# Aging Better Together: *Collaborating to Improve Outcomes Across British Columbia*

## Book of Abstracts

November 19-20, 2023

The AMS Student Nest, University of British Columbia, Vancouver, BC

Organized by:

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# Keynote Lectures

**Portrait of healthy aging: Challenges and opportunities for research on aging**

**Dr. Parminder Raina,** Professor, McMaster University; Canada Research Chair in Geroscience; Lead Principal Investigator, Canadian Longitudinal Study on Aging.

Time: 10:00 – 11:00 am, November 19th

This presentation will focus on highlighting emerging demographic shifts in Canada. The presentation will give an overview of research that highlights aging from social, clinical and biological perspectives.

**Healthy ageing: identifying social to biological pathways over the life-course**

**Dr. Raphaele Castagne,** Researcher, Center for Epidemiology & Research in POPulation Health (CERPOP), Université Toulouse III Paul Sabatier, INSERM, Toulouse, France.

Time: 3:30 – 4:30 pm, November 20th

The social environment has a strong influence on health status along the life-course, life expectancy and overall mortality. Individuals experiencing less advantaged socioeconomic circumstances live less longer and in poorer health compared to those experiencing more advantaged socioeconomic circumstances: individuals' health differs according on their position on the "social gradient". Addressing social inequalities in health requires first a better understanding of why and how they arose.

The presentation will focus on understanding the factors and mechanisms that contribute to aging well and maintaining good health over the life course across socioeconomic groups. This research field combines social, psychological, biological and life-course perspectives to identify the various pathways and determinants that influence the aging process. After a short introduction on the social inequalities in health, I will briefly introduce the social determinants of health. I will then introduce the 'social-to-biological' research field which aim to understand how social, economic and cultural factors 'get under the skin' to impact on health and wellbeing along the life-course. This growing field has shown that our socially structured experiences elicit a biological response, leading to the observation that numerous biological measures are socially patterned. Along the presentation I will discuss and highlight the prominent role of the life-course approach as well as the importance of longitudinal studies in identifying patterns and changes in factors that contribute to healthy aging. In summary, the presentation aims to describe how common experiences from childhood and onward may have an impact on human biology, leading to biological phenomena that are socially patterned and may be involved in health inequalities between social groups.

# Panel Discussions

**Aging in Place**

Time: 3:30 – 5:00 pm, November 19th

**Moderator: Danielle Lafleur**, Doctoral Student, University of British Columbia

**Panelists:**

- **Dr. Grace Park,** Program Medical Director, Home Health, Fraser Health; Clinical Assistant Professor, Family Practice, University of British Columbia
- **Dr. Barbara Pesut,** Professor, School of Nursing, University of British Columbia - Okanagan
- **Dr. Habib Chaudhury**, Professor and Chair, Gerontology, Simon Fraser University
- **Dr. Lillian Hung,** Assistant Professor, School of Nursing, University of British Columbia

The issue of an aging population and the desire for older adults to "age in place" is a significant and evolving topic. In Canada the proportion of people aged 65 and older in Canada has been steadily increasing over the past two decades. This demographic shift is expected to continue, with one in five Canadians projected to be aged 65 and older by 2024. The majority of aging Canadians express a strong preference for "aging in place," which means living in their own homes and communities as they grow older. This preference or choice is rooted in the desire for familiarity, independence, and comfort.  Despite this, many homes and communities lack the necessary infrastructure and support services to make this a safe and realistic option thus presenting significant challenges that need to be addressed. This panel will take a highly interdisciplinary approach to the issue of aging in place, recognizing that various perspectives and expertise are required to develop and implement comprehensive solutions. The panel will feature experts from diverse backgrounds who will share their research and practical insights on various aspects working to support aging in place; from environmental gerontology, perspectives on innovation in dementia and aging, palliative and end-of-life care, to collaborative community and home healthcare solutions. This interactive panel session is intended to be engaging and centre around open knowledge exchange and mobilization among both panelists and attendees, allowing for questions, comments, and a deeper exploration of the topics covered. It aims to provide a platform for experts to share their knowledge and participate in a meaningful dialogue with the audience to help inform current research agendas and potential downstream applications associated with aging in place.

**Promoting Collaboration Across the Province to Improve Aging Outcomes**

Time: 8:30 – 10:00 am, November 20<sup>th</sup>

**Moderator: Dr. Anne Martin-Matthews,** Professor, Department of Sociology, University of British Columbia

**Panelists:**

- **Dr. Shannon Freeman,** Associate Professor, School of Nursing, University of Northern British Columbia
- **Callista Ottoni,** PhD student, University of British Columbia
- **Dr. Annalijn Conklin,** Associate professor, Faculty of Pharmaceutical Sciences, University of British Columbia
- **Johanna Trimble,** Patient partner

In this 90-minute panel discussion, we will explore strategies and initiatives aimed at enabling collaboration to improve aging outcomes in British Columbia. The panellists, representing diverse perspectives and expertise, will share their experiences and insights on fostering collaboration across academic institutions, health systems, and communities and address how to meaningfully engage patients, community partners, and interdisciplinary collaborators to improve the quality of life of older persons. We will delve into key themes and core questions related to successful collaborative models, overcoming challenges and barriers, the role of funding and support for collaboration, and strategies for future collaboration to enhance aging outcomes. We will also explore the perspective of trainees and how public scholarship can support collaboration. Join us for a meaningful conversation about how collaboration can drive innovation in research and better outcomes for aging individuals. The session will actively encourage audience engagement and feedback during and after the panel.

# Faculty Presentations

## Session 1 | The Determinants of Healthy Aging, including Biological, Environmental, Social and Cultural Determinants

Time: 10:15 am – 12:00 pm, November 19th

### The multiple sclerosis (MS) prodrome in older persons. How does age affect the earliest manifestations of MS and what are the implications for disease prevention?

**Dr. Helen Tremlett**, Professor, Department of Medicine, University of British Columbia

Canada has one of the highest prevalence of multiple sclerosis (MS) worldwide. While most are diagnosed with MS between the ages of 20-50 years, work from our team has demonstrated that the average age range of people living with MS in Canada is between 55 and 65 years. Despite this, age-related research in MS has historically been neglected; older persons with MS are often excluded from research. Early recognition, diagnosis and management of MS has been shown to benefit health outcomes. However, recognizing and diagnosing MS in older persons can be particularly challenging. One emerging opportunity to identify MS earlier in older persons stems from evidence for a prodromal phase in MS. 'Prodrome' refers to an early set of signs or symptoms indicating the onset of a disease or illness. For MS, this is the period before the date of MS symptom onset, defined by the occurrence of a more classically recognized issue, such as an optic neuritis. My team have focused on use of multi-region, population-based linked health administrative data in Canada and Sweden in order to create large representative cohorts of persons with MS and matched general population controls. We have demonstrated that a measurable prodromal period extends up to 15 years before MS onset and differs considerably by both sex and age. This presentation will highlight recent advances in identifying and phenotyping the MS prodrome in older persons with MS and the relevance of the prodromal phase for the early recognition, management and future prevention of MS.

## In it together: On the role of relationship transitions for couple concordance in health and well-being

**Dr. Teresa Pauly**, Assistant Professor, Gerontology, Simon Fraser University

Authors: Pauly, T., Weber, E., Hoppmann, C. A., Gerstorf, D., Scholz, U.

Abstract: Romantic partners tend to show linked (i.e., concordant) health and well-being trajectories over time. Transitions that change the family system, e.g., by introducing a new member or children leaving the household, have the potential to impact couple dynamics. However, there is a limited understanding of how shared transitions uniquely shape the strength of the link between couples' health and well-being. The current project is based on coordinated analyses using two large panel data sets (SOcio-Economic Panel, SOEP; Household, Income, and Labour Dynamics in Australia, HILDA) to investigate how couple concordance in life satisfaction, self-rated health, mental health, and physical health might change with the transition to parenthood and the empty nest. We make use of longitudinal data (≥ two decades) from both partners of 2,069 German (Mage = 29) and 1,842 Australian (Mage = 36) couples transitioning to parenthood and 3,501 German (Mage = 41) and 1,128 Australian (Mage = 49) couples transitioning to an empty nest. Data were analyzed using multi-level latent growth curve models for dyads. Results revealed couple concordance in intercepts (averaged r = .52), linear trajectories (averaged r = .55), and wave-specific fluctuations around trajectories (averaged r = .21). Concordance in linear trajectories was stronger after transitions (averaged r = .81) than before transitions (averaged r = .43), whereas no systematic transition-related change in concordance of wave-specific fluctuations was found. Findings emphasize that shared transitions represent windows of change capable of sending couples onto mutual upward or downward trajectories in health and well-being.

# Determinants of healthy aging: The influence of race, sex, and early smoking onset – A two-decade analysis from NHANES data

**Dr. Eshan Karim,** Assistant Professor, School of Population and Public Health, University of British Columbia

Background: Cigarette smoking, often initiated during youth due to aggressive marketing campaigns, remains a significant public health concern. Beyond the immediate health risks, it poses a long-term threat to the trajectory of healthy aging. Using two decades of data, we delve into the relationship between the age of smoking initiation and its implications for healthy aging. Furthermore, it seeks to understand how race and sex, coupled with disparities in healthcare access and socioeconomic backgrounds, might modify this relationship. Methods: We draw data from 10 NHANES cycles from 1999 to 2018. We meticulously examined the age at which participants began regular smoking, using never-smokers as a reference point. The primary outcome of interest was the time elapsed from birth to all-cause mortality. Results: Our findings revealed a pronounced dose-response relationship between earlier smoking initiation and heightened mortality risks, suggesting a compromised trajectory towards healthy aging. Even after rigorous adjustments for variables like race, sex, and survey cycles, these associations remained robust. The White demographic exhibited the most pronounced risk, with the Black population following closely. The differences in risk between male and female populations were not significantly divergent. Conclusion: Initiating smoking at an early age significantly impedes the journey towards healthy aging. Given the profound implications of early tobacco exposure, there's a pressing need for intensified public health campaigns targeting youth smoking prevention. It's paramount for governmental bodies and health organizations to spearhead and advocate for cessation programs, especially tailored for younger demographics, to promote a healthier aging process. Author list: 1. M Ehsan Karim (ehsan.karim@ubc.ca), School of Population and Public Health, University of British Columbia, Vancouver, British Columbia, Canada; Centre for Health Evaluation and Outcome Sciences, University of British Columbia, Vancouver, British Columbia, Canada. 2. Md Belal Hossain (belal.hossain@ubc.ca), School of Population and Public Health, University of British Columbia, Vancouver, British Columbia, Canada. 3. Chuyi (Astra) Zheng (chuyi17@student.ubc.ca), Department of Statistics, University of British Columbia, British Columbia, Canada.

# What does it mean for you? Choosing to empower aging in place

**Dr. Jennifer Jakobi**, Professor, School of Health and Exercise Sciences, University of British Columbia - Okanagan

Authors: Fenton, M.R., Hoppmann, C.A., Boger, J., Dalton, B.H., Sakakibara, B.M., Jakobi, J.M.,

'Aging in place' is a widely used term but its meaning and interpretation in literature and practice has often omitted older adults' perspectives. This study sought to uncover the meaning of 'aging in place' for older adults in Canada, the ways they think it can be supported, and the influence of the COVID-19 pandemic on their perspectives. A survey probing these topics was distributed to older Canadians, and participants were invited to focus groups to elaborate. Approximately 70% of survey participants had heard of the term 'aging in place' and 68% said that the pandemic had not changed their perspectives. Focus groups identified five themes: aging with choice, built environment, social environment, communication and information, and funding. This study highlights critical elements of *aging in place* in Canada and identifies gaps in choices available that can be addressed through research and policies.

Time: 10:15 am – 12:00 pm, November 20th

**Assessing whether peer coaching aids older adults to better manage their chronic health conditions and can slow down and/or prevent progression of frailty**

**Dr. Patrick McGowan,** Professor, School of Public Health and Social Policy, University of Victoria

The Self-Management Telephone Peer Coaching Program was developed and implemented in 2014. Two studies were conducted to investigate the feasibility, viability and effectiveness of the program. The first, a longitudinal study (2017-2019), found that a pragmatic low-cost telephone self-management peer coaching intervention assisted persons with type 2 diabetes to improve healthy behaviours and better self-manage their diabetes. The second study, a RCT (2019-21), evaluated the relative effectiveness of using peer coaches compared to using coaches where participants also provided with three assistive devices. Effectiveness was similar to the first study however, the use of assistive devices (watch and sleep Pad) significantly enhanced program effectiveness. The key implication for public health practice and policy is that a relatively inexpensive, easy to implement peer-delivered telephone Self-Management Health Coach Program is a way of helping people with chronic health conditions manage their health outcomes, even without devices. Since inception in 2014, the program has been delivered to over 4,000 persons. The third study, which started in the February 2023, is evaluating a three-month peer coaching weekly intervention designed to slow down and/or prevent the progression of frailty in older adults. The intervention involves peer coaching, assistive devices and instruction on ways of incorporating the Canadian Frailty Network AVOID strategies into their lives. This presentation will describe the intervention, how it is being implemented, study designs and outcome measures used in the previous studies and the frailty study, and some key lessons learned conducting this research over the past six years.

**An exploratory investigation of the LOVOT social robot as a facilitator of connection and wellbeing in Canadian Long-Term Care**

**Dr. Lillian Hung,** Assistant Professor, School of Nursing, University of British Columbia

Authors: Lillian Hung, Hiro Ito, Joey Wong

In this presentation, we introduce how social robots can foster wellbeing and counter loneliness and boredom as experienced by older adults living in Long-Term Care (LTC) homes. Specifically, we discuss preliminary findings from our mixed-methods, three-country study aimed to explore how older adults living experience and perceive LOVOT, an AI-driven social robot from Japan. In our Canadian sample, older adults living in LTC homes and their family members were invited to join four weekly sessions of interaction with LOVOT. During these interactions, we conducted conversational interviews to gain insights on their experiences and perceptions of interacting with LOVOT. We also conducted focus groups with staff and leadership to better understand their perceptions and experiences of LOVOT. This study offers insights into the potential role of social robots in LTC homes across eastern and western contexts.

## Learning, creating and caring together: Virtual creative engagement with collaborators with lived experience of dementia during COVID 19

**Dr. Julia Henderson,** Assistant Professor, Occupational Science and Occupation Therapy, University of British Columbia

**Dr. Colleen Reid,** Professor, Therapeutic Recreation Department, Douglas College

Introduction: Older adults were disproportionately affected by COVID-19, and isolation and loneliness became key risk factors for mental illness and decreased quality of life. Older adults with lived experience of dementia and their care partners experienced isolation, loneliness, anxiety and depression, already heightened due to social stigma. Reduced access to resources was a notable problem. Objective: This qualitative study investigates the Raising the Curtain on the Lived Experience of Dementia (RTC) Project's virtual turn in program delivery during the pandemic, asking "How did virtual collaborative creative engagement (CCE) impact well-being for people living with dementia and their care partners?"; and "What are key elements of RTC's unique virtual CCE approach?" Methods: The study employs reflexive thematic analysis to analyse interviews and focus groups with the project's artist facilitators, researchers, peer collaborators living with dementia, and their care partners. Findings: Themes describe key elements of RTC's unique approach to virtual CCE and include: "Adjusting Expectations and Adapting to Technology"; "Re-imagining Creative Engagement in Virtual Space"; "Sustaining Reciprocal Caring, Learning, and Support"; "Disrupting Stigma and Welcoming a Wider Audience"; and "Supporting Well-being through Empowerment, Community, and Creativity." Discussion: Findings offer new perspectives on how virtual CCE not only has the potential to decrease loneliness and isolation and associated mental health risks for older adults living with dementia and their care partners, but also can work to disrupt stigmatizing representations of dementia, promote inclusion, and enhance citizenship.

## Methods enabling academic drug discovery and their application to identify new targets and therapeutic interventions for age-related diseases

**Dr. Brent Page,** Assistant Professor, Faculty of Pharmaceutical Sciences, University of British Columbia

Age is a dominating risk factor for many common ailments that affect our population. Cancer, neurodegenerative diseases and inflammatory conditions all claim increasing age as a leading risk factor for disease onset and progression. My research focuses on the discovery and optimization of new therapeutic agents for age-related diseases. Our approach entails developing inhibitors for new and/or challenging targets that have major roles in disease. We work with networks of expert collaborators to conduct high-throughput screens, then characterize and optimize promising compounds that are identified.

A pillar of these projects is the early use of target engagement techniques that measure direct physical interactions between drug-like molecules and their biological targets in cells. These techniques enable my team to optimize our experimental compounds for binding their intended targets, rather than how well they induce a predetermined phenotype. Working collaboratively, we then assess the activity of these compounds in different disease models.

To emphasize the utility of this approach, I will present developments on our NUDT5 inhibitor project. NUDT5 (Nudix-type hydrolase 5) is and ADP-ribose hydrolase that has been implicated as a key regulator of hormone signaling in breast cancer. We developed the first potent and selective inhibitors of NUDT5 using combinations of high-throughput screening, medicinal chemistry and chemical biology techniques. While our top compounds had exciting activity in breast cancer cell lines, these unfortunately did not translate well into in vivo settings. However, we are now validating NUDT5 and these inhibitors as potential therapies for neurodegenerative diseases, with promising preliminary results.

# Trainee Presentations

## Session 1 | November 19th

Time: 1:15 – 3:10 pm, November 19<sup>th</sup>

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### Developing enhanced multimorbidity surveillance in BC

**Dr. Jennifer Ferris,** Postdoctoral Fellow, Simon Fraser University and BC Centre for Disease Control

Authors: Jennifer Ferris, Alexandra Choi, Ognjenka Djurdje, Kari HarderHind Sbihi, Jonathan Simkin, Brandon Wagar, Ryan Woods, Kate Smolina

Chronic diseases are leading causes of death and disability in Canada and worldwide. Chronic diseases often do not occur in isolation; having one chronic disease can increase the probability of developing others because of shared risk factors or etiological pathways. It is therefore common for two or more chronic conditions to develop in a single individual, a state termed "multimorbidity". The risk of developing many chronic diseases increases with age, and it is estimated that more than 60% of BC seniors had multimorbidity in 2019. The prevalence of multimorbidity is projected to rise, due to the aging population and increasing chronic disease prevalence. The goal of this project is to develop a comprehensive approach to measuring chronic disease multimorbidity in the BC population. Linked data from the BC Chronic Disease Registry and BC Cancer Registry were used for chronic disease case definitions from 2001/02 to 2019/20. We included 19 chronic conditions from the BC Chronic Disease Registry and 7 cancer subtypes from the BC Cancer Registry for multimorbidity analyses. This presentation will describe the analytic approaches taken to analyzing patterns of disease co-occurrence in multimorbidity, including disease counts, disease combinations, and a network-based disease clustering analysis. The presentation will also highlight preliminary data on trends in multimorbidity prevalence, incidence, and disease patterns in BC.

# Aging in prison through a philosophical equity-informed lens

**Mar'yanna Fisher,** Doctoral Student, University of Victoria

Despite international recognition of the importance of palliative care as a shared universal right, a health equity gap exists between Canada's general and carceral populations. Incarcerated people face unparalleled health inequities before, during and post-incarceration. And while the nursing discipline made advances in recognizing the detrimental effects of social determinants on health, the specifics of inequalities faced by terminally ill prisoners remain hidden from the public view. The following discussion aims to explore aging and dying in prison from the social justice perspective by articulating philosophical, social, and spatial dimensions that underpin end-of-life experiences for incarcerated individuals, hoping to inspire the possibility that life can be different.

# Getting a grip on greenspace; exploration of built environment factors and healthy aging in the BC Generations Project

**Millie Baghela,** Research Assistant, BC Cancer

**Jaclyn Parks**, Research Assistant, BC Cancer

Getting a grip on greenspace; Exploration of built environment factors and healthy aging in the BC Generations Project Millie Baghela1, Jaclyn Parks1, Parveen Bhatti1,2 1 Cancer Control Research, BC Cancer Research Institute, BC Cancer, Vancouver, BC, Canada 2 School of Population and Public Health, University of British Columbia, Vancouver, BC, Canada Background Population-level interventions that promote health aging through modifications to the built environment are likely more effective than individual-level behaviour changes. We leveraged detailed data from a population-based cohort study to explore how built environment may affect grip strength, a useful marker of age-related health status. Methods Analyses were conducted among participants of the British Columbia Generations Project (n=15,068). Built environment factors, including air pollution (PM2.5, SO2, NO2), light-at-night, and proximity to greenspace were ascertained via linkage of participants residential addresses to spatial data from the Canadian Urban Environmental Health Research Consortium. Grip strength was measured by Digital Hydraulic Hand Dynamometer, with strength of the stronger hand used as our primary outcome regardless of hand-dominance. Logistic regression analyses were conducted to estimate the increase in odds of having a stronger-than-average grip strength in association with each built environment factor. Results Greenspace was the only factor found to be significantly associated with grip strength. An interquartile range increase in Normalized Difference Vegetation Index was associated with 1.18-fold increased odds of having a stronger-than-average grip strength (95% Confidence Interval: 1.13-1.23), after adjusting for age and sex. Sociodemographic factors, behavioural factors, including physical activity, and comorbidities were not found to be confounders of this association. No association was observed between grip strength and proximity to parks as a measure of greenness Conclusion Greenspace may be a modifiable determinant of healthy aging, with benefits beyond just promotion of physical activity. Further research is needed to better understand the mechanism underlying this association.

# Subjective classification of physical fitness confounds age and sex-related comparisons in health research

**Ally Schweitzer,** PhD Student, University of British Columbia

Authors: A.M. Schweitzer, M.D. Fliss, C.J. Mitchell

Fitness confounds many metabolic and health-related outcomes yet varies between sexes and declines with advancing age. Therefore, sex and age-based comparisons require a strategy to control for fitness. Three strategies are commonly used, 1) subjective reports of activity level 2) matching of absolute or bodyweight-normalized fitness, and 3) matching of fitness percentile based on age and sex-stratified norms. This study aimed to compare cardiorespiratory ([CRF], ml/kg/min) and muscular (grip strength) fitness between 'recreationally active' young (19-30y, n=27) and older (65-85y, n=13) males and females reporting ≤2 hours per week of exercise. Young adults had greater absolute muscular (81.5±24.1kg) and CRF (37.3±6.4ml/kg/min) than older adults (71.8±22.4kg, $p<0.001$, 27.2±4.5ml/kg/min, $p<0.001$) and males had greater absolute muscular (98.3±15.5kg) and CRF (36.7±6.9mL/min/kg) than females (55.9±12.3kg, 30.3±6.8mL/min/kg). Older adults, however, showed higher CRF percentiles (63.9±18.3) than young volunteers (36.0±14.1, $p<0.001$). This effect was more pronounced in females than males (age × sex $p<0.001$). No differences in grip strength percentiles were observed between ages (66.2±23.7 [young], 60.8±25.3 [older], p=0.42) or sexes (59.5±26.7 [female], 67.3±22.0 [male], p=0.27). Recruiting individuals who self-report as 'recreationally active' results in young adults with higher body weight normalized CRF compared to older adults, but lower fitness relative to age-matched peers. Investigators should consider the most appropriate method to control for fitness given their research question. This is of particular importance for age-related research, where age- and physical inactivity-related declines are difficult to discriminate.

# Neurological plasma biomarkers follow age-related trajectories in cognitively healthy oldest old

**Jennifer Cooper**, PhD Candidate, University of British Columbia

Authors: Jennifer Cooper, Sophie Stukas, Mohammad Ghodsi, Stephen Leach, Angela Brooks-Wilson
Cheryl Wellington

Objectives: Investigate how ageing modifies plasma levels of amyloid beta 42/40 (Aβ42/40), phosphorylated tau-181 (p-tau-181), neurofilament light (NfL), and glial fibrillary acidic protein (GFAP) in a normative, epidemiologically representative Canadian population and in cognitively healthy seniors over 85 years of age. Methods: Biomarkers were analysed on the Quanterix Simoa HD-X analyzer. N=900 Canadian Health Measures Survey plasma specimens were analyzed as a normative population. Using smoothed quantile regression, the 5th, 50th and 95th percentiles from ages 3-79 years were determined. N=480 plasma specimens were analyzed from cognitively healthy Super Seniors Study participants with a median age of 88 years old (IQR=87-90y), who had never been diagnosed with dementia, cancer, diabetes, cardiovascular or major pulmonary disease. Results: In the normative population, the 50th percentiles of p-tau-181, NfL, and GFAP increased by 3-4% per year and the 95th percentile increased by 4-5% per year between 60-80 years of age. For Aβ42/40, both the 5th and 50th percentiles decreased by 1% per year. In Super Seniors, 93% of Aβ42/40, 90% of p-tau-181, 89% of NfL, and 87% of GFAP data points fell within the 5th and 95th percentiles of normative 79-year-olds. Within this reference range, a higher proportion of Super Seniors fell above the 50th percentile for p-tau-181 (59%), NfL (78%), and GFAP (75%), or below the 50th percentile for AB42/40 (60%). Conclusions: Cognitively healthy seniors over 85 years have similar plasma biomarker distributions as normative 79-year-olds, indicating that age, regardless of cognitive status, modifies biomarker concentrations over the age of 80 years.

**Charting the dynamic landscape of mental health changes in older adults using data from the Canadian Longitudinal Study on Aging**

**Karanvir Singh,** Masters Student, University of British Columbia

Authors: Karanvir Singh, Jessica Dennis, Sabine Bonnor

Getting older comes with many life changes, including transitions in occupation, social environments, and health status. Mental health too changes as individuals age, yet the factors that influence shifts in mental health are poorly understood, despite their public health relevance. According to the World Health Organization, more than 1-in-5 adults aged 60 years and older have a mental health condition such as depression or anxiety, and males aged 85 and older have the highest rate of suicide of any age group. Our goal was to understand why some aging adults experience greater changes in their mental health relative to others. We have analyzed data from over 26,000 participants in the Canadian Longitudinal Study on Aging. Participants were aged 45-85 at baseline in 2010-2012, and they completed detailed health, lifestyle, and behavioral questionnaires at three separate time points thereafter, and provided a blood sample for genotyping. Using growth curve modeling of depressive symptoms, we have identified different subgroups characterized by improving, stable, or worsening symptoms. Subgroups differ across multiple domains, including in the ratio of males:females, the frequency of activities impacted by pain, self-reported loneliness, emotional support, the occurrence of multi-morbidities, cognitive changes, and genetic predisposition. Our study moves beyond a static view of mental health and instead looks at factors that affect changes in mental health as individuals age, which is essential knowledge if we are to promote healthy aging across the life course.

# Tick tock goes the clock: exploring the association of epigenetic age acceleration with healthy aging

**Hannah-Ruth Engelbrecht,** PhD Student, University of British Columbia

Authors: Hannah-Ruth Engelbrecht, Sarah M. Merrill, Nicole Gladish, Julie MacIsaac, David T.S. Lin, David Rehkopf*, and Michael S. Kobor1* *these authors contributed equally

Epigenetic clocks are DNA methylation-based biomarkers that have been shown to have associations with health outcomes common with aging. Blue Zones are regions with exceptional centenarian prevalence and known healthspan advantages relative to other regions, with postulated genetic and lifestyle factors that influence the positive aging of the residents of these regions. In this study, the aim is to determine whether epigenetic clocks and their derived measure, epigenetic age acceleration, can be used to assess healthy aging as a complex phenotype. We investigated whether epigenetic age acceleration can be used to delineate between residents of Blue Zones and non-Blue Zone regions, including neighbouring areas in the same country, as an indicator of health differences in these regions. We then intend to make comparisons to a Canadian cohort (the Canadian Longitudinal Study on Aging: CLSA) which is comprised of a combination of health statuses. We constructed structural models for males and females from the Costa Rican Longevity and Healthy Aging Study to investigate epigenetic clocks and their moderation by the Healthy Aging Index in the Nicoya Peninsula Blue Zone and other regions of Costa Rica. The Healthy Aging Index was associated with Blue Zone status in men from the Nicoya Peninsula. In the CLSA, we intend to use a latent class analysis approach to separate the cohort into healthy aging strata, and assess whether any epigenetic age acceleration differences can be detected between these strata. Our research will indicate the utility of epigenetic clocks and their measures as a means of identifying and assessing the complex phenotype that is healthy aging across diverse populations.

# Effect of age on prodromal phase of multiple sclerosis: Evidence from sickness absence patterns: A matched cohort study

**Dr. Ali Manouchehrinia,** Research Associate, University of British Columbia

Authors: Ali Manouchehrinia, Feng Zhu, Jan Hillert, Kyla A Mckay, Yinshan Zhao, Ruth Ann Marrie, Helen Tremlett

Introduction: Sickness absence due to illness can indicate an individual's declining health. Such data provide early insights into emerging health issues, which can provide valuable knowledge regarding the prodromal phase of the disease. Little is known of the effects of age on sickness absences in the multiple sclerosis (MS) prodromal period. Aims: This study aims to examine the effect of age on sickness absence rates in years preceding the onset of MS. Methods: Using data from Sweden, we identified MS cases via a validated algorithm using International Classification of Diseases (ICD) codes. Cases were matched with up to five controls. Yearly pre-MS onset sickness absence rates stratified by age groups (&lt;30, 30-50, and ≥50) were compared using negative binomial regression with generalized estimating equations. Results: The cohort comprised 8,640 MS cases and 43,259 controls. Sickness absence rate ratios (RR) steadily increased in the years preceding MS onset and peaked one year before MS onset (RR: 2.7, 95%CI: 2.5-2.9). We observed a significantly greater RR in patients with age at MS onset ≥50 (RR: 3.6, 95%CI: 3.1-4.2) compared to those with age at MS onset 30-50 (RR: 2.5, 95%CI: 2.3-2.8) and &lt;30 years (RR: 2, 95%CI: 1.6-2.6). Conclusion: The observed increase in sickness absence rates highlights the presence of prodromal symptoms in MS, which is more pronounced in patients with older age at MS onset. Analyzing and monitoring sick leave patterns might aid in identifying individuals at a higher risk of MS or those exhibiting early signs of MS.

Time: 1:15 – 3:00 pm, November 20<sup>th</sup>

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**Developing knowledge mobilization strategies to create dementia-inclusive neighbourhoods for community access, participation, and engagement (DemSCAPE): An awareness-raising educational video**

**Caralyn Randa,** Graduate Student, Simon Fraser University

Authors: Caralyn Randa, Habib Chaudhury, Kishore Seetharaman

The neighbourhood is widely regarded as a setting that affords functional, social and psychological support and opportunities to maintain community-based activities and social participation for people living with dementia (PLWD). To help municipalities achieve their vision of dementia-friendly streets and outdoor spaces, this Knowledge Mobilization (KM) extension of the Dementia-inclusive Spaces for Community Access, Participation, and Engagement (DemSCAPE) project aims to create education and training tools and resources for municipal planners, as well as members of community-based organizations. A seven-minute documentary video was produced to illustrate the lived-experiences of three people living with dementia in British Columbia, two from Metro Vancouver and one from Prince George. This video is one of several public engagement tools for dialogue and challenging stigma surrounding living with dementia in the community that will be mobilized during the next phase of the project. The planned activities include: 1) conducting screenings and group discussions for the short video and photo exhibit on the importance of streets and outdoor spaces for people living with dementia, 2) group discussions with municipal planners to develop guidelines that will help them apply knowledge of dementia-friendly streets and outdoor spaces to planning and design, and 3) environmental audit of targeted streets in Metro Vancouver engaging people living with dementia and helping municipal planners find solutions to make those streets more dementia-friendly. Creating a supportive neighbourhood built environment that facilitates outdoor mobility, wayfinding, and access to community destinations is key to making our communities dementia-inclusive.

**What do primary care providers know, believe, and do about hearing health for older adults?**

**Danielle Lafleur,** Doctoral Student, University of British Columbia

Authors: Danielle Lafleur, Lorienne Jenstad, Brenda T. Poon, Craig Stevenson

Purpose: Determine the behaviour, attitudes, and knowledge of primary care providers (PCPs) in British Columbia regarding hearing health. Identify barriers and facilitators to acting as a champion for their patients' hearing health. Background: Hearing loss is one of the most significant contributors to the global burden of disease. Up to 65% of adults in BC age 60+ have hearing loss. Fewer than 1/4 of adults seek hearing healthcare or obtain hearing aids. Untreated hearing loss affects communication and quality of life, and is linked to social isolation and greater risk of falls. Methods: An online survey including both open- and closed-ended questions was distributed to PCPs in BC via PCP oriented newsletters and social media sites. To analyze open-ended responses, we applied coding practices drawn from grounded theory. Results: Three hundred and seventy responses to closed-ended questions and 241 responses to open-ended questions were analyzed. Seventy two percent of respondents agreed that there is sufficient evidence to support hearing screening for adults, and 71% agreed that they play an important role in the hearing health care of their patients. PCPs reported that their in-clinic practices regarding hearing health include advising patients on hearing protection and recommending that they seek further hearing health care with an audiologist or otolaryngologist. Conclusions: The next steps of our research will focus on the key role that primary care providers play as both educators and promoters of hearing health among patients and as integral gatekeepers to patients pursuing and receiving hearing health care.

**A community-integrated approach to digital literacy training in social housing for older adults:**
**Bridging the digital divide for enhanced wellbeing**

**Raghad Elgamal,** PhD Student, McMaster University

This research aims to provide pragmatic and meaningful insights for community centred interventions that support healthy aging and digital inclusion in marginalized communities. Employing a mixed-methods approach, this case study rigorously examines the unique barriers to digital literacy faced by older adults living in social housing, which include but are not limited to limited mobility, financial constraints, and inaccessibility to proper training resources. These barriers frequently culminate in social isolation and a noticeable reduction in digital self-efficacy. The study introduces an innovative digital literacy program co-designed by Hamilton Public Library and City Housing Hamilton. A distinctive feature of this initiative is the Mobile User Experience Lab, a state-of-the-art mobile facility equipped with a specialized User-Experience (UX) lab. Uniquely engineered to tackle accessibility and social inclusion barriers, the lab serves a dual purpose: it not only delivers targeted digital training but also functions as a conducive and equitable learning environment. This case study investigates the roles of mobile training, observational learning based on Bandura's Social Cognitive Theory, and encouragement by social networks in effectively enhancing digital self-efficacy and overall well-being among this vulnerable population. Preliminary findings, evaluated through both quantitative and qualitative feedback, underscore the significance of tailored digital literacy training within a community-integrated approach. These findings hold substantial promise for elevating digital self-efficacy, enriching learning processes, and improving the overall well-being of older adults residing in social housing.

# A qualitative study on the experiences of residents using virtual reality in long-term care

**Joey Wong,** Graduate Student, University of British Columbia

Authors: Joey Wong, Mona Upreti, Alisha Tumar, Winnie Kan, Mary Van, Kayla Wen, Christine Wallsworth, Jim Mann, Lily Wong, Mario Gregorio, Lillian Hung

Objective: Our scoping review study on using virtual reality (VR) in aged care identified the need for more comfortable headsets, a broader selection of high-quality videos, and greater user control in VR programs designed for long-term care. This qualitative study aimed to investigate residents' experiences of using a VR program specifically tailored for older adults. Methods: Three long-term care homes in Vancouver, British Columbia, implemented the VR headsets for four to eight months. A diverse group of 30 residents, with various physical, cognitive, and cultural backgrounds, participated in either individual or group VR sessions. Video-recorded conversational interviews were conducted with residents during and immediately after the VR sessions. Interviews and focus groups were held with two family members and ten staff members. Thematic data analysis was performed on data including interviews, video footage, and field notes. We conducted the analysis with a diverse team of academic researchers, clinicians, patient and family partners, and trainees. Results: Four themes were identified: 1) storytelling fosters residents' sense of self, 2) psychosocial impact, 3) supports resident-family connections, and 3) resident-resident and staff-resident relationship building. Conclusion: Our findings indicate that VR experiences tailored for older adults, support residents' personhood by promoting inclusion, social engagement, comfort, and recognition of individual identity. Future research should further investigate the long-term effects of VR usage in this population.

## Pacific Regional Centre for Healthy Aging: a province-wide collaboration between health care, community, and academic organizations to AVOID frailty

**Margaret Lin,** PhD Student, University of British Columbia and Fraser Health

Authors: Margaret Lin, Dr. Grace Park

Frailty is broadly seen as increased vulnerability and functional impairment caused by cumulative declines across multiple systems. In British Columbia (BC), 20% of our senior population is frail, reducing function and quality of life. While frailty is a complex problem for the health system, it can be prevented and delayed with early intervention and better inter-sectoral collaboration with the patient and family at the centre. Pacific Regional Centre for Healthy Aging (PRCHA) is a new network derived from a Canadian Frailty Network (CFN) grant to promote healthy aging through the AVOID frailty framework (Activity, Vaccination, Optimization of Medication, Interaction, and Diet). Five regional health authorities, four universities, and United Way BC collaborate on six PRCHA projects: 1. Develop an AVOID frailty education module for all community health care providers in BC 2. Establish a provincial website as a one-stop-shop evidence-based information hub for healthy aging information, local resources and tools throughout BC. 3. Expand a Peer Coaching program to support older adults' self-management. 4. Conduct a research project on using technologies to detect and monitor frailty at home. 5. Further integrate an electronic Comprehensive Geriatric Assessment tool into the health care system. 6. Continue to expand the Social Prescribing scheme started in Fraser Health and support its development for BC. This collaborative effort will facilitate early frailty identification and management, provide accessible and trusted sources of information and local resources on healthy aging, and allow a common collaboration platform for older adults, care partners, health authorities, care providers, and researchers.

# Evaluation of an innovative arts-based knowledge translation strategy for healthy aging research among women living with HIV

**Shayda Swann,** MD/PhD Student, University of British Columbia; **Melanie Lee,** Community Research Associate, British Columbia CARMA-CHIWOS Collaboration; and **Claudette Cardinal**, Indigenous Community Researcher with the BC Centre for Excellence in HIV/AIDS

Authors: Shayda A. Swann, Shelly Tognazzini, Claudette Cardinal, Davi Pang, Junko Milton, Melanie Lee, Amber R. Campbell, Elizabeth King, Tetiana Povshedna, Valerie Nicholson, Angela Kaida, Hélène C.F. Côté, Melanie C.M. Murray, on behalf of the British Columbia CARMA-CHIWOS Collaboration (BCC3; CIHR CTN 335)

Background: Knowledge Translation and Exchange (KTE) are critical to advancing healthy aging research, especially among equity-deserving populations who have historically experienced inequities in research. Art may provide an effective medium for communicating complex scientific topics. We developed a series of arts-based KTE events for Women Living with HIV to learn about healthy aging research.

Methods: Our KTE team includes Community Research Associates (CRAs; women living with HIV with research training), provincial HIV/AIDS Service Organizations, Indigenous Elders, trainees, and researchers. Events consisted of lay-language presentations by CRAs about actionable research findings, sharing guides for improving health, art activities, a shared meal, and a gift bag with health-promoting items. Events were evaluated using feedback forms with Likert scales.

Results: Eight KTE events were held in Vancouver (n=15-20 women/event), Victoria (n=6), and Prince George (n=14), including one overnight retreat (n=18). Themes covered cortisol and stress management, menopause, chronic pain, and cellular aging. Art media included canvas painting, body mapping, stencil drawing on t-shirts and pillowcases. Fifty-six feedback forms were received from 6 events (61% response rate). Respondents agreed that 1) the topics discussed were important to them (100%), 2) they felt safe attending the event (100%), 3) the art activities helped them connect with the theme (98%), and 4) they knew more about the theme than before (92%). Women commented that the events were "healing", "informative", and "engaging".

Conclusion: The positive feedback and at these events emphasize the value of utilizing innovative, arts-based approaches to communicate healthy aging research with equity-deserving women.

# Ikigai – A Japanese wellbeing construct for healthy aging

**Hiro Ito,** MSc Student, University of British Columbia

Authors: Hiro Ito, Susan M. Cox

To understand psychosocial and cultural determinants of healthy aging, it is important to consider culturally nuanced ideas of health and wellbeing in research. For example, ikigai, a wellbeing construct native to Japan, is often translated as "what makes life worth living" or the "purpose of life." Evidence suggests that a strong sense of ikigai can be protective against poor health outcomes. Further, ikigai has been attributed to the long life expectancies of people in Okinawa, Japan. However, despite these linkages between ikigai, health and longevity, ikigai remains poorly understood. Definitions of ikigai vary widely in the English-language literature, and the most popularized misrepresentation of ikigai is based on a single blog's misconstrued Venn diagram. Hence, we conducted a scoping review to explore how ikigai has been defined and examined in the English-language literature. Furthermore, we investigated the foci of ikigai research by highlighting populations, social determinants, and disciplines of interest. For this symposium, we present key findings from our scoping review to (a) clarify the concept of ikigai and its determinants and (b) demonstrate how culturally nuanced wellbeing constructs such as ikigai can further knowledge of healthy aging in diverse communities.

# Poster Presentations

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**Poster #1**

### All apneas & hypopneas are not created equal: Event-related hypoxia burden changes electroencephalographic cortical activity in obstructive sleep apnea patients

**Mohammadreza Hajipour,** Uniersity of British Columbia

Authors: M. Hajipour, A. M. Hirsch Allen, J. K. Raneri, A. E. Beaudin, R. Jen, S. Fels, A. Singh, P. Hanly, A. Azarbarzin, N. T. Ayas;

Rationale: The key index of OSA severity is the apnea-hypopnea index (AHI) which attributes equal value to all respiratory events. However, there is substantial variability in the extent of desaturation associated with respiratory events, and this may affect the patient's physiologic response. We hypothesized that the degree of event-related desaturation would affect ensuing electroencephalographic responses; specifically, we examined the relationship between event-related hypoxic burden and changes in EEG signals following respiratory events. Methods: Participants enrolled at the Vancouver and Calgary sites of the multi-center Canadian Sleep and Circadian Network (CSCN) were studied; these were patients referred for suspected OSA between 2016-2019 with OSA (AHI&gt;5 events/hour confirmed with polysomnography (PSG)). The area under the oxygen desaturation curve was calculated for each apnea and hypopnea (event-related hypoxic burden: HBEV). Power of delta, theta, alpha, beta and gamma frequency bands were calculated using Fast Fourier transformation 6s prior to the start of the event (baseline) and in the 6s after event termination. Change in power (power ratio) was defined as: log (power after termination/ power before the event using the C3-A2 lead). We examined associations between event-related hypoxic burden (scaled) and frequency band power ratios (scaled) using mixed-effect analyses adjusted for sex, NREM/REM, event duration, age, total sleep time, and BMI. Results: PSG recordings from 620 patients (76273 respiratory events) were included (median [IQR]: age 56 [45, 64] years, AHI 28 [15, 70] events/hour, and BMI 33 [28, 40] kg/m2). There was substantial variability in HBEV (1.61 [0.98, 2.73] %min). After all events, there were significant increases in power amplitude for all frequencies (positive power ratios). In mixed effect analysis, HBEV was associated with an increase in the power ratio of all frequency bands after controlling for confounders (Table 1, p&lt;0.0001 for all frequencies). The strength of association was greater in higher frequency bands. Moreover, sleep stage and duration of events were consistently associated with changes in power band frequencies; specifically, the power ratio was lower for REM versus NREM events, while longer event duration was associated with greater increases in power ratios. Conclusions: First, there was substantial within and between-patient variability in the HBEV. Second, HBEV was associated with increased change in power ratios of all frequency bands. Future investigations should determine whether indices that incorporate these event-related changes in cortical activity predict symptoms, cognitive function, and long-term health outcomes (e.g., dementia, cardiovascular disease) better than AHI.

**Poster #2**

## Genetic variation and pesticide exposure influence sex-specific blood DNA methylation signatures in early-stage Parkinson's disease

**Dr. Samantha Schaffner,** University of British Columbia

Authors: Schaffner, S. L.*, Casazza, W.*, Artaud, F., Konwar, C., Merrill, S. M., Domenighetti, C., Schulze-Hentrich, J. M., Lesage, S., Brice, A., Corvol, J. C., Mostafavi, S., Dennis, J.K.†, Elbaz, A.†, Kobor, M. S.†±, DIGPD Study Group.  *These authors share equal primary authorship. †These authors share equal senior authorship.

Although sex, genetics, and exposures can individually influence risk for sporadic Parkinson's disease (PD), the joint contributions of these factors to the epigenetic etiology of PD have not been comprehensively assessed. Here, we profiled sex-stratified genome-wide blood DNAm patterns, SNP genotype, and pesticide exposure in agricultural workers (71 early-stage PD cases, 147 controls) and explored replication in three independent samples of varying demographics (n = 218, 222, and 872). Using a region-based approach, we found more associations of blood DNAm with PD in females (69 regions) than in males (2 regions, $\Delta\beta adj|{\geq}0.03$, FDR≤0.05). For the majority of regions (48 in females, 2 in males), models including genotype or genotype and pesticide exposure substantially improved in explaining interindividual variation in DNAm (FDR≤0.05), and accounting for these variables decreased the estimated effect of PD on DNAm. Our results suggested that sex, genotype, and genotype-exposure interactions contributed to much of the variation in PD-associated DNAm, and that these factors should be considered in future epigenetic studies of PD and other complex disorders.

**Poster #3**

**Understanding healthy aging among older adults living with and beyond cancer**

**Ailsa C. Sirois,** University of British Columbia

**Authors:** Ailsa C. Sirois, Kristin Campbell, Schroder Sattar, Margaret Rudolf, Kristen Haase

Background: More older adults (OA) – those age 65+ - are living with and beyond cancer and may experience challenges related to health, well-being, and aging. Healthy aging is a process that allows for optimal functional ability and well-being among OA. Although health promotion can improve health outcomes and quality of life, less is known about caring for OA living with and beyond cancer in the period commonly called 'survivorship'. There is a need to better understand the intersection between healthy aging and OA experiences' living with and beyond cancer for OA. Purpose: The purpose of this study is to explore healthy aging in OA living with and beyond cancer. The research questions are: For OA living with and beyond cancer: (1) How do they define healthy aging? (2) What is the role of a cancer diagnosis in engaging in health promotion? (3) What is the role of gender in the experience of healthy aging and cancer? Methods: Using an interpretive descriptive approach and patient-oriented research methods, ongoing interviews focus on: defining healthy aging; understanding gendered norms; and health promoting behaviours. Sample size will be approximately 20 participants, or until themes are robust and descriptive. Data are being thematically analyzed. Significance: Understanding the experience of healthy aging among OA living with and beyond cancer is critical to promoting health for this growing population. The findings of this study will grow the knowledge based related to supporting healthy aging for OA and inform future interventions.

**Poster #4**

## The Cognitive Reserve Theory and attention deficit/hyperactivity disorder

**Tara Cooper,** University of Victoria

Attention deficit/hyperactivity disorder (ADHD) is a neurodevelopmental disorder characterized by challenges with attention, hyperactivity, and impulsivity which impair an individual in two or more environments. ADHD persists into adulthood; it is estimated that 2.5% of the population over 50 years old has ADHD. Therefore, as the population of adults over 65 continues to grow across the globe, it is likely that the number of adults over 65 with ADHD will also increase in the coming decades. Growing old is accompanied with an increased risk of developing dementia. This risk may be of particular concern for older adults with ADHD. Previous research has found that adults with ADHD have a significantly higher risk for dementia than controls. As a consequence of ADHD, adults with symptoms or who meet the full diagnostic criteria of ADHD suffer from an array of negative functional outcomes, each of which map onto the Cognitive Reserve theory and constitute a low reserve profile. According to the Cognitive Reserve theory, the quality and quantity of experiences throughout life develop an individual's resilience against cognitive impairment despite accumulating age-related neuropathology. Therefore, it is possible that older adults with ADHD have a higher risk of dementia due to fewer life-experiences. This research explores the risk of dementia diagnosis and the differential risk associated with high and low cognitive reserves in a sample of 231 adults over 55 with ADHD symptoms/diagnosis from the Longitudinal Aging Study Amsterdam (LASA).

**Poster #5**


## Exploring knowledge exchange through an intergenerational art collaboration

**Cassidy Dahl,** University of the Fraser Valley

Authors: Shelley Canning, Candace Couse, Cassidy Dahl

As the demographic makeup changes in society, today's children and young adults will be living at a time when there are increasing numbers of people living with dementia. The WHO identifies both meaningful social connections between younger people and people living with dementia, and dementia aware education to be important interventions to address negative attitudes related to dementia. While university students in health sciences-type programmes such as nursing have the opportunity for interactions with people living with dementia and dementia aware education, most students do not. In Winter 2023, a Visual Arts course was undertaken providing both meaningful social connections, and education related to dementia through intergenerational knowledge exchange. VA395 enrolled 14 UFV students who were partnered in creative collaborations with 14 community living people from across Canada who live with dementia. Our study explores the experiences of both the students and their community collaborators drawing on an applied qualitative methodology incorporating arts-based methods. Data includes individual participant interviews conducted over zoom along with the art works created in the course. These collaborative creations provide a unique lens to better understand the participants' experiences and underscore the role of collaborative art practice as a vehicle for bringing generations together in meaningful ways. We share early findings highlighting significant reciprocal benefits for both participant groups.

**Poster #6**

## The impact of comorbidities on aging outcomes in the multiple sclerosis population: a rapid review

**Hanna Frank,** University of British Columbia

Authors: Hanna A Frank, Helen Tremlett, Ruth Ann Marrie, Lisa Lix, Kyla McKay, Feng Zhu, Fardowsa Yusuf, M Ehsan Karim

Introduction: Aging is a multi-layered process influenced by diverse biological, social, cultural, and environmental determinants. Chronic diseases, notably Multiple Sclerosis (MS), play a pivotal role in this aging trajectory. MS, a progressive neurological disorder, predominantly affects individuals' daily activities. In Canada, the peak prevalence of MS is among those aged 55-65 years. As these individuals age, the onset of comorbidities, including hypertension, diabetes, and cardiovascular diseases, becomes apparent. These comorbidities not only shape therapeutic decisions but also hasten disease progression, impacting overall quality of life. Despite its importance, a detailed exploration of the relationship between these comorbidities, MS outcomes, and the broader aging process is lacking. This review aims to address this knowledge gap, providing a foundation for tailored treatment strategies for MS patients with significant comorbidities. Methods and Analysis: Adopting an interdisciplinary approach, this review will delve into the complexities of aging associated with chronic diseases. Following the Cochrane Rapid Review Methods Group's guidelines, databases like MEDLINE and EMBASE will be searched, complemented by a grey literature review. The Newcastle-Ottawa scale will assess bias. Results will be presented in tables, graphs, and a narrative synthesis. Ethics and Dissemination: This review does not require ethics approval. It will be submitted for publication in peer-reviewed journals, and the findings will be shared at conferences and seminars, highlighting a holistic understanding of aging in the context of chronic diseases.

**Poster #7**

**<u>Protocol for a systematic review of the comorbidities associated with disease outcomes in multiple sclerosis</u>**

**Enkhzaya Chuluunbaatar,** University of British Columbia

Background: There is a rapidly emerging literature exploring the impact of various comorbidities on important outcomes, such as disability progression in persons with multiple sclerosis (MS). Aging is positively associated with multiple comorbidities. The overall burden (number) of comorbidities as well as specific comorbidities have been associated with accelerated disability progression, increased risk of relapses, and possibly higher lesion load on MRI in persons with MS. There is a need to consolidate and synthesis this important literature. This systematic review will gather evidence of the association between comorbidities (including overall burden and specific co-occurring conditions, e.g., depression, anxiety, hypertension, hyperlipidemia, and chronic lung diseases) and disease outcomes in persons with MS (i.e. disability, relapses, and MRI-related metrics) from original research published in peer-reviewed journals. The study protocol will be presented Methods: This study has been registered within the International Prospective Register of Systematic Reviews (PROSPERO) database (ID: CRD42023389658). The literature search will include five databases and relevant studies will be compiled on the Covidence platform for two-stage screening by two reviewers. One reviewer will conduct data extraction using a standardized form and a second reviewer will verify the information to minimize bias. A third reviewer will be available to resolve any disputes. Only studies with an interventional, observational, cohort, longitudinal, or cross-sectional design will be included. Discussion: In-depth knowledge on comorbidity burden and disease outcome in MS may provide opportunity and guidance for the improved management (of comorbidities) in persons with MS to benefit health outcomes including elderly populations.

**Poster #8**

## Quality of care for community-dwelling older adults living with dementia in BC: effect of the COVID-19 pandemic and opportunities for routine monitoring of healthcare outcomes

**Mary Helmer-Smith,** University of British Columbia

Authors: Mary Helmer-Smith, Kimberlyn McGrail, Sabrina T. Wong, Michael Law

Background: Older adults living with dementia (OALwD) faced significant changes to delivery of health and social services during the COVID-19 pandemic. Though quality dementia care is a provincial and national priority, regular monitoring is not reported and the care received by OALwD in British Columbia (BC) during the pandemic has not been evaluated. | Methods: This population-based retrospective cohort study used routinely-collected health administrative data to examine trends in population-level indicators of quality care, comparing effects among community-dwelling BC residents aged 65+ with dementia and those without dementia. Indicators across six dimensions of quality (e.g., effectiveness, safety, patient-centeredness) were selected, including rate of hospitalization, medication use, and continuity of care. Interrupted time series (ITS) analysis examined changes between "pre-pandemic" and "in-pandemic" periods. Equity was assessed through stratification by sociodemographic variables. | Results: In-progress. Percent change in each indicators' level and slope will be reported. Single ITS will identify the effect of the pandemic on each outcome in the dementia group only. Controlled ITS will identify whether changes observed in OALwD differ from those observed in older adults without dementia. Stratified analyses will be reported to identify differences across equity variables. | Conclusion: We will determine whether quality of care changed during the pandemic and whether changes differed for OALwD. This knowledge will inform strategies for delivery of high quality, proactive dementia care, now and during future public health crises. This study also creates an opportunity to establish regular quality monitoring of care for OALwD in BC to inform care planning, delivery, and policy.

**Poster #9**

## The MIND diet is correlated with gut microbial differences in a Parkinson's disease cohort

**Avril Metcalfe-Roach,** University of British Columbia

Authors: Avril Metcalfe-Roach, Mihai S. Cirstea, Adam C. Yu, Hena R. Ramay, Olabisi Coker, Davide Martino, Laura K. Sycuro, Silke Appel-Cresswell, and B. Brett Finlay

Background: Parkinson's disease (PD) is associated with shifts within the gut microbiome. The microbiome is strongly affected by diet, and certain dietary patterns such as the Mediterranean-DASH Intervention for Neurodegenerative Delay (MIND) diet have been previously shown to correlate with a later age of PD onset. Elucidation of the MIND-microbial connection will help to identify elements of the gut microbiome which may contribute to PD. Methods: Dietary patterns over the past year were assessed using the EPIC-Norfolk Food Frequency Questionnaire for 166 participants with PD and 100 controls. MIND dietary adherence was calculated using food group consumption cutoffs outlined previously. Stool samples were shotgun sequenced and annotated using the HUMANn3 pipeline. Differential abundance of bacterial features was assessed using a combination of ANCOM-BC, LinDA, and MaAsLin2. Results: MIND scores correlated more strongly with bacterial beta diversity than disease status (F statistic = 3.0 and 2.6, respectively) (PERMANOVA, both $p<0.001$). Bacteria commonly associated with inflammation were less abundant as MIND scores increased. Prevotella and Ruthenibacterium lactatiformans correlated positively and negatively with MIND scores, respectively, in the PD group. MIND scores were strongly associated with lower Shannon alpha diversity of MetaCyc functional pathways (p=0.0004), especially in the PD group (p=0.003), as well as MetaCyc beta diversity. A range of pathways were depleted, including amino acid biosynthesis. Conclusions: The MIND diet shows strong correlations with a range of microbial features, including several which are strongly associated with PD. Further work is needed to evaluate their potential contribution to disease etiology.

**Poster #10**

**The association of built environment factors, high indoor air temperatures, and barriers to mitigation in homes with older adult residents: Findings from a citizen science study in the City of Vancouver**

**Katherine White,** University of British Columbia

Authors: Katherine White, Liv Yoon, Shirley Chen, Sarah Labahn, Iris Chan, and Michael Brauer

Background: Heat-related morbidity and mortality is expected to be one of the greatest threats to human health due to climate change. Older adults (65+) are at increased risk for heat-related adverse health outcomes. Previous research has shown that certain built environment characteristics are associated with worse health outcomes during extreme heat events. This project examines the association between the built environment and barriers older adults face to adapting to high indoor temperatures, which is less understood.

Methods: Data on indoor air temperatures, housing characteristics, and vulnerability to heat exposure were collected through a citizen science survey of residents in the City of Vancouver. These data were linked to environmental data from the Canadian Urban Environmental Health Research Consortium (CANUE). Regression models were developed to examine the effect of the built environment on indoor temperatures, health behaviours, and barriers reported by households with older adult residents.

Results: Several built environment factors were significantly associated with higher indoor temperatures, including neighbourhoods with the least vegetation (β 1.82, 95% CI 0.82, 2.82), and living on the top floor (β 1.19, 95% CI 0.11, 2.27). Older adults living in homes which experienced indoor temperatures over 26°C also reported increased odds of certain barriers to cooling, including access to cool spaces outside of the home (OR 3.25, 95% CI 1.25, 10.09).

Conclusion: Characteristics of the homes and neighbourhoods in which older adults live are associated with indoor temperatures. Additionally, older adults who experience high indoor heat may also face barriers to mitigating their heat exposure.

**Poster #11**

## Adverse childhood experiences, epigenetic aging and oral health: Findings from the Canadian Longitudinal Study on Aging (CLSA)

**Dr. Noha Gomaa,** Western University

Authors: Abby Hensel and Noha A. Gomaa

Objectives: To investigate the extent of the association between four epigenetic clocks (Horvath, Hannum, GrimAge, PhenoAge) with self-reported oral health (SROH) in middle-aged and older Canadians at two timepoints and assess the extent to which these relationships differ by adverse childhood experiences (ACEs).

Methods: We analysed baseline and first follow-up data from the comprehensive cohort of the CLSA (n=1,445) (age range 45-85 years). SROH and ACEs were assessed using a validated self-reported questionnaire. DNA methylation (DNAm) analysis was obtained from blood samples at baseline. Epigenetic age acceleration (Δ epigenetic age) was estimated by regressing each of the epigenetic clock estimates on chronological age as described in previous work. Associations between Δ epigenetic age for each of the clocks with SROH were estimated at baseline and 3-year follow-up using ordinary least squares regression models, adjusting for age, sex, household income, education, smoking, and alcohol consumption. Regression models were stratified by ACEs scores.

Results: GrimAge was associated with SROH at baseline (OR=1.08, 95% CI: 1.05, 1.11). At 3-year follow-up, a 1-SD increase in ΔGrimAge was associated with 1.06 (95% CI: 1.03, 1.09) greater odds of poor SROH, while a 1-SD increase in ΔHannum was associated with 1.03 (95% CI: 1.00, 1.05) greater odds of poor SROH. When stratified by ACEs score, we found that those with an ACEs score of 5 or higher exhibited the strongest association between ΔGrimAge and SROH at baseline (OR=1.14, 95% CI: 1.01, 1.29) and ΔHannum and SROH at 3-year follow-up (OR=1.11, 95% CI: 1.00, 1.22). ΔHorvath and ΔPhenoAge did not show associations with SROH at baseline or 3-year follow-up, or when stratified by ACEs score.

Conclusions: ACEs may contribute to an acceleration of biological aging and its relationship with poor oral health later in life.

**Poster #12**

## Losing social connections as we age and links to blood pressure among older women and men in Canada

**Gilciane Ceolin,** University of British Columbia

Authors: Rana Madani Civi*, Gilciane Ceolin*, Sanaz Mehranfar, Annalijn Conklin. * Shared first-authorship

Background: Aging brings notable changes to intimate partnership, leading to greater social isolation and poor health outcomes. This study aimed to describe the trends in marital status across age and sex and its association with hypertension.

Methods: Self-reported prospective data from 23,613 adults in the Canadian Longitudinal Study on Aging from baseline (2012-2015) and follow-up 1 (FU1, 2015-2018). Marital transitions over 3 years were remained married, remained unmarried, became divorced/separated, became widowed and became married. Descriptive statistics estimated transition probabilities, and logistic regression assessed associations with self-report of diagnosed hypertension.

Results: Most aging Canadians had stable marital statuses over 3 years, with transitions observed in middle-age (45-64 y), young-old (65-74 y) and old (75-84 y) but not old-old (85+) groups. Women of any age had higher probabilities of experiencing widowhood, about 2.5-fold more than men, especially old-old women (10-fold). By contrast, men had higher probabilities of staying married and becoming (re-)married at each age group, three- to five-fold more than women. Odds of hypertension was consistently higher in women who became widowed and who remained unmarried in middle-age (OR 1.33, p<0.05) and in old age (OR 1.58, p=0.05), however middle-aged women who divorced had lower odds of hypertension (OR 0.45, p<0.05), compared to remaining married.

Conclusion: Although aging women and men tend to stay in the same marital status category, changes in close relationships were observed and showed a gender disparity in aging Canadians with potential links to hypertension in women in mid-life to older age.

**Poster #13**

## Protocol for a systematic review of the impact of treating comorbidities in multiple sclerosis on disease outcomes

**Caitlyn Siu,** University of British Columbia

Authors: Caitlyn Siu, Enkhzaya Chuluunbaatar, Helen Tremlett

Background: Comorbidities are commonly seen in individuals with multiple sclerosis (MS). A higher burden of comorbidities in MS has been found to be associated with poorer disease outcomes, including disability progression, risk of relapse, MRI metrics, quality of life (QOL) and health-related QOL. This systematic review will explore whether treating such comorbidities can have a beneficial impact on MS disease outcomes. The study protocol will be presented. Methods: This study has been registered within the International Prospective Register of Systematic Reviews (PROSPERO) database. The literature search will include five databases and relevant studies will be compiled on the Covidence platform for two-stage screening by two reviewers. Studies assessing the impact of pharmacological and/or non-pharmacological treatment of comorbidities on disease outcomes in MS will be included. Only studies with an interventional, observational, cohort, longitudinal, or cross-sectional design will be included. One reviewer will conduct data extraction using a standardized form and a second reviewer will verify the information to minimize bias. A third reviewer will resolve disputes. Quality assessment will be conducted and any studies that do not meet sufficient criteria will be removed from the review. Discussion: This systematic review will allow for a better understanding of how treating comorbidities in individuals with MS can influence the outcomes of their disease. The findings of this systematic review can help guide patient care for such individuals. In particular, these findings may be beneficial and relevant to low- and middle-income populations with limited resources and treatment options.

**Poster #14**

## The physiological and cognitive effects of pickleball participation in older adults

**Anna Janzen,** University of the Fraser Valley

Authors: Anna Janzen, Gillian Hatfield

Background: Despite the increasing lifespan among Canadians, many older adults experience physiological, psychological, and cognitive decrements which shorten their health span. Maintaining physical activity and adhering to the Canadian 24-Hour Movement Guidelines may mitigate these deteriorations. Pickleball, one of the fastest-growing sports in North America, has become especially popular among older adults. This study sought to understand the physiological and cognitive effects of pickleball participation in this demographic. Methods: A cross-sectional study was conducted at the 2023 55+ BC Games, comparing pickleball players to a control group of non-pickleball players, all over the age of 55 years. The following dependent variables (DV) were measured: (a) balance, (b) upper body muscular strength, (c) lower body muscular strength (d) aerobic fitness, (e) cardio-metabolic risk factors, (f) cognitive function, (g) quality of life, and (h) self-reported physical activity. Significant between-group differences were detected with independent samples t-tests using IBM SPSS version 27.0, where the alpha level was 0.05. Results: 14 pickleball players (mean age=68.07±6.86 years; 57% female) and 14 non-pickleball players (mean age=69.36±5.49 years; 50% female) participated in this study. Despite similar levels of self-reported physical activity (p=0.467) between groups, pickleball players had significantly greater balance (p=0.021), greater lower body muscular strength (p=0.009), and greater self-reported physical functioning (p=0.046). Conclusion: This study suggests that pickleball is a beneficial sport for balance and lower body strength in older adults. Regular participation would contribute to the Canadian 24-Hour Movement Guidelines which may positively impact an individual's health span.

**Poster #15**

## Review of dietary interventions for persons with Parkinson's disease

**Kira Nicole Tosefsky,** University of British Columbia

Authors: Kira Tosefsky, Julie Zhu, Yolanda N. Wang, Joyce S.T. Lam, Amanda Cammalleri, and Silke Appel-Cresswell

Parkinson's disease (PD) is the second most prevalent neurodegenerative disorder worldwide and remains without an evidence-based disease-modifying therapy. The pathogenesis of PD is thought to involve a complex interplay of intestinal dysbiosis, central, gut and systemic inflammation, oxidative stress and mitochondrial dysfunction, culminating in alpha-synuclein aggregation and nigrostriatal dopaminergic neuron loss. Dietary factors may interact with these disease processes at multiple levels, and a growing body of observational studies have linked dietary patterns and individual food groups to PD risk, age of onset, progression, symptom severity and mortality rates. Additionally, as many as 1/3 of persons with PD (PwP) are at risk for malnutrition due to complex interactions between food intake and absorption, PD motor and non-motor symptoms, medications, sociocultural and economic factors. As such, there is substantial interest in exploring the role of diet-related interventions in both symptomatic management and potential disease modification. Nutritional interventions can interact with multiple disease mechanisms simultaneously, offering the potential for disease- modification, while nutritional self-management presents an opportunity for empowerment in PwP. Despite the importance of diet in PD, randomized controlled trials (RCTs) of dietary interventions are challenging to conduct, and there is a paucity of evidence from interventional studies regarding the optimal diet for PWP. The aim of this scoping review was to examine the intersection of Parkinson's disease (PD) with nutrition, to identify best nutritional practices based on current evidence, and to identify gaps in the evidence and suggest future directions.

**Poster #16**

## Cycling without age: experiences of intergenerational pilots and passengers

**Owen Swan,** University of the Fraser Valley

Authors: Shelley Canning, Alison Pritchard Orr, Anna Janzen, Owen Swan

Globally, we anticipate a significant increase in the number of people over the age of 65 years. This demographic reality will impact societies in significant ways, illuminating the imperative to address systemic ageism. In the recent Global Report on Ageism (2021), the WHO highlighted the importance of intergenerational connections in addressing age-related stigma and discrimination. As part of the University of the Fraser Valley's (UFV) commitment as an Age-Friendly university, we initiated an intergenerational programme establishing a Cycling without Age (CWA) chapter in partnership with a local "Seniors' Community Living" complex. CWA is a non-profit organization aiming to address inequities by enabling older adults to continue to access the natural environment through cycling, as passengers in a "trishaw". This innovative programme also provides rich opportunities for youth and young adults to engage in intergenerational relationships and learn about the ageing experience as trishaw pilots. In spring 2023, UFV Kinesiology students took the lead in training undergraduate students as trishaw pilots, taking older adults on bike rides along the local river trails. In this presentation we share our experiences in establishing this community engaged, intergenerational programme as well as share the findings from a qualitative study exploring the experiences of the participants. We drew on a narrative approach to "hear" the stories within the experiences, conducting individual interviews with six university student trishaw pilots and 12 older adult trishaw passengers living in a local supportive living complex. Our findings highlight the rich benefits of this programme for both pilots and passengers.

**Poster #17**

## Empowering care through an AI-enabled service robot, Aether

**Arisa Kinugawa,** University of British Columbia

In the face of a severe workforce shortage and escalating demand for care, the healthcare system is under significant strain, creating opportunities for developing and adopting advanced service robots. This study employs a Collaborative Action Research (CAR) approach to investigate the potential benefits and challenges of implementing a service robot, Aether, within a small care home setting. Aether has capabilities including environmental inspection and engaging in personalized social interactions, leveraging machine learning to sing, joke, and converse with residents. We employed methods: focus group discussions, observation, and interviews with users – people with diverse disabilities, family members, interdisciplinary staff, and operation leaders. Our preliminary findings indicate a positive acceptance of Aether, especially appreciating its social functionalities. The research team worked with users to address concerns regarding safety, privacy, and the maintenance needs of the robot. These findings provide valuable insights for the future integration of service robots in care settings, further emphasizing the need for ongoing research and development to address existing concerns. This study provides a groundwork for future research and contributes to a better understanding of the potential benefits and challenges of implementing advanced service robots in care settings.

**Poster #18**

## Adherence of remote-delivered falls prevention programs for community-dwelling older adults: Early results from a systematic review and meta-analysis

**Isis Kelly dos Santos,** Federal University of Rio Grande do Norte, Brazil

Authors: Isis Kelly dos Santos, Sze-Ee Soh, Jefferson Erome, Jared Grant, Juliana Mollins, Maureen C. Ashe

Background: Fall prevention programs are effective in reducing falls among community-dwelling older adults. However, barriers to regular participation exist, possibly limiting the benefits of effective interventions. Technology may overcome some barriers to improve engagement; however, less is known on adherence to this delivery mode. We aimed to synthesize evidence for adherence to remote-delivered falls prevention programs in community-dwelling older adults (60 years+). Methods: We conducted a systematic review following standard guidelines to locate randomized controlled trials across nine databases using Medical Subject Headings (MeSH) terms and keywords. Inclusion criteria were population (community-dwelling adults 60 years+); intervention (remote delivery of program); and outcomes (adherence). We included studies from 2007 to present and all languages. Two reviewers independently identified citations (Level 1 and 2) and conducted a risk of bias assessment using Cochrane Risk of Bias Tool. We conducted a meta-analysis for adherence, based on participants completion of program components. Results: We included 14 studies and 17 publications (n=1393 participants). Programs used a variety of technologies, such as an app with videos, online classes, or exergames. The mean (SD) scheduled session time/week was 112 (53.6) minutes; some interventions automatically collected data for completion of exercise/sessions. The mean (SD) percentage of participants who did not complete planned sessions (i.e., dropped out or lost to follow-up, etc.) was 14 (11)%. Early results from the review noted overall high adherence to exercise sessions for participants who remained in studies. Discussion: The use of technology may confer some benefits for program delivery and data collection. PROSPERO registration: CRD42023434178

**Poster #19**

## Development of a social prescribing online training resource for student volunteers in British Columbia: A study protocol

**Hadil Alfares,** University of British Columbia

Authors: Hadil Alfares, Anna Chudyk, Elham Esfandiari, Thomas Iverson, Margaret Lin, Maureen C. Ashe

Background: Social prescribing is a health and social approach to care which aims to create pathways to community-based resources to improve a person's overall well-being. In British Columbia, social prescribing programs exist for older adults, and volunteers play an important role in social prescribing. Given this is a new care model, knowledge mobilization is important for program delivery and uptake. The aim of this participatory action research project is to co-create and evaluate a knowledge mobilization product (an interactive eCourse) for social prescribing to be used as a future onboarding resource for volunteers. Methods: We will co-create an eCourse prototype for university undergraduate students who are volunteers and are seeking to work in the health and social sectors in the future. We are guided by team members who are university students, our reviews of social prescribing, and evidence for accessibility and instructional design. To test usability and feasibility of the eCourse, we will conduct semi-structured interviews and surveys with 15 people either working in social prescribing (n=5) or undergraduate students (n=10). We will seek information on the eCourse's design features, knowledge content, and implementation factors (e.g., how and when to deliver the information). We will adapt the eCourse (and its delivery) based on feedback from participants. Discussion: The prototype will be used in future studies and will undergo additional testing before finalizing it as a training course for student volunteers wanting to engage with social prescribing programs.

**Poster #20**

## Combatting the myths of ageing to reduce ageism and self-ageism

**Valentina Proietti,** University of the Fraser Valley

Authors: Valentina Proietti, Kaitlyn Doerksen, Sidney Hoolsema, Hailey Evans, Jashan Gill, Gursimrat Kaur, Gurmeen Banipal, Shawn Geniole, Andra Hughes and Lesley Jessiman

There has been exponential growth in our older adult population, with those over 65 years of age projected to represent 25% of the European and North American (16% global) population by 2050. ~60% of older adults have experienced age-based discrimination and more than 20% of the population views this age groups as burdens to society. Unfortunately, older adults often internalize these views, leading to 'self-ageism'6 and feelings of worthlessness, accelerating or increasing the odds of cognitive decline7, heart attacks8, and early death9. Here, we investigate whether such negative views of aging (as portrayed in, e.g., ageist vs. non-ageist internet memes) influence older (vs younger) adults' perceptions of the aging process (Research Question 1) and—more importantly—whether a low-cost, scalable intervention (a myth-buster educational quiz vs control) can buffer against these effects (Research Question 2) thus boosting/maintaining positive views of aging and promoting general wellbeing in older adults. Data collection for this 2 x 2 x 2 design is currently underway.

**Poster #21**

## Effect of volunteers in interventions for middle-aged and older adults living with noncommunicable disease: A protocol for a rapid systematic review

**Thomas Iverson,** University of British Columbia

Authors: Thomas Iverson, Emaan Abbasi, Anna Chudyk, Hadil Alfares, Gurkirat Singh Nijjar, Elham Esfandiari, Margaret Lin, Bobbi Symes, Robert J. Petrella, Maureen C. Ashe

Background: Volunteers can fill key roles in primary health care, and specifically social prescribing, a model of care which aims to address people's unmet social needs. However, to date few studies focus on volunteers and social prescribing. Therefore, our objective was to synthesize the effect (on study participants) and impact (on volunteers) for volunteer-led or supported interventions for middle-aged and older adults living with diabetes or cardiovascular conditions to help inform social prescribing research and practice. Methods: We followed Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) guidelines and searched six databases (Cochrane, MEDLINE, EBSCO, Embase, Epistemonikos, and Web of Science) and conducted an advanced search on Google Scholar for peer-reviewed studies from 2000 or later; the date of the last search was September 10, 2023. We included studies from all languages and study designs which focused on volunteer-led or supported interventions for middle-aged and older adults living with diabetes or cardiovascular conditions. We plan to synthesize data qualitatively using the Cochrane's Synthesis Without Meta-analysis (SWiM) guidelines. We will assess risk of bias for randomized controlled trials using the Cochrane "Risk of Bias Tool 2". For other study designs, we will follow guidelines from the Joanna Briggs Institute. Discussion: This review should inform an understanding of the effect (on study participants) and impact (on volunteers) of interventions led or supported by volunteers. Our focus on intervention for people with diabetes or cardiovascular conditions should provide some guidance for the integration of volunteers in social prescribing. PROSPERO registration: CRD42023453506

**Poster #22**

## Building capacity for meaningful participation of people with dementia: forging new partnerships in community engaged intervention research

**Ania Landy,** University of British Columbia

Authors: Ania Landy, Andrea Monteiro, Eric Macnaughton, Paulina Malcolm, Sheila Novek, Gloria Puurveen, Mariko Sakamoto, and Alison Phinney

The majority of people with dementia live at home, but they are often disconnected and isolated from the broader community. Community-based organizations are well positioned to support social engagement for this growing population, but are uncertain how to proceed. Phase 1 of the Building Capacity Project (PHAC, 2019-23) used an asset-based community development approach to build capacity for dementia inclusivity through community programs and activities. Using developmental evaluation with community partners across Vancouver's Westside, we identified a core set of guiding principles and promising practices for supporting dementia inclusive innovations in community programming: (1) addressing stigma; (2) collaborating with action/ working groups of people with dementia; (3) community development coaching; and (4) social networking. Now in Phase 2 (2023-25), we are doing community-engaged intervention research to "package" these practices so they can be more easily implemented, spread, and sustained. We have turned to the well-established Evidence Based System for Innovation Support (EBSIS) which functions as a theoretical framework focusing on the "tools, training, technical assistance, and quality assurance" needed to scale out our impacts with new partners in new communities across BC. In this presentation, we explore the practices and processes involved in forging these new partnerships in diverse settings, drawing particular attention to the role of existing networks and the diverse ways that people with dementia and care partners are involved in planning and implementation.

**Poster #23**

**Flipping dementia stigma: An action group's guide**

**Paulina Malcolm,** University of British Columbia

Authors: Paulina Malcolm and the Flipping Stigma Action Group, Mariko Sakamoto, Jim Mann, Deborah O'Connor and Alison Phinney

A group of people with lived experience of dementia from across British Columbia were part of a CIHR-funded participatory action research study that began in 2019. They worked together as an Action Group with the research team to develop and implement a multimedia toolkit (flippingstigma.com) that is intended to raise awareness and reduce the stigma and discrimination surrounding dementia. As the project was drawing to a close, members of the group reflected that it had been a powerful and meaningful experience for them individually and collectively, and agreed that it was important to tell the story so others could learn about how the work had proceeded and what it had meant to those who were involved. In this presentation, we describe the reflexive work the Action Group did in the final year of the project and how they used this opportunity to work with the research team to create a practical and inspirational guide for others who might want to do something similar. Key components include: (1) building relationships; (2) committing to positive change; (3) developing advocacy skills; (4) valuing diversity; and (5) sharing common goals. We show how the guide is being shared with the broader community and explore its potential as an approach for increasing the meaningful and active inclusion of more people with dementia in community-based research.

**Poster #24**

## The MIND diet captures variance in dietary intake in a sex-specific manner

**Asha Octoman,** University of British Columbia

Authors: Asha Octoman, Avril Metcalfe-Roach, Adam C. Yu, Silke Appel-Cresswell*, and B. Brett Finlay, PhD*. *Authors share equal senior authorship.

Background: Parkinson's disease (PD) is an age-related neurodegenerative disease. The Mediterranean-DASH Intervention for Neurodegenerative Delay (MIND) diet is shown to correlate with a later age of PD onset in a sex-dependent manner. Identifying which food groups contribute most heavily to these findings will highlight interplay between the MIND diet, PD onset, and biological sex.

Methods: Dietary patterns over the past year were assessed using the EPIC-Norfolk Food Frequency Questionnaire for 166 participants with PD and 100 controls. MIND dietary adherence was calculated using food group consumption cutoffs outlined by Morris et al, giving MIND scores (/15) for each participant.

Results: PCA plots of food group data showed distinct groupings for MIND diet tertiles for all subgroups. MIND tertiles were separated predominantly along principal component axis 1 for all subgroups. The same three food groups contributed the most variance across this axis for both sexes: beans, leafy greens, and miscellaneous vegetables; however, there was a notable difference between sexes in the contribution from margarine, cheese, non-fried fish, red meat products, fried fast food, grains, and sweets.

Conclusion: We validated that the MIND diet is capturing a reasonable amount of the total variance observed in the MIND diet food groups. Although several key food groups are well represented by the MIND diet in both sexes, sex-specific consumption of other food groups may partially explain the sex-dependent correlation between the MIND diet and PD onset observed previously. Linear regression will confirm the correlation between MIND scores and these food groups.

**Poster #25**

## The perspective of staff towards the implementation of Telepresence Robot in dementia care in institutional care settings

**Lily Ren,** University of British Columbia

Authors: Lily Ren, Lillian Hung, Grace Hu, Joey Wong, Nazia Ahmed, Ali Hussein, Erika Young, Annette Berndt, Jim Mann, Lily Wong

Although there are emerging studies on the use of telepresence robots in dementia care within institutional settings, there is limited literature on the perspectives of frontline staff members who play a significant role in dementia care delivery. Using the Consolidated Framework for Implementation Research (CFIR) as a guide, we conducted 10 focus groups and 10 semi-structured interviews in four long-term care (LTC) homes and one hospital in British Columbia. We included 50 frontline staff members from diverse disciplines, such as nursing, social work, occupational therapy, and recreational therapy, to understand their experiences supporting residents and their families using telepresence robots. Our thematic analysis identified three themes that could facilitate or hinder the staff from implementing the robots: 1) Robot features; 2) The physical and organizational environment in which the robot was implemented; and 3) The learning opportunities for staff and staff engagement strategies. We found that user-friendly design in robots, supportive and resourceful environment and appropriate learning opportunities for staff facilitated the implementation of robots, whereas inconvenient robot features, insufficient resources and structural supports and learning opportunities and engagement that was not staff-centered demotivated staff to use the robots. Our results suggested the importance of structural support at micro, meso and macro level to staff and care sites to implement technology in dementia care delivery. Our study offers insights for future research on 1) exploring staff's experiences in implementing telepresence robots and similar technologies in LTC homes and hospitals and 2) developing guidelines, toolkits and practices to enhance staff-focused implementation.

**Poster #26**

## The experiences and challenges of family caregivers using Telepresence Robot with residents with dementia at long-term care homes and hospital

**Lily Ren,** University of British Columbia

Authors: Lily Ren, Lillian Hung, Jim Mann, Grace Hu, Joey Wong, Jason Fu, Joelle Rivera, Karen Wong, Erika Young, Charlie Lake, Sarah Kleiss, Ruth Khong, Nazia Ahmad, Ali Hussein, Annette Berndt, Lily Wong, Lynn Jackson, Mario Gregorio and Rekesh Corepal

Family Caregivers (FCs) of residents with dementia living at Long-term care (LTC) homes face multiple challenges, including role transition, mental health (e.g. anxiety and burnout) and competing commitments (e.g. work and social life). There is growing research focuses on families using technology to navigate their care delivery. However, limited studies explored their positive experiences and challenges of using telepresence robot in their online communication with residents with dementia living in institutional care setting. Our study implemented 20 telepresence robots at four LTC homes and a hospital in BC. The team conducted observation and semi-structured interviews with FCs, staff and operation leaders. Through thematic analysis, we identified four themes: The telepresence robot helps to 1) relief FCs' mental burden; 2) enhance the trust and transparency in the partnership between staff and family; 3) uphold residents' the dignity in a technology-facilitated connection and improve the autonomy in family relationship; and 4) support FCs to better manage their competing commitments and render more creative and joyous virtual visitations. Challenges identified are 1) complexity in the family relationships: the robot has limited impact on solving existing challenges between FCs; 2) complexity in the environment: implementing robots requires seamless and ongoing coordination between the staff, residents and FCs. Our findings challenged our assumptions about the view from FCs and residents towards privacy. Future studies should investigate how telepresence robots address unmet needs of FCs under various care settings and situations, and how robots enhance the well-being of residents with dementia in LTC homes and FCs.

**Poster #27**

## City of Richmond Seniors Strategy 2022-2032

**Anthony Kupferschmidt,** City of Richmond

With close to 40% of the population of Richmond, BC projected to be 55 years of age or older by 2036, the City of Richmond has adopted a 10-year strategy to address the needs of seniors. The *City of Richmond Seniors Strategy 2022–2032* represents the City's ongoing commitment to the aging population and is an action-oriented framework guiding the City and stakeholders in supporting seniors. Building upon previous City plans, strategies and initiatives, the *Strategy* guides City planning and policy development, while continuing to take a collaborative approach to program and service delivery for seniors in Richmond, including shared accountability with Community Associations and Societies, community service organizations, health agencies and the private sector.

The *Strategy* outlines five strategic directions:

1. Age-friendly neighbourhoods that support seniors to age in place;
2. Diverse, accessible and inclusive programs and services for seniors at all stages;
3. Communication and awareness of programs and services available for seniors;
4. Education and understanding about healthy aging; and
5. Planning or a growing population of seniors.

This poster provides an overview of the *Strategy* and its 29 actions

**BC Brain Wellness Program – Brain wellness beyond all boundaries: from idea to implementation**

**Alisa Hashimoto,** BC Brain Wellness Program

Authors: Amanda Cammalleri, Matthew Sacheli, Elaine Book and Silke Appel-Cresswell

Introduction: The BC Brain Wellness Program (BWP) delivers a comprehensive and integrated approach to brain wellness for people with ***chronic brain conditions, care partners***, and ***healthy agers***. The Program has three pillars: ***Program Delivery, Education,*** and ***Research***, designed to change the way British Columbians live, age, and care for chronic brain conditions. We offer evidenced-informed lifestyle and wellness programs and integrate active research and education in all that we do. Located at the Djavad Mowafaghian Centre for Brain Health, University of British Columbia, collaborations with the departments of Physiotherapy, Kinesiology, Neurology, Neurosciences, Sports Medicine, Dietetics, Psychology, Social Work, and the School of Music as well as several community partners allows us to offer a unique and interactive program. The program empowers individuals and is personalized to a person's physical and cognitive abilities, rather than diagnostic labels. Our ongoing delivery of classes compliments traditional medical care to lead participants to a better quality of life.

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