, and a lack of training and support. Associations were also observed with caring for Chinese Singaporeans, providing dementia care, not providing pet care, and having an advanced-age care recipient.

Conclusions: Nearly half of the FDWs in the present study had poor well-being. The finding that FDWs with higher educational attainment reported lower well-being suggests these individuals may feel underutilized or unfulfilled in their current roles. These results highlight the need for support measures, including career advancement opportunities. Targeted interventions, such as improved matching with care recipients, caregiving training, career development opportunities, and access to mental health resources, are therefore essential for promoting well-being among FDWs and sustaining the quality of long-term care.

(10) Aging under climate stressor: How extreme temperatures shape multi-system biological aging

Eunyoung Choi, University of Southern California, USA

Background: Exposure to ambient temperature extremes is increasingly linked to morbidity and mortality, posing a risk to population health. However, their influence on biological aging, a subclinical marker of physiological decline, remains poorly understood. We examine whether older adults living in areas with more extreme heat or cold days have greater biological age acceleration and which physiological systems are most affected.

Methods: We analyzed data from 6,148 community-dwelling older adults in the 2016 Health and Retirement Study Venous Blood Study. Biological age acceleration was derived from 22 biomarkers representing nine physiological systems. For each participant, we quantified the number of extreme heat ($\geq 90^{\circ}\text{F}$ Heat Index) and extreme cold ($\leq 0^{\circ}\text{F}$ Wind Chill) days at the census tract of residence, using the 7 days before blood collection (acute exposure) and the prior year (chronic exposure). Associations with biological age acceleration were estimated using linear regression. We also examined system-specific effects by modeling associations between temperature exposures and individual biomarkers.

Results: Both short-term and long-term heat exposure were associated with higher biological age acceleration. Each additional heat day in the prior week corresponded to a 0.25-year increase in biological age acceleration, and chronic heat exposure showed a smaller but significant association. Cold exposure was not associated with biological age acceleration. Biomarker-specific analyses showed that heat was linked to elevated markers of inflammation, cardiovascular strain, and hematologic dysregulation. In contrast, cold exposure showed mixed patterns, some suggestive of anti-inflammatory responses, others indicating renal and hepatic stress.

Conclusions: Extreme heat appears to impose a multidimensional physiological burden, accelerating biological aging. Cold exposure may trigger heterogeneous biological responses that do not translate into overall aging acceleration. These findings suggest that heat extremes may contribute to earlier physiological deterioration, offering insight into how climate stress may shape disease risk and functional decline in aging populations.

(11) Cardiovascular disease-free longevity in Finland by gender and education from 2000–04 to 2016–20: A register-based multistate decomposition of changes

Shubhankar Sharma, Timothy Riffe, Mikko Myrskylä, Margherita Moretti, and Pekka Martikainen

Background: While declines in cardiovascular disease (CVD) mortality in high-income countries are well-documented, research analyzing trends in CVD-free longevity (HLE♥) and its key drivers is lacking. We examined how changes in mortality and

CVD incidence contributed to the changes in HLE♥ at age 40 between 2000–04 and 2016–20 in Finland and evaluated the role of educational expansion.

Methods: Using multistate modelling on individual-level data from the total Finnish Population Registers, the Care Register for Healthcare, and Death Registers, we decomposed changes in HLE♥ by gender and education into contributions from baseline cardiovascular health (age 40 CVD-free prevalence), CVD incidence, mortality, and educational expansion.

Results: Men experienced a greater HLE♥ increase than women (2.4 vs 1.6 years), mainly driven by larger declines in mortality and CVD incidence, while worsening baseline cardiovascular health suppressed these gains. Educational expansion explained 25% of the HLE♥ increase for women and 12.5% for men. Among lower-educated women, nearly all HLE♥ gains resulted from reduced CVD incidence after age 50. For women across all educational levels, increased CVD incidence at ages 40-50 suppressed HLE♥ gains considerably.

Conclusions: Both reductions in mortality and CVD incidence play an important role in driving gains in CVD-free longevity. However, the deterioration of cardiovascular health before age 50 among women pose major challenges for future progress. Population-level actions for primary prevention of CVD should be initiated from young adulthood. Moreover, the positive role of educational expansion underscores its potential as an indirect health policy.

(12) Is obesity an accelerator of aging?

Solveig Argeseanu Cunningham, Puneet Chehal, Fernando Riosmena, and K.M. Venkat Narayan

Background: Obesity is associated with early onset of diabetes and cardiovascular conditions and therefore may be implicated in the health declines characterizing the aging process. We examine the accumulation of chronic diseases across adulthood for those with and without obesity, weighing whether those with obesity are aging differently.

Methods: We use panel data from the Panel Study of Income Dynamics (PSID) and the Health and Retirement Study (HRS), two nationally representative studies of the United States, which we pool to create a 20-year follow up of adults ages 30y+. We calculated the presence of diagnosed diabetes, hypertension, heart disease, heart attack, stroke, cancers, asthma, lung disease, and arthritis and multimorbidity, defined as 2+ of these conditions. Obesity was calculated based on body mass index (BMI≥30), as well as by severity (class 1-3, with cutoffs at 30≤BMI<35, 35≤BMI<39, and BMI≥40).

Results: Among U.S. adults ages 30+years the number of diseases increased with weight, as did multimorbidity, affecting 23% of those with normal weight, 29% of those with overweight, 38% of those with class 1 obesity, 43% of those with class 2 obesity, and 50% of those with class 3 obesity. For each number of diseases, average age decreased as weight increased: the mean age of people with multimorbidity was 58 years for those with class 3 obesity, compared with 68 years for those with normal weight. Multimorbidity among people with obesity started early: at each age, prevalence of multimorbidity for people with obesity was higher than that of people with normal weight who were a decade younger.

Conclusion: Obesity is associated with higher risks of multimorbidity, more advanced multimorbidity, and younger onset; thus, obesity may be conceptualized as an accelerator of aging: a person with BMI of 40+ has a disease profile comparable to a normal-weight person 10 years older.

SESSION 4. WORK, RETIREMENT, AND HEALTH

Chair: Reiko Hayashi, National Institute of Population and Social Security Research (IPSS), Japan

(13) Healthy and unhealthy working life expectancy across emerging welfare states: How micro- and macro-level factors shape who works longer in poorer health

Anastasia Lam

Background: Population aging and longer working lives makes it crucial to understand the relationship between health and employment across contexts. These issues are particularly relevant for emerging welfare states that are balancing expanding social protection systems with high informal employment. Additionally, they sit at the nexus of demographic and health transitions, managing old-age labor force participation amidst rising chronic disease burden. Evaluating whether older adults in these contexts are working in good or poor health is critical for informing social policy, and healthy and unhealthy working life expectancy are valuable indicators for comparative analysis within and between populations.

Methods: Using a discrete-time multistate modelling approach, this study examines how micro- and macro-level factors shape healthy and unhealthy working life expectancy at age 50 across these emerging welfare states: China, Costa Rica, Mexico, South Africa, and South Korea. Expectancies are estimated by gender, education, place of residence, marital status, public pension receipt, and private health insurance coverage.

Results: Preliminary analyses based on nine waves (2006–2022) of the Korean Longitudinal Study of Aging show that men and women spend 26% and 14% of their remaining life expectancy working in poor health, respectively. Differences are similar by education, marital status, and public pension receipt, but more pronounced by urban/rural residence and private health insurance coverage. Men and women in rural areas spend 34% and 22% of their remaining life expectancy at age 50 working with poor health compared to 24% and 13% of men and women in urban areas, respectively. These estimates are similar for those with and without private health insurance.

Conclusion: These findings suggest that micro- and macro-level factors jointly structure late-life work and health. Future analysis will examine the other countries and compare how healthy and unhealthy working life expectancies differ and which factors may have larger influences.

(14) Burden or blessing? Evidence on job quality of older unhealthy workers

Christian Dudel, Leah R. Abalrams, and Alessandro Feraldi

Background: Healthy working life expectancy (HWLE) has received considerable interest as a measure of healthy aging. It is complemented by unhealthy working life expectancy (UWLE). Often, it is assumed that increases in UWLE are a cause for concern. Such increases could indicate that unhealthy individuals are forced to work despite illness due to financial necessity. However, unhealthy working years could indicate that sick or disabled individuals are able to opt into the labor market in jobs that accommodate them.

Methods: We use data from the U.S. Health and Retirement Study (waves 2008-2020) to assess the job quality of Americans aged 50 and older in different states of health and employment. First, we use discrete-time multistate models to calculate HWLE and UWLE by gender, education, and race/ethnicity. Second, we calculate the risk that unhealthy workers are in low-quality jobs and compare it to the risk of low-quality jobs among healthy workers. Low-quality jobs require high physical effort, involve high levels of stress, and/or pay so little that the income is below the official poverty threshold.

Results: Socio-economic inequalities in HWLE are substantial: HWLE is 1.9 years for low-educated Black women, while it is 10.6 years for highly educated Hispanic men. Levels and inequalities in UWLE are smaller, and values range from 2.5 years to 5.5 years. For all socio-economic groups, we find that the risk of a low-quality job is significantly higher for unhealthy workers compared to healthy workers. There is substantial socio-economic heterogeneity in the levels and types of low-quality jobs older workers experience, and more disadvantaged individuals have an elevated risk

of experiencing a low-quality job, in particular with respect to physical effort and working poverty.

Conclusions: UWLE is associated with an increased risk of low job quality. However, the experiences of different socio-economic groups vary drastically.

(15) The causal effect of retirement on cognitive functioning: exploring the role of gendered employment histories

Thomas Arnhold

Background: Maintaining good cognitive functioning is a requirement for living an independent life. Concerningly, rates of cognitive decline show substantial variation between individuals around retirement age, with the underlying mechanisms remaining underexplored. In light of these heterogeneities, several studies have investigated the effect of retirement on cognitive functioning, often showing inconsistent results. At the same time, research has emphasized the roles of gender and employment trajectories in shaping cognitive resilience in older age. Bringing together these two strands of literature and acknowledging the role of gender-specific life-courses in shaping both later-life cognitive functioning and the character of retirement, this paper aims to estimate the role of gendered employment histories (in terms of work intensity and complexity) on the causal effect of retirement on cognitive functioning.

Methods: The study draws on data from the Survey of Health, Ageing and Retirement in Europe (SHARE) of Europeans aged 50-70, using episodic memory and verbal fluency as outcome variables. In a two-step design, I first derive gender-specific life-course clusters via sequence analysis using retrospective data on work intensity (full-time or part-time) and work complexity (higher or lower skill level). Second, I estimate causal effects using an instrumental-variable approach, exploiting discontinuity in retirement probabilities at the statutory retirement age.

Results: Preliminary results indicate heterogeneities by gender and employment history, suggesting that retirement is not uniformly detrimental to cognition. Specifically, I find negative short-term retirement effects on cognitive functioning for men who held less complex jobs and women who had prolonged homemaking spells. Furthermore, retirement duration effects on cognitive functioning are negative for men overall, and for women who had less complex jobs or prolonged homemaking spells. Work intensity shows little explanatory relevance.

Conclusions: Preliminary findings suggest shifting from uniform retirement policies toward frameworks acknowledging gender- and employment history-specific contexts and their cognitive implications.

(16) Working life expectancy and unpaid caregiving: How working lives differ across caregiver groups

Brian Beach, Lawrence Sacco, Holendro Singh Chungkham, and Paola Zaninotto

Background: In the context of population aging, policymakers are eager to encourage and enable longer working lives, often assuming that raising employment rates at older ages will offset pressures on tax revenue, social security, and healthcare systems. However, many factors drive early labour market exit, and blanket policy strategies to extend working lives often ignore the nuances that shape the length of real working lives.

Methods: To address this, this study applies a refined methodological approach to measure working life expectancy (WLE) among people age 50+, examining the impact of unpaid caregiving responsibilities. WLE is estimated using multi-state models allowing for reversible transitions between work and non-work, reflecting the dynamic and complex nature of modern labour market transitions and exits. Data are drawn from the English Longitudinal Study of Ageing (ELSA), with comparison to results from the Swedish Longitudinal Occupational Survey of Health (SLOSH).

Results: Findings suggest that WLE is significantly impacted by the intensity of unpaid caregiving (i.e., the number of hours per week) as well as the duration of care responsibilities over time. The results reinforce existing evidence that unpaid caregiving plays a role in reducing the length of working life. Cross-national comparisons of England and Sweden further suggest that institutional contexts may be able to enhance the ability for unpaid caregivers to remain in paid work.

Conclusions: Given the anticipated growth in the prevalence of unpaid caregiving in advanced economies, findings highlight the need for better coordination of support to those needing care to strengthen the ability for older people to remain in employment. Greater support for caregivers and those receiving care, e.g. through supportive workplace practices and welfare policies, will be critical for sustaining employment among older adults and reducing inequalities in later-life labour market experiences.

SESSION 5. CROSS-COUNTRY COMPARISONS OF HEALTH EXPECTANCY

Chair: Zachary Zimmer, Mount Saint Vincent University, Canada

(17) Health inequalities and health expectancy among Roma populations in Europe: A cross-national comparison

Lina Lasar, and Marc Luy

Background: Existing research suggests that Europe's largest minority, Roma populations, experience significantly poorer health outcomes than non-Roma populations. Comparative, quantitative research on the health status of Roma communities across different EU countries remains scarce. This study provides the first comparative assessment of health expectancy (HE) at age 50 and predicted health probabilities between Roma and national populations across European countries.

Methods: Using data from the 2016 and 2019 Roma Surveys (EU Agency for Fundamental Rights) and EU-SILC, we analyse self-rated health, chronic illness, and activity limitations. Analyses used R's survey package with FRA/Eurostat weights. After creating a weighted design and bootstrap replicates, GLMs predicted health outcomes by Roma status and gender, controlling for age groups and country. The Sullivan method was applied to estimate health expectancy in years at age 50 for the Roma population using data from the 2016 and 2019 surveys. These estimates were compared against Eurostat figures for the general population.

Results: Predicted probabilities reveal consistently poorer health among Roma, especially Roma women, compared to both Roma men and national populations, with inequalities are especially pronounced in older ages. Health expectancy, estimated using the Sullivan method, shows that Roma at age 50 live significantly fewer years without limitations: 4.1 years in Croatia to 12.0 years in Portugal for women and 4.5 years in Croatia to 13.6 years in Portugal for men. Gaps compared to national populations range from -0.7 years in Portugal to -22.4 years in Sweden for women and -1.6 years in Portugal to -22.1 years in Sweden for men.

Conclusions: These results indicate that Roma populations in Europe face both shorter lifespans and a greater number of years spent in poor health compared to national populations in all investigated countries. These findings highlight persistent and substantial health inequalities across Europe, reflecting disadvantages in daily life."

(18) Trends in life expectancy and disability-free life expectancy in France and Japan before, during, and after the COVID-19 pandemic

Jean-Marie Robine, Yuri Akamatsu, Emmanuelle Cambois, and Toshiyuki Ojima

Changes in the health status of populations are generally studied within a conceptual framework that contrasts three main theories: morbidity compression (MC), its opposite, morbidity expansion (ME), and, between these two theories, dynamic equilibrium (DE). MC leads to an increase in the proportion of years lived in good health (%_YLGH) within the total number of years lived. ME, on the other hand, leads to a decrease in %_LGH, while DE is verified by the maintenance of %_YLGH.

It is within this framework that we compare the changes over time in disability-free life expectancy (DFLE) calculated for France and Japan (i) before, (ii) during, and (iii) after the COVID-19 pandemic. The calculations are made from birth (DFLE[0]) and at age 65 (DFLE[65]), distinguishing between degrees of disability severity whenever possible. An increase in the proportion of years lived without disability (%_YLWD) within life expectancy (LE) indicates a reduction in disability, while a decrease in %_YLWD indicates the opposite, i.e., an increase in disability, and a stable %_YLWD indicates a dynamic equilibrium (DE) between changes in longevity and disability over time.

In all the most developed countries, we have observed a slowdown in the increase in LE over the past 10 to 15 years. In some countries, such as France, the slowdown has been very sharp and could even be described as stagnation. In other countries, such as Japan, it appears to be much weaker. We hypothesize that the slowdown in LE growth promotes the occurrence of morbidity compression (MC), measured by disability, and that this is all the truer when the slowdown is significant.

The results will focus on changes over time in age-specific mortality rates and disability prevalence, attempting to disentangle what is due to a change in trends and what is due to the COVID-19 pandemic that occurred in 2020 and the following two years.

The Japanese data comes from the Ministry of Health, Labour and Welfare, which has been publishing calculations of DFLE every three years since 1995. In this study, we use the calculations made for the years 2001 to 2022. The next calculations will be made for the year 2025 and are not expected to be available for the REVES meeting in March 2026. The disability data used in Japan comes from the Comprehensive Survey of Living Conditions (CSLC), the results of which are published every three years.

French data comes from the Ministry of Health, which has published calculations of DFLE every year since 2005. The latest figures available are for 2023. They were published in December 2024. In March 2026, at the REVES meeting, we should know the figures for 2024. The disability data used in France comes from a population survey entitled “Statistics on Resources and Living Conditions (SRCV)”, part of the European SILC survey and conducted by INSEE, the French national statistical bureau.

(19) Unpacking divergent morbidity in Europe: Functional resilience and indicator-dependent patterns

Tamara Vaz, Marc Luy, and Lina Lasar

Background: The debate regarding morbidity compression versus expansion is frequently framed as a dichotomy. While emerging evidence points to a "divergent development" where health indicators yield conflicting trajectories, a comprehensive synthesis of this phenomenon across Europe is lacking. This study provides a broad generalization of these divergent trends and investigates the multidimensional interplay between chronic morbidity, the Global Activity Limitation Indicator (GALI), and Self-Perceived Health (SPH) to understand how populations buffer the impact of disease.

Methods: We utilized data from the EU Statistics on Income and Living Conditions (EU-SILC) covering 31 European countries for the period 2008–2019. We calculated gender-specific Healthy Life Years (HLY) using the Sullivan method for three distinct indicators: chronic morbidity, GALI, and SPH. We operationalized "functional resilience" as the divergence between clinical morbidity and functional limitations, specifically identifying populations that maintain disability-free status despite high chronic disease burden. Meta-regression were employed to analyse cross-national heterogeneity and the role of social determinants in shaping this resilience.

Results: Our analysis confirms a systematic divergent development across Europe: longevity gains are generally accompanied by an expansion of chronic morbidity (clinical risk) but a simultaneous compression of years spent in poor SPH (subjective experience). However, GALI trends exhibit significant cross-national heterogeneity not explained by disease prevalence alone. High levels of functional resilience were evident in countries where rising chronic disease did not translate proportionately into activity limitations, whereas other nations showed a tighter coupling between pathology and disability.

Conclusions: The coexistence of rising clinical morbidity and improving self-perceived health challenges classical compression theories. Our findings demonstrate that "functional resilience", measured as the capacity to decouple chronic conditions from functional limitations, is a critical mechanism explaining European health trends. Understanding how social and contextual factors support this resilience can advance more integrated interpretations of morbidity dynamics in high longevity countries.

(20) Comparison of health expectancy between Japan, France, and European countries

Toshiyuki Ojima, and Yuri Akamatsu

Objective: Japan and European countries regularly estimate health expectancy based on activity limitations. While European countries use the Global Activity

Limitation Indicator (GALI), Japan employs a different question format. This study aimed to estimate GALI-based health expectancy in Japan by constructing conversion matrices between the two question types, and to compare Japan with France and European countries.

Methods: Data were obtained from the Japan Gerontological Evaluation Study (JAGES), conducted in 2019 among adults aged ≥ 65 years living in 60 municipalities across Japan. Both GALI and the Japanese question on activity limitations were administered, and sex-specific conversion matrices were developed. Using results from the 2022 Comprehensive Survey of Living Conditions, we estimated the national distribution of GALI responses in Japan by applying these matrices. Health expectancy in 2022 was then estimated using Sullivan's method with mortality data from vital statistics. These estimates were compared with Eurostat data for European countries. Additionally, a couple of sensitivity analyses were performed. We also compared health expectancy based on self-perceived health, as assessed by the Japanese research group funded by the Ministry of Health, Labour, and Welfare Japan and Eurostat.

Results: For JAGES survey, valid responses were obtained from 22,048 participants. GALI-based health expectancy at birth (male, female) was: Japan 65.7, 68.1; France 63.7, 65.2; EU27 average 62.4, 62.8. By contrast, health expectancy based on self-perceived health at birth was: Japan 73.2, 77.1; France 73.3, 77.3; EU27 average 73.0, 76.5.

Conclusion: Japan's GALI-based health expectancy was slightly higher than that of France and the EU27 average. However, health expectancy based on self-perceived health was slightly lower than France and slightly higher than the EU27 average. Further research is needed to examine cross-national determinants and to refine methodological approaches for international comparisons of health expectancy.

SESSION 6. COMORBIDITIES AND MORTALITY

Chair: Emmanuelle Cambois, French Institute for Demographic Studies (INED), France

(21) Lessons from a laggard? Study of CVD incidence and survival inequalities in Finland, 2000–2020, based on novel bivariate health-death distributions

Chiara Micheletti, Alyson van Raalte, Pekka Martikainen, Shubhankar Sharma

Life expectancy improvements have slowed in many high-income countries since 2010, largely due to stagnating cardiovascular disease (CVD) mortality. Yet, the reasons behind this slowdown remain unclear. Finland provides a compelling case:

despite an historically high CVD burden, overall declines in mortality have continued. Using detailed Finnish register data from 2000 onward, we apply novel age-health curves estimating the average number of years lived CVD-free at each age at death. We compare the curves across different domains, such as sex, educational attainment and time. Results show persistent educational disparities: individuals with tertiary education consistently experience more CVD-free years than those with basic education. However, changes over time are modest, suggesting that gains in longevity have not been matched by equivalent improvements in cardiovascular health. Our findings highlight continued progress in mortality reduction, but also points towards a stagnation in CVD-free survival, underscoring the need for renewed prevention efforts.

(22) International birth cohort patterns in cancer mortality in high-income countries the 21st Century: A Cross-national comparative analysis using Lexis Surfaces

Octavio Bramajo, Leah Abrams, and Neil Mehta

Background: This study examined whether countries show similar generational patterns of cancer mortality over the past two decades to explore how shared global lifestyle transitions manifest differently across national contexts.

Methods: We used harmonized data from United States, Canada, England & Wales, Germany, Spain, France, Czechia, and Japan from the Human Cause of Death series to capture mortality in 2000-2020 from all cancers, as well as specific lifestyle-associated cancers—lung and larynx, colorectal, stomach, and liver cancer.

Results: There has been progress in all observed countries in overall cancer reduction, and cohort patterns of lung and larynx cancer match established cohort patterns in cigarette smoking. We document concerning increases among younger birth cohorts in mortality from colorectal cancer, and to a lesser degree stomach and liver cancer, with the magnitude and timing of these increases differing across country context. The United States and Canada tended to exhibit strikingly similar patterns, somewhat matched by England and Wales. Trends in France and Germany also resembled each other, whereas Japan was most often an outlier.

Conclusion: These cancer mortality patterns likely reflect generational differences in dietary behaviors, alcohol consumption, and physical inactivity that may have occurred first in the United States and Canada and then been adopted in parts of Europe. The worsening cancer mortality trends in young birth cohorts call for continued vigilance and adaptation of public health approaches to cancer prevention and healthcare planning for the decades to come.

(23) Midlife diabetes, mortality trajectories and long-term survival

Tirna Purkait, Solveig Argeseanu Cunningham

Middle-aged adults with diabetes consistently experience higher all-cause mortality than those without diabetes. In this study, we examine the extent to which midlife diabetes shapes long-term health trajectories. Using harmonized and pooled longitudinal data from the Health and Retirement Study and Panel Study of Income Dynamics, we constructed an inception cohort of US adults first observed when they were ages 50-55 in survey years 1992–2023. We apply age-specific normalized survey weights to preserve the population-representative nature of the study. Baseline diabetes was defined by self-reported diagnosis on or before the first interview. Mortality follow-up was harmonized across waves, and age-as-time left-truncated/right-censored survival models accounted for variation in age at study entry. We estimated sex-specific Kaplan–Meier curves, fitted stratified and interaction Cox models, and calculated remaining life expectancy from age 50 through numerical integration of left-truncated survival curves. The baseline cohort included 25,505 adults; the analytic sample comprised 24,860 individuals with complete time-to-event data (2,606 deaths). By age 80, survival was markedly lower among those with baseline diabetes (Men: 55%; Women: 65%) compared with non-diabetic peers (Men: 74%; Women: 79%). diabetes nearly doubled mortality risk for both sexes (HR≈2.1 men; HR≈1.9 women) and was associated with substantial losses in remaining life expectancy at age 50, approximately 10.8 years for men and 7.3 years for women. These findings demonstrate that diabetes diagnosed in midlife accelerates mortality and reduces survival.

(24) Comparing healthy life expectancy indicators and their related factors across prefectures in Japan

Yuri Akamatsu, Rikuya Hosowaka, Toshiyuki Ojima

Objective: In Japan, reducing prefectural disparities in healthy life expectancy (HLE) is a critical policy challenge. disability-free LE without activity limitation (DFLE-AL), LE with self-perceived health (LE-SH), and DFLE without care need (DFLE-CN) are used to measure HLE, yet differences in the underlying definitions of unhealthy states lead to variation in estimates across indicators, within the same prefecture. This study aimed to examine the relationships among these indicators and their associations with potential HLE-related factors at the prefectural level.

Methods: This cross-sectional study obtained prefecture-level data for LE and HLE in 2022 from the Healthy Life Report from Japan, and other variables from the 2022 Comprehensive Survey of Living Conditions and the 2021 Basic survey on Social Life. Correlation between LE and each HLE indicator and among the residuals from

regressions of LE on each indicator were calculated. Age-adjusted participation rates for volunteer, sports, and travel/leisure activities were estimated using indirect standardization based on 2022 population estimates. Residuals adjusted for the proportion aged ≥ 65 years were used for the proportion of limitations on going out and K6 score $\leq 0-4$. Correlations between these potential factors and each HLE indicator were assessed.

Results: In both sexes, DFLE-CN showed the strongest correlations with LE (males: $r=0.977$, females: $r=0.857$), and DFLE-AL and LE-SH aligned most closely (0.858/0.653), including in residual analyses (0.919/0.890). Sports participation showed associations with LE-SH, especially DFLE-CN in both sexes (0.388/0.461), whereas other factors exhibited sex-specific patterns. Among males, travel participation and limitations on going out showed correlations with all indicators, especially LE-SH (0.378), and LE-SH/DFLE-AL (-0.453/-0.557). Among females, volunteer participation, travel/leisure participation, and the proportion with K6 ≤ 4 showed correlations with DFLE-CN (0.416), LE-SH (0.290), and DFLE-AL, respectively (0.373).

Conclusions: Relationships among HLE indicators were the almost same between sexes, whereas the HLE-related factors differed by sex.

(25) Community wealth protects cognitive health for older adults

Connor Sheehan, Dylan Connor, Connor Sheehan, Jiwon Jang, Tom Kemeny, Joel Suss, et al.

Background: Widening geographic wealth disparities in the USA fuel disparities in access to public goods and amenities, positioning community wealth as a critical, yet understudied, determinant of cognitive health. This study provides the first large-scale evidence linking community wealth to subjective cognitive impairment (SCI), an early risk factor for mild cognitive impairment and dementia, among older adults.

Methods: We utilized a novel database linking net worth and self-reported cognitive impairment for almost two million U.S. older adults. We assessed the association between community wealth and cognitive impairment, conditioning on personal wealth and other individual-level risk factors.

Results: A standard deviation increase in community wealth was associated with a 6.7% relative risk reduction in cognitive impairment across the national population of older adults, rising to 13.7% for those in the poorest fifth of communities. Community wealth mattered more than relative inequality. Its associated protective effects were larger for non-white, non-college-educated, and low net worth householders. Static simulations estimated that equalizing wealth for the poorest three-fifths of communities could reduce the burden of cognitive impairment by 6.7% (over 86,000 cases).

Conclusions: The economic fragmentation of American communities poses a growing threat to the cognitive health of Americans, especially socially vulnerable populations who rely more on public goods underwritten by local affluence. These findings challenge the primacy of individual-focused models, identifying place-based wealth redistribution as a potent, overlooked force for promoting public health and reducing disparities in cognitive aging.

SESSION 7. LIFE AND HEALTH EXPECTANCY ACROSS POPULATIONS

Chair: Shubhankar Sharma, University of Helsinki, Finland

(26) Does longer life mean a life of better quality? An examination of trends in expected 'Years of Good Life' in the U.S.

Zachary Zimmer, Amber Duynisveld

Background: A crucial issue across the health expectancy literature is whether gains in life expectancy result in more quality life years. The issue is, however, still unresolved, in part because studies tend to focus on singular physical or cognitive measures, while rarely incorporating broad conceptualizations of well-being. To address this literature gap, we draw upon the 'Years of Good Life (YoGL)' concept introduced by Lutz et al. (2020), and assess expectancies and trends in YoGL over a twenty-year period.

Methods: Data is from HRS 1998-2018 (N=31,573). A YoGL indicator assessing quality life combines four markers: poverty, life satisfaction, disability, cognition. We construct three states representing high-, intermediate- and low-quality of life. Expected years in each state across survey waves is computed using multistate life tables employing the Interpolative Markov Chains (IMaCh) software. We evaluate net and relative trends in YoGL by age and sex.

Results: Both total and high-quality life expectancy increased from 1998 to 2018. For instance, considering 70-year-olds, in 1998, men and women expected 7.05 (SE=0.30) and 7.92 (SE=0.29) years of high-quality life respectively, rising significantly to 9.48 (SE 0.42) and 9.49 (SE=0.39) by 2016. In contrast, over the same time period, low-quality years remained stable for men [1.59-1.65 (SE 0.15-0.16)] and declined for women [3.73-2.93 (SE 0.22-0.21)]. In relative terms, this means the proportion of life expected in a high-quality state increased significantly for women and men (by 20% and 17% respectively), while remaining life in a low-quality state decreased significantly (by 22% and 66% respectively).

Conclusions: We optimistically find the share life that may be considered meaningful and worth living is on the rise. This finding is somewhat in contrast to recent results

that have assessed trends in singular measures of morbidity, such as disability-free life expectancies, and supplement a compression of morbidity argument.

(27) Scenario projections of healthy life expectancy in Japan until 2040 with consideration to the COVID-19 pandemic

Yoshitaka Murakami, Shuji Hashimoto, Miyuki Kawado, Anna Tsutsui, Toshiyuki Ojima, and Ichiro Tsuji

Background: As Japan's population rapidly ages, it is essential to provide detailed projections of healthy life expectancy (HLE) to support long-term healthcare planning. This study estimated the projected increases in HLE from 2022 to 2040 across various scenarios (including COVID-19 impact) in Japan.

Methods: Data on mortality rates were obtained from Vital Statistics, disability rates were obtained from the Comprehensive Survey of Living Conditions, and future population projections were obtained from the 2023 Population Projections. Estimated mortality and disability rates for men and women were derived using extrapolation methods based on predefined scenarios. Four mortality projection scenarios were established: (a) all-cause mortality in 2010–2019, (b) cause-specific mortality in 2010–2019, (c) all-cause mortality in 2010–2022, and (d) cause-specific mortality in 2010–2022. Scenarios (a) and (b) assumed a rapid recovery from the COVID-19 pandemic, while Scenarios (c) and (d) assumed the ongoing influence of the pandemic. Similar methods were used to develop four disability projection scenarios. Using the Sullivan method, a total of 16 combinations of mortality and disability scenarios were applied to estimate HLE from 2020 to 2040.

Results: The projected increase in HLE from 2022 to 2040 ranged from 1.13 to 5.24 years for men and from 0.31 to 3.96 years for women. Optimistic scenarios, which assumed a rapid recovery from COVID-19 disruption and a return to the 2010–2019 trend within a few years, showed significant HLE gains. Conversely, pessimistic scenarios, which assumed severe COVID-19 impact, indicated a slowdown in HLE growth.

Conclusions: Accounting for the impact of the COVID-19 pandemic is crucial for projecting HLE improvements in Japan.

(28) Disability-free life expectancy in France over the 2010s: What can be learned from trends and occupational disparities

Emmanuelle Cambois, Florian Bonnet, and Giancarlo Camarda

Objectives: The recent decade has been characterised by a growing life expectancy in France over, however at a different pace across gender and occupational classes

(OC) and with fluctuations. To further analyse these trends, we computed disability and disability-free life expectancy (DLE and DFLE), based on various measures.

Method: LEs and DFLEs were estimated in the age ranges the 35-50 and 65+ for the whole population and by OCs, based on two repeated population surveys: the French EU-SILC provides yearly data, for the GALI disability indicator (AL); SHARE-France provides 5 point-in-time data for various disability indicators. Sullivan method was applied to national life tables for men and women between 2010 and 2019, and to triennial life tables by OC and genders (2011-13 to 2017-19).

Results: Men and women benefited an increase in LE and DFLE at age 65, and a decrease in DLE between 2010 and 2019, whatever the disability indicators. Before age 65, no significant changes were observed, except a slight increase in the years lived with AL and IADL limitations in women. Regarding the OCs, women benefitted a compression in DLE at age 65, based on GALI, in all but the highly-skilled OCs, of which DLE fluctuated. In men, manual workers benefited a stable share of DFLE in the increasing LE, the highly skilled men a DLE compression with fluctuations, intermediary occupations workers and employees a DLE expansion. Variations are observed across disability indicators. Before age 65, highly-skilled women and both gender employees underwent an expansion of DLE. Manual workers of both genders experienced an increase and a decrease of the DLE.

Conclusion: These preliminary findings suggest that there is no shared model of transition to longer life, and underline the diversity of health trajectories and needs across social groups in an ageing society.

SESSION 8. METHODOLOGY

Chair: Christian Dudel, Max Planck Institute for Demographic Research, Germany

(29) Further applications and clarification of the multistate life table decomposition method

Tianyu Shen, and Iñaki Permanyer

Background: A recently proposed method allows for the decomposition of differentials in multistate life tables into contributions from initial state distributions and each transition between states. An extension of this approach further enables decomposition by population subgroups defined by time-fixed characteristics (e.g., sex or education at older ages). However, existing methods face important limitations. First, when the state space includes an absorbing state, typically mortality, the contribution of transitions to this state cannot be directly decomposed. Second, subgroup decomposition is restricted to time-invariant characteristics, limiting its

application to contexts where subgroups vary over time (e.g., morbidity or marital status).

Objectives: This paper extends the current decomposition framework to broaden its applicability within the multiple multistate modeling framework. Specifically, our approach allows for the decomposition of mortality effects and accommodates population subgroups defined by both time-invariant and time-varying characteristics.

Data and Application: To demonstrate the added value of our method, we replicate and extend previous analyses using data from the Health and Retirement Study. We present three applications: (1) a three-state life table with mortality, (2) a three-state model with education-based subgroups, and (3) a multiple multistate model incorporating morbidity and disability.

Conclusion: The extended decomposition method provides researchers with a more comprehensive tool to disentangle the relative contributions of initial population structure and transition dynamics to differences in state-specific life expectancies. By explicitly incorporating mortality and allowing for time-varying subgroup characteristics, the method enhances interpretability and flexibility. This facilitates more nuanced analyses, both within health research and in other fields, and offers a clearer link between multistate decompositions and traditional Sullivan-based perspectives.

(30) Healthy outsurvival probabilities

Iñaki Permanyer, Chiara Micheletti

Background: As lives continue to lengthen, it becomes increasingly important to assess not only how long people live, but also the quality of the years gained, particularly in terms of health.

Methods: This paper introduces the Healthy Outsurvival probabilities (HOP) framework, which extends the standard outsurvival probability (ϕ) proposed by Vaupel et al (2021) by incorporating a health dimension. While the traditional ϕ metric measures how likely is it that individuals from one population are to outlive those from another, HOP assesses whether they can live both longer and healthier lives. More precisely, HOP decomposes survival comparisons into four possible outcomes (living longer and healthier, longer but unhealthier, shorter but healthier, and shorter and unhealthier) to better reflect the interplay between longevity and morbidity.

Data: We use mortality and health records for the entire population of Denmark aged 50+ for three periods: 2005-2009, 2010-2014 and 2015-2018. In our preliminary analyses, health status is assessed via cardiovascular disease diagnostics (a definition that will be broadened in successive versions of the paper).

Results: In 2015-2018, the probability that a man lived longer than a woman (i.e., the outsurvival probability ϕ) was equal to 0.36. In turn, the probability that a man lived longer but unhealthier than a woman was 0.27, while the probability that he lived longer but healthier was 0.09. Conversely, a Danish man had a 56% chance of dying earlier and with less healthy years than a woman, and the male probability of dying younger but with more healthy years was 0.08.

Conclusion: HOP challenges the assumption that survival advantages necessarily imply better well-being. It can be applied to test hypotheses of morbidity compression or expansion, and to shed new light on gender differences in the relationship between health and survival.

(31) Joint multistate models for interval censored data

Magdalena Muszynska-Spielauer

Multistate survival models (MSMs) capture transitions through multiple health states over time (age). These models typically rely on the Markov assumption, which implies that transition intensities depend only on the current state and observed covariates. In practice, this assumption is frequently violated because transition hazards depends on unobserved heterogeneity, sojourn time, or unobserved transitions in the intervals between interviews or observations, i.e. interval censoring. This paper extends MSMs for interval-censored data by introducing a joined frailty model that captures unobserved heterogeneity across several transitions simultaneously. Whereas existing joint frailty models have primarily been used to link dependence between two transitions to a health event and death, the proposed joined frailty models generalize this concept to multiple transitions within a unified and computationally efficient structure. The model accommodates different baseline hazard specifications (e.g., Gompertz or Weibull) and alternative frailty distributions (commonly Gamma or Normal). By allowing transition-specific loadings of the same frailty term, the joined frailty model provides a flexible solution to represent the effect of latent characteristics on multiple health transitions. A preliminary empirical application using data on German women from SHARE illustrates the feasibility and empirical relevance of the approach. The results confirm that including a frailty term improves model fit and mitigates bias caused by violations of the Markov assumption. The proposed models offer a theoretically coherent and computationally tractable extension of multistate models for interval-censored data.

SESSION 9. SOCIAL INEQUALITIES IN HEALTH AND MORTALITY

Chair: Marc Luy, VID, Austria

(32) Educational inequalities in healthy life expectancy in Catalonia: Evidence of a decline in healthy years from a population-based study

Aïda Solé-Auró, and Iñaki Permanyer

As lifespans lengthen, a continuing challenge is to narrow the gap between longevity and healthy living. While increased life expectancy (LE) represents a major achievement, it does not indicate whether added years are healthy. The concept of healthy life expectancy (HLE) better reflects quality of life by distinguishing years lived healthily from those lived with illness (Robine et al., 2013). From a policy perspective, identifying factors that increase HLE is crucial. Education is a key determinant, and understanding educational inequalities in health can help reduce disparities and improve population wellbeing.

This study examines education inequalities in health in Catalonia (Spain) using the HEALIN cohort, a longitudinal population-based dataset encompassing over 1.5 million individuals (accounting for 22% of the total Catalan population) from 2005 up to 2021 (Solé-Auró et al, 2025). This sample is representative in terms of age, sex, and region. We estimate HLE by education level (low, medium, high) for men and women in two periods (2011, 2021) using the Sullivan method (1971). We also decompose the contribution of mortality and multimorbidity to the HLE (Andreev et al. 2002).

Results show a persistent educational gap in LE over time, and a pronounced education gradient in LE and HLE. For both men and women, across education levels, and using both basic and complex multimorbidity, we find that HLE between 2011 and 2021 decreases while unhealthy life expectancy increases. Multimorbidity remains the main contributor to the educational differences in HLE when using basic multimorbidity, and we observe a shift from mortality to multimorbidity as the main contributor when using complex multimorbidity.

These findings offer a comprehensive view of educational inequalities in health, as well as a comprehensive map of the gender differences in HLE by education in Catalonia, identifying factors shaping both longevity and years lived in good health. In sum, our contemporary ageing society is becoming increasingly complex and heterogeneous, and our societies present global social, economic, and health challenges.

(33) Disability and physical performance across social and economic development

Benjamin Seligman, Rainer Kotschy, Grace Chang, Yuxuan Wang, and David E. Bloom

Background: Independence in (instrumental) activities of daily living (ADLs/IADLs) is a key health outcome for older adults and is closely related to physical performance. Different environments may alter the relationship between physical performance and ADL/IADL independence and identify practices that help maintain independence. We study how this relationship varies across countries by measures of social and economic development.

Methods: We used data on 22 countries from CHARLS, HRS, LASI, MHAS, and SHARE. First, we ran within-country logistic regressions of dependence in any ADL/IADL on grip strength in kilograms, age, sex, BMI, and wealth. Then, we regressed country-specific grip strength odds ratios (ORs) on four country-level social and economic indicators using ordinary least squares: GDP per capita in constant 2015 US\$10,000 (GDP), Human Development Index (HDI), infant mortality rate per 1000 live births (IMR), and life expectancy at age 15 (LE15).

Results: The ORs of ADL dependence for grip strength ranged from 0.90 to 0.96, and for IADL dependence ranged from 0.87 to 0.96. Improved social and economic indicators were associated with a stronger protective association of grip strength with ADL/IADL dependence. Beta (95% CI) for ADL ORs on GDP was -0.004 (-0.007 – -0.002), on HDI was -0.150 (-0.231 – -0.069), on IMR was 0.001 (0.000 – 0.002), and on LE15 was -0.004 (-0.006 – -0.002). For IADL ORs, these were -0.004 (-0.007 – 0.000) for GDP, -0.227 (-0.318 – -0.136) for HDI, 0.002 (0.001 – 0.003) for IMR, and -0.006 (-0.009 – -0.004) for LE15.

Conclusions: We find that with improving socioeconomic conditions, specifically greater GDP per capita, greater HDI, lower IMR, and greater LE15, the protective association of grip strength against ADL and IADL limitations becomes stronger. These environments may allow older adults to better-leverage their physical abilities to maintain independence. Further work should identify the policies and technologies that allow older adults to remain independent.

(34) Caregiver-specific life expectancies: educational and racial inequalities in family care resources at older ages

Zoey Wang, Bingxin Chen, and HwaJung Choi

Family life among older Americans has shifted markedly in recent decades, with rising late-life divorce, declining marriage, and increasing solo or multigenerational living reshaping the structure of family support. Yet even as marital and household trajectories diversify, we still know little about who actually provides care when disability occurs or how long older adults can expect to receive support from different family members. Recent evidence also shows clear educational and racial disparities in later-life family contexts, with many Black, Hispanic, and lower-educated adults

spending extended periods unmarried or living without spouses—conditions that may widen inequalities in access to care. Building on this work, we move from describing with whom older adults live to examining who provides care once disability arises and the expected duration of care from each relationship. Using data from the Health and Retirement Study (2006–2020), we integrate a calibrated Family Care Availability (FCA) index—capturing family network size, proximity, caregiver health, and competing demands—into a Bayesian multistate life table framework. We identify each respondent’s likely main caregiver (spouse, adult child, sibling, other kin, or none) and estimate caregiver-specific life expectancies from age 60, including years spent disabled without any major family caregiver. Analyses are stratified by race/ethnicity and educational attainment. Preliminary findings indicate substantial caregiving inequalities. White and higher-educated adults are expected to spend the most years receiving spousal care. Black adults—especially Black women—are likely to have fewer spousal-care years and more time relying on adult children or experiencing disability without a major caregiver. Hispanic adults may follow a distinct pattern, receiving fewer spousal-care years than Whites but more care within multigenerational networks. Across groups, lower-educated adults face the longest durations of disability without stable family caregiving. These results provide the first population-level estimates of “who cares, and for how long,” underscoring structural caregiving gaps with major implications for long-term care policy and aging equity.

(35) Assets, debts, and health: Disaggregating the wealth–health gradient in Japan

Dina Maskileyson, and Piotr R. Paradowski

Background: Socioeconomic disparities in health are well documented, yet research has focused primarily on income and education, often overlooking wealth as an independent determinant. Wealth reflects long-term economic security and resilience to shocks, while debt can generate chronic stress and undermine wellbeing. Prior studies show that aggregated net worth can mask distinct health effects of specific asset and debt components. In Japan, a context of universal health coverage, rapid population aging, rising wealth inequality, and persistent health disparities, the role of disaggregated wealth components remains insufficiently understood. This study examines how financial assets, residential property, housing debt, and non-housing debt relate to self-rated health and psychological distress.

Methods: We analyze harmonized 2021 Luxembourg Wealth Study data from the Keio Household Panel Survey and the Japanese Household Panel Survey (N = 7,827 adults aged 22+). Health outcomes include self-rated health (four categories) and psychological distress measured by the Kessler 6 (K6) scale. Wealth components are

transformed using the inverse hyperbolic sine function. Tobit models estimate associations with psychological distress, while multinomial logistic regression models assess links with self-rated health, using good health as the reference category. Models control for demographic, socioeconomic, and behavioral variables and use population weights.

Results: Financial assets are modestly associated with lower psychological distress, whereas non-housing debt correlates with higher distress. Housing debt shows no significant associations. For self-rated health, financial assets are linked to higher odds of reporting good or normal, but not very good or bad health. Non-housing debt shows a small negative association with reporting good health.

Conclusions: Findings indicate that the composition of wealth, not merely its total value, shapes health outcomes. Economic insecurity tied to unsecured debt and limited financial assets appears more consequential than housing-related resources. In the next stage of this study, we will test behavioral pathways linking wealth components and health.

ABSTRACT FOR POSTER PRESENTATION

DAY 1: Wednesday, 11th March (9:00a.m – 5:00p.m. room 2-415)

(1) Occupational-class trends in diagnosis-specific sickness absence among natives and migrants in Finland

Waseem Haider, and Laura Salonen

Background: Sickness absence (SA) reflects both health and working conditions, yet evidence on migrant–native differences in Finland is scarce. Nordic studies report higher SA among most migrant groups in Sweden and among non-Western migrants in Norway, while a Finnish study of healthcare workers found lower SA among migrants. Socioeconomic position strongly influences SA, particularly for musculoskeletal and injury-related causes, but occupational class disparities across diagnostic groups among migrants remain underexplored.

Methods: We used Finnish register data on all individuals aged 25–64 years from 2005–2020. Annual SA prevalence and mean SA days were age-standardised. Disparities between occupational classes within each region of origin (2005, 2013, 2020) were estimated using modified Poisson regression for relative risks (RRs) of yearly prevalence and negative binomial regression for incidence rate ratios (IRRs) of days, stratified by musculoskeletal, mental, and injury-related causes.

Results: In 2020, overall SA prevalence was 11.1%, higher among natives (11.1%) than migrants (6.3%). Among migrants, prevalence was highest for those from Russia/former Soviet Union (7.9%) and refugee-sending countries (7.4%), and lowest for Asia (4.4%). Mean SA days were 7.8 among natives and 4.4 among migrants, ranging from 5.5 (refugee-sending) to 3.1 (Asia). A persistent occupational gradient was evident: upper non-manuals and entrepreneurs had the lowest SA, while unemployed, manual, and lower non-manuals had the highest. Among natives and European-origin migrants, SA among manual workers declined and converged with lower non-manuals by 2020. Musculoskeletal SA decreased but remained concentrated among unemployed and manual workers; mental disorder–related SA increased, especially among unemployed and lower non-manuals; and injury-related SA declined modestly but persisted among disadvantaged groups.

Conclusions: Migrant–native differences in SA in Finland are smaller than in neighbouring countries, but occupational class disparities persist. Musculoskeletal and injury burdens remain highest among manual and unemployed workers, while mental disorder–related SA is increasing across all groups.

(2) What it Means to Lose a Child for Fertility Measurement: Survival- Adjusting the Completed Cohort Fertility Rate

Natalie Nitsche, Ben Malinga John, and Wen Su

Background: Mortality occurring before the end of the reproductive lifespan varies greatly across societies, introducing a fundamental bias in the interpretation of the Total Fertility Rate (TFR). Because the TFR assumes that all women survive through their reproductive years and that all children born survive to adulthood, it provides a distorted picture of population replacement. Consequently, the TFR is a poor population replacement measure—unless it is discounted for a) mortality that occurs before potential mothers finalize their reproductive lifespan and b) mortality that prevents children born from reaching the end of their reproductive lives. Demographers have long recognized this limitation. The Net Reproductive Rate (NRR) was developed to address it, measuring the average number of daughters a woman would bear while accounting for her survival. However, the NRR is neither directly comparable to the TFR, nor does it account for the future mortality risk of children. To fill this gap, Gietel-Basten and Scherbov (2020) estimated the 'replacement rate of fertility' (RRF), providing an approximation of the TFR needed for population replacement in each context. However, no 'mortality adjusted' TFR measure currently exists that returns its intuitive interpretation as "The average number of children per woman" and offers a direct understanding of the TFR's implication for future population replacement, thereby making TFR comparable across different mortality contexts.

Methods: This study provides such a measure, namely a mortality adjusted total fertility rate (MATFR). We introduce three novel measures: MomMATFR backwards-accounts for the mortality of potential mothers by assuming all girls born in the past would have survived until age 49. ChildMATFR adjusts for children's survival until age 49. AllMATFR adjusts for both past mortality of potential mothers and prospectively expected mortality of children.

Conclusions: These measures will provide intuitive mortality adjusted fertility measurements for comparing population replacement implications of the TFR across societies and different mortality contexts.

(3) Cohort life expectancy convergence between Latin American and high-income countries

José Andrade, Héctor Pifarré i Arolas, and José Andrade

This study examines the long-term convergence in cohort life expectancy between Latin American and high-income countries across the 1840–2000 birth cohorts. While high-income countries historically maintained a longevity advantage, Latin America

has achieved substantial gains, narrowing the cohort life expectancy gap from 28 years at its 1926 peak to a projected 8 years for the 2000 birth cohort. Understanding whether this convergence results from similar epidemiological transitions or distinct longevity trajectories remains essential for assessing future progress.

We use age-specific mortality data from the Latin American Mortality Database (LAMBdA) and the Human Mortality Database, complemented by UN World Population Prospects (2024) mortality forecasts. Cohort life tables, closed at age 85+, were used to calculate life expectancy, and age-specific contributions to differences were estimated using Arriaga's decomposition method. To distinguish between stage and trajectory effects, we analyze convergence conditional on countries' positions within the epidemiological transition, measuring the number of cohorts required to progress across successive life expectancy milestones.

Our findings reveal two key phases in the convergence process. Between the mid-19th century and the 1920s, countries diverged sharply as high-income nations experienced faster mortality improvements, particularly in infancy. From the early 20th century onward, convergence accelerated, driven largely by rapid reductions in infant and child mortality in Latin America. However, for cohorts born after the 1950s, progress at older ages became the dominant source of divergence, as high-income countries advanced more quickly in reducing old-age mortality.

These results suggest that Latin America's early convergence stemmed from both its position in the epidemiological transition and a faster trajectory of mortality improvement. Yet, the region's recent slowdown, particularly at older ages, may signal limits to further convergence. The persistence of the remaining longevity gap will depend on Latin America's ability to sustain mortality improvements across all age groups.

(4) Inequality in healthy longevity: Global evidence from distributional metrics

Pietro Belloni, Rami Cosulich, and Virginia Zarulli

Background: Research on healthy longevity has previously focused on healthy life expectancy (HLE) and inter-individual variation, measured through the standard deviation of healthy lifespan distributions (SDHL). However, the asymmetry of these distributions, which can highlight minorities with particularly long or short healthy lifespans, requires further investigation. This study aimed to assess the asymmetry of healthy longevity distributions and its relationship with HLE and SDHL, and to identify global country clusters based on these three measures.

Methods: We used Global Burden of Disease data (1990–2019) for 204 countries, linked with World Bank income groups. The asymmetry of healthy longevity distributions was measured with skewness. HLE, SDHL and skewness were

estimated with a Markov Chain with Rewards model. After assessing correlations between these three measures, countries were clustered with a Gaussian Mixture Model.

Results: For both sexes, in most country-year observations, skewness was negative at younger ages, indicating that a minority of individuals had considerably shorter healthy lifespans than the majority. However, at older ages, skewness was positive, indicating that a minority had particularly long healthy lifespans. At birth, clustering revealed a group of mainly high-income countries that had compressed distributions with high-HLE and strongly negative skewness. At age 65, clusters with low-HLE, compressed, positive-skewness distributions often included low- and lower-middle-income countries.

Conclusions: Averages alone mask substantial health inequalities, so a focus on SDHL and skewness can strengthen global monitoring of health outcomes.

(5) Am I less worried if I can afford it? Socioeconomic moderation of the mental health effects of children's unemployment

Jordi Gumà-Lao

Background: Research on intergenerational effects increasingly shows that adult children's adverse labour market experiences can influence their parents' mental health. Previous studies have examined moderating factors such as gender of parents, geographical distance between generations, and broader economic conditions. Given the financial strain often associated with unemployment, including situations in which parents are required to support their adult children, I hypothesize that the association between children's unemployment and parents' mental health may be moderated by parents' socioeconomic status.

Data and Methods: The study uses longitudinal panel data from the Survey of Health, Ageing and Retirement in Europe (SHARE), which offers detailed information on older adults and their adult children from 2004 to 2022. To distinguish the effect of intergenerational socioeconomic transmission from the specific moderating role of parents' socioeconomic status, I plan to employ linear correlated random effects models. These models will allow me to assess the interaction between parents' education and their children's employment status in shaping parents' mental health outcomes.

Preliminary Results: Preliminary findings, based on OLS models using cross-sectional data from SHARE Wave 9, reveal a clear educational gradient in depressive symptoms among parents whose children are not unemployed. In contrast, among parents with at least one unemployed child, this gradient becomes

less pronounced, particularly among mothers, suggesting a potential flattening of socioeconomic differences under conditions of children's unemployment.

Conclusions: Initial results do not provide strong evidence that parents' socioeconomic status moderates the relationship between children's unemployment and parental mental health. Nonetheless, the reduced educational gradient observed among parents with unemployed children underscores the importance of further investigation using longitudinal data to better capture within-parent changes over time. I also plan to explore alternative proxies to socioeconomic status as economic wealth of parents.

(6) The hidden costs of technological change: Investigating pathways through which highly automatable jobs undermine workers' health in Germany

Mariia Vasiakina, and Christian Dudel

Background: The ongoing economic transformation driven by automation has significant social implications, particularly for the health and well-being of workers who face the risk of job displacement and the pressure to acquire new skills and qualifications. However, the specific pathways through which exposure to automation risk affects health outcomes remain poorly understood, and the relative contribution of each potential mechanism is still unclear.

Methods: In this study, we examine the nature of the relationship between workplace exposure to high automation risk and a range of subjective health outcomes – including self-reported health, anxiety, and both physical and mental component summary scores from the SF-12 Health Survey – among workers in Germany. Using data from the German Socio-Economic Panel (SOEP) linked with administrative records from the Occupational Panel for Germany (2014–2022), we apply the Karlson-Holm-Breen (KHB) mediation analysis method to assess whether broader indicators of economic uncertainty, alongside automation-specific factors, mediate the relationship between high automation risk and workers' health.

Results: Our results indicate that the negative impact of high automation risk on health in Germany primarily operates through indirect pathways (related to mediators) for both genders, with the exception of physical health among male workers, where a direct negative effect is also evident. Economic concerns – particularly job insecurity and worries about one's future financial situation – emerge as more significant mediators than automation-specific factors.

Conclusions: Overall, our findings suggest that the mechanisms linking high automation risk to health are gender- and context-sensitive, and are shaped by broader economic conditions and workplace environments."

(7) Regional inequalities in healthy life expectancy in Spain: Exploring the role of health resources

Elisenda Renteria, Pilar Zuera, and Mariana Calderón-Jaramillo

While Spain has one of the highest life expectancies worldwide, it also experiences one of the largest regional socioeconomic inequalities in Europe, also visible in health outcomes disparities. The Spanish administrative organization reinforces these regional disparities, where the central government has a coordinator role, setting basic national legislation, and regional governments (Autonomous Communities) are responsible for planning, managing and delivering goods and services, including public health and healthcare services, such as hospitals and primary care. Moreover, recent events as the financial crisis from 2008-2012 and the COVID-19 pandemic, have exacerbated these regional variations. Using data from the National Health Surveys from 2006 to 2023, we apply the Sullivan method to estimate various measures of healthy life expectancies at age 50 by sex and region. We examine chronic conditions, self-reported health, activity limitations, and cognitive impairment to capture the stages of health deterioration resulting from the ageing process. We pair each of these health measures with regional indicators of socioeconomic levels and, specifically, public health resources, to identify and understand associations, and if they differ by region, health measure, and sex. Preliminary results show that regional and gender disparities in the number of years of life expectancy spent with chronic conditions increased over time until 2019. Furthermore, public health expenditure was identified as one of the most relevant factors explaining regional differences in years lived with and without chronic conditions. It remains to be assessed whether these findings also apply to the other proposed measures of healthy life expectancy, as well as to the period after the COVID-19 pandemic. Exploring regional indicators of healthy life expectancy is crucial to understand if health variations are resulting from how regional governments have handled their public health resources, and to adjust research advice to the implementation of regional and national policies.

(8) Changes in diabetes-free life expectancy among older adults by race, sex, and education between 2000 and 2016

Francisco Rios Casas, and Mateo P. Farina

Background: Recently, the United States has seen a rise in deaths from external causes and decreased deaths from cardiovascular and chronic diseases. However, progress against diabetes, a major contributor to cardiometabolic complications and healthcare costs, has stalled or worsened over the same period. This study seeks to

understand changes in diabetes-free life expectancy among older adults between 2000 and 2016 according to race, sex, and education levels.

Methods: Data on diabetes prevalence among older adults 50 to 89 years old came from the Health and Retirement Study. US vital statistics and population survey counts were used to estimate mortality rates in 2000 and 2016 for older adults identifying as non-Hispanic White and non-Hispanic Black. We used Sullivan's method to integrate disease prevalence into standard life tables to estimate the change in diabetes-Free Life Expectancy (DFLE) for each race-sex-education group. We also decomposed the changes in DFLE over time into changes due to shifting mortality rates and shifting disease prevalence.

Results: The prevalence of diabetes increased across all race-sex-education groups. However, shifts in DFLE differed between subpopulations. Groups that saw the greatest improvements in DFLE included Black women with a college degree, White women with a college degree, Black men with a High School degree, and White men with a college degree. Subpopulations that saw worsening DFLE included Black women with some college, and White men and women with a high school degree. Decomposition analyses indicate that improvements in DFLE among higher-educated groups was due to improvements in mortality whereas among less-educated White men and women the changes were driven primarily by changes in morbidity and some decreases in mortality.

Conclusions: These results highlight persistent and widening disparities in healthy longevity and underscore the need for targeted interventions addressing social determinants of diabetes.

(9) Explaining the recent rise in infant mortality in France

Nikita Kupska

Background: After decades of steady progress, France is facing an unprecedented rise in infant mortality. Between 2012 and 2024, the infant mortality rate increased from 3.5 to 4.1 deaths per thousand live births. This trend contrasts with the substantial progress observed in many European countries and has been mainly driven by an increase in deaths within the first month of life (i.e., neonatal mortality). To this day, the factors driving the increase have not been identified due to critical gaps in health data in France.

Methods: This study draws on data from the French civil register, neonatal death certificates, and mandatory 8th day health certificates to analyze and decompose neonatal mortality trends in France since 2012. Specifically, it investigates whether this increase is due to a growing share of births at risk, reflecting changes in the characteristics of mothers and newborns, or to a higher risk of death at birth among

specific groups. The main goal is to decompose neonatal mortality trends between 2012 and 2023 by key medical and demographic characteristics, including maternal age, nationality and infant's health status at birth.

Preliminary results and future steps: Preliminary analyses indicate a deterioration in the health status of infants who die within the first month of life, marked by increasing rates of extreme prematurity, very low birthweight, and advanced maternal age. These shifts contrast with the stability of most characteristics among all live births in France aside from a notable rise in maternal age. Further analysis will involve calculating mortality rates by the characteristics of interest mentioned above and applying decomposition methods to separate compositional changes from shifts in mortality risks.

Conclusion: Neonatal mortality remains a major obstacle to reducing overall infant mortality in France and identifying the factors behind the observed increase is essential for developing successful targeted interventions.

(10) Relationship between underweight and overweight/obesity and disability-free life expectancy: A systematic review

Anna Tsutsui, Yoshitaka Murakami, Horikawa Chika, Hiroyuki Kikuchi, Tomonori Okamura, and Ichiro Tsuji

Background: Many studies have examined the association between disability-free life expectancy (DFLE) and body mass index (BMI) categories, including underweight, normal weight, overweight, and obesity. This study aimed to systematically review these associations.

Methods: Eligibility criteria included peer-reviewed observational studies written in English or Japanese that reported DFLE across BMI categories in the general adult population. disability was defined as poor self-rated health or non-independence in activities of daily living (ADL). PubMed, Web of Science, and Ichushi-Web were searched on 12 August 2025. After independent screening by two reviewers, the reference lists of the included studies were examined to identify additional relevant articles. Data were extracted from the included studies and descriptively summarized. When multiple BMI categories above normal were reported, the category immediately above normal (typically overweight) was used. The protocol was registered in PROSPERO (CRD420251107308).

Results: Of 813 records identified, 15 studies were included. One study was identified through reference screening, resulting in a total of 16 studies. The total number of participants was 352,623. Studies from North America were the most common (n=9), followed by Europe (n=3), Asia (n=3), and South America (n=1). Compared with the normal-weight group, the numbers of studies reporting equal or shorter DFLE in the

underweight group were 2/2 for the overall population, 5/5 for men, and 5/5 for women. The corresponding figures for overweight/obesity were 3/3 for the overall population, 7/13 for men, and 12/13 for women.

Conclusions: This review suggests a pattern in which both underweight and overweight/obesity are associated with reduced DFLE compared with normal weight, although findings were less consistent for men with overweight/obesity. Further analyses are needed to quantify these associations.

Funding: This study was funded by the Health and Labour Sciences Research Grant for Research (25FA1004) from the Ministry of Health, Labour and Welfare (MHLW) of Japan.

(11) Mapping mental health inequities: The invisible costs of racialized stressors

Zaza Zindel

Persistent health inequalities across social groups remain a core concern in public health research. This study examines the mental health effects of racialized discrimination as a structural determinant of health, drawing on longitudinal data from the NaDiRa Panel (2022–2024), a nationally representative dataset capturing the experiences of racialized populations in Germany.

The findings indicate that individuals exposed to frequent discriminatory experiences - particularly those who are perceived as Muslim, Asian, or Black - report significantly higher levels of depressive symptoms, anxiety, and psychosocial stress. These effects are cumulative and more pronounced with repeated exposures over time, suggesting a chronic burden that contributes to the social gradient in mental health outcomes. Racialized discrimination thus emerges not only as a psychosocial stressor but as a driver of population-level disparities in mental well-being and a potential risk factor in broader morbidity and mortality patterns.

These results call for the integration of racism-sensitive indicators in health surveillance systems and highlight the need for intersectoral interventions that target structural determinants of health. A comprehensive understanding of population health - and its unequal distribution - requires explicit attention to the role of racism in shaping life chances and health trajectories across the life course.

DAY 2: Thursday, 12th March (9:00a.m – 5:00p.m. room 2-415)

(1) Cholera mortality and morbidity in Spain, 1885: The role of environmental and public health factors

Joana Maria Pujadas-Mora, and Santiago Cerda-Suárez

Background: The global prevalence of cholera, with 116,574 cases and 1,514 deaths reported across 25 countries worldwide in 2025 (WHO, 2025), underscores the need to understand the risk factors influencing its incidence. Historical cholera outbreaks provide a critical framework for examining the long-term determinants of disease exposure and for guiding strategies to mitigate the risk of future epidemics while enhancing population health resilience.

Methods: We aim to analyse environmental, hygienic, and public health factors influencing morbidity and mortality during the 1885 cholera outbreak in Spain, part of the fifth pandemic. The study utilizes a pioneering municipal-level sanitary survey conducted by the National Health Office immediately before the epidemic, preserved for 590 municipalities. The survey comprised 22 questions, which can be grouped into four risk categories: Sanitary Infrastructure and Water Management, Climatic and Environmental Conditions, Preventive Measures and Public Health Response, and Nutritional Factors, alongside recorded cholera cases and deaths. These counts were modelled using Negative Binomial Regression to account for overdispersion while estimating the impacts of infrastructural, environmental, and sanitary factors.

Results: Municipalities with drinking water pipes showed the clearest protective effect, reducing both morbidity and mortality. Sewerage systems were associated with lower morbidity, though effects on mortality were non-significant. Good hygienic conditions, as self-assessed by local authorities, displayed a protective tendency for mortality, without significant effects on morbidity. Preventive measures such as quarantines and cordons sanitaries did not reduce incidence and were associated with higher deaths, likely reflecting reverse causality. These interventions were implemented to prevent the epidemic, but cholera had frequently already established itself in the municipality, making the measures ineffective.

Conclusion & Discussion: These findings highlight the critical role of water infrastructure and basic hygiene in mitigating cholera impact, and illustrating the limitations of reactive preventive measures, offering lessons for historical understanding and contemporary public health planning.

(2) How pre-existing diseases shape multimorbidity in the aging population: Mapping the development of chronic disease networks

Zixuan Wang, Erika Banzato, and Solveig A. Cunningham

Understanding how chronic diseases cluster is important for prevention and treatment. Existing research has primarily focused on clusters using cross-sectional analyses. We apply dynamic Bayesian network models to examine clustering and progression of multimorbidity to assess how disease clusters change over time and how the diseases an individual already has relate to developing new diseases.

We use population-representative, multi-country data from waves 5 (2013) and wave 9 (2022) of the Survey of Health, Ageing and Retirement in Europe (SHARE) to map networks of chronic diseases over ten years among Europeans aged 50y+ (n=31,526). We analyze self-reported diagnoses of heart attack, hypertension, hypercholesterolemia, stroke, diabetes, chronic lung disease, cancer, stomach ulcers, Parkinson's disease, cataracts, Alzheimer's disease, fractures, obesity, affective disorders, and arthritis.

We estimate the conditional associations among diseases to quantify the links among diseases at one point in time, as well as the effect of having a disease at one point in time on the probability of new diseases ten years later. We describe the network structure, which identifies the presence or absence of connections. Then, we estimate the conditional probabilities associated with each connection. We assess the number of disease communities, closeness centrality, and proximity of diseases. Additionally, we stratify the population by sex and age (50-75 and 75+).

Preliminary results show that three disease communities are identified within each wave, while heart attack, hypertension, hypercholesterolemia, stroke, diabetes, and obesity remain in the same cluster over time. Heart attack shows consistently high closeness centrality and proximity to other conditions, suggesting a central role within the comorbidity network. However, this longitudinal network structure differs between females and males, as well as between individuals aged 50–75 and aged 75+. Across time, cardiovascular diseases and arthritis are strong predictors of new diseases, and this pattern is consistent among subgroups.

(3) Health change in older age: Linear decline or irregular paths? Insights from The Cloister Study

Paola Di Giulio, and Marc Luy

Many studies assume that health declines in a steady, one-directional way. This perspective is reflected in several demographic models and in the way health expectancies are typically constructed. However, longitudinal research shows that health can change in multiple directions over time, including periods of recovery or stability. How individuals perceive these changes is less well understood.

This study examines perceived health trajectories among older members of monastic communities in Austria and Germany. Monastic populations provide a useful setting because their living conditions are relatively uniform, helping to limit external sources of variation in health.

We use data from the Cloister Study, a longitudinal survey conducted in 2012, 2014, 2017, and 2022. In the 2017 and 2022 waves, respondents aged 50 and above were asked to select, from nine stylised graphs, the one that best represented how their

health had changed over the previous five years. The options included both linear and non-linear patterns.

Preliminary results indicate that a steady pattern is the most commonly chosen trajectory. Nonetheless, a substantial share of respondents selected non-linear patterns, suggesting that many people experience—or at least perceive—their health as changing in more than one direction over time.

Next steps involve linking these perceived trajectories with reported health measures in each wave and examining differences by age and other characteristics. The findings can contribute to understanding how subjective health reflects underlying health processes, how individuals report change, and how such perceptions relate to the construction and interpretation of health expectancy measures.

(4) Small area life expectancy and expected years lived with depression estimates for the Spanish Basque Country

Jacob Martin, Rustam Tursun-Zade, Tim Riffe, Ainhoa Alustiza Galarza, Unai Martin Roncero, and Amaia Bacigalupe de la Hera

Introduction: The Spanish Basque country is one of the highest life expectancy autonomous communities in Spain, which itself has consistently registered some of the highest life expectancy values among countries in the 21st century. However, the degree of mortality inequalities within such a community remains poorly understood. Furthermore, territorial differences in the prevalence of health conditions can produce large spatial inequalities in years lived in good health; these have not been systematically studied in the Basque country.

Objective: To estimate at the finest spatial scale possible age-specific mortality risk and prevalence of depression, and map expected years lived with depression in the Basque country for the years 2016 to 2024.

Methods: We obtained data on mid-year population and death counts by census tract, age, sex, and year for 2012 to 2024 from the Spanish Instituto Nacional de Estadística and Basque Eustat. We also obtained from the Basque public health service information on number of registered individuals and number of individuals with 10 different health conditions by age, sex, census tract, and year for 2016 to 2024. Using a recently proposed model that borrows strength across age, space, and time, we estimate the underlying age-specific death risk and age-specific prevalence of depression by sex and municipality for 2016-2021. We modeled prevalence and mortality independently, and all modeling was independent by sex. We then calculated estimates of expected years lived with depression for all areas using the Sullivan method.

Results: Preliminary estimates by municipality for males in 2021 showed a life expectancy range of 78.3 to 82.7 years among municipalities. When combined with our preliminary estimates for depression prevalence, this translated to a range of 1.3 to 3.9 expected years lived with depression.

Remaining steps: We will perform the analysis at the census tract level, up to 2024, considering sex differences.

(5) Morbidity-Mortality Paradox in India: An analysis of sex-gap in health of older adults through disability free life expectancy by rural-urban location and geographical region

Sadanand Karun

Background: The morbidity-mortality paradox is a phenomenon where females live longer with poor health compared to males who live shorter but in good health. India made significant improvements in life expectancy, but whether achievements in life expectancy are translating into corresponding benefits in health remains understudied. This study aimed to assess: (i) the sex gap in healthy life expectancy among older adults aged 60 and above by rural-urban location and geographical region in India; and (ii) the morbidity-mortality paradox by rural-urban location and geographical region in India.

Methods: Using nationally representative 'mortality' and 'disability' data from 'India's Sample Registration System (SRS)' and 'Longitudinal Ageing Study in India (LASI)', respectively, the life expectancy, disability-free life expectancy, and life expectancy with disability were computed employing Sullivan's method. The sex gap in healthy life expectancy was decomposed through the stepwise replacement decomposition technique.

Results: The findings indicate a female mortality advantage where females aged 60 lived longer than males in India and its geographical regions, both in rural and urban locations. In contrast, disability prevalence indicated females' disadvantage because females suffered more from disability than males. On combining disability prevalence rates with life tables, it was found that despite living longer, females spent a higher proportion of their remaining lives at age 60 in disability compared to males, indicating the existence of the morbidity-mortality paradox. The findings further revealed the consistent existence of the morbidity-mortality paradox across rural and urban locations, as well as geographical regions, in India. The decomposition of sex gap in DFLE revealed that the mortality effect (lower mortality rates among females than males) adds disability-free years to females' lives which is offset by disability effect (higher disability prevalence among females than males).

Conclusions: The findings of this study underscore the need for targeted efforts to reduce disability among females aged 60 and above, enabling them to live longer, healthier, and more productive lives.

(6) Clustering of NCDs in couples in India: A multilevel analysis of shared household determinants

Radhika Aggarwal, and Sandra Sebastian

Background: Non-communicable diseases, due to their chronic nature, have become widespread in India, impacting the public health system and posing a significant threat to economic development. As these conditions disproportionately affect people from various socioeconomic backgrounds, it is crucial to understand the factors that contribute to a higher prevalence of NCDs. The National Family Health Survey-5 (NFHS-5) data is used to examine the relationship between NCD status, gender, and other socioeconomic factors, with a focus on disease risk clustering among couples living in the same household. It is hypothesised that shared environments play a role in creating a notable intra-couple correlation in NCD status.

Methods: For analysis, a sample of 115,386 married men and women was extracted from NFHS-5. The primary outcome was taken as the presence of at least one NCD, which was then investigated across socioeconomic variables of gender, religion, wealth index, access to improved water and food habits.

Results: A multilevel analysis revealed that women had a higher likelihood of presenting with NCDs compared to men (OR = 2.27, $p < 0.001$). The variation in NCD status could also be attributed to clustering at the household level, shedding light on the phenomenon of similarity in disease risk due to living under the same roof. For wealthier groups, the odds of NCD prevalence were higher in comparison to the poorest groups. This could indicate a higher rate of diagnosis among wealthier individuals.

Conclusion: The findings suggest that NCD control strategies need to be expanded beyond the individual level, due to the effect of clustering. The risk of a partner developing a chronic condition is expected to be higher due to the shared living environment, including similar dietary patterns and health-seeking behaviours. Public health interventions targeting the family as a unit might be effective in mitigating NCDs.

(7) Healthy migrant, healthy couple? Health and quality of life by type of union across Europe

Jeroen Spijker, Jeroen J A Spijker, Thaís García-Pereiro, and Anna Paterno

Background: The growing prevalence of mixed-origin unions in Europe raises questions about how partner origin shapes health. Evidence on whether migrants have better self-rated health (SRH) than natives is mixed, reflecting differences in socioeconomic status, duration of residence and other contextual factors, although the protective effect of partnership is well established. Yet few studies examine health status by type of couple (native, mixed, foreign-born) or consider diverse health and quality-of-life outcomes in a comparative European perspective.

Methods: We use cross-sectional data from the 2024 European Union Statistics on Income and Living Conditions (EU-SILC), covering 29 European countries. Besides SRH, we analyse the presence of long-standing health problems, activity limitation and several quality-of-life indicators, all dichotomised. Type of couple distinguishes: native–native couples; mixed couples with a native respondent; mixed couples with a foreign-born respondent; and foreign-born–foreign-born couples. Binary logistic regressions are estimated separately for men and women in stepwise fashion: (1) type of couple only; (2) adding individual characteristics (age, own non-coresiding minor children, education, employment status); and (3) adding couple-level combinations of partners' education and employment. Predicted probabilities of poor health/quality of life are derived for each couple type.

Expected results: Based on previous findings, we expect foreign-born men partnered with native women to have the lowest probability of poor health/quality of life, followed by native-born men partnered with native women, with foreign-born men in foreign-born couples faring worst. In contrast, we expect foreign-born women in foreign-born couples to have the lowest probability, lower than that of native women in native–native couples.

Conclusions: Health inequalities by migration background are likely to depend strongly on couple composition, gender and health outcome. We anticipate a gendered “healthy migrant” effect and argue that mixed unions are not uniformly protective or detrimental for health and quality of life.

(8) Quality of life among older adults who experienced war—The case of Vietnam

Yvette Young

Background: The lived experience of war manifests in the body in numerous ways across the life course, presenting as physical, psychological, and cognitive health conditions. While research documenting the deleterious effects of war on physical and psychological conditions is plentiful, research on late-life locus of control is limited. However, locus of control is a critical component of quality of life for older

adults. This study investigates older adults' well-being, specifically their perceived locus of control as it relates to early-life exposure to war stressors.

Methods: We use data from the second wave of the Vietnam Health and Aging Study (VHAS), fielded in 2021 and 2022. VHAS-2 conducted follow-up interviews with 2,135 adults aged 60+ residing in four districts of northern and central Vietnam that were differentially exposed to wartime bombing. We use structural equation models to explore the mechanisms linking exposure to wartime stressors with late-life sense of control.

Results: We find that greater exposure to wartime stressors is not directly associated with locus of control; however, exposure to war stressors increases the likelihood of poor physical, mental, and cognitive health over the life course. The adverse health consequences of war exhibit strong negative impacts on late-life locus of control. Thus, it indirectly influences the quality of life of older adults through the mechanisms of late-life physical and cognitive disability.

Conclusions: This study sheds light on the complex interplay between early-life exposure to war stressors and late-life locus of control, highlighting the critical role of health and disability experiences in shaping older adults' locus of control. By elucidating the mechanisms through which war impacts locus of control, our research can inform the development of targeted interventions and support services that address the unique needs of this population.

