University of Victoria | Institute on Aging & Lifelong Health

January 2024

THE IALH UPDATE

In this issue:

The Impact of COVID-19 and Microglial Contribution on the Development and Severity of Parkinson's Disease

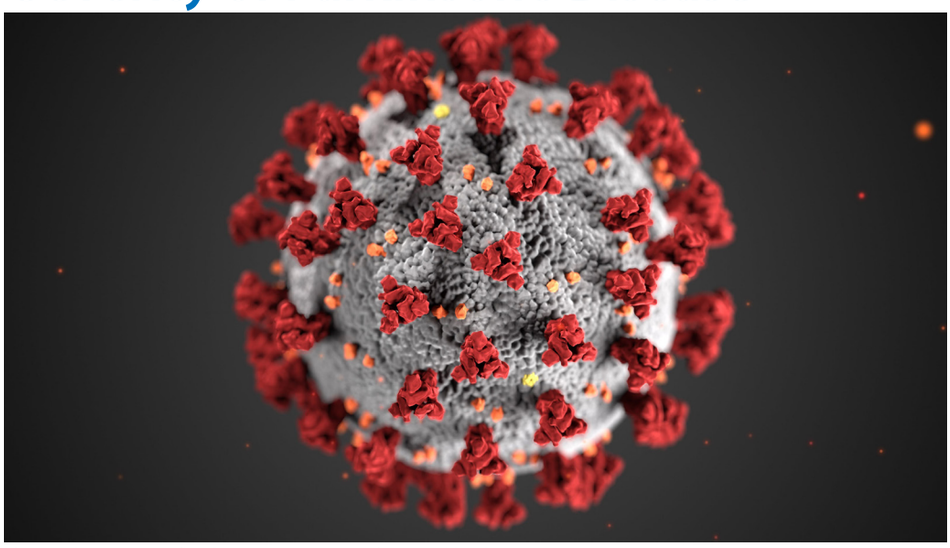

Photo: Structure of a Coronavirus, Pexels.com/CDC

Submitted by Ifeoluwa (Hiphy) Awogbindin, a Postdoctoral Fellow working with IALH Research Fellow Marie-Éve Tremblay (Division of Medical Sciences)

Before 2020, the world was concerned about increasing rates of neurodegenerative diseases (such as Alzheimer's disease and Parkinson's disease) in the aging population. Between 1990 and 2019, the global prevalence of Alzheimer's disease increased by approximately 160%. Similarly, between 1990 and 2016, the global prevalence of Parkinson's disease increased by 244%. Researchers have focused on chronic diseases (such as depression, hypertension, obesity, etc.), lifestyle factors (such as smoking, alcohol intake, lack of exercise, low socialization, etc.), and environmental factors (such as infections, air pollution, etc.) to try to understand these increases.

Between December 2019 and the beginning of 2023, the world reached a standstill due to the COVID-19 pandemic. As of November 25, 2023, approximately 9% of the world's population had been infected by the virus, which has caused 0.09% of deaths globally. Individuals who survived mild to severe cases of COVID-19 have shown a range of neurological symptoms (notably cognitive impairment, long COVID and motor impairment), which persist after clearing the virus.

Data suggests that despite vaccination, COVID-19 cases and hospitalizations are still prevalent in Canada although mortality rates have decreased. There is evidence that microglia, the cellular gatekeepers of the brain, go out of order throughout the post-mortem brain of individuals who have died from COVID-19 complications. Similar findings have been observed in monkeys which have been experimentally-infected with mild to severe COVID-19. Changes include microglial alterations in the brain region controlling fine motor movements, an area which is also affected in Parkinson's disease. Among their many essential roles, microglia ensure that our brain functions perfectly, hence providing significant support for neuronal connections and functions while removing debris and abnormally formed entities such as the unusual amyloid beta and alpha-synuclein that accumulate in Alzheimer's disease and Parkinson's disease brains, respectively.

Many COVID-19 survivors are in the age range when Parkinson's disease may begin and initial non-motor symptoms are often experienced. With a previous study showing that alpha-synuclein is upregulated after clearance of the COVID-19 virus, I am interested in exploring whether COVID-19 will result in increased Parkinson's disease cases, particularly in adults over the age of 50, who make up about 30% of COVID survivors in Canada. I am especially interested in knowing if COVID-19 survivors may be more susceptible to

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other environmental triggers for Parkinson's disease. Together with my supervisors (Professors Marie-Éve Tremblay and Therese Di Paolo), I have proposed basic experiments to investigate if COVID-19 survivors are more vulnerable to other potential environmental triggers of Parkinson's disease, with a particular focus on microglial alterations.

Through funding from the Parkinson Society (British Columbia and Canada), Michael Smith Health Research BC, and the support of my supervisors, I hope to demonstrate whether the COVID-19 infection can itself cause Parkinson's disease later in life or if it acts as a first hit that synergizes with a subsequent factor to hasten or worsen the progression of Parkinson's disease. I will also decipher the specific outcomes on microglia, the essential immune cells of the brain. Given that microglial alterations have been linked to both neurotropic viral resolution and Parkinson's disease progression, the study offers a potential framework to evaluate the relevance of microglial treatments.

Congratulations

Congratulations to all of the 2023-2024 IALH Student Award Recipients:

- **Neena Chappell Scholarship** – Heather Kwan (Psychology) – *An Investigation on Grey Matter Volume and Modifiable Risk Factors in Healthy Older Women*
- **Marilynne Convey Scholarship** – Masako Anderson (Social Dimensions of Health) – *Exploring the Lived Experiences of Older Adults Living at Risk: Living Alone at Home Socially Isolated with Serious Illness and/or Frailty Without Appropriate Support in Canada and Japan*
- **Elaine Gallagher Award** – Tara Cooper (Psychology) – *Cognitive Abilities and Cortical Atrophy: Exploring Life Experiences as a Moderator*
- **David Chuenyan Lai Scholarship** – Audrey Tung (Geography) – *A Room of One's Own: Co-Constructing a "Home" Space for Older Women*
- **Alice Lou-Poy Graduate Scholarship** – Taylor Snowden (Division of Medical Sciences) – *Brain Gain: Identifying Candidate Dementia-Related Biomarkers and Early Intervention Strategies for Adults Aged 50+ With a History of Mild Traumatic Brain Injury*
- **UVic Retirees Association Award** – Poonam Sehgal (Nursing) – *From Detection to Prevention: Reducing Hospital Transfers in Long Term Care Homes Using Artificial Intelligence* **and;**
  Sanjit Roy (Social Dimensions of Health) – *Elder Abuse Among Canadian Veterans: A Comprehensive Examination Using the Canadian Longitudinal Study on Aging*

Resources

Move for Your Mood

After the excitement of the holiday season, winter's colder, darker, and shorter days can leave us feeling unmotivated and a little down. Being physically active can help boost mood, improve our ability to cope with stressful situations, and increase self-esteem and feelings of self-worth. It can also reduce physical tension as well as symptoms of anxiety and depression.

ParticipACTION has offered five tips to encourage people to be more physically active:

- Pick activities you enjoy – Choose activities you enjoy, as the best types of physical activities for mental health are ones that you'll stick with.
- Get active outdoors – Exposure to nature has been linked with many benefits, including lower stress levels, boosted moods and increased cooperation.
- Use physical activity as a stress relieving tool – Being physically active can act as a temporary distraction to clear your head and reduce tension.
- Make physical activity a habit – Consistency is key to increasing the mental health benefits of physical activity. Make participation in physical activity a regular part of your daily and/or weekly routine.
- Make participating in physical activity a social event – Join group fitness classes, walking groups, or online communities where you can connect with like-minded individuals who are interested in physical activity.

For more information on the mental health benefits of physical activity, go to https://www.participaction.com/programs/move-for-your-mood/

Resources (Cont'd)

Canadian Dental Care Plan

The Government of Canada has recently rolled out the Canadian Dental Care Plan. Seniors who are a resident of Canada as of 2022, with an adjusted family net income under $90,000 based on their and/or their spouse's 2022 tax returns, who currently do not have dental coverage will be eligible for this plan. Eligible individuals will receive letters from the federal government over the next six months inviting them to apply, with instructions on how to validate their eligibility and apply by telephone. Individuals with disabilities and kids under 18 will be able to apply online beginning in June 2024. A wide range of oral health care services will be covered, including preventive services (e.g., cleaning), diagnostic services (e.g., examinations and x-rays), restorative services (e.g., fillings), endodontic services (e.g., root canal treatments), prosthodontic services (e.g., complete and partial removable dentures), periodontal services (e.g., deep scaling), and oral surgery services (e.g., extractions. For more information, go to https://www.canada.ca/en/services/benefits/dental/dental-care-plan.html.

Opportunities

UVic Continuing Studies - Health Community Courses

Continuing Studies at the University of Victoria is offering several Community Health courses in February and March. Each course name is hyperlinked for more information.

Feb. 6, 2024:	More Than Money: Making the Most of Retirement
Feb. 13, 2024:	Cannabinoids in Chronic Pain
Feb. 20, 2024:	How to Build a Resilient Relationship
Feb. 27, 2024:	The Importance of Gut Bacteria on Mucosal Immunity
Mar. 5, 2024:	Nature-Based Mindfulness
Mar. 6, 2024:	Healthy Boundaries: Thriving Rather Than Surviving
Mar. 26 & 27, 2024:	Healthy Aging and the Anti-Inflammatory Diet

Locations, class sizes and costs vary for each course. For more information, please contact Bree Hagan, Health, Safety & Public Relations Programs Coordinator at hsprcoord@uvic.ca or 250-472-4179.

Memory Café Victoria

Memory Café Victoria is a social gathering where care partners can relax, unwind and have fun with their family member who is experiencing memory loss. It is about making social connections and joyful engagement in activities that focus on creativity.

Gordon Head Recreational Centre
Tuesdays from 10:00 AM - 12:00 PM
$200 per couple/10 weeks

For more information, please contact Dr. Debra Sheets at dsheets@uvic.ca.
To register, see https://www.memorycafevictoria.org/register

Voices In Motion Choir Seeking Duets

Voices in Motion (VIM) is an intergenerational choir for adults with memory loss, their caregivers, friends and students. Through weekly rehearsals and public performances, participants journey alongside those with memory loss and find a supportive and caring community. VIM is looking for more "duets" to join the choir for the Winter/Spring session. A "duet" is made up of a person experiencing memory loss and their care partner. Previous singing or choir expereince is not required. For more information, contact info@voicesinmotionchoirs.org or 250-882-5668.

Research Opportunities

Supportive Storytelling

IALH Student Affiliate Cynthia McDowell, IALH Research Fellow Mariko Sakamoto (Nursing) and IALH Associate Member Debra Sheets are seeking participants for a supportive storytelling research and knowledge mobilization project. Caregivers for individuals with dementia will be asked to record their daily interactions, events, and thoughts though audio clips and diaries. They will also meet weekly in small groups to share and discuss their recordings with one another in supportive storytelling sessions. Select audio recordings will be developed into a podcast series for the general public to highlight the experiences of caregivers. For more information or to participate, contact Mariko Sakamoto at audiodiaries@uvic.ca.

Mobile-Based Intervention for Reducing Risk of Cognitive Decline

IALH Research Fellows Theone Paterson, Jonathan Rush and Sam Liu (Psychology, Exercise Science Physical and Health Education) are seeking healthy adults who would like to participate in a pilot test of a 6-week psychoeducational mobile-based intervention for reducing risk of cognitive decline in later life. For more information or to participate, contact brain@uvic.ca.

Smart Home Systems for Indivdiuals with Dementia

Caregivers are often overlooked as care team members, and while individuals with dementia are living at home they bear significant responsibility. As a result, negative physical and mental health outcomes can occur, creating a barrier to efficient implementation and the use of smart technology in the home to support caregiving. Masters Student and IALH Student Affiliate Evangeline Wagner is seeking participants for a study entitled *Understanding the Needs of Caregivers Involved in At-Home Care Using SmartHome Systems for Patients with Dementia*. Eligible participants must be:

- a non-medical caregiver of an individual with dementia who is living at home;
- over the age of 19; and
- able to read, write and speak in English

Participants will be asked to complete some questionnaires and participate in an interview. The tasks will take about 30 minutes to complete. For more information or to participate, please contact Evangeline Wagner at evangelinemwagner@uvic.ca or her supervisor Elizabeth Borycki at emb@uvic.ca.

Investigating the Effects of 3D Multiple-Object Tracking on Markers of Oxidative Stress and Cognition in Brain Injury Survivors

Traumatic brain injury (TBI) is a leading cause of death and disability worldwide, with an estimated 69 million people acquiring a TBI each year, yet accessible and effective interventions for reducing symptoms of TBI are lacking. Jamie Morrison is a Masters Student in the Division of Medical Sciences and an IALH Student Affiliate. Jamie and the UVic Christie Lab are partnering with the Victoria Brain Injury Society to investigate the effects of a cognitive training intervention on recovery in moderate to severe TBI survivors. Eligible participants must:

- be aged 19 years or older;
- have a history of moderate to severe traumatic brain injury

Participants will be asked to provide blood and saliva samples (collected at the University of Victoria) and particpate in a virtual cognitive assessment before, immediately after, and one-month after the intervention period. All participants will have the opportunity to engage in the cognitive training intervention upon completion of the study. For more information, or to particpate, please contact jamiemorrison@uvic.ca.

Healthy Aging, Autism and Policy Priorities

Vynthia Lamisi Anaba, a Master of Public Policy student at the University of Regina is studying the lived experiences and perspectives of people who provide support to adults with autism. The goal of this research is to help deepen understanding of what resources and supports are important for the well-being of adults with autism as they age.

If you are involved in providing support, whether as a family member, a friend, a partner, or a professional, to an adult with autism in Saskatchewan, the researcher would be grateful for your time and insights.

For more information or to participate, contact Cynthia Lamisi Anaba - cla897@uregina.ca
Supervisor: Dr. Amy Zarzeczny, Associate Professor Email: amy.zarzeczny@uregina.ca

Research Opportunities (Cont'd)

Trust in Stem Cell Interventions

A group of researchers from the University of Regina is conducting a study on factors affecting patients' trust in stem cell interventions. They are particularly interested in individuals who self-identify as having a chronic musculoskeletal condition, such as osteoarthritis, ankylosing spondylitis, ligament/tendon tear, cartilage lesion, intervertebral disk degeneration or chronic back pain, etc.

The study involves an online interview that will require approximately 1 hour of your time. In appreciation for your time, you will be entered into a draw to win a $50 Amazon gift card.

To learn more, contact Marina Shaker at MSP201@uregina.ca or her supervisor Dr. Amy Zarzeczny at amy.zarzeczny@uregina.ca.

Upcoming Events

What's Your Story?

February 4, 2024 1:00PM & 3:30PM
STAR Cinema, 9840 Third Street, Sidney BC

REACH! (Westcoast REACH Association) presents *What's Your Story?* Wonderful stories will be shared by Jack Knox (humorist, columnist, author) as well as three new short films featuring four outstanding Saanich Peninsula residents - Mavis Underwood, Kenny Podmore, Kare Morgan, and Tim Maloney.

For tickets, see https://star-cinema-whats-your-story.eventbrite.ca
For more information, please call 250-889-0871 or 250-882-4339

Cafe Scientifique: Sharing Best Strategies for Inclusion of Mental Health Patients and Families in Research

Friday, March 1, 2024 4:00PM to 6:30PM PT

In person: Michele Pujol Room, Student Union Building, University of Victoria
Online: Livestreamed via Zoom

The Institute on Aging and Lifelong Health's Health Services and Systems Research Cluster is hosting a Café Scientifique entitled ***Sharing Best Strategies for Inclusion of Mental Health Patients and Families in Research***.

The World Health Organization (WHO) reports that 1 in 8 people worldwide live with a mental illness, which has only increased during the COVID-19 pandemic. There is increasing evidence of inequitable access to appropriate mental health services for patients with mental health conditions.

To mitigate systemic inequities related to accessing these services, interdisciplinary collaborations with people with lived mental health experiences are needed. Strategies for meaningful inclusion of patients and families living with mental health problems are needed to promote equitable mental health services and support. The purpose of this Cafe Scientique is to promote meaningful engagement with members of the public regarding best practices for Strategies for Patient-Oriented Research S(SPOR). The objectives for this presentation are to:

- Share evidence-based SPOR related to mental health with patients, the general public, and scholars.
- Identify knowledge gaps in mental health related to SPOR.
- Identify research priorities in mental health research from diverse knowledge users (patients, clinicians, public).

For more information, including registration, please visit https://www.uvic.ca/research/centres/aging/events/index.php.

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