



*17<sup>th</sup> Annual Crossroads Interdisciplinary Health  
Research Conference*

March 15<sup>th</sup> – 16<sup>th</sup>, 2019

Halifax, Nova Scotia, Canada

**Conference Proceedings**



**DALHOUSIE  
UNIVERSITY**



**Friday March 15<sup>th</sup>, 2019**  
Halifax Central Library

Time	Activity
11:30-12:30 <i>Paul O'Regan Hall</i>	<b>Registration and Lunch</b>
12:30-1:00 <i>Paul O'Regan Hall</i>	<p><b>Opening Remarks</b> Elder Geri Musqua-Leblanc, Coordinator of Elders in Residence Madison MacQuarrie and Sara Brushett, Conference Co-Chairs</p> <p><b>Welcome from the Healthy Populations Institute</b> Dr. Sara Kirk, Scientific Director, Healthy Populations Institute</p>
1:00-2:00 <i>Break out rooms</i>	<p><b>Mini Course Sessions</b> <b>Introductions</b> – Sara Brushett, Co-Chair</p> <ul style="list-style-type: none"> <li>○ <b>Diversity and Inclusion</b> Led by <b>Dr. Barb Hamilton-Hinch</b>, School of Health and Human Performance, Dalhousie University, <i>Paul O'Regan Hall</i></li> <li>○ <b>Knowledge Translation</b> Led by <b>Dr. Erna Snelgrove-Clarke</b>, Centre for Transformative Nursing and Health Research &amp; School of Nursing, <i>Lindsay Children's Room</i></li> <li>○ <b>Empathy</b> Led by <b>Dr. Lisa Goldberg</b>, Centre for Transformative Nursing and Health Research &amp; School of Nursing, <i>BMO Community Room</i></li> </ul>
2:15-3:15 <i>Paul O'Regan Hall</i>	<p><b>The Ocean and Human Health Panel + Q&amp;A</b> <b>Introductions</b> – Madison MacQuarrie, Co-Chair</p> <p><b>Moderator:</b></p> <ul style="list-style-type: none"> <li>○ <b>Dr. Wendy Watson-Wright</b> PhD, Chief Executive Officer of the Ocean Frontier Institute</li> </ul> <p><b>Panel Members:</b></p> <ul style="list-style-type: none"> <li>○ <b>San Patten</b> MSc, Faculty Member, College of Sustainability at Dalhousie University</li> <li>○ <b>Dr. Megan Bailey</b> PhD, Assistant Professor and SSHRC Canada Research Chair in Integrated Ocean and Coastal Governance, Marine Affairs Program at Dalhousie University</li> <li>○ <b>Dr. Fabrice Berrue</b> PhD, Team Leader at National Research Council of Canada</li> </ul>

	<ul style="list-style-type: none"> <li>○ <b>Dr. Stefanie Colombo</b> PhD, Canada Research Chair in Aquaculture Nutrition and Assistant Professor at Dalhousie University</li> </ul>
3:15-4:15 <i>Paul O'Regan Hall</i>	<p><b>“Gray Matters” Competition</b> <b>Introductions</b> – Sara Brushett, Co-Chair</p> <p><b>Judges:</b></p> <ul style="list-style-type: none"> <li>○ <b>Dr. Sharon Young</b>, Nova Scotia Health Authority</li> <li>○ <b>Dr. Daniel Stevens</b>, Dalhousie University</li> <li>○ <b>Amanda Medjuck</b>, Brain Awareness Week</li> </ul>
4:30-5:30 <i>Paul O'Regan Hall</i>	<p><b>Basic Income and Health Panel + Q&amp;A</b> <b>Introductions</b> – <b>Dr. Ren Thomas</b>, MacEachen Institute</p> <p><b>Moderator:</b></p> <ul style="list-style-type: none"> <li>○ <b>Dr. Rebecca Hasdell</b> PhD, Ecology Action Centre and Dalhousie Food Policy Fellow, and Adjunct Faculty in the Northern Medical Program at the University of Northern British Columbia</li> </ul> <p><b>Panel Members:</b></p> <ul style="list-style-type: none"> <li>○ <b>Dr. Christine Saulnier</b> PhD, Nova Scotia Director of the Canadian Centre for Policy Alternatives</li> <li>○ <b>Dr. Catherine Mah</b> MD, FRCPC, PhD, Canada Research Chair in Promoting Health Populations and Associate Professor, School of Health Administration, Dalhousie University</li> <li>○ <b>Dr. Elizabeth Kay-Raining Bird</b> PhD, Chair of Basic Income Guarantee-Nova Scotia and Professor in the School of Communication Disorders at Dalhousie University</li> <li>○ <b>Graham Steele</b> Former Nova Scotia Finance Minister and Professor of Business Law, Faculty of Management, Dalhousie University</li> </ul>
5:30-5:45 <i>Paul O'Regan Hall</i>	<p><b>Closing Remarks</b> Dr. Michelle Stone, Faculty Advisor, School of Health and Human Performance</p>
5:45-7:00 <i>Paul O'Regan Hall</i>	<p><b>Social / Networking Event</b> Please join us for networking, appetizers and good times!</p>

**Saturday March 16<sup>th</sup>, 2019**  
*Collaborative Health Education Building*

<b>Time</b>	<b>Activity</b>
8:00-9:00 <i>Room 170</i>	<b>Check in + Breakfast</b> All presenters required to arrive at this time
9:00-9:30 <i>Room 170</i>	<b>Welcome + Opening remarks</b> Elder Geri Musqua-Leblanc, Coordinator of Elders in Residence Madison MacQuarrie and Sara Brushett, Conference Co-Chairs  <b>Welcome from the Faculty of Health</b> Dr. Cheryl Kozey, Dean, Faculty of Health (Acting)
9:35-10:50 <i>Breakout Rooms</i>	<b>Oral Presentation Session #1</b> Rooms 140, 150, 220, 221, 268
10:50-11:00 <i>Room 170</i>	<b>Break</b>
11:00-12:15 <i>Breakout Rooms</i>	<b>Oral Presentation Session #2</b> Rooms 140, 150, 220, 221, 268
12:00-1:30 <i>Room 264/266</i>	<b>Lunch + Poster Sessions</b> Lunch in Room 170
12:00-12:45	<b>Poster Session 1</b> Rooms 264/266
12:45-1:30	<b>Poster Session 2</b> Rooms 264/266
1:30-2:30 <i>Room 170</i>	<b>Keynote Speaker</b> Dr. Gaynor Watson-Creed, Deputy Chief Medical Officer of Health
2:30-2:40 <i>Room 170</i>	<b>Break</b>
2:45-4:00 <i>Breakout Rooms</i>	<b>Oral Presentation Session #3</b> Rooms 140, 150, 220, 221, 268
4:00-5:00 <i>Room 170</i>	<b>Awards Presentations</b> Maureen Summers, Healthy Populations Institute Managing Director <b>Closing Remarks</b> Dr. Laurene Rehman, Director, School of Health and Human Performance Madison MacQuarrie and Sara Brushett, Conference Co-Chairs

## Welcome from the Conference Co-Chairs



Hello everyone!

We'd like to welcome you to the 17th Annual Crossroads Interdisciplinary Health Research Conference and thank all of you for attending our event. This conference is a student-led initiative, which has grown from the School of Health and Human Performance at Dalhousie University. Students studying any aspect of health from health promotion, to microbiology to medicine and everything in between.

Designed as an adjudicated, peer-reviewed academic forum, Crossroads provides an important opportunity for undergraduate, masters, and PhD students to learn from each other, gain relevant experience, and showcase their work at a professional level. The interdisciplinary nature of this conference promotes and encourages collaboration between faculty, community representatives, and students. This year we have chosen the conference theme, "Growing the Future of Collaborative Health Research" to showcase the wonderful opportunities this conference provides for networking across health research disciplines.

This year, we are welcoming over 200 student researchers, faculty members and special guests from across Canada and the United States to Halifax. We are very proud of the hard work that our student volunteer team has dedicated to the planning of this year's conference. Crossroads is entirely student-run and without their support, the conference you are attending would not be possible. Our Committee has reviewed over 200 abstracts from student health researchers from a vast array of disciplines and fields. We have created many ways for you engage during the conference, including panel discussion, mini courses, student presentations and our Friday night social! This year, we have also added a new competition to the conference called "Gray Matters" for students conducting brain-related research to concisely present their project using images and accessible language.

We hope that you enjoy your experience and we hope to see you again in the years to come!

Madison MacQuarrie and Sara Brushett, Master of Arts Candidates in Health Promotion  
Co-Chairs, Crossroads Conference Planning Committee, 2019

## Director's Welcome

Dear Crossroads 2019 Delegates:

On behalf of the faculty, staff, and students of the School of Health and Human Performance (HAHP) I would like to welcome you to the 17th Annual Crossroads Interdisciplinary Health Research Conference and to Halifax and Dalhousie University for those who are travelling from away. The conference theme this year of “Growing the future of health research” has two purposes. First, it recognizes the growth that has occurred in the conference itself over its history as well as its contribution towards advancing knowledge and understanding of health research.



Crossroads is a health and wellness research conference organized by the graduate students within the School of Health and Human Performance in the Faculty of Health since its inception. As one of the longest-running events of its kind, Crossroads has supported student researchers in dozens of programs and universities across Canada and has truly become interdisciplinary in its nature and content. However, Crossroads not only attracts students, but also community partners, researchers, and delegates in a variety of health-related disciplines.

While the faculty and staff from the School of Health and Human Performance fully support Crossroads, the continued success of this event is really thanks to the hard work and planning of our graduate students. Please join with me and thank the organizers if you have a chance during the conference. It is my sincere hope that you enjoy this event as much as my colleagues and I do each year.

Sincerely,

Laurene Rehman, Ph.D. Director School of Health and Human Performance Dalhousie University



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Healthy Populations Institute

## **Healthy Populations Institute Welcome**

On behalf of the Dalhousie University Health Populations Institute (HPI) we would like to welcome you to the 2019 Dalhousie University Crossroads Interdisciplinary Health Research Conference: Growing the Future of Collaborative Health Research. This year's focus on collaborative and interdisciplinary aspects of health is providing you with excellent discussions about social determinants of health through a panel on 'Basic Income and Health', as well as raising issues about the human-ocean interface and their influence on both human health and ocean health with the panel 'Oceans and Human Health'. Workshops, oral presentations and posters will expose all of us to the breadth of research that is happening around us.

As in previous years, this student-led conference promises to provide an excellent opportunity for knowledge sharing, networking and capacity building, building on a 17-year history and engaging student researchers from across Canada and internationally. HPI is proud to partner with the Graduate Student Society at Dalhousie University's School of Health and Human Performance to host this conference again this year.

The Healthy Populations Institute is a multi-faculty research institute at Dalhousie University. Our mission is to improve population health and promote health equity by understanding and influencing the complex conditions that affect communities' health. This is reflected in our research clusters: Starting Healthy, Staying Healthy; Health of Marginalized Populations; Indigenous Health & Wellness; Healthy Cities, Healthy Communities, Health of People of African Descent, and Implementation Science. HPI is comprised of dedicated researchers and graduate students. For over 20 years, we have been working collaboratively to develop, support, and maintain healthy populations throughout the life course and across generations. We accomplish our goals through research development and management, capacity building, mentorship, and outreach.

We welcome you to Halifax and hope that your time at the Crossroads conference provides you with a wonderful experience in presenting your work and learning about what others are doing, challenges your thinking, and most of all provides opportunities for new friendships and connections for your future.

We look forward to meeting with you over the next couple of days.

Sincerely,

Sara Kirk, PhD  
Scientific Director  
Healthy Populations Institute

Maureen Summers, MSc  
Managing Director  
Healthy Populations Institute

## Keynote Speaker

Dr. Gaynor Watson-Creed is a Royal College certified specialist in Public Health and Preventive Medicine (PHPM), having completed her post graduate medical education in this field at McMaster University in 2005. She is also certified in Family Medicine.

Dr. Watson-Creed is a PEI native and received chemistry degrees from UPEI and University of Guelph before attending Dalhousie University for her MD in



1995. Although her current major role is as Deputy Chief Medical Officer of Health for the province of Nova Scotia, she holds and has held several other key population health roles during her career. She is currently the Assistant Dean of Serving and Engaging Society for Dalhousie University's Faculty of Medicine, and Chair of the Board of Engage Nova Scotia, a not-for-profit organization dedicated to improving Nova Scotia's place in the world. She sits as chair or member of several population health councils and boards nationally, and is a passionate advocate for high quality and well organized public health services in Canada. She sat on the One Nova Scotia Coalition, and received the William Grigor award for achievement in medicine from Doctors Nova Scotia in 2017. In 2018 she was awarded the President's award from Public Health Physicians of Canada for her advocacy regarding population health systems and services in Canada.



## Mini Courses

### Being Invited to the Party and Asked to Dance

Led by **Dr. Barbara Hamilton-Hinch**



Dr. Barb Hamilton-Hinch is an Assistant Professor in the School of Health and Human Performance, in the Faculty of Health, Dalhousie University. Her research focuses on improving the health and well-being for diverse populations. She stresses the importance of examining and striving to understand all facets of individuals such as their race, ethnicity, gender identity, ability, SES, community, place of origin, Indigenous status, and how all their social identities contribute to an individual and community health and well-being. Her most recent research has included developing welcoming and inclusive spaces for individuals living with mental health challenges, Closing the Achievement Gap for African Nova Scotian Learners, Optimizing Services for families in marginalized communities. Barb is one of the recipients of the inaugural Belong Research Fellowships 2019.

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### Working Together to Translate Knowledge

Led by **Dr. Erna Snelgrove-Clarke**

Dr. Erna Snelgrove-Clarke is the Associate Dean, Academic (acting) in the Faculty of Health and an Associate Professor in the School of Nursing / Department of Obstetrics and Gynecology at Dalhousie University. She is the CIHR Embedded Clinical Researcher in the Maternal Newborn Program at the IWK Health Centre and her program of research focuses on the identification of successful strategies for improving use of evidence in maternal newborn practices. Erna explores the transfer of knowledge through mixed methodology, concentrating on the relationships of health care professionals, organizations, and decision-makers. Areas of



interest include women's pain, obesity, breastfeeding, pregnancy, fetal health surveillance, practice development, and person centred practice.

In this workshop, participants will explore innovative interdisciplinary approaches to using evidence in academic and in the clinical setting. Using examples from active research projects, strategies for change and ways of working will be discussed. Participants will actively engage with one another in this collaborative learning opportunity.

### **Applying Watson's Caring Science to re-imagine our professional practices and simultaneously re-imagine ourselves**



#### *Led by* **Dr. Lisa Goldberg**

Dr. Lisa Goldberg is an Associate Professor and Caritas Coach in the School of Nursing, Faculty of Health, Dalhousie University. Her research and educational scholarship build on her expertise as a perinatal nurse and engage innovative methodologies grounded in feminist/queer phenomenology guided by a caring science philosophy. Her most recent research used arts-based methodologies to translate queer birth findings in the form of a theatre production to

more broadly examine the invisibility of LGBTQ2S+ identities in nursing and health care more broadly. Lisa is also the recipient of the 2017 Dalhousie University Award for Excellence in Education for Diversity.

Using interactive exemplars grounded in Watson's Caring Science, this workshop will illuminate how and why compassion is a necessary underpinning to inform our current practices: personally, professionally, and within systems. Using the 10 caritas processes as an applied framework, in alignment with transpersonal caring and the caring moment, our collective experience will foster opportunity to re-imagine our professional practices, and in the process ultimately reimagine ourselves.

## The Ocean and Human Health Panel

### **Moderator: Dr. Wendy Watson-Wright**

Dr. Wendy Watson-Wright is the Chief Executive Officer of the Ocean Frontier Institute (OFI), a transnational hub for ocean research that brings together experts from both sides of the North Atlantic to explore the vast potential of the world's ocean. One of OFI's research objectives is to help manage human activities as they related to ocean resources.



### **San Patten**

San Patten is a faculty member of the College of Sustainability, where she brings a human health and social justice perspective to sustainability issues. She also runs her own consulting practice specializing in HIV policy development, facilitation, program evaluation, and community-based research. She works extensively with issues relating to injection drug use, sexual health and HIV prevention, in Canada and internationally. She is also Chair of the board of the Halifax Refugee Clinic, a local non-profit organization that provides free legal and settlement assistance to refugees.

### **Dr. Megan Bailey**

Megan Bailey is Assistant Professor and SSHRC Canada Research Chair in Integrated Ocean and Coastal Governance with the Marine Affairs Program at Dalhousie University. Megan's work focuses on finding solutions at the intersection of markets and states to promote sustainable fishing and sustainable seafood consumption. She is particularly interested in improving fisheries, food, and trade policy to ensure that the public resources of the ocean are leveraged to provide optimal social benefits. Megan serves on the Scientific and Technical Advisory Committee for the International Pole and Line Foundation, is on the Board of Directors for the Fishermen and Scientists Research Society, and is Associate Editor for the journals *Marine Policy* and *People and Nature*.





**Dr. Stefanie Colombo**

Dr. Stefanie Colombo is a Canada Research Chair (Tier II) in Aquaculture Nutrition, and Assistant Professor at Dalhousie University- Agricultural Campus. She completed her B.Sc. at the University of Guelph, M.Sc. at Dalhousie University, and Ph.D. at Memorial University. The overall goal of her research program is to discover novel solutions in nutrition to improve aquaculture and contribute toward healthier, environmentally sustainable, and economically viable farmed seafood.

**Dr. Fabrice Berrue**

Fabrice Berrué received his Ph.D. from the University of Nice (France) in 2005 where he studied marine sponges as a source of anticancer lead candidates in collaboration with the Spanish company, PharmaMar SA. He moved to the University of Prince Edward Island where he led research activities with both academic lab and Nautilus Biosciences Canada Inc. on the development of bioactive marine natural products with application in human health and wellness. Fabrice joined the National Research Council Canada in 2015 as a research officer and serves in the role of team leader in Halifax. His current research focuses on the development of solution to transform marine and terrestrial bio-based resources into sustainable and high value products as well as exploring bioanalytical technologies for monitoring the health of the ocean ecosystem, particularly around industrial site.



## Basic Income and Health Panel



### **Moderator: Dr. Rebecca Hasdell**

Rebecca Hasdell is the Ecology Action Centre and Dalhousie Food Policy Fellow, and Adjunct Faculty in the Northern Medical Program at the University of Northern British Columbia. Her research examines public policy approaches to promoting healthier environments in smaller cities and rural regions. Over the past 15 years, Rebecca has worked in program planning and strategic policy for government, research and not-for-profit positions in several Canadian cities. She holds a BA from the University of Calgary, and a Masters of Public Health (Health Promotion) and PhD from the University of Toronto.

### **Dr. Catherine Mah**

Catherine L. Mah MD FRCPC PhD is Canada Research Chair in Promoting Healthy Populations and Associate Professor, School of Health Administration, Dalhousie University. She directs the Food Policy Lab, a multidisciplinary program of research on the environmental and policy determinants of healthier consumption, with a focus on health-promoting innovations in the food system. Dr. Mah promotes trainee opportunities for community-engaged scholarship and citizen leadership, and can't wait to support a former student to run for office one day. She is also appointed at the Dalla Lana School of Public Health, University of Toronto and is an Associate Research Scholar of the Healthy Populations Institute. Her current research is supported by the Canadian Institutes of Health Research, the Social Sciences and Humanities Research Council, and the Australian National Health and Medical Research Council.



### **Dr. Christine Saulnier**

Christine Saulnier is the Nova Scotia Director of the Canadian Centre for Policy Alternatives. She has a doctorate in Political Science from York University. She leads the publication of the Nova Scotia Alternative Budget, and the living wage calculations for various communities in the Maritimes. She is also co-author of the annual child and family poverty report card for Nova Scotia.

**Dr. Elizabeth Kay-Raining Bird**

Dr. Elizabeth Kay-Raining Bird is a Professor in the School of Human Communication Disorders at Dalhousie University in Halifax, Nova Scotia, Canada. Her research and teaching are in the areas of child language development and disorders, with a particular focus on issues of cultural and linguistic diversity. As such, she is acutely aware of the destructive impacts of poverty on the health and well-being of adults and children. Elizabeth is the chair of Basic Income Guarantee – Nova Scotia, an anti-poverty group that educates about Basic Income and advocates for its implementation.



**Graham Steele**

Graham Steele was a member of the Nova Scotia legislature from 2001 to 2013, and was Nova Scotia's finance minister from 2009 to 2012. His first book, *What I Learned About Politics* (2014), was a bestseller. It pulled back the curtain on how politics really works. His second book, *The Effective Citizen* (2017), helps citizens understand how to work with politicians to get things done. Graham has been a professor of business law in the Faculty of Management at Dalhousie since 2015.

## Thank You To Our Sponsors

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HALIFAX BRAIN AWARENESS WEEK





## **Our Team**

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### **Special thanks to**

Katie Allan, Fatemeh Asadi, Megan Aston, Julie Barry, Ingram Barss, Karina Branje, Matt Frenette, Hayley Gillis, Matthew Herder, Don Laporte, Susan Marsh, Holly Mathias, Amanda Medjuck, Laura Miller, Kevin Quigley, Daniel Rainham, Sherri Slate, Maddy Stevens, Daniel Stevens, Maureen Summers, Kenisse Trotman, Sharon Young, and Joshua Yusuf

**Thank you to all partners, sponsors, and donors**

## **Evaluating the Feasibility of Managing Fatigue Program for Individuals with Parkinson`s Disease**

Neda Alizadeh<sup>1</sup>, Tanya Packer<sup>1</sup>

1, Dalhousie University

**Introduction:** Fatigue is a main disabling symptom in Parkinson Disease (PD). No cure exists, but the impact of fatigue can be reduced. Managing Fatigue, an energy conservation program, reduces fatigue impact in similar conditions. In this study, the individual form of the program will be developed to enhance its accessibility, especially in remote communities. This study aims to evaluate the feasibility of the Individualized Managing Fatigue (IMF) program (1) from the perspectives of individuals with PD and health care providers, and (2) for conducting a full-scale randomized controlled trial (RCT).

**Methods:** A mixed method pilot RCT will evaluate the feasibility of the IMF program in the PD population. Sixty individuals with PD and five occupational therapists will be recruited. Individuals with PD will be randomly assigned to either a control or intervention group. All participants will complete feasibility questionnaires, and they will take part in focus groups after completing the intervention. Individuals with PD will complete the standard measures at three times; baseline, post-test, and after three-month follow up. The recruitment procedure will be recorded based on the inclusion rate, attrition rate, and the variation in the sociodemographic characteristic of included participants. The sample size for future RCTs will be determined using the changes in the study outcomes of fatigue, quality of life, participation in daily life, and self-efficacy. Outcome measures of the study will be evaluated for their feasibility and responsiveness.

**Anticipated Results:** This study will determine the level of acceptability, usability, impact, and fidelity of the IMF program for related stakeholders, and will determine the sample size, outcome measures, and recruitment process for future RCTs. Significance: This study will evaluate the feasibility of a well-known fatigue intervention for the first time in PD which is required for conducting a full-scale RCT design.

# **Utilization of Omani Nurses with a Master's Degree: A Research Proposal**

Salma Almukhaini<sup>1</sup>, Lori Weeks<sup>1</sup>

1, Dalhousie University

**Introduction:** In Oman, there are few nurses who hold a master's degree or are in a master's program, and most of them participate in graduate training internationally. In 2016, the College of Nursing at Sultan Qaboos University launched a master's in acute care nursing program for the first time in Oman in order to train nurses locally. Consequently, it is expected that the number of Omani nurses with a master's degree will significantly increase in the coming years. Nothing is known regarding how Omani nurses are being utilized appropriately within the health care system after completing their graduate degree. This proposed research aims to explore how master's prepared nurses are being utilized in Oman and what factors impact their utilization.

**Methods:** Case study methods using Robert Stakes' approach will be used. Focus group interviews will be conducted with Omani nurses holding a master's degree. Semi-structured interviews will be conducted with coworkers of the nurses and policy makers. In addition, a policy review will be conducted.

**Anticipated Results:** It is anticipated that results will provide evidence about the roles of master's prepared nurses in Oman, evidence about how other health care professionals view the roles of these nurses, and policies governing the roles that these nurses can fulfill.

**Significance:** The results will be used to develop recommendations for stakeholders on how to support these nurses and utilize their competencies appropriately. This research will also provide insight on how to best utilize master's prepared nurses in other developing countries.

## Optimal Resource Allocation Strategy for the Youth Mental Health System

Zainab Almkhtar, Saint Mary's University

**Methods:** Applying mathematical methods we propose a comprehensive framework for resource allocation in the youth mental health system in Canada. The service delivery is enhanced, and the total cost minimized simultaneously. Important factors are investigated such as the high use of ED for mental health treatment, and the switching between interventions. Also, the resources directed to mental health awareness. By using the Newsvendor model, we expressed the portion of patients that switch from interventions to ED by a numeric factor and investigated the relation with costs in the system. We study the two-direction movement from the interventions to the ED and the effect of proper service delivery on crowding, repeated visits, and total cost.

**Anticipated Results:** By improving access in the intervention, crowding at the ED and the total cost of the system are reduced. The cost of getting to the ED (Emergency Department), and /or the intervention is also an affective factor in patient's paths and choices. This can be seen in the difference between rural and urban ED and intervention use.

**Conclusions/Significance:** The research has significant impacts on the health of Canadians youth. We look to identify gaps in the mental health system, and explore the interactions, and influences of those gaps. We present a strategy for policy makers to aid them in decision making. We explain the interactions between system entities and how malfunction in one affect the other. The work overcomes the fragmentation in the youth mental health system.

## **Satisfaction with low vision assistive technology services and devices at the CNIB**

Yaser Alnasery<sup>1</sup>, Tanya Packer<sup>1</sup>

1, Dalhousie University

**Introduction:** The Canadian National Institute for the Blind (CNIB) is the largest provider of assistive technology (AT) services and devices for people with low vision in Canada. As CNIB clients are depending on these services to assist them in performing their daily tasks, it is important to maintain a high-quality service. CNIB is, therefore, interested to evaluate the quality of their AT services. This study will evaluate users' assessment of the currently provided AT services by measuring participants' satisfaction level of AT services and devices.

**Methods:** The study will use a descriptive survey design to evaluate clients' satisfaction with prescribed low vision AT devices and related AT services at CNIB branches located in two provinces: Ontario and Nova Scotia. CNIB clients twenty-one years old or older, who have received AT between August to November of 2018 will be invited to complete the questionnaire. The questionnaire will gather participants' satisfaction scores using Quebec User Evaluation of Satisfaction with assistive Technology (QUEST 2.0) in addition to some basic information such as age, sex, visual condition, residential area (province), and general device usage pattern. The QUEST will produce three scores: Two subscale scores of device and service as well as a total score, which will be used to analyze the results.

**Anticipated Results:** We anticipate that findings will show a varied level of satisfaction in a proposed sample size of about 150 participants. Variation in the satisfaction level is expected to be based on several factors related to user's age, sex, location of service and type of device.

**Significance:** Users' assessment is vital to inform the decision-makers at the CNIB to identify the optimum method of providing and arranging the AT services and devices.

# **Insights From User Reviews for the improvement of Mental Health Apps: a Thematic Analysis**

Felwah Alqahtani<sup>1</sup>, Rita Orji<sup>1</sup>

1, Dept. of Computer Science, Dalhousie University

**Introduction:** User reviews of an app are critically important for open mobile application markets, including the App Store and Google Play. Analyzing app reviews help explain user experience and reveal what features users liked and disliked in the app, specifically regarding mental health applications. There are many studies that have concentrated on evaluating the usability and functionalities of the app and pay no attention to user experience with these app. A growth in demand exists to obtain insight from reviews, which can enhance the design of the app and reduce low engagement.

**Methods:** A qualitative study was conducted using thematic analysis of user reviews available in 106 mental health apps through Apple's App Store and Google's Android devices to gain initial key themes and to gather more detailed insights. The aim of the study was to understand users experience with mental health application and why users were not engaging with these applications. Also, to investigate any other effective factors associated with usage and success.

**Results:** We classified reviews into three categories: strengths features, weakness features and requested features.

**Conclusions:** By presenting which aspect users like and disliked, this research could be a guideline for app developers to follow when developing a mental health app to prevent from adopting features that might impact the use of application or perform those perceived positively by the users.

## **The Effect of a Fasting Mimicking Diet (FMD) on Overweight and Obese Women with Systemic Inflammation: A Pilot Study**

Nada Alzhrani, Dalhousie University

**Introduction:** A fasting mimicking diet (FMD) is a new form of an intermittent energy restricted (IER) diet, which depends on low energy intake rather than actual fasting. We hypothesized that a FMD would reduce systemic inflammation and that a FMD with a higher protein content would facilitate adherence to the diet.

**Method:** In this pilot study, we developed a dietary system that used whole foods and investigated the relationship between fasting FMDs and health indicators. Six healthy women, 33-55y, BMI 27-33 kg/m<sup>2</sup>, were recruited. Subjects were randomized to one of two diets, which they followed for 3 weeks; they then returned to their normal diets for a week, and then adhered to the second diet for 3 weeks. Each test diet consisted of 3 low energy intake days followed by 4 days of isocaloric energy intake. The diets differed only by protein content. High sensitivity C-reactive protein (hs-CRP) tests, Glucose tests, weight, and waist circumference were measured at the beginning and end of each dietary intervention. Analyses of the results were on a case basis. Visual analogue scales were used to assess fullness and satiety.

**Result:** Both diets resulted in decreased inflammation as indicated by lowered hs-CRP tests and those who adhered to the diets lost weight. Participants purported greater satiety when adhering to the higher protein FMD and that both diets were positive experiences.

**Conclusion:** The FMDs appeared to improve health in overweight women and the higher protein version enhanced adherence.

## **Continuous Monitoring of Research: The REBs Unfulfilled Obligation**

Ramseyer Apau Bediako, Memorial University of Newfoundland

This project is about the ethics of Research Ethics Boards (REBs) monitoring while research is being conducted, after the phase of initial review of protocols. It addresses how REBs can best protect human subjects who are contributing to scientific knowledge as a way of ensuring integrity in research.

The current mechanisms for monitoring research are inadequate. I will provide an argument drawing on the prevalence of research misconduct, instances of gross research misconduct and the centrality of the researcher's self-reporting for REB oversight to defend the idea that adequate REB post-initial-review monitoring requires greater REB involvement, other than trust and researcher's assurances. Monitoring institutions cannot continue to monitor research by trusting that researchers will report all serious adverse events, that informed consent will be proper, and that subject safety will be a priority. I will also present evidence that most cases of misconduct go unreported by researchers because researchers are unwilling to risk their reputations, and find the reporting process frustrating.

The current monitoring process requires a major revamp. If monitoring is based on trust alone, then clinical practice guidelines may be based on compromised research. We need the highest form of scientific evidence that is based on sound ethical practices.

Continuous monitoring of research should include paternalistic annual reviews of protocols, monitoring of serious adverse events, and more importantly on-site monitoring to examine data, to check informed consent documents, and have verbal interviews with study staff and subjects. I will present an ethical justification for this model of continuous monitoring.



## **The Evolution of the Attention Network Test: Cross-Cultural, Developmental & ADHD Applications from the ANT Database**

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1, Dalhousie University

**Introduction:** The Attention Network Test (ANT) was developed by Michael Posner and his colleagues (Fan et al., 2002) to measure the efficacy of and interactions among the three attentional networks: alerting, orienting, and executive functioning. Our lab has created a database of studies that have cited the seminal paper and is the process of extensive data extraction, with future plans of web development.

**Methods:** We have developed a comprehensive database of all studies that have used the Attention Network Test or one of its' close variants. This search yielded 539 studies and we have extracted data pertaining to participant condition, clinical subset, geographical region and mean task performance from 155 of these studies. We have conducted 3 meta-analysis to date with this database on childhood ADHD, regional differences in ANT performance, and age related differences in preadolescent children.

**Results:** Mean reaction time differences in performance in the ANT in relation to the three meta-analysis are reported with 95% confidence intervals. Regional differences were apparent in network scores between China, Europe and the United States. Reaction time performance in children improved with age as predicted by previous literature. Network scores in clinical ADHD showed impairments in the alerting and executive functioning networks, but no significant difference in orienting.

**Conclusions/Significance:** This database can be used to identify which components of attention are impacted and which are still intact in various different clinical populations from a considerable sample size.

## **Exploring the Lived Experiences of Those with Chronic Obstructive Pulmonary Disease (COPD) in Prince Edward Island (PEI)**

Hailey Arsenault, University of Prince Edward Island

**Introduction:** The prevalence of chronic disease in Prince Edward Island (PEI) has risen significantly, despite little research within the province's context. The purpose of this study was: (1) understand and examine the lived experiences of individuals who have been diagnosed with Chronic Obstructive Pulmonary Disease (COPD) in PEI; and (2) explore the perceived impact a Cardiac and Pulmonary Rehabilitation program (developed by Health PEI) on this population.

**Methods:** Participants were individuals diagnosed with COPD who had completed a 12-week Pulmonary Rehabilitation Program. The participants were recruited by Health PEI and connected with the researcher to evaluate the perceived impact of the program. Participants completed a short questionnaire prior to being interviewed by the researcher (lasting approximately 82 minutes). Participants were also given the option of taking photos (i.e. Photovoice methodology) to describe their life experience before and after attending the Pulmonary Rehabilitation program.

**Results:** In total, nine participants (5 males, 4 females) agreed to participate. The average age of COPD patients in this study was 70 years of age, with an initial average age of diagnosis of 62 years. All participants stated that the program improved their physical health, with 89% indicating that it also improved their mental health, and 67% of participants indicating that the program enhanced their lives. Interview transcripts were coded, from which five themes relating to lived experience themes emerged: medications, disease impact on mental and physical health, social supports and networks, financial costs, and smoking. Three themes relating to the Pulmonary Rehabilitation program also emerged: strengths, barriers, and future aspirations.

**Significance:** This study has the potential to provide evidence to maintain and/or enhance chronic pulmonary disease management in PEI, and to develop and/or enhance policy and practice in the PEI context.

# **It's More Than Getting Dressed: Exploring Clothing-Related Barriers Experienced By People with Intellectual Disabilities**

Katie Ashley, Dalhousie University

**Introduction:** The lack of inclusive and accessible clothing available to people with disabilities is extremely problematic. Clothing most commonly available to wear is created for people who are able-bodied, however, people who have intellectual disabilities often have complex needs and require modifications in order to make clothing more comfortable and wearable. The lack of accessible and inclusive clothing could create barriers for people with disabilities, exacerbate barriers they already face on a daily basis, and further exclude them from the rest of society. This research aims to explore these clothing-related barriers that people with disabilities face on a daily basis.

**Methods:** This study will use a narrative research design and be guided by a transformative worldview lens to help understand and recognize the oppression and stigmatization towards people with intellectual disabilities. Qualitative data collection for this proposed research project will occur through interviews with teenagers and adults who have intellectual disabilities and their parents/caregivers.

**Anticipated Results:** Findings from this research will provide insights into the barriers people with intellectual disabilities deal with in relation to clothing and getting dressed, how it affects them, and solutions to barriers. These findings could be of interest to not only people with intellectual disabilities, but practitioners, caregivers, and parents. Clothing in the future could be made to be more inclusive and accessible with guidance from these results.

**Significance:** Learning what these barriers are, how they can further exacerbate the barriers they already experience, and how clothing can be changed to improve the experience of getting dressed could promote social inclusion and acceptance of people with intellectual disabilities. Eradicating barriers and improving clothing could improve social and community engagement, decreasing the stigma surrounding people with disabilities.

## **Informing realist evaluation of the Choice and Partnership Approach in Nova Scotia using a scoping review**

Caitlyn Ayn<sup>1</sup>, Lori Wozney<sup>2</sup>, Sharon Clark<sup>2</sup>, Julie MacDonald<sup>3</sup>, Debbie Emberly<sup>2</sup>, Andrea Bishop<sup>2</sup>, Jill Chorney<sup>2</sup>, George Kephart<sup>1</sup>, Adrian MacKenzie<sup>4</sup>, Daniel Marsh<sup>3</sup>, Kylie Peacock<sup>1</sup>, Leslie Anne Campbell<sup>5</sup>

1, Dalhousie University; 2, IWK Health Centre; 3, Nova Scotia Health Authority; 4, Nova Scotia Department of Health & Wellness; 5, Sobey Family Chair in Child and Adolescent Mental Health

**Introduction:** Estimates suggest that 14% of Canadian children and adolescents are currently experiencing mental health concerns. In Nova Scotia, the desire to meet this need contributed to the adoption of the Choice and Partnership Approach (CAPA). CAPA is a service transformation model focused on streamlining services and engaging clients throughout mental health treatment. Despite promising evidence of its effectiveness, to date there has been no evidence synthesis regarding implementation of the model. The current project will address this gap by identifying where, why, and how CAPA has been implemented globally.

**Methods:** A scoping review was chosen to assess the heterogenous evidence base regarding CAPA implementation. Through systematic searching of peer-reviewed and grey literature, items will be retrieved that describe CAPA implementation in child and adolescent mental health and addictions services. Materials will be independently reviewed. A data extraction tool developed by the research team will then be applied to distill key points regarding the implementation process, analyses, outcomes, and conclusions from these materials.

**Anticipated Results:** This review will generate an inventory of contexts and implementation activities across systems that have begun or completed transitioning to CAPA. Barriers and facilitators to implementation, such as resource requirements and sociopolitical considerations will be identified. A list of implementation recommendations and next steps for research will also be compiled.

**Significance:** Most proximally, findings will provide the theoretical foundations for an upcoming realist evaluation of how, for whom, and under what circumstances the approach works in Nova Scotia. This will inform implementation planning to support all components of CAPA within child and adolescent mental health teams province-wide. Elsewhere, findings will be beneficial for teams looking for guidance on how to integrate CAPA into th

## Alignment of Primary Care Deprescribing Strategies to Nova Scotia Context Using Components of the Behaviour Change Wheel

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**Introduction:** Polypharmacy and inappropriate medication use are an increasing concern with the aging population. Deprescribing may reduce medication-related harm and improve quality of life. The Behaviour Change Wheel (BCW) is a framework for practice change that may assist in the development of deprescribing strategies. The objective was to identify components of published primary care deprescribing strategies that link to local qualitative data to inform development of deprescribing initiatives in Nova Scotia.

**Methods:** Two background studies were completed. A scoping review identified studies that evaluated primary care deprescribing strategies. Strategies were mapped to the BCW Intervention Functions and the Behaviour Change Techniques (BCTs). A qualitative study of interviews and focus groups evaluated knowledge, attitudes, beliefs and behaviours toward deprescribing of local primary care physicians, nurse practitioners and pharmacists. Transcripts were coded using the Theoretical Domains Framework (TDF) and matched to the BCW. Results from the scoping review that linked to the TDF domains in the qualitative study were described.

**Results:** The scoping review included 44 studies of various study designs. All intervention functions of the BCW were utilized except Restriction. When mapped to the BCW, the two most predominate BCTs identified were Prompts/Cues and Social Support (practical). The qualitative study identified six TDF domains by frequency of codes and content of responses.

Environmental Context and Resources and Social Influences were the most commonly identified domains in the scoping review (through BCTs mapping) and in the qualitative study.

**Conclusion:** By aligning the views of local healthcare providers with published literature, results of this study indicate that deprescribing initiatives for future research in primary care in Nova Scotia should involve components that address Environmental Context and Resources and Social Influences.

## **Instability impacts mechanics after thirty minutes of walking in those with knee OA compared to asymptomatic controls**

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1, Dalhousie University

**Introduction:** Self-reported knee instability is often reported during walking in individuals with knee osteoarthritis (OA). Previous work has indicated joint mechanics and muscle activations are altered in those with OA, however, to date these studies have examined brief walking bouts. The purpose was to investigate if knee biomechanics and muscle activations differ between those with OA stable (OAS), OA unstable (OAU) and asymptomatic (ASYM) knees after 30 minutes of walking.

**Methods:** 21 ASYM participants and 20 individuals with knee OA provided informed consent. Participants eligible for a total knee arthroplasty were excluded. Skin surface electrodes were placed on the quadriceps, hamstrings, and gastrocnemius and passive retro-reflective markers were affixed to bony landmarks and rigid segments using standard procedures. Ground reaction forces, marker motion and electromyograms (EMG) were recorded while participants walked barefoot on a dual-belt treadmill at self-selected speed. After an acclimatization period, recordings were taken at 6min and 30min. Participants with knee OA were grouped based on the Knee Outcome Survey instability score. Discrete biomechanical variables were extracted from kinematics waveforms. Principal Component Analysis was used to identify features of EMG variability. Analysis of Variances models were used to test for main effects and interactions ( $\alpha=0.05$ ).

**Results:** No changes in biomechanics occurred between 6min and 30min in all groups. Quadriceps, hamstring and gastrocnemius activation was reduced, and hamstring and gastrocnemius activation was less prolonged at 30min compared to 6min, but this was evident in all groups.

**Conclusions:** Walking for 30min decreased knee muscle activation amplitudes and reduced prolonged activation in all groups. No differences in biomechanics were found between the groups, indicating self-reported knee instability may not influence how individuals walk for longer activity bouts.

# **The Use of Mindfulness-Based Interventions for Unhealthy Weight Control Behaviours in Adolescents: A Scoping Review**

Madeline Balardo, Dalhousie University

**Introduction:** Unhealthy Weight Control Behaviours (UWCB) are highly prevalent in adolescents. UWCBs are the driven actions that include binge eating, purging, or non-purging compensatory behaviours such as fasting, excessive exercise, or diet pill use. These behaviours are often influenced from the perceptions of health or appearance, and can lead to long-term physical, mental, and psychosocial health consequences. Mindfulness-based interventions (MBI) use mindfulness practice to build awareness and acceptance, and reduce emotional and cognitive reactivity, and automatic behavioural patterns. MBIs are becoming increasingly used for reducing and preventing UWCBs. The proposed project is intended to summarize and examine the studies that explore the use of MBIs for UWCBs in adolescents.

**Methods:** The Arksey and O'Malley methodological framework will be followed to conduct this scoping review. At stage one of this study the research questions will be identified, followed by a comprehensive search of the relevant studies. Data bases including PsychINFO, CINAHL and PubMed will be explored. A study selection will be completed and will apply inclusion and exclusion criteria to all citations. All items of information obtained from the primary research reports will be charted. The final stage will involve collating, summarizing, and reporting the findings.

**Anticipated Results:** Findings of this project will provide an accessible and summarized format of mapped out research studying the use of MBIs for UWCBs in adolescents. This project will attempt to identify and describe the key evidence relative to MBIs for UWCBs in adolescents and identify the major gaps.

**Conclusion:** The purpose of this project will be to draw conclusions from relevant research that explores the nature of use of MBIs for UWCBs in adolescents.

# **Power to the People? Balancing Human, Economic and Environmental Wellbeing in NunatuKavut Communities**

Emily Beacock, Dalhousie University

**Introduction:** NunatuKavut, the traditional territory of the Southern Inuit stretches across south-eastern Labrador. Many Southern Inuit live in remote coastal communities, upholding Inuit values and standing up for their communities and their lands, despite economic and political uncertainty and urgent sustainability challenges. This project, in partnership with NunatuKavut's Sustainability Pilot Communities and NunatuKavut Community Council (NCC), explores how some of NunatuKavut's most isolated communities balance the need for economic and energy development, with the health of individuals, communities and the environment.

**Methods:** This project uses community-based and qualitative methods. Data collection took place in Summer 2018; community members in Black Tickle, St. Lewis and Norman Bay were invited to participate in focus groups and/or interviews. This project asked questions about getting off diesel, transitioning to renewable energy and other development as well as the health of humans and the land-water-air. The research centres Indigenous knowledge and ways of knowing and uses an anticolonial lens to examine sustainability in NunatuKavut.

**Results:** The study communities have diverse sustainability challenges and opportunities. Community members describe community sustainability as complex and wholistic, while readily identify feasible, community- and culturally-appropriate avenues for sustainability solutions. Reducing diesel dependency is not a priority but transitioning to renewable energy might be part of a sustainability pathway, if it fits the community.

**Conclusions:** Communities assert the importance of traditional and local values when navigating the balance between development and the health of humans and the environment and are asking for support and capacity to determine healthy, sustainable futures through collaboration, capacity-building, and reclamation and reconnection with Inuit ways of life in NunatuKavut.



## **In vitro study of cell death mechanisms induced by low doses of cyanotoxins alone or in mixture on human hepatic cells**

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The production, use, and release of pollutants remain to increase worldwide and are widespread such as persistent and bioaccumulate through food chains raising questions about the validity of current threshold exposure levels, mechanisms of action and combined effects, synergism, addition, or antagonism of toxic effects. This study focused on cyanotoxins such as potential human health contaminants due to their increasing presence in drinking water sources. There are several toxins: hepatotoxins (microcystins-MC); neurotoxins (anatoxin-ATX-a) and dermatotoxins. Monitoring of Canadian drinking water has revealed that cyanotoxins risk assessment and management are compromised due to insufficient of relevant epidemiological data. Nova Scotia, such as all other Canadian provinces, doesn't have data for total cyanotoxins and the guideline value (GV) for drinking water is relative to MC. Health Canada suggests the GV at 1.5 µg/L whereas WHO fixed that at 1 µg/L. Our objectives are to verify whether human hepatic cells can be a target of low doses of cyanotoxins, either alone or in mixtures, and to investigate by which cell death mechanisms they will induce cytotoxicity. We have examined, on the human hepatic cell line HepG2, the cytotoxicity of microcystin (MC-LR) and anatoxin-a (ATX-a) as well as their equimolar mixture, at different low doses (0.001, 0.01, 0.1, 1, 10 and 100 µM). We have measured mitochondrial asphyxia by MTT test, apoptosis pathway by Caspase-3/7 Fluorescence Assay and necrosis with the ToxiLight assay. Our results show that MC-LR are more toxic than ATX-a and the equimolar mixture is more potent to induce mitochondrial asphyxia, apoptosis and necrosis than the individual compounds. This in vitro study provides new findings supporting data on human hepatotoxicity exposed to drinking water contaminated by cyanotoxins and demonstrates the need for further research of cell death mechanisms, in vivo, to best contribute to their risk assessment and management.

## **Estimating the impact of staffing and clinical decisions on wait times for child and adolescent mental health services**

Mark Bennett<sup>1</sup>, Dr. Leslie Anne Campbell<sup>1</sup>, Dr. George Kephart<sup>1</sup>, Dr. John Blake<sup>1</sup>, Dr. Sharon Clark<sup>2</sup>

1, Dalhousie University; 2, IWK Health Centre

**Introduction:** One in five Canadian children and adolescents experience clinically significant symptoms that warrant a diagnosis of mental illness, yet fewer than 25% of these patients receive specialized care. Timely access to mental health care is important for successful outcomes of treatment, and longer wait times may negatively affect long term outcomes for children and adolescents. In 2011, the IWK Community Mental Health and Addictions service adopted the Choice and Partnership Approach model to support more timely access to care and improve the outcomes of mental health care. This research aims to quantify the relative impact different management decision points have on wait times.

**Methods:** This interdisciplinary research will use Discrete Event Simulation to model patient flow, and subsequently adjust variables such as staffing, demand, and clinician caseload to understand their relative impact on wait times. 2k factorial design will quantify the impact of individual variable adjustment and any potential variable interaction.

**Results:** We expect the following to impact wait times to a significant degree : 1) Fluctuations in demand; 2) The number of personnel resources and staffing configuration; and 3) Carrying caseloads who have extended contacts with services, or 4) a uniform increase in appointments across all cases.

**Significance:** Wait times are often used as a performance indicator for the access to care and play an important role in access to mental health services. The model building process and results of this research will help clinicians, clinic managers, and policy planners understand the impact of staffing and clinician decisions on wait times.

## Healing Sounds: An Anthropology of Music Therapy

Michelle Berube, Dalhousie University

**Introduction:** Music therapy has been recognized as a legitimate health practice in Canada since after the Second World War. While research shows the emotional, social and health benefits of music therapy, researchers have failed to agree on the reason music can be beneficial to health. I argue that affect could be the key to understanding the myriad ways in which music, and music therapy, can have a positive effect on health.

**Methods:** This research was a combination of ethnographic interviews and participant observation. In all, I conducted 17 semi-directed interviews with a total of 10 accredited music therapists from across Canada. I completed a music care training module with the Room 217 organization, and volunteered once a week for a period of 1 year with a music therapist at a long-term care facility.

**Results:** Affect and affective relationships are noted as powerful agents in reaching healthcare goals, and the ways in which such concepts are harnessed through music are explored.

**Conclusions:** Through the lens of affect theory, I explore embodiment, relationship-building and aesthetic creation as three areas in which music can allow the harnessing of affect towards health goals. I note music's powerful affect on the human body and movement, and the ways in which these affects are mobilized towards specific clinical goals. I explore the various human-to-human and human-to-sound relationships that are mobilized, created or strengthened through music therapy interventions, and how they relate to health and to the affect of "becoming". Finally, I note the strong evidence for musical and aesthetic creation as a part of self-care, both by music therapists and by their clients, and argue for a broader understanding of how creativity impacts health, by allowing people to affect their environments and "become themselves".

## **The experiences of fat students in accredited, undergraduate, dietetic training programs in Canada**

Meredith Bessey<sup>1</sup>, Jennifer Brady<sup>1</sup>

Mount Saint Vincent University

**Introduction:** Dietetic students and practicing dietitians have been found to hold stigmatizing beliefs about fat patients, and thinness is often viewed as a “professional credential” of a good dietitian. Dietetic students often feel a pressure to align with this ideal, thin dietitian, and are at significant risk of disordered eating and eating disorders. Furthermore, fat dietetic students are likely subject to bias within their educational environment, given the negative messages about fat people perpetuated in dietetic education. This question has yet to be explored in the dietetic context.

**Methods:** The current research explores the experiences of fat students who are enrolled in accredited, undergraduate, dietitian training programs in Canada through qualitative, in-depth interviews. Specifically, we are interested in their experience within dietetic education, in terms of curriculum, course content, faculty and peer interactions, the physical environment, etc. It is also of interest how the dominant messages around weight in dietetics influences fat students’ perceptions of their body and health, and of their ability to attain an internship and a career in dietetics. Data will be coded thematically using MaxQDA.

**Anticipated Results:** At the time of submission, nine interviews have been conducted. Interviews to date suggest that while weight-inclusive messaging is becoming more commonplace within dietetic training, there are still many insidious, shaming messages about food, bodies and weight that students internalize. More specific findings will be available at the time of presentation.

**Significance:** This research has important implications for the scholarship of teaching and learning and critical pedagogy, health professional education and training, critical dietetics, and fat studies. Results will be shared with dietetic educators across the country, in hopes of influencing the ways in which weight is addressed in the dietetic training environment.

## **Interaction of racism and mental health stigma on the mental health of Euro-Canadian, Indigenous, and Black populations**

Vibhu Bhargava<sup>1</sup>, Amy Bombay<sup>1</sup>

1, Dalhousie University

**Introduction:** Currently in Canada, we see relatively low levels of help-seeking for psychological distress in the Indigenous and Black populations, potentially due to the mental health stigma and ethno-racial discrimination faced by these communities. This study explores how perceived ethno-racial discrimination might interact with mental health stigma in predicting mental health help seeking among Euro-Canadian, Black, and Indigenous adults living in the Halifax Regional Municipality (HRM).

**Methods:** A survey was conducted by Indigenous, Black, and Euro-Canadian adults living in the HRM who have and/ or continue to experience symptoms of depression, anxiety, or significant psychological distress. The survey contains scales measuring mental health stigma, ethno-racial discrimination, psychological distress, and past mental health help-seeking.

**Results:** The analyses will explore if there are any group-level differences between the three ethnic-groups in relation to mental health stigma, psychological distress, help seeking, and ethno-racial discrimination. As well, the main effects and interaction between mental health stigma and ethno-racial discrimination in predicting psychological distress will be assessed.

**Conclusion:** If our hypotheses are correct, our findings will have important implications in relation to the mental health needs of Euro-Canadian, Indigenous and Black peoples living in Nova Scotia.

## **Training curriculum to empower Indigenous communities to become informed co-directors of culturally relevant biological**

Maya Biderman<sup>1,2</sup>, Aaron Prosper<sup>1,2</sup>, Krista Hull<sup>2</sup>, Robyn McQuaid<sup>3</sup>, Amy Bombay<sup>1</sup>, Carol Hopkins<sup>4</sup>, The Thunderbird Partnership Foundation

1, Dalhousie University; 2, Indigenous Wellness Lab; 3, Institute for Mental Health Research; 4, The Thunderbird Partnership Foundation

**Introduction:** Biological health research (BHR) serves as a promising mechanism to identify the ways in which intergenerational trauma from Canadian colonial structures have increased the risk for certain chronic diseases among Indigenous populations. Indigenous individuals, however, are less likely to participate in BHR that involved biospecimen collection. This is a direct result of previous negative research relationships between Indigenous communities and non-Indigenous researchers, apprehension about researchers' intentions, and a lack of transparency regarding of the potential benefits and risks of the research and their participation. Despite these ongoing issues, there are a growing number of positive research collaborations based on co-learning that ensure that Indigenous communities are able to lead and make informed decisions about health research and their bodies.

**Methods:** An informative curriculum will be developed to provide Indigenous communities with the Western research-informed knowledge base to become directors of their own Western research engagement based on understandings of methodologies used, potential benefits of participation, and potential risks. The curriculum will also incorporate First Nations (FN) knowledge regarding human development and biology, and will provide examples of research projects that have been led by FN communities. The curriculum will be pilot-tested with four FN communities and evaluated as a tool to increase interest and capacity to initiate and lead BHR.

**Anticipated Results:** It is expected that FN communities will express increased interest in participating in BHR and will gain an improved capacity to be co-directors in research, which will improve the cultural safety of future BHR collaborations.

**Significance:** The training curriculum will be instrumental in providing communities with the tools to develop and lead their own BHR projects and make fully informed decisions regarding project participation.

## **Maskwiomin (Birch Bark-oil): A Traditional L'nu Skin Ointment**

Matthias Bierenstiel<sup>1</sup>, Tuma Young<sup>1</sup>

1, Cape Breton University

**Introduction:** Maskwiomin (birch bark-oil) is an almost forgotten L'nu medicine for a variety of skin conditions such as rashes, eczema and psoriasis. It is obtained by torrefaction of birch bark in thermal and chemical processes in an oxygen limited environment. The resulting viscous oil can be suspended in a crème or embedded within a soap bar. Overwhelming anecdotal evidence shows relief of skin issues within days of topical application of maskwiomin.

**Methods:** We have re-discovered the medicine of maskwiomin through community outreach and empirical experiments. We worked with the community of Membertou First Nation, Sydney, NS and based the research on the principles of the Truth and Reconciliation Commission and a 2-Eyed Seeing process. We heard a story from the 1920's about a skin rash on a new mother's breasts which was treated by the L'nu midwife with maskwiomin and that mother and baby survived. Only two elders in Membertou remembered this story, of which one has since passed away.

**Results:** We have successfully re-discovered the process of making maskwiomin in a can-over-can setup in a camp fire. Testing of the oil in disc diffusion experiments against 6 strains of Gram-pos and Gram-neg bacteria showed broadspectrum antibiotic properties. The zone of inhibition was on the same order as positive control experiments (gentamicin). MIC studies showed effectiveness of maskwiomin of up to 0.1 wt% which makes it ideal for low concentration for soaps or shampoos.

**Conclusions/Significance:** We have found the first scientific proof that the maskwiomin has broadband antibiotic properties. This L'nu medicine has been used by the First Nation people in Atlantic Canada much longer than Alexander Fleming's discovery of penicillin in 1928. We have evidence that maskwiomin may contain a new class of antibiotics which is much needed in the age of increasing antibiotic resistance. We are now working with Membertou First Nation to further investigate maskwiomin and deve

## Investigating the Association between History of Prostate Cancer Diagnosis and Mental Health Outcomes in Atlantic PATH

Chloe Blackman, Dalhousie University

**Introduction:** Prostate cancer (PCa) is the most commonly diagnosed non-skin cancer among Canadian men, with one in seven men facing a diagnosis in their lifetime. Despite the high incidence rates, PCa survivorship rates are high with approximately 99% surviving the first five years after diagnosis and 98% surviving ten years after diagnosis. This is a result of improved testing and active treatment options; however, survivorship comes at the expense of different lifestyle implications, which include but are not limited to sexual, urinary, bowel dysfunction, and psychological distress. Over 3.4 million Canadian men are affected by mental illness each year and they are particularly more prevalent among men with chronic illness and cancer. Psychological distress in PCa patients are often overlooked, yet in this population the risk of committing suicide for men 65 years or older is 4.24 times that of age-specific individual. This thesis hopes to examine the association of a history of PCa diagnosis and current mental health in Atlantic Canada, and then examining how known predictor variables such as of diet, physical activity, sleep, and substance use (alcohol and smoking) contribute to the association between history of PCa diagnoses and current mental health.

**Methods:** The Atlantic Partnership for Tomorrow's Health is a regional cohort of the national Canadian Partnership for Tomorrow Project and includes data on 35 935 participants pertaining to health, socioeconomic status, and life style choices. We will run several logistic regressions between presence or absence of history of PCa diagnosis and each of the independent variables for both anxiety and depression.

**Significance:** Recent literature has demonstrated the impact of prostate cancer on mental health outcomes. By better understanding how mental health and its adverse health correlates co-occur with prostate cancer diagnoses we can begin to develop comprehensive care plans for men coping with cancer.



## **Understanding gender norms and body image in adolescent & young adult women cancer survivors: A proposed scoping review**

Nicole Blinn, Dalhousie University

**Introduction:** Adolescent & young adult (AYA) women face complex pressures relating to their bodies due to gender norms & body-focused discourse. Due to the biopsychosocial impact of cancer treatment, body image is a significant concern for AYA women cancer survivors. Body image is important for health, which is significant for survivorship outcomes among AYA women cancer survivors. Though body image is a salient issue for AYA women cancer survivors, it is an understudied phenomenon; further, AYA women cancer survivors are an understudied population. The purpose of this scoping review is to determine what is known from the existing literature about gender norms as they relate to body image in AYA women cancer survivors.

**Methods:** This proposed review will use Arksey & O'Malley's framework for scoping reviews to examine the understudied, complex phenomena of body image in AYA women cancer survivors, & assess the breadth of available scholarly evidence. The method is an iterative 6-step process involving identifying relevant studies, selecting studies, interpretation & synthesis, summarizing, & an optional consultation stage.

**Anticipated Results:** Anticipated findings will include a description & summary of the literature about body image & gender norms in AYA women cancer survivors, themes, & gaps in the literature.

**Significance:** Body image as it relates to gender norms in AYA women cancer survivors is a gap in the literature. Scoping review methodology has not yet been used to understand body image in AYA women cancer survivors; moreover, a lens of health promotion & gender has not previously been applied to this topic. Assessing the current scope of available research can indicate the state of the current evidence, as well as future directions for research on gender norms & body image in AYA women cancer survivors.

## **Communicating Risks and Harms in Clinical Guidelines: A Need for Values in Science**

Naseeb Bolduc, University of British Columbia

**Introduction:** Current clinical practice guidelines in the United States, Canada, and the UK assert that antidepressants are not addictive. This claim is epistemically questionable and morally problematic, given the widely reported phenomenon of ‘antidepressant discontinuation syndrome’, the contentious use of the term ‘addictive’, as well as the extensive long-term use of antidepressant drugs that has resulted from this guideline. Clinical practice guidelines play an important role in healthcare, as they are the source of information about harms and risks associated with various treatments for both clinicians and patients. These recommendations are widely used, and influence both the pharmaceutical industry and health at a population-level. Despite the importance of these guidelines, there is currently no consideration made for the potential consequences stemming from the assertions made about harms in them.

**Methods:** I examine this ethical concern by closely examining the debate surrounding inductive risk in the philosophy of science, the systematic underrepresentation of harms in medical research, and the ethics of autonomy in healthcare. The current clinical practice guidelines for antidepressants will serve as a case study.

**Results:** My paper argues that values and inductive risk should be explicitly considered in the way harms and risks are portrayed in clinical practice guidelines. I contend that stakeholders should weigh the costs and benefits of assertions being made about harms, in addition to the costs and benefits of the actual treatments being recommended.

**Conclusions/Significance:** I conclude with the acknowledgement that values may already be considered in the crafting of the guidelines, and how, through reverse engineering, we may be able to determine what they are and why they are not transparent. This project sheds light on the rarely acknowledged need for values in the development of clinical practice guidelines.

## **Eating With Inflammatory Bowel Disease: Examining Nutrition Narratives to Enhance Medical Nutrition Therapy**

Heather Bonnell, Acadia University

**Introduction:** Inflammatory Bowel Disease (IBD) is a chronic illness that has a considerable impact on nutrition, eating, and relationships with food. The purpose of this Honours project is to examine what the food, nutrition, and eating experiences of people with IBD who live in Nova Scotia are, and their relevance for medical nutrition therapy, counselling, and research.

**Methods:** Participants were recruited purposively and participated in one-on-one interviews conducted in-person and via video conference asking open-ended questions about how IBD has affected their food, nutrition, and eating experiences. Narrative accounts of the participants' experiences underwent content categorization using the Organizational Framework For Examining Nutrition Narratives (Morley, 2016). Results are currently undergoing analysis.

**Anticipated Results:** IBD can have a profound impact on psychological health, which affects eating practices and social behaviour. Everyone will have a different experience after a health crisis, but their lives will always be changed in some way. People will use strategies like humour, diet changes, or social support networks, to name a few, that help define their new normal.

**Significance:** Though the biomedical impacts of IBD are well researched, there is little attention given to the inter- and intra-personal impacts of living with the illness. By examining the ways in which IBD affects all aspects of a person's life, health practitioners can deepen their understanding of the disease and be better positioned to have a positive impact on their clients' quality of life, not just their biomedical health.

# **The Impact of an Outdoor Loose Parts Intervention on the Physical Literacy of Nova Scotian Preschoolers**

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**Introduction:** Early childhood development is optimized when children have opportunities to develop physical literacy (PL). PL consists of a child's physical competence, confidence, and motivation to take part in physical activity (PA), and the understanding of PA to health. The idea of loose parts (LP) for enhancing outdoor play and PL is growing. LP are open-ended materials (e.g. tree stumps, wooden planks, buckets) that provide opportunities for diverse movements and risk-taking during outdoor play, which could contribute to PL. However, little evidence exists on the effectiveness of integrating LP into childcare outdoor spaces to improve preschoolers' PL.

**Purpose:** To explore the impact of a childcare outdoor LP intervention on preschoolers' PL.

**Methods:** The Physical Literacy in the Early Years (PLEY) project used a randomized control trial mixed-methods approach to facilitate unstructured, active, risky play among Nova Scotia preschoolers aged 3-5 years by integrating LP into outdoor spaces of regulated childcare centres (intervention: n=10; control: n=9). Child demographic (age, sex), anthropometric (height, weight) and physical (PA, fundamental movement skills, balance) data were measured pre (baseline) and post (3- & 6-month) intervention. Educators photo documented LP play, and described LP play in focus groups. Linear mixed-effects modeling will determine if intervention sites had greater increases in PA and physical competence (fundamental movement skills, balance) than controls. Photo documentation and educator focus group data will be coded using NVivo software and used to explore other components of PL (e.g. confidence, motivation).

**Anticipated Results & Conclusion:** Outdoor play with LP will afford preschoolers physical, cognitive, and socio-emotional benefits that contribute to PL. Findings will improve understanding of how LP outdoor play contributes to PL development in early life, and could support the integration of LP in other early years settings.

## Exploring the Effects of a Program-Specific Camp on Sense of Community in University Undergraduate Students

Marisa Buchanan, Dalhousie University

**Introduction:** Camps have commonly been used to achieve educational, therapeutic, and leisure-related goals. At Dalhousie University, first-year Bachelor of Science (Recreation) students are required to participate in a one-night orientation camp known as the Recreation Orientation, where they can get to know their peers, faculty, and professionals in the field. The purpose of this program evaluation is to explore the effects of the Recreation Orientation on sense of community for the first-year Recreation students.

**Methods:** This explanatory sequential mixed-methods study uses mixed methods to compare participants' sense of community from pre- to post-camp. This includes quantitative data such as that collected using the Sense of Community Index II (Chavis, Lee, & Acosta, 2008) and qualitative data collected from pre- to post-camp surveys, and a semi-structured interview. Data was analyzed and compared from pre- to post-camp using descriptive statistics, paired t-tests, and thematic analysis (Braun & Clarke, 2006).

**Results:** From a sample of n=47 survey responses, participants' sense of community increased from pre- to post-camp, as was found by significant increases in the membership, reinforcement of needs, and shared emotional connection subscales of the sense of community index. As well, key themes were identified such as connecting with peers, professors, professionals in the field, and learning more about the Recreation program.

**Conclusion:** Quantitative and qualitative data is consistent and supports the goals of the Recreation Orientation, as students showed increased sense of community, and indicated that the Recreation Orientation supported them in connecting with the Recreation community. This increased social support serves as a protective factor for student mental health and well-being (CIHI, 2012).

## **Impact of Sex on the Relationship between Habitual Physical Activity and Blood Vessel Health in Young Adults**

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**Introduction:** Impaired artery endothelial function, indicated by reduced flow-mediated dilation (FMD) and low-flow-mediated constriction (L-FMC) responses, is associated with increased cardiovascular disease (CVD) risk. Physical inactivity and sedentary behaviors are also independent risk factors for the development of CVD. Recent evidence suggests that the FMD response may be lower in women versus men. In addition, male sex has been identified as an independent predictor of the presence of L-FMC in a cohort of smokers. However, it is unclear whether corresponding differences in habitual physical activity patterns contribute to these sex differences. We recently reported a stronger positive relationship between habitual moderate-vigorous physical activity (MVPA) levels and endothelial function in the popliteal versus brachial artery of older adults. However, it is unknown if a similar relationship is present in younger adults and/or if sex differences exist in habitual MVPA and sedentary behaviors. The current study aims to examine the impact of sex on brachial and popliteal artery endothelial function (FMD and L-FMC), as well as the relationship between endothelial health versus habitual levels of MVPA and sedentary behaviors.

**Methods:** Brachial and popliteal FMD and L-FMC will be assessed via ultrasonography in 12 young (18-30 yrs) men (YM) and women (YW) who currently meet national MVPA guidelines (n=24 total). Habitual MVPA and sedentary behaviors will be determined from PiezoRXD® and ActivPAL® activity monitors worn for 7 days.

**Anticipated Results:** We hypothesize that YM will have superior FMD and L-FMC when compared to YW. We also expect to see a stronger positive relationship between weekly MVPA and FMD/L-FMC in YM compared to YW. Finally, we expect to see a stronger relationship between weekly MVPA and endothelial function in the popliteal versus brachial artery in both sexes.

## **Identifying barriers and facilitators to maternal health care access for resettled refugee women in Nova Scotia**

Emma Cameron<sup>1</sup>, Dr. Lois Jackson<sup>1</sup>

1, Dalhousie University

**Introduction:** There are currently over 25.4 million refugees displaced worldwide; the highest rate ever recorded. Since 2016, Canada has resettled over 90,000 refugees, with another 140,000 anticipated to arrive by 2020. Many recently resettled refugees report finding accessing health care services in Canada to be challenging. Previous studies have highlighted language barriers, financial limitations (e.g., no access to a car to drive to appointments, inability to afford childcare) and lack of medical knowledge as significant barriers to accessing health care. Few studies have examined barriers impeding women from accessing maternal health services, including prenatal care, delivery, and postpartum follow-up. Even fewer studies have highlighted facilitators used for accessing services. This project aims to identify the barriers facing recently resettled refugee women as they attempt to access maternal health services and to gain insight into the facilitators being used to increase access within the community.

**Methods:** A qualitative approach will be taken in this research study to gain an in-depth understanding of women's experiences interacting with the maternal health system. Participants will include who have been pregnant and given birth in Nova Scotia within the last five years. Women must have been in Nova Scotia for at least six months of their pregnancy. Semi-structured interviews will be conducted. Questions focusing on identifying barriers and facilitators across three points of care: i) prenatal care, ii) delivery, and iii) postpartum follow-up. Interviews will be transcribed and analysed using thematic analysis.

**Anticipated results:** This study will provide an understanding of the key barriers and facilitators to maternal health services for recently resettled refugees.

**Significance:** These findings will serve as a foundation for creating policy guidelines and interventions aiming to improve access to maternal health services in Nova Scotia.

## **The Impact of Culture on Parent-Targeted Interventions in Pediatric Pain Care: Outlining the Relevance and Significance**

Leah Carrier, Dalhousie University

**Introduction:** Children and families identify pain as a primary concern, but there is a continued lack of optimal pain treatment in the pediatric population despite hospitalized children undergoing multiple painful procedures daily. This is critical because early pain experiences can result in immediate and long-term developmental consequences. One avenue in which health care professionals can improve pain treatment is through parental involvement in care. Parental participation has been found to improve pain assessment frequency as well as children's pain levels, anxiety, and emotional wellbeing. However, there is limited evidence about how to best support the involvement of culturally diverse parents. To optimize the uptake of parent-targeted interventions, health professionals need to understand how cultural diversity acts as a barrier or facilitator to participation in care. The objective of this project is to synthesize relevant literature to gain an understanding of the state of the current evidence to identify strengths, gaps, and recommendations for practice.

**Methods:** The Joanna Briggs Institute provides a rigorous methodology for the conduct of systematic reviews. The proposed database search will be developed in consultation with a librarian scientist and will include health-related databases, unpublished studies, and grey literature. Proposed inclusion criteria are qualitative studies involving culturally diverse pediatric patients and families with a focus on parent-targeted interventions for pain.

**Anticipated Results:** Understanding the state of current research will identify gaps in the existing evidence and generate new knowledge relating to how culture influences parental participation in pain care.

**Conclusion/Significance:** Gaining insight regarding the impact of culture on parent-targeted pain-relieving interventions can improve therapeutic relationships with diverse families, promote practice uptake, and improve pediatric pain care.



## **Determining the Effect of the Folate-Coupled Enzyme MTHFD2 on DNA Methylation in Breast Cancer**

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<sup>1</sup>, Dept. of Pathology, Dalhousie University

**Introduction:** Epigenetic changes, such as DNA methylation are vital to cancer pathogenesis. Cancer cells tend to have an overall decrease in DNA methylation with concurrent hypermethylation of gene promoter regions. This hypermethylation of promoter regions is dependent on generation of methyl-groups via the folate cycle. Many cancers show increased activity of the folate metabolic pathways as indicated by the consistent upregulation of folate-coupled enzyme methylenetetrahydrofolate dehydrogenase 2 (MTHFD2).

To determine how DNA methylation contributes to tumor progression, a shRNA genome-wide screen was performed in breast tumors treated with DNA methylation inhibitor Decitabine; this identified MTHFD2 as a putative metabolic regulator of DNA methylation in breast cancer. To confirm this role of MTHFD2, I have used MDA-MB-231 breast cancer cells with knockdown of MTHFD2 to study genome-wide methylation and gene expression patterns.

**Methods:** Using a panel of genes known to be induced when demethylated, RT-qPCR was used to evaluate gene expression changes resulting from MTHFD2 knockdown and/or Decitabine treatment. To study genome-wide methylation, MTHFD2 knockdown and/or Decitabine treated samples will be subject to bisulfite conversion followed by LINE methylation-specific PCR.

**Anticipated Results:** It is expected that MTHFD2 knockdown, as well as Decitabine treatment, will increase expression of genes that are transcriptionally active when unmethylated. This could be attributed to a decrease in methyl group generation via the folate cycle and DNA methylation inhibition by Decitabine, therefore potentially resulting in a decrease in genome-wide DNA methylation.

**Conclusion:** Should DNA methylation levels decrease due to the knockdown of MTHFD2, this will provide more insight into the link between the folate cycle and DNA methylation. This finding could help better understand DNA methylation patterns observed in cancer cells.

## **Retrospect: Supports for Criminal Record holders and Incarcerated Individuals and Community Reintegration**

Nnamdi Chiekwe, Dalhousie University

**Introduction:** Incarcerated individuals and individuals with criminal records are inclined to participate in programs that are designed to assist with transition into the community. These programs have different focuses; correctional, social, vocational, and educational, and when used in combination enhances an individual's development for community reintegration. There is limited knowledge on the success rates or functions of these programs. The proposed research will explore the experiences of frontline workers in the correctional system, who play a significant role as a liaison, to describe the outcomes of the current programs.

**Methods:** This project will be a qualitative/narrative description of frontline workers experiences with correctional and community programs for individuals with criminal records and currently incarcerated. Using a constructivist lens, data collection will be conducted using semi-structured interview questions exploring the perceived gaps and access to meaningful programs.

**Anticipated Results:** By conducting interviews with frontline workers and gaining information from their experiences and industry knowledge, this may provide information that can be applied for necessary policy and practice reform. We believe this project will generate a pool of applicable and viable recommendations, new policy amendments, novel program ideas, and other supports, both in the community and in the correctional system that can help reduce rates of recidivism.

**Conclusions and Significance:** Understanding the experiences of frontline workers in the correctional system will help shed light on the functions of the programs available. These insights may be helpful in contributing to development of meaningful programs for this population. In turn, these modifications may help contribute to improved program success and individual development, with potential for reducing rates of recidivism.

# **Investigation of Medical Education Around Treating Patients with Intellectual Disabilities**

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1, Dalhousie Univeristy

**Introduction:** A person with an intellectual disability often requires more health care than the average person without disabilities. People with disabilities have difficulty in accessing the care they need and communicating with physicians about symptoms and health behaviors. They also have substantially higher morbidity and mortality rates than the general population. They have different risk factors and preventative care needs. There is very little research-based evidence in the area of medical education surrounding issues related to training students to provide healthcare for people with intellectual disabilities. In order to provide healthcare to patients with disabilities, medical students need education around differential methods of diagnosis, communication, medication and adherence. During their clerkship period, medical students work with patients including those with intellectual disabilities. There are very few clinicians specialized in treating people with intellectual disabilities in Canada. It is important that all physicians have not only the necessary education and training but also positive attitudes and comfort on caring for this population with special needs.

**Methods:** Cross-sectional self-administered survey of 3<sup>rd</sup> and 4<sup>th</sup> year medical students.

**Anticipated Results:** The results of this study will identify critical areas and gaps where students feel their education and training around treating people with intellectual disabilities is lacking.

**Conclusions/Significance:** This study will help to layout potential ways in which training of medical students can be improved in order to provide better health care for individuals with intellectual disabilities. Once this study is completed, findings can be used as a stepping stone for improvement of curricula/training and provide research directions for future studies looking at students, residents or general practitioner training opportunities around treating people with intellectual disabilities.

## **Modelling purchases of soft drinks and their complementary products using longitudinal grocery data in Montréal, QC**

Kody Crowell<sup>1</sup>, Aman Verma<sup>1</sup>, Hiroshi Mamiya<sup>1</sup>, Amélie Quesnel-Vallée<sup>1</sup>, Catherine Mah<sup>1,2</sup>, David Buckeridge<sup>1</sup>

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**Introduction:** Soft drink consumption contributes to the increasing global incidence of obesity, cardiovascular diseases, and type II diabetes. Previous studies addressing purchasing patterns of soft drink consumption have emphasized the importance of both complementary products and product substitution; however, few have actually analyzed dynamic patterns of purchasing in longitudinal, household-level data. The objective of this study is to identify the purchasing trends of complementary food groups and alternative beverages purchased by households who also purchase soft drinks.

**Methods:** We used longitudinal, household-level loyalty card transaction data from a grocery retailer in Montréal, Canada between February 2015 and September 2017 (>29 million transactions). Using standard marketing criteria, shoppers were classified based on the frequency and volume of their store transactions and linked to 2016 Canadian census data. After correcting price for inflation over the two year period, the proportion spent per unit weight for each category will be regressed against a series of linked regression equations for the effects of each price and demographics variables. The analysis will be run for different classifications of frequency and volume.

**Anticipated Results:** Model estimates will show whether the purchasing of unhealthy foods is related within households, and whether households tend to substitute specific beverage classes for soft drinks. Moreover, purchase patterns of soft drinks will be compared between households of varying demographics and between household who shop frequently versus those who shop infrequently.

**Significance:** This data source provides a novel way of examining complementary products and products substitution for households who purchase soft drinks, the results of which are important for public health practitioners seeking evaluate interventions that decrease unhealthy food purchases in the grocery retail environment.

## **Coping with Cancer (Mindfully): A Scoping Review**

Maddie Curtis, Dalhousie University

**Introduction:** Cancer diagnosis and treatment can be profoundly stressful events, affecting all aspects of life. The adolescent and young adult (AYA) patient population has demonstrated a growing concern surrounding the need for coping interventions for a cancer diagnosis. Mindfulness based interventions (MBIs) have been used in the context of AYA populations as a way of coping with a cancer diagnosis. While distress associated with a cancer diagnosis remains a concern for this population, there is research linking the use of MBIs for coping with AYA cancer diagnosis. The proposed project will present the scope of literature that looks at MBIs as they are used with AYA cancer populations.

**Methods:** The objectives of this research will be to describe the scope of literature about the ways in which MBIs have been used as a means of coping with AYA cancer diagnosis. A scoping review will be used to explore this literature, guided by the methods of Arskey and O'Malley. Findings will examine the range of research available that explores the themes of MBI and AYA cancer patients. This work will involve identifying a research question, collecting literature, charting the data and summarizing available and relevant literature.

**Anticipated Results:** Results from this review will present available literature that has studied the use of MBIs as a way of coping with a cancer diagnosis. This research will provide a greater understanding of the connection between MBIs and a cancer diagnosis. The ultimate goal of this review is to establish the unique types of MBI's that have been used as a relief of distress associated with a cancer diagnosis, as well as identify any gaps in available literature.

**Conclusions/ Significance:** The available literature from this scoping review will allow researchers and clinical settings to see possible avenues that may alleviate symptoms of distress and ways in which AYA cancer patients can best cope with a diagnosis.

## **Establishing a protocol for developing an evidence-based approach to interviewing adolescents via focus group discussion**

Lillie Cyr<sup>1</sup>, Sara Kirk<sup>1</sup>, Jeffery Zahavich<sup>1</sup>

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**Introduction:** This independent study is part of a larger qualitative research project that aims to explore Grade 8 students' lived experiences of the current physical education curriculum in Nova Scotia. To do this, focus groups will be used to collect qualitative data involving Grade 8 students. Currently, there is limited peer-reviewed literature on how to develop an effective focus group protocol appropriate for adolescents.

**Purpose:** The purpose of this independent study is to document the steps involved in developing an effective means of interviewing adolescents via focus group discussion, and to establish a list of recommendations for future researchers who aim to do similar work.

**Methods:** An initial literature review will be completed to determine the areas within focus group protocol standards involving adolescents that need to be strengthened and/or created. Following this literature review, there will be an in-depth examination of the overarching research questions. From there, a list of discussion questions intended for student participants will be developed. After determining a range of predicted outcomes/responses for each question, they will be narrowed down to a final set of five to six questions. These final questions will be used to pilot the protocol with a group of the same age range, to provide rationale for the protocol itself and the questions within.

**Anticipated Results:** Upon completion of this independent study, there will be a specific focus group protocol that is supported by evidence, which is relevant to adolescents (aged 12-14 years), as well a list of recommendations for future researchers.

**Significance:** Given the research provides the desired outcome, it will provide a means for conducting focus groups with adolescents, in a way that uses effective communication for their level of maturity and comprehension. In addition, it will contribute to future qualitative research that aims to use focus groups involving adolescents.

# **The Effect of Loving-Kindness Meditation on Closeness, Generosity, and Prudence**

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**Introduction:** Loving-kindness meditation increases feelings of closeness, prosocial behaviour, and positive self- and other-regarding feelings. The aim of this study was to investigate whether loving-kindness meditation increases prudence, and whether it increases generosity through heightened feelings of closeness with others.

**Methods:** Undergraduate students (n = 172) participated in the study. Participants were assigned to either a loving-kindness meditation or an unspecified-feelings meditation control condition. Levels of generosity and prudence were measured using a resource allocation survey. We predicted that loving-kindness meditation would increase feelings of closeness and thus generosity toward strangers, compared to the unspecified-feelings control group. We also hypothesized and that these relations would be moderated by levels of empathy. We further predicted that loving-kindness meditation would enhance prudence, also moderated by empathy.

**Results:** Our results indicate that feelings of closeness with others did not mediate a connection between loving-kindness meditation and generosity, nor did meditation affect prudence. We did not find evidence for the role of empathy in our analyses. However, our results suggest that there is a positive correlation between closeness and generosity.

**Conclusions/Significance:** Our study contributes to the growing body of research on meditation interventions to identify techniques that can strengthen and facilitate physical and psychological wellbeing.

## **Looking Beyond the Plate: Assessing Diversity and Cultural Competence Among Students in Dietetic Programs**

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1, Mount Saint Vincent University

**Introduction:** As dietetic professionals, cultural competence is immanent in meeting the unique nutritional needs of the diverse Canadian population. However, the profession has yet to explore the diversity among its fellow dietitians. A small, growing pool of research on dietetic students indicates that the dietetic profession is largely Caucasian (Siswanto, Brady, & Gingras, 2015; Brady et al., 2012). It may be that the seeming lack of racial and ethnic diversity among Canadian dietitians stems from the competition for internship positions. The perspectives of students of colour and ethnic minorities are invaluable in understanding what, if any, systemic barriers may exist. However, research has yet to gather the experiences of students of colour, which creates a knowledge gap and disconnect between individuals and the connection to the profession. (Dhami, 2018).

**Methods:** A qualitative approach will encompass in-depth, semi-structured interviews with dietetic students from diverse backgrounds. Recruitment of the sample will be gathered from Atlantic Canada offering dietetic programs with internship. A critical theories lens, drawing on feminism, anti-racist, and anti-oppressive frameworks will analyze the data.

**Anticipated Results:** It is anticipated that data will shed light on diversity recommendations to consider for strengthening the profession.

**Significance:** My proposed research will promote critical perspectives of diverse student groups partaking in dietetics education, with the potential to increase diversity in the profession.



## **Systematic review on perinatal mHealth interventions for mothers in low- and middle-income countries**

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**Introduction:** Mobile health (mHealth) projects for maternal and newborn health have grown in low and middle-income countries (LMICs). mHealth may not only increase the use of the perinatal clinical care, but also improve maternal knowledge and self-efficacy through education to impact newborn outcomes. The objective of this review was to determine the impact of mHealth education during the perinatal period in LMICs on antenatal/postnatal clinic attendance, maternal knowledge and self-efficacy, and newborn mortality and morbidity outcomes.

**Methods:** We systematically searched CINAHL, PubMed, and Embase for studies published after 2000 reporting on mHealth interventions targeting mothers from birth to 6 weeks postnatally in LMICs. Peer-reviewed published experimental or quasi-experimental English studies were eligible.

**Results:** 1,448 articles and 84 full-texts were screened with 19 articles critically appraised. Three articles were excluded due to poor quality as per Joanna Briggs Institute methodology. Of the 16 studies included, 9 targeted antenatal education, 4 postnatal, and 4 both. Mothers who received an mHealth intervention attended a significantly greater number of antenatal contacts (MD=0.57, 95% CI, 0.28 to 0.85, p=0.0001) and were significantly more likely to have at least one postnatal contact by eight weeks (OR 1.36, 95% CI, 1.00 to 1.85, p=0.05). Maternal knowledge, self-efficacy as well as newborn mortality and morbidity were inconsistently reported across studies with varied findings.

**Conclusion:** mHealth education interventions are associated with increased maternal contact antenatally and postnatally in LMICs. Due to heterogeneity of studies among country of implementation, approach, frequency, and content of the mHealth interventions, the impact on other maternal and newborn outcomes is inconclusive. Future work using mHealth to target maternal education during the perinatal period should focus on standardization of content and outcome evaluation

## **Prediction of microbial genomes from 16S rRNA gene sequences and application to disease state classification**

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**Introduction:** The abundance of microbes in human stool has been used to develop classification models that predict clinical outcomes. Microbes in these models are typically identified through sequencing 16S ribosomal RNA (rRNA) genes, which act as “barcodes” for different microbial groups. The key issue with this approach is that no information is provided on what functions these microbes are performing. PICRUSt is a software that predicts the functional potential of a microbial sample based solely on 16S rRNA gene sequences. However, this tool suffers from several limitations, such as being limited to 16S rRNA gene sequences in a defined database and relying on an outdated collection of reference functions and genomes.

**Methods:** We have re-written PICRUSt and re-released it as PICRUSt2. To assess whether PICRUSt2 is more accurate than other similar tools, we compared functional predictions based on 16S rRNA sequences with sequencing of all DNA on paired samples. We then applied PICRUSt2 to 16S rRNA gene sequencing datasets from a range of disease cohorts. We then determined whether classification models based on microbial abundances and PICRUSt2 predicted functions together yields improved classification accuracy over microbial abundances alone.

**Results:** We show that PICRUSt2 is more accurate than alternative prediction methods on four different microbial communities representing a range of environments. In addition, we demonstrate the utility of PICRUSt2 by identifying functional predictors of disease in a Crohn’s disease cohort. Our preliminary results comparing microbial and functional datatypes in classification models indicate that the best models will be based on both datatypes.

**Conclusions:** PICRUSt2 is a more accurate approach for generating functional predictions from 16S rRNA gene data. Early work suggests that combined functional predictions with microbial abundances will result in improved classification models, which could have future clinical application

## **Does Anxiety Sensitivity Mediate Relations Between Attachment and BPD?**

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**Introduction:** Anxiety sensitivity (AS) refers to the fear of arousal-related somatic sensations (Reiss, 1991). AS is comprised of three dimensions: physical, cognitive, and social concerns about consequences of sensations (Zinbarg, Mohlman, & Hong, 1999). AS is considered a maladaptive emotion regulation strategy that develops during early insecure attachment relationships (Macaulay et al., 2015), and may be a risk factor for Borderline Personality Disorder (BPD; Bounoua et al., 2015). Common to both AS and BPD is insecure attachment, which can be conceptualized along two dimensions: anxiety and avoidance (Brennan et al., 1998). Global AS was found to mediate relations between insecure attachment and BPD traits in a recent study (Gallagher et al. (submitted). AS dimensions may then play unique mediating roles in relations between attachment styles and BPD symptomology.

**Methods:** Present study included 82 outpatients with BPD (90.2%F) currently receiving treatment who completed the ASI (Reiss et al., 1986), ECR-R (Fraley et al., 2000), and BSL-23 (Bohus et al., 2009).

**Anticipated Results:** Preliminary results indicate the three ASI subscales (physical, cognitive, social) positively correlate with BSL-23, while ECR-R attachment anxiety positively correlates with ASI physical and social concerns subscales. Multiple mediation analyses are being performed to examine if AS facets uniquely mediate relations between attachment and BPD symptomology.

**Conclusions:** Results will be discussed in terms of clinical implications, such as better understanding the transdiagnostic role of AS and influence of attachment style in the variability of BPD manifestations.

## **Preclinical Assessment of Intranasal Administration of Lurasidone Hydrochloride to Treat Schizophrenia**

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**Introduction:** Schizophrenia (SZ) is a chronic, often debilitating neuropsychiatric disorder affecting approximately 1% of the global population. Lurasidone hydrochloride (LUR) is a novel atypical antipsychotic drug used to treat SZ, however, its poor aqueous solubility limits its use to oral administration in humans. At present, most pharmacological treatments of SZ only treat select symptoms of the disease and require large doses that are typically associated with severe extrapyramidal or metabolic side effects. These barriers can be conquered by exploiting pathways in the nasal cavity to improve drug delivery and limit the severity of side effects.

**Methods:** We evaluated the antipsychotic potential of intraperitoneal (IP) and intranasal (IN) LUR treatment in vivo using a MK-801-induced rodent model of SZ. Rats were pre-treated with LUR or Vehicle followed by MK-801 and were subjected to a series of behavioral paradigms designed to evaluate the heterogeneous symptomology of SZ.

**Results:** We show that subchronic LUR treatment (3.0 mg/kg; IP) successfully attenuates MK-801-induced psychotic, social, and cognitive deficits but not sensory-motor gating deficits. Preliminary research indicates that intranasal administration of antipsychotic drugs can be effective with up to 6.7 times lower dose compared to IP administration. We are now poised to test the efficacy of IN administration of LUR encapsulated in a POEGMA-based nanoscopic carrier system. We hypothesize that IN administration of LUR will enhance brain bioavailability and require substantially lower doses to achieve a therapeutic response.

**Significance:** Our results suggest that LUR is an effective treatment for preventing the positive, negative, and cognitive symptoms of SZ. Furthermore, we illustrate the importance of investigating alternative methods of administration to improve drug delivery.

## Sexual Health Education in Ontario and Nova Scotia: An Environmental Scan

Hannah Flaherty, Dalhousie University

**Introduction:** Access to sexual health education (SHE) is a fundamental component of the overall health of secondary school students. Implementing SHE curriculum in schools can influence what learned information is considered knowledge; therefore, SHE within the school setting must be effective. With no federally mandated SHE curriculum in Canada and the lack of literature about SHE within Canadian provinces, implementing an effective curriculum proves difficult. The purpose of this environmental scan is to examine and compare the SHE curriculums that are implemented in public secondary schools in Ontario and Nova Scotia.

**Methods:** This environmental scan will describe and compare the current state of SHE within Ontario and Nova Scotia using document analysis. It will examine curriculums and policies within the Ontario and Nova Scotia public secondary schools.

**Anticipated Results:** Examining SHE curriculums across Ontario and Nova Scotia may yield gaps within the current curriculum and policies that are implemented in public secondary schools. This project will be done by comparing what SHE topics are covered, what teacher supports and resources are available for instructing SHE, as well as how parents' perspectives help with the coverage of SHE. The aim of this project is to present what currently exists and present those findings to students, educators, and parents.

**Significance:** This project aims to present the current curriculums and policies of SHE that exist within Ontario and Nova Scotia public secondary schools. This project aims to generate awareness of the potential gaps in current curriculum, and policies that may be minimally implemented currently in public secondary schools that are in Ontario and Nova Scotia.

# **Occupational therapy's potential to transform post-concussion care: An integrative review**

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**Introduction:** Thousands of Canadians are diagnosed with concussions each year; 24 to 84% face persistent post-concussion symptoms (Ryan & Warden, 2009). The outdated recovery protocol of complete physical and cognitive rest, perpetuated in some healthcare settings, ensures occupational disruption (Howard et al., 2018). The impact of post-concussion symptoms extends across occupational domains (self-care, productivity, leisure). Thus, occupational therapists should be incorporated into rehabilitation. This integrative review examines how occupational therapists can reduce symptom burden and increase occupational engagement of clients with persistent post-concussion symptoms.

**Methods:** The authors searched five databases (CINAHL, OTSeeker, PsycInfo, PubMed, SportDiscus) using the terms: occupational therap\*, concuss\*, mTBI, post-concussion, persistent symptom\*, and symptom burden. The initial search retrieved 142 articles. After title and abstract screening for inclusion criteria (injury severity and occupational therapy scope of practice), 18 articles were appraised using Critical Appraisal Skills Program tools. Systematic and integrative reviews were included, as were quantitative and qualitative studies employing low-to-good quality evidence.

**Results:** Regardless of age, primary occupation, or mechanism of injury, analysis highlighted three themes: holistic post-concussion care, client empowerment through self-management strategies, and occupational therapy's professional potential to transform post-concussion rehabilitation. Concurrent implementation of self-management strategies with function-based occupational therapy intervention improves quality of life by enabling clients to manage persistent symptoms.

**Conclusions:** Occupational therapists are equipped to skillfully address the functional needs of clients with persistent post-concussion symptoms, and can weave novel approaches into interprofessional concussion rehabilitation teams. Future research should

## **Sepsis treatment by iron restriction – a novel therapeutic approach**

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**Introduction:** Sepsis is a deadly condition characterized by a dysregulated host immune response to infection associated with the release of harmful molecules called reactive oxygen species (ROS). Leukocytes produce ROS through an iron-catalyzed chemical reaction damaging bacteria, but also host cells. The purpose of this project is to study the ability of DIBI, a new highly specific iron chelator, to reduce ROS-related inflammatory damages.

**Methods:** Toxins from Gram-positive (*Staphylococcus aureus*: lipoteichoic acid – LTA, peptidoglycan – PGN) and Gram-negative bacteria (*Escherichia coli*: lipopolysaccharide – LPS) were injected into anesthetized animals (8 weeks old male C57BL/6 mice). Control animals received normal saline. Two hours after the administration of toxins or saline, intravital microscopy (IVM) of the intestinal microcirculation was performed. The IVM parameters evaluated were leukocyte adhesion in intestinal submucosal venules and functional capillary density (FCD) of the muscle and mucosa layer. Plasma samples were collected to measure inflammatory markers.

**Results:** The Gram-positive and Gram-negative toxins induced an inflammatory host response characterized by a prominent rise in intestinal leukocyte adhesion and a significant FCD decrease. DIBI was able, for each toxin, to significantly reduce the increase of leukocyte adhesion in venules and improve capillary perfusion. Moreover, DIBI reduced the release of plasmatic inflammatory markers.

**Conclusions:** DIBI decreases leukocyte adhesion and improves capillary perfusion in experimental toxin models of sepsis. These results strongly suggest DIBI as promising drug candidate for the treatment of sepsis caused by gram-positive or negative bacteria, respectively.

## **When Saving the World Isn't Your Day Job: A Interdisciplinary Study of Intersectional Environmental Activism and Madness**

Alexandra Fox, Dalhousie University, York University

**Introduction:** As the threat of environmental destruction grows larger, and modern activism retreats into individualistic forms of protest, the collective agency that activists feel with respect to their ability to create change has greatly decreased. Informal conversations in the field make it clear that burnout, depression, guilt, trauma, existential crises, and anxiety are common, but this phenomenon has yet to be studied.

**Methodology:** A total of 458 people completed a survey on activism and mental well-being. The survey asked about the nature of participants' activist work (how many hours per week, what "movements" they were most involved in, etc), the impact they felt their activism had on various parts of their life (income, professional life, etc), and used various scales (Warwick-Edinburgh, Plutchik's Emotions Wheel) to ask participants about their well-being.

**Results:** As there were over 25 different questions about participants' activist work and their well-being, there were many varied responses and not one singular answer. The most significant findings will be reported through descriptive statistics.

Additionally, upon analysis of various correlations in data, there were drastic differences in response among those who identify as white vs person of colour, straight vs LGBTQIA+, disabled vs able-bodied etc – some of which will be highlighted in the presentation.

**Conclusion:** The results of this research shed light on the unique experiences of mental health issues in communities fighting oppressive systems, and aim to provide these communities with tools to better support each other and seek treatment based on their political ideals and values. The correlative data results mentioned above suggest that further studies are needed about the well-being of activists who identify with various "minority" groups, and the ways systemic "isms"/phobias may be replicated in activist organizing and further marginalizing those of oppressed identities.



## **Youth Engagement in Research: Insights of ACCESS Open Minds initiative aimed to transform youth mental health services**

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1, ACCESS Open Minds

**Introduction:** ACCESS Open Minds (ACCESS OM) is a pan-Canadian youth mental health research and evaluation network. ACCESS OM works with youth as equal partners in the research process to develop, plan, implement and evaluate the changes that need to be made to improve youth mental health services in 14 communities across Canada. The purpose of this presentation would be to outline this process of youth integration in research and evaluation, not only as participants but as co-creators, and address the impact this has on achieving the networks objectives.

**Methods:** ACCESS OM has five key objectives: early identification, rapid access, appropriate care, continuity of care, and youth and family engagement. By creating a national youth council consisting of young people from the transformation sites (rural, urban and Indigenous youth) each objective can be tackled with youth at the forefront of change. Young people have been a part of ACCESS OM since the initial research proposal and are integrated into all levels of this initiative by; sitting on all levels of governance; sitting on the research advisory group; co-designing research evaluation methods; and leading knowledge translation strategies and delivery.

**Results/Significance:** This project represents a model of co-creation which is recently beginning to be seen as a valuable asset in youth health research. By focusing on having youth as both participants and equal co-creators, this research has been truly collaborative. ACCESS OM is a template for patient-centered transformation in youth mental health services and has generated multiple insights into strategies for cross-disciplinary and multi-stakeholder research. Communities outside of this national research network have begun to consult ACCESS Open Minds to advise on the implementation of similar models.

## **Directed Study: Assessment of Foot Impact Forces During Gait With Different Foot Orthotic Configurations**

Yotam Friedman-Raz, School of Health & Human Performance, Dalhousie University

**Introduction:** Abnormally high ground reaction forces (GRF) during gait have been shown to contribute to various foot pathologies. To date, there are few published guidelines for the application of materials with different viscoelastic properties, used in the fabrication of foot orthotics (Fos) in an attempt to reduce GRFs. The Fos' posted rigid shell commonly has an unsupported area at the midfoot region, whereas this section is sometimes supported with a thermoplastic material. To date, no articles were found which assess the effect of supporting the shell's midfoot section on GRF.

**Methods:** The Fos used in this study were prescribed and fabricated under the guidelines of a novel (Richard) weightbearing casting-based procedure. A single participant was recruited, and a pair of Fos was prescribed and fabricated for him. The orthotic shell for the left foot had three types of interchangeable midfoot inserts: PPT, Pelite, and Proform; a full length PPT top cover (TC) was also applied. Following an adjustment period, the participant was instructed to walk over a force plate to assess GRFs acting on the shoe with each FO modification. Vertical GRF data were processed, time normalized, averaged and superimposed over the control condition (shoe only) with a 95% confidence interval.

**Results:** During weight acceptance, higher peak GRFs were generated by all modifications except for PPT with TC. During midstance to push off, all experimental conditions resulted in lower peak GRFs. PPT with TC resulted in the largest reduction in GRF.

**Conclusion:** It is possible that the application of materials with different viscoelastic properties for Fos midfoot support may result in clinically significant GRF and plantar surface peak pressure reductions during midstance to toe-off. A functional foot orthotic fabricated under the guidelines of the Richard protocol resulted in GRF reduction during terminal stance for the assessed participant.

## Cervical Joint Position Error in High Contact Sport Athletes

Meaghan Goyetche, Dalhousie University

**Introduction:** A method of determining the health of the proprioceptive system is testing for Joint Position Error (JPE). JPE is easily reproduced during position matching tests where visual feedback is removed. Clinically, cervical spine JPE has been shown in individuals with chronic neck pain and positively associated with degenerative effects of age. High contact sport athletes are prone to early signs of degenerative changes in the cervical spine yet may remain asymptomatic. As these athletes are subjected to similar mechanisms of injury and similar degenerative changes to populations previously studied, it is hypothesized that they will show higher degrees of JPE when compared to controls.

**Methods:** Thirteen high contact sport athletes will be compared to age and gender matched controls. Participants will be seated 90cm away from a target with a laser pointer positioned on the head, to track position, while blindfolded. Participants will complete cervical flexion, extension, left/right rotation, with the starting position being the anatomically neutral head position. The goal for participants will be to return to their exact starting position, where difference in position between the start and end position is considered JPE. Two 2x4 ANOVAs will compare JPE in the vertical and horizontal positions.

**Predicted Results:** It is predicted that high contact sport athletes will have higher degrees of JPE compared to controls.

**Significance:** Results from this study will help further the understanding of the effects of high contact sport on the health of cervical spine in athletes, as well as the amount cervical spine joint position error present in asymptomatic individuals. It will add to the field of literature linking cervical proprioception and high contact sports.

## **Perceptions of Residents' Mental Health During the 2018 Spring Flood in Saint John and the Kingston Peninsula**

Caitlin Grogan, University of New Brunswick

**Introduction:** Housing stability and the effects of climate change have significant impacts on mental health. Between late April and mid-May approximately 12,000 New Brunswick properties were affected by flooding when the Saint John River rose by up to 6.7 meters in some locations. An estimated 3,000 New Brunswickers experienced residential displacement as a result of the flood. This study investigates community leaders' perceptions of residents' mental health during the 2018 spring flood in Saint John and the Kingston Peninsula.

**Methods:** This study analyzes data from a larger research project, which investigates mental health and social capital during the New Brunswick spring flood in 2018. Data will be thematically analyzed from semi-structured interviews with approximately ten key informants who are policy experts, political leaders and/or people who were involved in flooding response initiatives.

**Results/Anticipated Results:** The data collection for this project is currently underway. The concepts of environmental despair and residential displacement will be explored as they relate to mental health and wellbeing in this study. It is anticipated that the key informants will perceive that the residents' mental health was negatively impacted by the flooding.

**Conclusions/Significance:** This study indicates the importance of policies addressing mental health concerns associated with displacement during or following natural disasters. As climate change continues, natural disasters, such as storms and flooding, become more prevalent. This will require the creation of interventions to address the effects of environmental despair and displacement on the mental health of individuals and communities. This study will add to a growing body of cutting edge research on the social and psychological effects of climate change, housing displacement and natural disasters.

This research is funded by the Institute for Catastrophic Loss Reduction's Rapid Response Program.

## Activity Patterns and Magnitude Depend on Knee Osteoarthritis Severity

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**Introduction:** Physical activity (PA) is a fundamental treatment for knee osteoarthritis (KOA), however, discrepancies exist for prescribing appropriate duration and intensity dosages across disease severities. The purpose of this study was to quantify the effect of replacing sedentary behaviour (SB) with light physical activity (LPA) or moderate-to-vigorous physical activity (MVPA) on clinically important outcomes at 2Y in individuals with moderate or severe KOA.

**Methods:** Data were extracted from the Osteoarthritis Initiative Accelerometer sub-cohort dataset on 995 participants. Using the Kellgren and Lawrence (KLG) scale for disease severity, participants were dichotomized as moderate (MKOA, KLG=2) or severe (SKOA, KLG>=3). For each group, isotemporal substitution models were used to estimate the effect of replacing time spent in one behaviour (SB) with equal time in another (LPA or MVPA) using 10min increments up to a maximum of 60min. Adjusted odds ratios (OR) quantified the likelihood of improved clinical outcomes (OR<1.0) for pain, function and stiffness using the WOMAC.

**Results:** Replacing incremental bouts of SB with equal bouts of LPA or MVPA were associated with increasing odds of improved 2Y clinical outcomes. Replacing SB with LPA was associated with significant improvements in pain (OR: 0.80-0.96; p<0.05) and stiffness (OR: 0.78-0.96; p<0.05) for SKOA, but no effect for MKOA. Replacing LPA with MVPA was associated with significant improvements in pain for MKOA (OR: 0.35-0.84; p<0.05) but not SKOA. There were no significant associations for changes in function; however increasing PA levels were associated with progressively better odds of improvement.

**Significance:** Substituting SB with incremental increases in duration and intensity of PA is associated with progressively improved pain and stiffness. However, by participating in PA at an appropriate intensity, individuals with MKOA (MVPA) and SKOA (LPA) can likely achieve similar clinical benefits.

## Investigating Mental Health Support for Military Veterans in Sydney, Nova Scotia

Lisa Hanke, Cape Breton University

**Introduction:** The present research investigates what happens to veterans who return home from war traumatized by their experiences and how effective the present mental health infrastructure is in helping them cope/recover. It explores the prevalence of PTSD and depression in correlation with lacking support systems for those living with the illnesses in Sydney. The present research is fueled by the lack of impartial research done in the area of military service and mental health. The research question is as follows, “Does the amount of mental health supports in the CBRM meet the needs of military veterans post-service?”

Literature Review: Literature has presented the notion that PTSD and Depression go hand in hand, becoming extremely prevalent in war veterans due to heightened exposure to traumatic events.

**Methodology:** Veterans participated in one on one semi structured interviews covering topics including community, available infrastructure, and successful/unsuccessful organizations.

Results/Analysis: Results indicated that the availability and success of the infrastructure throughout the province is disproportionate; places such as the CBRM seem to be lacking, while the HRM is adequately providing. Stemming from this lack of support, participants felt disconnected from their place of residence and within the veteran community. Organizations that have shown success have been removed, and replaced with government run organizations, which has led to discouragement.

**Discussion:** Taken as a whole, results of the present research study indicate that receiving adequate support is a product of mere chance. As stated by the literature, information on mental health infrastructure and developing a deeper understanding of the needs proposed by CAF are essential for efficient service planning, providing access and creating positive changes in communities. Through completing the present research study, we can begin to fill the gap in research, and available infrastructure.

# **The Effect of Rotator Cuff Taping on Velocity of a Baseball Overhead Throw and Muscle Recruitment in Baseball Players**

Kara-Lyn Harrison<sup>1</sup>, Paolo Sanzo<sup>1</sup>

1, Lakehead University

**Introduction:** Due to the repetitive, high forces and torques placed on an individual during a baseball pitch, shoulder pain is present in 46-57% of pitchers. Therapeutic taping has been used in various sports including baseball as it has been proposed to have beneficial qualities in injury prevention and rehabilitation and performance enhancement via muscle facilitation. Therefore, the purpose of this study will be to investigate the effect of taping on the velocity of an overhead baseball throw and muscle recruitment using surface electromyography (EMG) and a radar gun in baseball players.

**Methods:** Participants will be asked to complete three, 30-minute sessions under three different taping conditions (no tape, Kinesio Tape (KT), and placebo tape). Participants will be asked to complete a fatiguing protocol followed by three trials of maximum velocity pitches while velocity and EMG activity in the infraspinatus, supraspinatus, teres minor, and pectoralis major muscles are being measured.

**Anticipated Results:** KT will result in higher velocities of overhead throws and will change the amount of activity present in the rotator cuff as compared to the no tape and placebo tape conditions. Finally, placebo tape will cause no effect and results will be similar to the no tape condition.

**Significance:** It is anticipated that KT will change the amount of activity in the rotator cuff, decreasing stresses placed on the rotator cuff muscles during an overhead throw. After this study knowledge will be obtained regarding how the application of taping may affect the rotator cuff while completing an overhead throw.

## **Weight Cutting in Combat Sports: A Call for Professional Practice**

Mallory Harvie<sup>1</sup>, Dr, Daphne Lordly<sup>1</sup>

1, Mount Saint Vincent University

**Introduction:** Weight cutting is a colloquial term describing the practice of losing 5-15% body mass in a short period of time prior to an athletic competition. Methods include water loading, fluid restriction, vapour impermeable suits, laxatives, excessive exercise, and/or purging as examples. It is practiced in combat sports such as Brazilian jiu jitsu, mixed martial arts and wrestling. These sports are divided by weight classifications to reduce disparity in size and strength, and to reduce the incidence of injury. Fighters benefit from competing in the lowest possible weight class and associate weight cutting with a competitive advantage. However, the practice is associated with health concerns. The purpose of this investigation was to determine the extent and challenges of this issue, examine the ways in which weight cutting affects health status and to consider a potential role for dietitians.

**Methods:** The search protocol yielded 96 peer-reviewed articles. Following inclusion criteria, 37 articles were included for final review, analyzes and thematic organization based on applicability to the study purpose.

**Results:** Both male and female athletes weight cut when competing internationally, 92.9% and 89.5% respectively and nationally, 78.8% and 84.2% respectively. Despite identified health implications including the consequences of dehydration and the risk of multi-organ failure and death, combat athletes rely on knowledge collected from their teammates and coaches and not health professionals. Weight cutting is highly regarded as part of competition culture and an essential component of the pre-competition routine.

**Conclusion & Significance:** Weight cutting is an established practice in combat sports. Knowledge mobilization on how to safely manipulate body mass, how best to recover post weigh-in and sports nutrition education is essential in achieving the best possible sport and health outcomes. Dietitians have a role to play at the individual and systems level.



## **Barriers and Facilitators to Accessing Sexual Violence Related Health Services in Rural Nova Scotia (Proposed Research)**

Clare Heggie, Dalhousie University

**Introduction:** It is estimated that one in three Canadian women will experience some form of sexual violence in their lifetime. Women face significant barriers accessing health services in response to a sexual violence experience; these barriers include but are not limited to: fear of victim blaming, stigma, lack of training and confidentiality of health care professionals, and fear of a re-triggering or traumatic experience. Rural sexual violence survivors face additional barriers to access. Rural areas generally lack the sexual violence response services available in urban area. Additionally, rural women tend to face higher additional health risks and lower socioeconomic status, which exacerbates the previously identified barriers to access. The purpose of this proposed study is to explore and understand the experiences of women accessing or attempting to access sexual violence related health services in a rural area.

**Methods:** In Phase 1 of this study, key informants on sexual violence services in rural Nova Scotia will be interviewed to gain their perspectives on the challenges delivering services in a rural area. In Phase 2, women who have accessed or tried to access a sexual violence health service will be interviewed. Thematic analysis of all data will identify key barriers and facilitators to accessing and utilizing sexual violence health services in a rural Nova Scotia context.

**Anticipated Results:** Results could suggest ways to improve existing under-used services and inform new approaches to care that are based on the needs of the population and cognizant of structural and social determinants of health.

**Conclusions/Significance:** This study has potential significance for health promotion, and both primary and emergency care policy and practice. Additionally, it contributes to a wider advocacy movement to support survivors of sexual violence and understand the vast number of impacts violence against women has on population and community health.

## **The effects of voluntary muscle contraction and stimulation frequency on motor cortex excitability associated with rPNS**

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1, Dalhousie University

**Introduction:** Repetitive peripheral nerve stimulation (rPNS) can be used to increase motor cortex excitability by activating afferent inputs in the corticospinal tract. These increases are known to be larger and longer lasting when rPNS is paired with muscle contraction.

Unfortunately, it is not clear which parameters create the most effective rPNS treatments.

**Purpose:** The purpose of this study is to determine the effects of stimulation frequency and voluntary muscle contraction, on motor cortex excitability associated with rPNS.

**Methods:** Participants will receive 30 minutes of rPNS during three different conditions: 50 Hz at rest, 200 Hz at rest, and 200 Hz during flexor digitorum superficialis (FDS) voluntary muscle contraction. rPNS will consist of trains of five pulses, with a of duration 1 ms in intervals of 1 second ON and 2 seconds OFF. These intervals will allow wrist flexion at 30% maximum voluntary contraction (MVC) to match stimulations. Motor evoked potentials (MEP) and MEP recruitment curves will be measured using transcranial magnetic stimulation (TMS), to assess corticospinal tract excitability immediately before, immediately after, and up 90 minutes after the treatment. H-reflexes elicited in the FDS will be measured to evaluate alpha motor neuron excitability immediately before, immediately after, and up 90 minutes after rPNS.

**Anticipated Results:** Repeated measures ANOVAs will be conducted to determine changes in motor cortex excitability before and after the rPNS session. We expect MEPs to increase significantly and H-reflexes to remain constant after the rPNS session. T-test's comparing post to pre-ratios of rest vs. contraction and 50 Hz vs. 200 Hz conditions will be used to determine which conditions elicit the largest increases in motor cortex excitability. We expect that the voluntary contraction and 200 Hz conditions' MEP ratios will be significantly larger than resting and 50 Hz conditions' MEP ratios.

## **Fit for Sex: An examination of the conflation of sexual and physical health in Zoomer Magazine**

Megan Hill, St. Thomas University

**Introduction:** Old age is no longer a time of rest, rather those in lateI life are expected to age successfully as virile, active members of their community. The concept of successful aging perpetuates the false reality that by making the right decisions, we can gain control over uncontrollable processes like aging and health. The responsibility of keeping the aging population healthy and alive has shifted out of the hands of the government and into the hands of the individual. Signs of aging are to be corrected by making the right lifestyle and consumer choices, and failing to do so reflects poorly on you, as successful aging is a moral imperative. Successful aging is positioned against the fear of death and decline, and so, those in lateI life must buy into markers of youthfulness such as sex and fitness.

**Methods:** Zoomer magazine targets Canada's aging population, and analysing its contents provides an opportunity to see the messages directly targeted at and being consumed by those in lateI life. In my analysis of 18 magazines ranging from 2017 to 2018, I will examine the intersections of aging, sexuality, and physical fitness as they are represented in this magazine.

**Anticipated Results:** Although I am in the early stages of this project, Zoomer's representation of successful aging emphasizes remaining active, both sexually and physically, as indicators of youthfulness, a goal of longevity and cheating death, and taking matters into the hands of the individual.

**Significance:** The Baby Boomer population are entering old age, and make up a significant percent of the overall Canadian population. However, there is a lack of research into the social pressures that those in lateI life face to age well, and specifically popular understandings of the role of sex and fitness in successful aging.

## **Evaluating the association between cancer and arsenic exposure using speciation biomarkers in the Atlantic PATH Cohort**

Kalli Hood, Dalhousie University

**Introduction:** Chronic exposure to environmental arsenic has been associated with many diseases, including cancer. Studies have shown that arsenic speciation is a biomarker for cancer; yet to date, few studies have used long-term indicators. Moreover, long-term biomarkers and arsenic speciation have not been used to compare speciation profiles between disease groups.

**Primary objective:** Use toenails as an indicator of chronic arsenic exposure to investigate the association between arsenic speciation and the outcome of skin, lung, bladder, kidney, prostate, breast, and cervical cancers.

**Methods:** This cross-sectional study will use toenail samples and questionnaire data from the Atlantic PATH cohort study. The samples of 35 healthy participants, and participants with a history of cancer (19 lung, 25 bladder, 33 kidney, 35 skin, 45 breast, 45 prostate, and 45 cervical cancers) will be analyzed. Analytic methods: Arsenic speciation profiles will be determined using high performance liquid chromatography (HPLC) and inductively coupled plasma mass spectrometry (ICP-MS). Statistical analysis: A one-way analysis of variance of the proportion of monomethylated arsenic of cancer subgroups and healthy participants; multiple logistic regression to determine if arsenic speciation is associated with increased odds of cancer; and multiple regression to identify factors associated with heterogeneity in speciation.

**Anticipated Results:** This study will use novel analytical techniques to measure arsenic species and other heavy metal co-contaminants in biological samples. This study will provide insight into arsenic speciation profiles and types of cancer and will provide evidence of toenails as a long-term biomarker of cancer.

**Significance:** This research can improve our ability to identify high-risk populations, and provide a foundation for the development of targeted intervention strategies to protect individuals from the adverse effects of chronic environmental arsenic exposure.

## **Engaging patient voices: Developing an accountability tool for patient contributions in healthcare decision-making**

Anna Horton, McGill University

**Introduction:** Involving patients, caregivers and citizens in health care and health policy has been a contemporary concern of organizations internationally. However, patient groups have expressed concern that organizational commitments to patient engagement have been more concerned with box ticking than achieving truly collaborative decision-making processes. This ongoing research seeks to address the need for accountability in patient-engagement initiatives by developing a tool to assess the extent and character of patient input into institutional priorities and choices in health care.

**Methods:** Through interviews and ethnographic data, this research follows the work of a Patients' Committee at a Canadian 'super-hospital'. Observations have been conducted of patient participation in infrastructural hospital meetings and interviews led with patients and other participants. Thematic analysis will reveal the extent and patterns of patient participation in such meetings and priorities for various stakeholders, from which specific themes will inform items on a tool to assess patient input.

**Anticipated results:** This research project will provide important methodological contribution to the ongoing goal of engaging patient stakeholder groups in investigations of innovation and policy implementation in healthcare. In collaboration with patients we will develop criteria for assessing patient input in healthcare organization decision-making.

**Significance:** This research project presents essential investigation into an as yet underdeveloped area of research and practice. It seeks to develop a practical tool to enable patient input and to hold healthcare organizations to account for their commitments to patient engagement. The tool will be a specific and transferable device against which to help health organizations and patients ensure that patients have a strong voice in health-care priority-setting and decision-making.

## **Characterization of a liquid-liquid bioprinting system: A new way to model microbial-mammalian cell interaction**

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**Background:** Co-culturing different cell types in vitro has been a challenge in modelling microbe-mammalian cell interaction due to different growth conditions and technological barriers in the average laboratory. Using polyethylene glycol and dextran (PEG-DEX) aqueous two-phase system (ATPS) formulations, bacteria suspended in DEX phase may be dispensed over mammalian cells cultured in PEG phase as a way to overcome these challenges. Because these liquid phases do not mix, the two cell types are physically separated but chemically connected in the ATPS. The growth and interactions between two cell populations can be monitored and studied in a controlled reproducible fashion. The goal of this research is to characterize the effects of bacteria loading and maturation on the stability of PEG-DEX ATPS to better model microbe-mammalian interactions.

**Methods:** Two ATPS formulations were prepared consisting of 5% PEG /5% DEX and 10% PEG/10% DEX (w/v), where FITC-dextran was used to highlight phase separation in ATPS. To test the containment limits of the PEG-DEX ATPS, *E. coli* was suspended in the two formulations of DEX at varying densities. *S. mutans* was also tested in the ATPS at various seeding densities.

**Results:** Our findings show that *E. coli* colonies of lower initial seeding densities were better contained within the DEX phase of the ATPS than higher initial seeding densities. *E. coli* also showed better containment and increased biofilm formation when grown in the 10% PEG/10% DEX formulation compared to the 5% PEG/5% DEX formulation. Interestingly, the addition of DEX following initial ATPS formation did not affect the growth of *E. coli*. When *S. mutans* were grown in an ATPS, only higher densities were found to diminish the fluorescence of the FITC-DEX, suggesting consumption of the DEX by the bacteria and disruption of the ATPS stability.

**Conclusion:** Polymer concentration, initial seeding density, and bacterial species types can contribute to the stability of ATPS.

## **“What are the indoor and outdoor play attributes of Early Child Care Centres in Nova Scotia?”**

Nilá Joshi, Dalhousie University

**Introduction:** The outdoor and indoor play environment of early childcare centres (ECC) fosters cognitive and social development and allows opportunities for physical activity (PA) for children age 3-5 years. That said, there is limited data looking at the characteristics of ECC, specifically those located in Nova Scotia (NS). Our project developed the site context questionnaire (SCQ) to gather contextual information on ECC such as ECC play times, indoor/outdoor play equipment and environment, centre policies and uptake and utilization of loose parts materials. The development of the SCQ will provide a better understanding on the indoor and outdoor play environment of ECC in NS

**Purpose:** This project will provide a descriptive analysis on the indoor and outdoor play characteristics of ECC in NS.

**Method:** A literature review was conducted looking at different tools used to evaluate and measure various attributes of early childcare environments. We selected specific subscales and questions from tools such as the Environment and Policy Assessment and Observation (EPAO) and modified these questions in a way that requires reflection rather than direct observation. The questionnaire was then pilot tested with the former director of the Nova Scotia College of Early Childhood Education, to ensure the questions were appropriate for the intended audience. We then distributed the questionnaire to 19 centres across NS for site directors and early childcare educators to complete.

**Anticipated Results & Conclusion:** The results from these questionnaires will provide us a better understanding on specific indoor and outdoor characteristics of ECC across NS.

Furthermore, these results will provide better knowledge on how certain characteristics of ECC in NS influence PA behaviours of preschool children and how it impacts their overall development. Results will be available during the time of the presentation.

## **Addictive Behaviors across the Menstrual Cycle: A Systematic Review**

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1, Dalhousie University

**Introduction:** Research examining the relationship between menstrual cycle phase (MCP) and addictive behaviors is accumulating. Theories suggests that addictive behaviors increase during the premenstrual/menstrual (phases characterized by elevated negative mood) or ovulatory phases (a phase characterized by elevated positive mood) relative to other MCPs. It is hypothesized that females will increase their addictive behaviors premenstrually/menstrually to self-medicate elevations in negative mood and during ovulation to enhance increases in positive mood and reward sensitivity. This systematic review aimed to summarize existing literature on the relationship between MCP and substance use/other potentially addictive behaviours, and their underlying motivations.

**Method:** All articles within the PsycINFO, PubMed, and CINAHL databases were searched. A total of 1481 article titles and abstracts were screened for eligibility. Following a full-text review (n = 63), forty-six articles examining alcohol use, cannabis use, nicotine intake, caffeine consumption, sexual behavior, gambling involvement, and food consumption across MCP were identified and results were synthesized.

**Results:** Results consistently suggest that nicotine intake increases premenstrually/menstrually (in line with self-medication theory), while sexual behaviour increases during ovulation and decreases menstrually (corresponding with reward sensitivity theory). Drinking and sexual motives also varied by MCP. Findings on alcohol and food consumption were less consistent. Further research is required on cannabis, caffeine, and gambling to determine cycle-related changes.

**Significance:** MCP appears to be an important factor affecting substance use/other addictive behaviors that should be considered when conducting addictive behavior research or clinical interventions with reproductive-aged females.



# **Canadian Neighbourhood Fast Food Access and Fast Food Consumption Across the Social Gradient**

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1, McGill University

**Introduction and Methods:** Unfavourable retail food environments with an abundance of calorie-dense ready-made foods (e.g. fast food) may negatively influence individual eating behaviour. Both fast food consumption and low socioeconomic status have been linked to overall poor diet and negative health outcomes including obesity and type 2 diabetes, but little research has explored the interaction between neighbourhood fast food access, eating behaviour, and socioeconomic factors. This project examined the relationship between neighbourhood fast food access and fast food consumption and investigated socioeconomic status as a potential moderator in a large Canadian population sample. Fast food retail outlets were extracted from the Statistics Canada Business Register and mapped in a geographic information system (ArcGIS) by their geocoded location. Absolute and relative fast food access measures were created using 1-km and 3-km network buffers in the neighbourhoods of respondents of the 2015 Canadian Community Health Survey (CCHS-Nutrition). Fast food consumption was measured using a question from the 24-hour dietary recall in the 2015 CCHS-Nutrition (N = 20, 487).

**Anticipated Results:** Univariate and multivariate regression analyses will be used to test hypotheses that fast food access is positively associated with fast food consumption (Hypothesis 1) and that this relationship is stronger for individuals with low socioeconomic status (Hypothesis 2).

**Significance:** This project will contribute a large population-based study with a representative Canadian sample, which will help fill gaps in our knowledge on the link between fast food access and fast food consumption. Findings inform policies around creating healthier neighbourhood food environments and reducing diet-related health inequalities.

## **Generation of a free standing epithelial cell sheet in a hanging drop culture platform**

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1, Dalhousie University

Current methods for growing epithelial cell sheet on traditional 2-D culture plates have limited accuracy and longevity due to the lack of in vivo-like mechanical stiffness and dimensionality. Suspended hollow spherical epithelium culture known as acini model has come forward which resolve these mechanical limitations. However, means of studying the luminal surface of these structures is challenging due to their closed spherical orientation. This study aimed to explore the feasibility of growing confluent semi-spherical epithelial cell sheets suspended within a hanging drop culture platform and to verify their morphology and integrity. This study was conducted using several seeding densities and droplet volumes, aiming to outline parameters to optimize cell sheet formation/growth. Using MCF10a human breast epithelial cells, sheets were grown and imaged using brightfield microscopy at regular time intervals to observe progression of these cells towards confluent cell sheets, with image analysis later performed to quantify this progression. Cell sheets grown within the hanging drop platform were compared to culture plate grown cell sheets (positive control) and cells in spheroids (negative control) to qualitatively verify the sheet-like morphology of these constructs. Using immunohistochemistry, we were able to verify the presence of well-recognized epithelium structures such as E-cadherin and actin filaments in epithelial cell sheets grown in hanging drop platform. This ability to grow confluent epithelial cells sheets in a free-standing fluidic environment provides a method of cell sheet growth which can more closely mimic the in vivo mechanical environment thus increase their longevity and stability in culture. Furthermore, the top loading design of the hanging drop plate use to suspend these droplets allows for easy access into the interior luminal space of the epithelium, allowing for the capability to introduce foreign species for the purposes of co-culturing.

## **Investigating the community-level variation of soil-transmitted helminth prevalence in Kpandai district, Ghana**

Harry Kim, School of Public Health, Yale University

**Introduction:** Soil transmitted helminths (STH) are a major cause of disability and morbidity in resource-poor settings, especially in underdeveloped rural areas. These parasites, including intestinal hookworms, are commonly found in warm, moist environments with heavy rainfall, with population behaviors that facilitate contact with soil and feces. It is important to identify population and community-level factors contributing to heavy parasite burden, which can direct future treatment strategies. A recent epidemiologic survey in the Kpandai region of Ghana identified a rural, agrarian town, Jagbigbingdo, with high prevalence of hookworms, compared to demographically similar villages in the same region. We suspect that this community has a higher exposure to hookworms, and we will be investigating behavioral and environmental risk factors in this village. We hypothesize that the farming environment and behaviors differ from surrounding towns, leading to higher contacts with hookworms.

**Methods:** We will conduct qualitative interviews with key informants in three villages, and in-depth interviews with individuals of Jagbigbingdo. We will use purposive sampling methods to identify individuals of interest. We will supplement this data with environmental sampling of soil and water, inspecting for soil type and environmental parasite load to verify the environment's hospitability for parasites. Finally, we will overlay primary and secondary epidemiological data using Geospatial Information System (GIS) mapping technology.

**Anticipated results:** We expect that Jagbigbingdo inhabitants have higher exposure to STH due to environmental factors and behaviors that facilitate hookworm transmission. This study will generate further hypotheses that can identify risk factors for hookworm prevalence.

**Significance:** This study would give insight on community-level factors that facilitate hookworm transmission, providing considerations for future prevention and control strategies.

## **Characterization of The Role of Shroom3 During Kidney Development**

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1, Dept. of Health Sciences, McMaster University

**Introduction:** During kidney development the proper formation of the nephron is essential for normal kidney function. The nephron forms by a process termed nephrogenesis, which requires nephron progenitor cells to undergo significant cell shape changes to form mature nephrons. Shroom3 is an actin-binding protein that regulates epithelial cell shape. It apically constricts cells to form “pie” shaped cells. We hypothesize that Shroom3 is required for nephron progenitor cells to cluster into cell aggregates and form renal vesicles.

**Methods:** We generated Shroom3 knockout mice by crossing Shroom3 heterozygote mice. E13.5 and E18.5 wild-type and mutant kidneys were stained with hematoxylin and eosin (H&E). Immunofluorescence (IF) was performed using Shroom3, Six2/Pax2, and Par3/NCAM.

**Results:** Shroom3 was expressed in some of the aggregating nephron progenitors and renal vesicles. In E13.5 and E18.5 mutants, H&E staining demonstrated abnormal clustering of nephron progenitors. Abnormal aggregation of progenitors in Shroom3 mutants was confirmed through Six2 staining, and quantitation of the aggregation length (WT  $179.6\mu\text{m} \pm 24.96$ , MUT  $306.4\mu\text{m} \pm 33.30$ , n=9), and of nephron progenitor area (WT  $8804\mu\text{m}^2 \pm 1250$ , MUT  $12353\mu\text{m}^2 \pm 1504$ , n=9). E18.5 Shroom3 mutants displayed significantly less Six2 cells (WT  $149 \pm 13.3$ , MUT  $79.5 \pm 7.47$ ). Less nephron progenitors led to the reduction in renal vesicles in mutants, when stained with H&E (WT  $3 \pm 0.58$ , MUT  $1 \pm 0$ , n=9). Of the renal vesicles that were present in the Shroom3 mutants, the majority were forming abnormally and not undergoing epithelial polarization or forming tubule lumens as measured by Par3/NCAM IF. At E13.5 and E18.5, H&E staining and Pax2 IF of Shroom3 mutants demonstrated an increased distance of the nephron aggregates from the ureteric epithelial cells (WT  $3.85\mu\text{m} \pm 0.30$ , MUT  $14.80\mu\text{m} \pm 1.22$ , n=9).

**Conclusion:** Our findings establish, for the first time, that Shroom3 is essential for the early stages of nephron formation.

## **Moving Beyond Measure: A Methodological Account Exploring the Experiences of Older Adults in a Tai Chi Program**

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<sup>1</sup>, Lakehead University

**Introduction:** Tai chi (TC) is a martial art that promotes balancing the mind and body. While individually focused, TC typically occurs in groups and is often practiced by older adults because of its' gentle nature. Documentation quantifying TC's ability to mitigate chronic conditions exists; however, few studies have focused on healthy older adults. Qualitative research investigating reasons for participation are needed. The purpose of this study is to use qualitative inquiry to broadly explore the perspectives of experienced, healthy, older adult TC practitioners' participating in a community-based program.

**Methods:** Fifteen adults who are > 50 years old, healthy, and have been practicing TC for > 3 years will be recruited from a community-based TC program. Semi-structured interviews, observations, and field notes will be used for data collection and analyzed thematically via inductive content analysis.

**Anticipated Results:** It is expected that themes regarding participation (e.g., health reasons) and the TC delivery format will emerge. Because group-based social support has been shown to influence physical activity participation positively in other contexts, it is expected that the findings will reveal similar trends among TC practitioners.

**Conclusion:** The group-based delivery context could be an important contributor to continued TC participation among older adults. Given the health benefits of physical activity, especially in an aging population, it is hoped that this qualitative study will uncover new data regarding avenues for facilitating participation.

## **Supporting Patient Physical Activity Through Intervention in Collaborative Primary Health Care Practice**

Julia Koppernaes, Acadia University

**Introduction:** Allied health networks that incorporate exercise professionals into primary care have been shown to be especially effective at improving physical activity levels in various populations. This pilot study will examine and describe the efficacy of physical activity referral programs of a collaborative health practice that incorporates a qualified exercise professional in the Annapolis Valley, Nova Scotia.

**Methods:** Using accelerometers and questionnaires, physical activity and exercise levels will be measured pre- and post- exercise/physical activity intervention. The effectiveness of physician-prescribed exercise will be compared to exercise referral through an exercise physiologist and to participation in community exercise programs. In addition to physical activity levels pre- and post-, questionnaires will also assess participants' stage of change, task and regulatory self-efficacies, physical activity and exercise, and open-ended responses to questions regarding which interventions were of most help.

**Anticipated Results:** Previous literature predicts that the more thorough the intervention, the more potent the increases in physical activity, exercise, and adherence. It is anticipated that the community exercise programs will be more effective at increasing such variables that will be the brief interventions of the physician or exercise professional.

**Significance:** Nova Scotia is particularly inactive as compared to other regions of Canada, with few Nova Scotians meeting the daily physical activity guidelines. Access to physical activity supports such as tailored physical activity counselling and prescription, and physical activity monitoring devices (all shown to benefit physical activity levels and adherence) can be particularly challenging to access in Nova Scotia, where exercise participation is typically an out-of-pocket (i.e. outside of primary care) expense.

## **Fabrication and in vitro evaluation of a bifunctional porous scaffold for revitalizing endodontic therapy**

Eric Kriss, Faculty of Dentistry, Dalhousie University

Apexification therapy performed in teeth that have not fully matured commonly causes long term complications due to a missing apical seal and lack of vitality of the tooth, resulting in poor crown to root ratio and thin dentinal walls. Revitalization therapy is a promising solution to successfully treating pulpal infections in immature teeth. Revitalization therapy continues the physiological development of the treated tooth, may improve long term prognosis, and reduce the lifetime cost of treatment for the tooth. Critical to the success of revitalization procedures is the migration of stem cells of the apical papilla (SCAP) into the canal with a stable cellular scaffold commonly formed by blood from the apex. Secondly, elimination of infection from the canal space with agents that are non-toxic to the SCAP cells.

Experimental work compared the in vitro application of 2 medically approved hemostatic materials in a simulated root canal system and assessed the anti-microbial properties of peptide LL-37 via a 12 hour bacterial growth assay. In vitro testing of surgical materials demonstrated that collagen based HeliCote more readily absorbs blood and is superior in wicking than Surgifoam material. Helicote material was able to form sufficient absorption of blood into the material of ~8mm, without the addition of heparin. Antimicrobial tests revealed that LL-37 demonstrated antimicrobial properties at concentrations of 8 $\mu$ M and 16 $\mu$ M in free liquid LB broth assays. Future assays are necessary to determine the antimicrobial properties of LL37 bound to HeliCote

## **Embedding Health Equity as a Priority in the Canadian Healthcare System**

Madeline Kubiseki, Dalhousie University

**Introduction:** In Canada, the benefits of good health are not equally shared by all. Health inequities exist among groups of populations as a result of social, economic, cultural and structural factors. Healthcare organizations have tremendous opportunities to improve health equity and reduce disparities in their communities, however, many fail to do so. The goal of this research paper is to investigate what is required to advance health equity as a priority in the Canadian healthcare system. A qualitative policy analysis will be conducted using an inductive analysis approach based on a conceptual framework derived from the three steps delineated in the methods section.

**Methods:** 1. Rapid grey literature scan to identify national/provincial health equity strategies and frameworks in Canada to identify the elements necessary and relevant to advance health equity  
2. Key informant interviews to gather informed perspectives on what is required to advance health equity in the Canadian healthcare system  
3. Examine 1-2 hospitals as case studies to analyze how health equity is embedded within the organizations priorities/strategies/key performance indicators and to identify they key factors in their strategies that drive action

**Anticipated Results:** It is anticipated that this research will elucidate several important factors necessary for health organizations to prioritize health equity such as health system/authority influence, commitment to social justice and human rights, improved demographic data collection to understand local population, partnering with local community organizations, increased patient engagement, and improved workforce diversity and inclusion.

**Conclusion/Significance:** Healthcare organizations can play a critical role in improving health equity. This research should help to reveal some of the key components needed to tackle health equity in Canada. The findings will be compiled in an infographic to ensure knowledge translation.



## **Exploring the Sensory Properties Associated with Seaweed-fortified Bread and Pasta.**

Timothy Lamont, Acadia University

**Introduction:** Brown seaweeds have been eaten in the diets of coastal cultures for centuries (China, Japan), however consumption has seen limited interest in Western diets. Seaweeds possess sensory characteristics such as astringency, bitterness, and seafood-like taste that detract from their consumption. Brown seaweeds contain bioactive metabolites that have been shown to elicit healthful effects on the human body, directly counteracting and or mitigating underlying mechanisms associated with diseases, as well as antioxidant and immunostimulatory properties. Brown seaweeds are also good sources of fiber, minerals, nearly a complete protein, and contains little fat, of which most is mono or polyunsaturated.

**Method/Objectives:** *Ascophyllum nodosum* will be incorporated into whole wheat bread and pasta, in increasing quantities. The products will then be evaluated by a trained panel (n=13) to determine the sensory properties associated with seaweed-fortified bread and pasta. Additionally, a consumer trial (n=120) will be conducted to assess the acceptability of the products.

**Objectives:** A) To determine if the brown seaweed *A. nodosum* can be feasibly added to bread or pasta. B) To determine how the sensory properties of the bread and pasta are altered by the addition of seaweed, if at all. C) To determine at what level of seaweed addition to bread or pasta is acceptable to consumers.

**Anticipated Results:** My hypothesis is that as the quantity of seaweed incorporated into the bread increases, sensory qualities of the bread will decline. I anticipate overall acceptability to also decrease as the quantity of seaweed increases.

**Significance:** To encourage and promote the consumption of brown seaweed, or to exemplify seaweed incorporation into foodstuffs. By increasing consumption of brown seaweed, there is potential to reduce harmful mechanisms and/or the effects associated with dietary factors of disease, in those who consume more brown seaweed.

## **Comparing the effects of high-intensity interval exercise and moderate-intensity continuous exercise on cognition**

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1, Dalhousie University

**Introduction:** A growing body of evidence has shown cognitive benefits in individuals following single bouts of exercise. Research to date has determined that 20 minutes of moderate intensity aerobic exercise or a shorter but higher intensity aerobic exercise is enough to improve performance on a cognitive task. However, little research has been done to directly compare these two different exercise protocols within the same group of participants (direct comparison). The purpose of this study was to investigate the effects of each exercise protocol on participant's performance on a cognitive task while also measuring their cerebral blood flow.

**Methods:** On the first day participants (n=10) did a maximal cycling test (V<sub>O2</sub> max measurement) to establish subsequent exercise intensities. The second and third days (randomized) participants either did a 20-minute bout of steady state exercise at 65% maximal effort, or a 10-minute interval training session with 3 minutes at 85% followed by 2 minutes at 50% maximal effort repeated twice. For the second and third day, participants performed the Stroop task via keypress (64% congruent trials, 36% incongruent trials) while measuring their cerebral blood flow (from the MCA artery) before, immediately after and 10 minutes following exercise.

**Results:** A similar pattern of results was found for each type of exercise protocol. Participants were more accurate and faster at identifying the color of incongruent trials (e.g., red presented in green ink) after each exercise protocol. Cerebral blood flow velocity was also shown to significantly increase immediately after each exercise protocol but returned to normal state after 10 minutes.

**Conclusions:** Both exercise protocols produce an enhancement in the ability to inhibit cognitive interference accompanied by a similar increase in cerebral blood flow.

## **Investigating Cortical Excitability in a Motor Imagery Task with Varying Block Durations**

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**Introduction:** Motor imagery (MI; the mental rehearsal of a motor skill in the absence of physical movement) is effective in facilitating motor skill learning and is often used as an adjunct to physical practice. Similar to physical practice, MI leads to an increase in cortical excitability – facilitating brain plasticity and, in turn, motor learning. However, prolonged MI performance is fatiguing, likely resulting in decreased cortical excitability over time, making MI-based motor skill learning ineffective. Yet, parameters surrounding practice duration, and more specifically how the length of MI impacts cortical excitability, are not well understood. This study will look at how different MI block durations effect corticospinal excitability.

**Methods:** Participants (N = 36) were randomized into one of three groups that differed only in the duration of each imagery block (2-min, 4-min, or 6-min blocks), and engaged in a single session of imagery-based practice. Cortical excitability was assessed using transcranial magnetic stimulation (TMS). TMS was used to deliver magnetic pulses to the brain as participants performed imagery-based practice, eliciting a motor evoked potential, a measurement of cortical excitability.

**Results/Anticipated Results:** We expect to observe a relationship between MI block length and cortical excitability. Specifically, we anticipate a greater decrease in cortical excitability with increased MI block length, such that the greatest reduction in cortical excitability will be observed in the 6- and 4-min block groups compare to 2-min block group.

**Significance:** Findings from this study will allow us to better understand the relationship between imagery block length and cortical excitability. Ultimately, this work will expand our understanding of the optimal parameters for imagery-based practice to facilitate motor learning.

## **Hitting the Right Notes: Exploring International Students' Experiences of Music and Belonging at Dalhousie University**

Michelle Lincoln, Dalhousie University

**Introduction:** Music has the power to promote psychosocial aspects of people's health, such as their sense of belonging. Particularly, music programs in university settings can provide students with an increased sense of safety and social support. In international communities, music can help immigrants to negotiate their cultural identity and adjustment. These factors are also associated with international students' social inclusion and sense of belonging; however, research examining the connection between music and international students' belonging is limited. Therefore, the purpose of this study is to explore how international students' experiences of music relate to their sense of belonging at Dalhousie University.

**Methods:** The proposed study will be conducted using a qualitative description approach with a phenomenological lens to explore international students' experiences of music and belonging at Dalhousie University. International students will be purposefully sampled and interviewed in a semi-structured format. Audio elicitation will be used to prompt participants to reflect upon their everyday music experiences in preparation for the interviewing process. Students will be asked to capture music moments they feel connect to their belonging using their phones or other audio recording devices. This will be conducted for approximately one week to facilitate interview responses.

**Results/Anticipated Results:** These findings could reveal important insights about how international students experience music in their everyday lives, and the influence that may have on students' belonging. Results may also include details about the role music may play in international students' adjustment to Dalhousie University.

**Conclusions/Significance:** The results of this study will be used to inform programming to promote international students' health and wellness within Dalhousie's International Centre and Dalhousie University.

## The Prevalence of Elementary School Gardens in Nova Scotia

Peri Lockhart, Dalhousie University

**Introduction:** School gardens and horticultural activities are popular practices that have been adopted and conducted in many elementary school gardens across Nova Scotia. Literature suggest that school gardens, though interacting with nature and individuals involved in the garden, can improve children's health and wellness, social development, and strengthen local communities. The purpose of this environmental scan is to determine the scope of existing elementary school gardens in Nova Scotia, and to address and review the impacts they can have on health and wellness as well as community development.

**Methods:** This environmental scan will use a pragmatism world view lens with content analysis to determine the scope of elementary school gardens in Nova Scotia and the impacts they can have. Documentation and data of existing school gardens will be collected from the department of education, and experiences from individuals participating in existing school gardens will be collected and reviewed.

**Anticipated Results:** This research will provide information about what elementary school gardens currently exist and the impacts elementary school gardens can have on children's health and wellness, social development, and community development in Nova Scotia.

**Conclusions/Significance:** Nova Scotian based findings of the experiences and impacts of elementary school gardens in the province will provide relevant information to decision makers to invest in the creation of new gardens, as well as the sustainability of existing elementary school gardens. This could be beneficial to policy makers, education system decision makers, school faculty members, and parents of students to inform the impacts school gardens can have. This can also influence the possibly of implementing elementary school gardens into their curriculums.

## **Knee mechanics during gait in hip osteoarthritis, knee osteoarthritis and asymptomatic cohorts: A preliminary comparison**

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1, Dalhousie University

**Introduction:** Many patients with a hip replacement will go on to require a secondary lower-extremity joint replacement; most likely to occur in the contralateral compared to ipsilateral knee. Is there a mechanical underpinning for this development? Is it present early in the hip OA process? The study purpose was to determine whether knee joint motions and moments of the contralateral and ipsilateral limbs in individuals with moderate unilateral hip OA differ between individuals with moderate knee OA and an asymptomatic cohort.

**Methods:** Knee joint motion and moments were calculated for participants with moderate unilateral knee (n=21) and hip (n=10) OA, and an asymptomatic group (n=22) using standardized collection and processing procedures. Participants walked barefoot on a dual belt instrumented treadmill set to their average self-selected walking speed. T-tests were employed to determine significant differences between participant groups and to compare ipsilateral and contralateral limbs of the hip OA participants.

**Results:** Ipsilateral knees in people with hip OA showed reduced range of motion between early and mid/late stance (50,  $p=0.03$ , effect size: 0.87) and reduced range of peak knee flexion moment to peak knee extension moment (0.2Nm,  $p=0.04$ , effect size:0.71) compared to the asymptomatic group. No differences between groups were found in frontal plane knee adduction moments or impulse ( $p<0.05$ ) and no differences were found between the knee and hip OA groups for any variables ( $p<0.05$ ).

**Conclusions:** Altered ipsilateral knee biomechanics were present in the hip OA participants compared to the asymptomatic population (large effect sizes). Sagittal plane differences were aligned with those previously found between knee OA and an asymptomatic group, suggesting a common alteration in sagittal plane knee mechanics may exist regardless of the joint affected. Implications exist for understanding the role of joint mechanics in the development of lower limb OA.

## **What can be said about the Food Waste Phenomenon?**

Ashley MacDonald, Dalhousie University

The topic of food waste is saturating all aspects for our world. News, television, and social media, not to mention in physical grocery stores, restaurants, classrooms and at the trash can itself. According to the FAO, approximately 30% of food produced for human consumption around the world is either lost or wasted each year. This is equivalent to 1.3 billion tonnes of food, USD 1 trillion in economic costs, around USD 700 billion in environmental costs and around USD 900 billion in social costs. The global food waste phenomenon is not new and is obviously having a significant toll. Waste occurs along all the food supply chain.

Underdeveloped countries experience problems in growth and productions stages, while developed nations, such as Canada, see waste during the consumption stage.

Canada's food waste amount is higher than the global average; this is largely due to overconsumption and the overabundances of available food. This can be hard to visualize when you also consider a large number of Canadians facing food insecurity.

Clearly, this is a complicated and nuanced problem that may not have one, or even a few clear solutions. My research is qualitative and is looking at the aspects surrounding the phenomenon as a whole. To do this, I am looking at what is known about the problem and what is said/believed by all involved. This includes academic research, traditional news media, through stakeholder interviews and surveys, and finally through social media discourse analysis. The issue is talked about in government, academia, and within the public conversation. I feel that it is important to look at those conversations to truly understand what barriers and opportunities there are to enacting positive and lasting change.

## A comparison of bioinformatics tools to identify microbial biomarkers of disease

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1, Dalhousie University

**Introduction:** The microbes living on and within the human body are called the human microbiota. The human microbiota has been associated with myriad diseases, which has caused a growing interest in identifying biomarkers as targets for subsequent investigation. There have also been many bioinformatics tools produced to identify these biomarkers. However, there is little consistency in which tools are applied across analyses. Accordingly, it remains unclear to what extent the differential application of these tools has contributed to contrasting interpretations across studies. To address this question, we performed an evaluation of several biomarker-identification tools on actual microbiota datasets.

**Methods:** We acquired microbiota sequencing data from five previously published studies that have clear case-control sample groupings. These datasets represent a range of environments and diseases, including acute lymphocytic leukemia and Crohn's disease. On each of these datasets we ran a set of nine contrasting approaches: MaAsLin, SIAMCat, ALDEx2, DESeq2, LEFse, ANCOM, Gneiss, corncob, and rfPermute. We contrasted the numbers of total and overlapping significant biomarkers identified by each tool to quantify how the interpretation of each dataset differs depending on tool usage.

**Expected Results:** Preliminarily we have identified massive differences in the numbers of significant biomarkers depending on tool usage found across all datasets. In the most extreme case the number of significant biomarkers ranges from 0 to 300 depending on which tool is applied. We also plan to summarize the similarity of the approaches, which we believe will aid researchers in selecting which tools should be applied prior to beginning their analyses.

**Significance:** Our preliminary results highlight that best-practices in the analyses of microbiota have yet to be determined and that the choice of bioinformatics method can have a large influence on final results.



## **Exploring perceived benefits and challenges of everyday cycling in Halifax: A qualitative study**

Samantha MacLellan, Dalhousie University

**Background:** Low physical activity and air pollution are the two leading causes of disease burden worldwide. From a public health perspective, there is value in promoting sustainable transportation such as everyday cycling. Parents are gatekeepers to their family's transportation choices, however there has been little qualitative research conducted to understand their experiences.

**Purpose:** This research project aimed to explore the benefits and challenges of everyday cycling as perceived by parents in Halifax, Nova Scotia.

**Methods:** This project used qualitative description to explore the benefits and challenges of everyday cycling perceived by parents in Halifax, Nova Scotia. Parents of young children (aged 3-10) who identified as everyday cyclists were recruited through the use of posters, social media, and the Halifax Cycling Coalition newsletter. Qualitative data were collected through five open-ended interviews, which were transcribed verbatim, coded and thematically analysed.

**Findings:** This research provided insight into parents' perceived benefits and challenges of everyday cycling in Halifax, Nova Scotia and how these benefits and challenges occur in the context of a family. Social and emotional benefits for families were described along with their challenges including unsupportive physical and social environments.

**Conclusion:** The results of the project added to the literature on active transportation and physical activity. By exploring the experiences of parents within the family context, we can create better-informed policies, programs and interventions aimed at promoting everyday cycling and other forms of sustainable transportation.

## **Qualitative investigation: barriers, facilitators, and attitudes of clients in a interprofessional student-led clinic**

Kathleen MacMillan<sup>1</sup>, Gaithre Kalainathan<sup>1</sup>, Emily MacMurdo<sup>1</sup>, Angelena Kuhn<sup>1</sup>, Michelle Bérubé<sup>1</sup>, Jubal Stewart<sup>1</sup>, Lauren Moritz<sup>1</sup>, Megan Flynn<sup>1</sup>, Alexander Rudiuk<sup>1</sup>, Nicole Blinn<sup>1</sup>, Marie-Eve Pomerleau<sup>1</sup>, Carl Kooka<sup>1</sup>, Holly Mathias<sup>1</sup>,

1, Dalhousie University

**Introduction/Background:** Student-led clinics are becoming increasingly common in North America, serving to encourage collaborative practice and education among trainees, and to deliver health care to marginalized populations. Existing evaluations focus on the experience of the student participants, while few evaluate the client experience. Halifax Outreach Prevention Education Support (HOPES) is an inter-institutional collaboration between healthcare related programs at Dalhousie University, Mount Saint Vincent University, and Medavie HealthEd in Halifax, Nova Scotia. The objective of this study is to investigate the attitudes, perceptions, and barriers to healthcare access for clients attending a student-led clinic in Halifax, Nova Scotia, for the purpose of quality improvement and better understanding of the client experience.

**Methods:** Participants will be recruited through the HOPES student-led clinic in Halifax. Students from the interprofessional research team were trained in facilitating in depth interviews by an experienced researcher within the HOPES executive. Participants will be invited to be interviewed by the student researchers during their clinic visit, with the purpose of exploring themes that can lead to further improvement of HOPES.

**Anticipated Results:** The findings will highlight the experiences of the participants and add to the developing literature, given that relatively little is known about clients' experiences accessing student-run health services.

**Conclusion/Significance:** Little is known about the experiences of participants accessing student-run clinics. It is important to understand their experiences in order to address potential barriers and support initiatives that provide opportunities to access for research participants.

## **Skills Development & Knowledge Sharing for Cultural Food Security for Newcomer Immigrant and Refugees Living in HRM**

Jaclyn MacNeil, Mount Saint Vincent University

**Introduction:** Power (2008) argues that food is central to “cultural health and survival,” and defines “cultural food insecurity” as a lack of access to cultural foods and foodways, she asserts is an important social justice concern that lies beyond individual, household, or community food insecurity caused by financial insufficiency (95). Canada’s national survey data show that new immigrants experience a higher prevalence of food insecurity (19.6%) compared to immigrants who have lived in Canada longer (11.8%) and non-immigrants (12.1%) (Statistics Canada, 2014). There is a growing body of literature investigating the relationship between food insecurity and inadequate income (Power, 2008). Cultural food insecurity is intertwined with the social determinants of health.

**Methods:** Interviews and focus groups with service providers that are engaged in work to redress cultural food security and one-on-one interviews with newcomers.

**Anticipated Results:** The results of this research are anticipated to fill the gap of knowledge in scholarly literature regarding cultural food insecurity by developing a conceptual framework to define cultural food insecurity. This will inform future engagement among newcomers and service providers, as well as partnerships for participatory, community-development focused research.

**Significance:** The lack of understanding of cultural food insecurity is a barrier for social service providers who seek to address the unique issues related to food that are faced by newcomers. Creating a conceptual framework will facilitate further research in this area; as well as allow service providers to better articulate their work when communicating with the public and granting agencies who may fund or otherwise support their work.

1. Power, E. M. (2008). Conceptualizing Food Security for Aboriginal People in Canada. *Canadian Journal of Public Health / Revue Canadienne de Santé Publique*, 99(2), 95–97.
2. Statistics Canada, 2014

# Undergraduate Students' Attitudes, Opinions, Beliefs, and Conceptualizations of Verbal Sexual Consent

Brittany Matchett, Dalhousie University

**Background:** Campus sexual assaults have been labeled an epidemic. Undergraduate (UG) university students are at significantly higher risk of experiencing sexual assaults, with sexual assault trends on Canadian university campuses not decreasing in the past 20 years. UG students typically rely on non-verbal cues to obtain sexual consent opposed to verbal cues, which contribute to higher rates of sexual assaults due to misinterpretations. The purpose of this qualitative description study will be to explore how UG students' in a 4<sup>th</sup> year Human Sexuality course at Dalhousie University conceptualize verbal sexual consent.

**Methods:** This project will be conducted using a post-structuralist lens to examine UG students' attitudes towards verbal sexual consent as produced via social and cultural norms. Qualitative data will be collected using open-ended questions through the online medium Tophat. Data analysis will use qualitative description to summarize key themes.

**Anticipated Results:** Findings will provide insight into current UG students' attitudes, opinions, and beliefs regarding verbal consent. Anticipated results include how specific sexual behaviours and social norms influence UG students' views of verbal consent, and if students believe verbal consent is necessary in all sexual encounters.

**Significance:** Exploring UG students' attitudes, opinions, and beliefs towards verbal consent will allow further understanding of the conceptualizations and perceived barriers surrounding UG students' use of verbal consent. The findings of this project may inform future policies and programs focusing on verbal sexual consent to educate UG students and combat campus sexual assaults.

## **Community Supports in Perinatal Education**

Lauren Matheson<sup>1</sup>, Martha Paynter<sup>2</sup>, Dr. Erna Snelgrove-Clarke<sup>2</sup>, Paula Marshall<sup>3</sup>, Darlene MacEachern<sup>4</sup>, Gaye Zylsta<sup>4</sup>

1, School of Social Work, Dalhousie University; 2, School of Nursing, Dalhousie University; 3, Mi'kmaq Legal Support Network; 4, Elizabeth Fry Society of Cape Breton

**Introduction:** In 2017, Women's Wellness Within, a non-profit supporting criminalized women pregnant or parenting, collaborated with the Mi'kmaq Legal Support Network (MLSN) and Elizabeth Fry Society of Cape Breton (EFSCB) to provide a free doula training to women working within both organizations. This partnership developed in response to the need for non-clinical doula support in the Cape Breton region. Research demonstrates non-clinical doula support reduces clinical interventions in labour and delivery, improves neonatal outcomes and augments patient satisfaction with the birth experience. The primary objective of this study is to understand the impact of the training and learn ways to strengthen the program to meet the needs of those providing supports to Indigenous women and women navigating criminalization.

**Methods:** In Spring of 2019, participants from the initial training will be invited to complete a one hour interview either over the phone or in person. Interviews will be transcribed and coded inductively, focusing on strengths, areas to improve and impact (individually and collectively). Main themes will inform necessary alterations to the doula curriculum. Themes will be presented to the group of initial participants during a meeting in the summer of 2019. All changes to the curriculum will be reviewed by participants prior to alteration, in the fall of 2019.

**Anticipated Results:** We anticipate past participants will desire ongoing birth and postpartum supports and education.

**Significance:** Feedback could shape and develop more context-relevant and community-specific content that is lacking from the standard doula training program.

## **Does what Older Adults do outside of Moderate-to-Vigorous activity impact physical function?**

Andrea Mayo<sup>1</sup>, Martin Senechal, Jonathan Boudreau, Mathieu Belanger, Danielle Bouchard  
1, Dalhousie University

**Introduction:** Physical activity (PA) recommendations for aging adults exclude possible influences of light intensity or sedentary activities on physical function (PF). The objective of this study was to explore PF benefits of a comprehensive evaluation of PA on PF outcomes in aging adults.

**Methods:** Data collected from cycle 1 of the Canadian Longitudinal Study on Aging (CLSA n=25,072) and the 2005-2006 cycle of the National Health and Nutrition Examination Survey (NHANES n=932) including adults ages 45-85. PA was collected via the Physical Activity Scale for the Elderly (CLSA) and accelerometer (NHANES). Three PA indexes were created to study PA comprehensively: 1) Total Activities (Total Index), 2) Moderate-to-Vigorous Activity/Resistance Training (RT Index), 3) Sedentary/Activity Time (SED Index). PF was derived from objective (CLSA) and self-reported (NHANES) measures. Logistic regression analysis was used for statistical analysis.

**Results:** In both datasets, the Total 1.12 (95% CI: 1.05-1.33) and SED indexes 0.67 (95% CI: 0.55-0.82) were significantly associated with PF after adjusting for potential confounders ( $p < .05$ ) while the RT Index was only significantly associated in the NHANES study (1.21 (95% CI: 1.03-1.42)).

**Conclusion:** This study suggests that other activities and combination of activities not currently included in typical PA guidelines may be associated with PF outcomes for aging adults.

## **Parent and Early Childhood Educators Role in Supporting Sleep Hygiene in Preschool-Aged Children**

Stephanie McCabe, Mount Saint Vincent University

**Introduction:** Research on strategies to promote optimal health and development in children has largely ignored sleep quality and duration as an essential component. However, “the whole day matters”[1]. In the Canadian 24-Hour Movement Guidelines for the Early Years, creating a balance between physical activity, sedentary behaviors, and sleep is emphasized[1]. Evidence-based research has indicated that achieving adequate sleep quality and duration is crucial for optimal growth and development of children and is a predictor of adult health and well-being[1,2]. Therefore, including research on childhood day and night sleep practices can contribute to the growing body of research on the whole day of a child.

**Methods:** Data is being collected from 4-18 parents and 4-18 early childhood educators (ECEs) in Halifax Regional Municipality using focus groups or phone interviews. Focus groups and interviews follow a semi-structured guide discussing preschool-aged children’s sleep hygiene practices at home and in child care.

**Anticipated Results:** Analysis of the transcripts will follow a thematic analysis method[3] and result in a description of parent and ECEs access to information about, experience with, and knowledge of preschool-age children’s sleep.

**Significance:** With the lack of research in this area, this research will shed some light on parent and ECEs perception of the relationships between sleep and preschool-aged children. By starting to fill this gap, this research may provide guidance to policy makers, parents, and ECEs who are directly connected to preschool-aged children.

[1] Tremblay, LeBlanc, et al. (2017)

[2] Bathory & Tomopoulos (2017)

[3] Braun & Clarke (2006)

## Investigating the Effects of Hearing Loss on Memory: A Proposal

Juliana McLaren<sup>1</sup>, Dr. Steven Aiken<sup>1</sup>

1, Dalhousie University

**Introduction:** Evidence indicates there is an independent relationship between hearing loss and cognition, although the effects of hearing aids on this relationship are unknown. This study will investigate how hearing loss and hearing aid use alters memory-related brain function. Event-related potentials, electrical measurements of the brain's responses to stimuli, will be used to examine a pattern that occurs when people recognize a word called the late-positive component (LPC).

**Method:** People with hearing loss with hearing aids, people with hearing loss with no hearing aids, and a control group will be compared. In the first phase of the experiment, participants will be asked to remember 50 nouns. Then they will do mental math for 12 minutes as a distraction from rehearsing the words. In the testing phase participants will be shown 100 nouns and asked to indicate if the words are old (from the first phase) or new (not yet presented). During the testing phase, participant's electrical brain patterns will be recorded to measure the LPC differences between the 3 groups.

**Predicted Results:** Group differences in LPC responses would indicate a relationship between memory, hearing loss, and hearing aid use. It is predicted that participants with hearing loss will have poorer memory, and an LPC response with a smaller peak and/or occurring later than the control group. The effects of hearing aid use on memory are unknown, therefore this study is exploring those effects and no predictions regarding their impact on memory are being made.

**Significance:** This research could help demonstrate the importance of treating hearing loss for healthy memory functioning, which could be a strategy for dementia prevention. The established relationship between hearing loss and cognitive decline demonstrates that hearing health is an integral part of overall health, and understanding its connection to comorbid diagnoses of dementia could advance our understanding of both disorders.



## **Near Beers and other low alcoholic beverages- Where they are sold, who is drinking them and why we should care**

Laura Kennedy, Dalhousie University

**Introduction:** Nova Scotia (NS) has one of the highest heavy drinking rates in Canada (28%). Low or non-alcoholic beverages (NAB), such as beer, wine and spirits, are a rapidly growing global market. Many of the major global alcohol companies are producing NABs to meet this growing demand. In NS, low or NABs are sold in grocery and convenience stores using food merchandising techniques, introducing the general population to familiar alcohol brands outside of liquor commission stores. Other jurisdictions are beginning to implement restrictive regulations for these beverages.

**Methods:** This is a PhD proposed mixed-methods study completed in three parts. First, an adapted NEMS-S (Nutritional Environment Measurement Survey) observation tool will assess availability, affordability, and advertising for NABs and other beverages (eg pop, juice). Audits will be completed in eight grocery stores and eight convenience stores within the Halifax, NS. Second, 100 Intercept surveys and 10 in-depth interviews, recruiting from the general population using news advertisements, will explore reasons for consumption. Third, a jurisdictional scan will be completed to determine regulations in other provinces and countries.

**Anticipated Results:** I will be sharing current regulations and over view of current literature at Crossroads. It is predicted that NABs are less expensive and placed in a more visible position within grocery and convenience stores. NABs in convenience stores will be more accessible than grocery stores. The reasons for consumption will be health, pregnancy and price.

**Significance:** There is minimal research exploring the population health impact of low or NABs. This research will not only explore the individual reasons for consumption, but the environment in which they are sold. This research moves beyond the individual and look at the affordability, accessibility and advertising of substances within a community.

## **Research Proposal: Mental Illness and the Experience of Seeking Employment**

Robyn Moore, Dalhousie University

**Introduction:** Individuals with mental illness face higher than average rates of unemployment and this is a problem because it costs taxpayers billions of dollars in income support and lost productivity. It also causes adverse outcomes for the individuals with mental illness including loss of self-confidence and perceived loss of control. While employment is not always a goal for individuals recovering from mental illness, employment can be important for recovery from a mental illness through the structure and social inclusion it provides as well as the income. This study aims to understand the experience of job seeking for individuals living with mental illness.

**Methods:** Working age individuals who identify as living with a mental illness will be recruited via posters and online advertisements to participate in an approximately one hour long semi-structured interview about their experiences of seeking employment. The interviews will be audio recorded and transcribed verbatim. The transcripts will be analysed using Interpretive Phenomenological Analysis to understand how individuals with mental illness make sense of their experience of job seeking and to identify common themes amongst individuals.

**Anticipated Results:** It is expected that the interviews will provide insight into the experience of seeking employment for individuals living with mental illness. The interviews are expected to yield information about what is most helpful in improving the job seeking experience.

**Significance:** The barriers and facilitators identified in this study can inform future research and can suggest ways to improve the hiring of individuals with mental illness.

## **Postsecondary Students with Mobility Disabilities: Exploring Barriers & Facilitators to Leisure & Educational Activities**

Lauren Moritz<sup>1</sup>, Lois Jackson<sup>1</sup>

1, Dalhousie University

**Introduction:** Research indicates that social and physical environments are key determinants of health. However, relatively little is known about how these environments can influence access to leisure and educational activities for post-secondary students with a mobility-related physical disability. For these students, key aspects of the social environment (e.g. stigma) and the physical environment (e.g. inaccessible spaces) within the context of the post-secondary institution may shape access to and use of various programs and activities that are important for their health. For example, not being able to physically access recreation facilities on campus such as swimming pools or skating rinks when one desires to do so, may influence one's physical, social, and mental health. The key goals of this study are to gain an in-depth understanding of barriers and opportunities to accessing leisure and educational activities for post-secondary students with a mobility-related physical disability, and to understand what changes, if any, students think are needed to address the barriers.

**Methods:** One-on-one semi-structured interviews were conducted with nine participants in an accessible space. Students currently living in Halifax and enrolled in a post-secondary institution who identify as having a mobility-related physical disability were recruited.

**Results:** This study highlights student experiences, and suggests changes that may improve access to leisure and educational activities for students in post-secondary institutions.

**Conclusion:** Access to leisure and educational activities is key because these activities are important for one's health, including emotional, social, and physical health. At the same time, access to these activities may help with retention of students with a mobility-related physical disability, and thus help to ensure their continued education which is necessary for future employment.

## **Netflix but No Chill: Hypersexuality and Relationship Satisfaction**

Maeve Mulroy, Saint Mary's University

**Introduction:** The present study examined correlations between hypersexuality, sexual satisfaction, and relationship satisfaction. Additionally, two potential moderators of these associations were evaluated: desire discrepancy and biological sex.

**Methods:** A sample of 323 undergraduate students over the age of 18 were recruited from Saint Mary's University in Halifax. Eighty-one percent identified as women, 38% as being in a committed relationship, and 79% as heterosexual. Self-report measures (the Couples Satisfaction Index, Hypersexual Behaviour Inventory, and New Sexual Satisfaction Scale) were administered online.

**Results:** A non-significant negative association between hypersexuality and sexual satisfaction was observed. A significant negative correlation between hypersexuality and relationship satisfaction was observed, providing support for a negative association between hypersexuality and relationship satisfaction ( $r = -0.24, p < .001$ ). In moderation analyses, as well as moderated moderation analyses for relationship satisfaction, significant main effects of hypersexuality were observed, providing further evidence for a link between hypersexuality and relationship satisfaction. In moderated moderation analyses for sexual satisfaction, a significant biological sex by desire discrepancy interaction was observed. However, in simple slope analyses, no significant main effects were detected.

**Conclusions and Significance:** While support for an effect of hypersexuality on relationship satisfaction was observed, hypotheses pertaining to moderation by desire discrepancy and biological sex were not supported. This research lends support to existing literature which indicates hypersexuality may result in relationship distress or functional impairment. Results of the present study may be particularly relevant for couples therapists and clinicians working with individuals with hypersexuality, through increased understanding of associated functional impairment.

# **Birthing and Being Birthed: A Feminist Phenomenological Framework for Nursing Practice in Traumatic Birth**

Sandra Murphy<sup>1</sup>, Dr. Lisa Goldberg<sup>1</sup>

1, Dalhousie University

**Introduction:** Childbirth is a transformative life event during which a person is both giving birth (to another) and being birthed (as a parent). Increasingly, birthing people perceive childbirth as traumatic, producing a phenomenon known as birth trauma, a label for a set of symptoms that cause psychological distress related to events in childbirth. Contributing events span a broad spectrum, but include obstetrical intervention, birth complications, pre-existing mental illness, and unsupportive relationships with care providers. Birth trauma affects up to 30% of childbearing people, yet healthcare professionals' knowledge of it remains inadequate. Nurses, as the healthcare professionals that spend the most time with pregnant people, have opportunities to prevent birth trauma, as well as recognize its presence in birthing people and offer referrals for assistance with treating trauma. Feminist phenomenology provides a framework for nurses to use in order to maximize these opportunities.

**Methodology:** Feminist phenomenology, while traditionally focused on female embodiment, in its modern iteration brings a critical lens to experiences that seem from the outside to be normalized, but to the person experiencing them, are not. The key elements of feminist phenomenology will be aligned with perinatal nursing practices to suggest a framework to both recognize and address birth trauma. This work furthers feminist phenomenology as the methodology of choice for the first author's proposed thesis research.

**Anticipated Results:** N/A

**Conclusions/Significance:** Nurses' good relationships with birthing people are integral to a positive childbirth experience. As a framework for perinatal nursing practice, feminist phenomenology provides practical strategies for nurses to think about the care they provide, how they are providing it and to reflexively make changes to their practice. Consequently, a feminist phenomenological framework can contribute to decreasing traumatic births.

**Life is like a box of chocolates, you never know what you're gonna get. Predicting cannabis edibles industry in 2025.**

Mary Myketyń-Driscoll<sup>1</sup>, Dr. Catherine Mah<sup>1</sup>, Laura Kennedy<sup>2</sup>

1, Dalhousie University; 2, Mental Health & Addictions, Nova Scotia Health Authority

**Introduction:** In 2018, Canada passed Bill C-45 to legalize sale and distribution of recreational cannabis in leaf form. Federal and Provincial regulations related cannabis edibles are being developed. In 2014, Colorado State legalized cannabis, and has since experienced increased rates of harm (i.e. poisonings, ingestion by children) from cannabis edibles. Health professionals have argued this could be due to accessibility and attractiveness to youth. With Canada's emerging legal cannabis market, edibles could become an industry-driven product, like tobacco and alcohol, with potential to be marketed aggressively to capture youth attention. The aim of this project is to explore and predict the future state of cannabis edibles in Nova Scotia with recommendations to mitigate cannabis edible marketing impacts on youth.

**Methods:** This is a qualitative policy analysis for Nova Scotia Health Authority with Dalhousie. Deborah Stone's causal stories will be used as a framework to analyze and predict potential relationships between cannabis industry framing and consequences for public health policy. We will gather information from key informants in industry, health, and policy sectors, as well as from secondary sources (i.e. public documents, media, organization and government reports). Key themes will be coded inductively. Findings will be analyzed to formulate a policy model of the potential state of cannabis edibles industry in Nova Scotia in 2025.

**Anticipated Results:** Common themes regarding harms related to industry-driven substance use, consistent with those of Colorado's legal cannabis landscape, will be identified, reinforcing need for comprehensive regulation of edibles in Nova Scotia.

**Significance:** Education and awareness have proven limited in leveraging reduced harms in regards to substance use. An upstream approach becomes critical in forcing accountability of industry's role in the health of our populations, specifically youth, and prevention of public harms.

## **The Oral Microbiome of Individuals Living in Atlantic Canada with Prostate, Breast, or Colon Cancer**

Jacob Nearing<sup>1</sup>, Vanessa DeClercq<sup>2</sup>, Johan Van Limbergen<sup>3</sup>, Morgan G. I. Langille<sup>4</sup>

1, Dept. of Microbiology & Immunology, Dalhousie University; 2, Atlantic PATH, Dalhousie University; 3, Division of Pediatric Gastroenterology & Nutrition, IWK Health Centre; 4, Dept. of Pharmacology, Dalhousie University

**Introduction:** The human body contains over 30 trillion microorganisms that code for a vast amount of genetic information. This complex community of microorganisms known as the human microbiome can perform many complex functions that the human body cannot, making it an important factor in overall health. Recent studies have shown that not only is the gut microbiome associated with diseases such as cancer, but so is the composition of the oral microbiome. However, these associations are difficult to reproduce due to other factors such as lifestyle choices also impacting microbiome composition. This has left a need for large scale epidemiological studies on the oral microbiome of individuals with chronic disease.

**Methods:** To address this need we have partnered with the Atlantic Partnership for Tomorrow's Health to examine the oral microbiome of over 1600 individuals from around Atlantic Canada. Along with these samples is a vast amount of metadata including diet, exercise, heavy metal exposure, and various other lifestyle choices that will allow us to not only assess changes in the oral microbiome due to these various cancers but also relationships between the oral microbiome and various lifestyle choices. To assess associations between cancer and the oral microbiome controls matched on age, BMI, smoking status, and sex will be compared to individuals diagnosed with prostate cancer, colon cancer, and breast cancer.

**Anticipated Results:** We expect to find that various oral bacteria will be associated with life style choices such as diet, exercise and heavy metal exposure. We also expect that oral bacterial signatures will be related with the cancer status of the participants.

**Conclusion:** Findings from this work have the potential to provide novel screen techniques, identify modifiable risk factors, and guide future studies that can incorporate other cohorts from the Canadian Partnership for Tomorrow Project.

# **More Than A Meal: Senior Women Connect Through Food in a Multigenerational Community Space**

Samara Ohm<sup>1</sup>, Daphne Lordly<sup>1</sup>

<sup>1</sup>, Mount Saint Vincent University

**Introduction:** Adults aged 65 years and older, in particular lone females, are a growing demographic. Biological, psychological, and social changes bring changes to food intake, ones identity and sense of self. Connecting weekly with a women's group, Empowered Women Blossom, held at a youth organization in north end Halifax, exemplifies how places within the community can foster connection between senior women by sharing a meal. The research seeks to understand what having a space to gather for a meal with others means to women in this group.

**Methods:** Face-to-face individual interviews will be held with woman participating in the the group (8) using a phenomenological approach. As individuals and their experiences are embedded within a network of factors ranging between personal, day-to-day interactions and larger societal and structural values, Bronfenbrenners Ecological Systems Theory will be used as a framework to help describe and understand the experiences of the women.

**Anticipated Results:** This research will provide a greater understanding of how aging women value community social spaces, and how, if at all, these interactions impact their lives. The barriers senior women experience, what brings the women to the space, and what makes the space accessible to them will be illuminated.

**Significance:** Food intake and nutrition is critical but often compromised throughout aging. Understanding the importance of social eating for senior women, and respecting the connection women form through food, highlights how nutrition goes beyond nutrient content and intake of food. Encouraging collaborative, community-based approaches to support seniors may help build more cohesive, inclusive communities and help deconstruct ageism to ultimately enhance the quality of life and well being of seniors.



## Exploring Postpartum Sexual Health in Nova Scotia Using Feminist Post-Structuralism

Rachel Ollivier<sup>1</sup>, Dr. Megan Aston<sup>1</sup>, Dr. Sheri Price<sup>1</sup>

1, Dalhousie University

**Introduction:** My proposed thesis will utilize a feminist post-structural (FPS) methodology to address the following objectives: 1. Describe postpartum childbearing persons' sexual health experiences, 2. Identify and understand the meaning ascribed to sexual health as it relates to perceived wellbeing, 3. Identify strategies that will assist childbearing persons and their partners, health care providers, as well as other key decision-makers to facilitate sexual health during the postpartum period.

**Methods:** I will first conduct a secondary analysis of data from my co-supervisors' project titled 'Mapping & Understanding Mothers' Social Networks (MUMS)' to identify and describe mothers' concerns, questions, and discussion regarding sexual health. To address objective 2, individual interviews and focus groups will be conducted with a sample of postpartum childbearing persons to identify the meaning ascribed to sexual health. To address objective 3, discourse analysis of the data will be performed to uncover how relations of power are negotiated and experienced to further understand how health care may more effectively support the empowerment and mental, social, and relational wellbeing of postpartum persons and their partner(s) through sexual health.

**Anticipated Results:** My proposed research will lead to uncovering the personal, social and institutional construction and meaning of sexual health and how power is negotiated in their experiences. The aim of my research will be to further understand the influence of sexual health during normalized postpartum experiences as well as difficult and vulnerable times, thereby preventing negative mental health outcomes, improving postpartum sexual health services and, as such, promoting overall wellbeing after birth.

**Significance:** Postpartum sexual health as historically been research from a biomedical, reductionist lens, therefore my research will uncover meaningful, broadened definitions of postpartum health.

## **Emergency department attitudes toward influenza vaccination availability during wait times: Health care provider survey**

Noelle Ozog<sup>1</sup>, Dr. Audrey Steenbeek<sup>1</sup>, Dr. Janet Curran<sup>1,2</sup>, Nikki Kelly<sup>1,3</sup>

1, Dalhousie University; 2, Emergency Medicine, IWK Health Centre; 3, Emergency Medicine, QEII Health Sciences Centre

**Introduction:** Influenza is a preventable infectious disease that causes a yearly burden to Canada. While an influenza vaccine is available free of charge, the rate of uptake in Canada is below target rates. 15% of Canadians who did not get the influenza vaccine reported that they “didn’t get around to it”; this presents an opportunity to combine the task of influenza prevention with the logistical issue of another health system challenge: escalating emergency department (ED) wait times. At the Queen Elizabeth II Health Sciences Centre (QEII) in Halifax, NS, average wait time is 4.6 hours. Offering the influenza vaccine during this time could increase convenient access to health services, and previous initiatives to increase convenient access have improved vaccination rates.

**Methods:** The study is of an observational, cross-sectional design. A convenience sample of ED nurses, physicians and paramedics (n=82, response rate 37%) were surveyed between October 28 and December 14, 2018 via a short, anonymous, close-ended questionnaire. The Promoting Action on Research Implementation in Health Services framework provided the conceptual basis for the questionnaire.

**Results:** 85.0% (n=68) of those surveyed supported ED influenza vaccination in theory, and 59.3% (n=48) supported it in light of current QEII resources. Participants most commonly preferred screening for influenza vaccination during triage (n=46, 56.8%), documentation of vaccination status on the nursing note (n=38, 46.9%), and having a medical directive for vaccination (n=60, 74.1%).

**Conclusion:** An ED influenza vaccination program could add value to the hours clients spend waiting in the ED and make the care we provide more cohesive. By surveying ED staff this study is one way we can lay this groundwork for a program that would utilize patient “wait time” more effectively.

## **Implementation of Walk On, Live On Walking Guide: Supporting Active Lifestyle in Cancer Patients and Survivors in NS**

Kyulee Park, School of Health & Human Performance, Dalhousie University

Nova Scotia, with one of the highest rate of inactivity among Canadian provinces, has been reported to have one of the highest rates of cancer incidence in Canada. Walking has been found to be effective in minimizing the side-effects of cancer and cancer treatment and recognized as the most preferred form of physical activity (PA) among cancer patients. Despite the benefits of walking, PA levels among cancer patients and survivors in Nova Scotia remain low. To reduce the barriers to PA, the Walk On, Live On Walking Guide was developed and introduced to cancer patients and survivors in Nova Scotia, specifically for those who regularly visit the QEII Cancer Care Centre in Halifax. The walking guide includes total of 3 indoor and outdoor walking routes and instructions, as well as helpful PA resources. The guide was designed to be utilized by cancer patients and survivors to engage in PA during the waiting time, during which individuals usually remain sedentary. Semi-structured telephone interviews will be conducted with a sample of cancer patients, survivors and healthcare professionals to evaluate the practicability of the walking guide and the perceived barriers to PA while visiting the cancer centre. Common themes may include (1) convenience of the walking guide while visiting the cancer centre; (2) prevention of side-effects and secondary diseases; (3) perceived benefits of walking; (4) perceived barriers to PA related to personal safety. The results from the current study then will be used to refine the walking guide to be piloted.

## **Mental and Emotional Health in Veterinarians: Impacts on Client and Patient Care**

Jennifer Perret<sup>1</sup>, Colleen Best<sup>1</sup>, Jason Coe<sup>1</sup>, Deep Khosa<sup>1</sup>, Amy Greer<sup>1</sup>, Andria Jones-Bitton<sup>1</sup>

1, University of Guelph

**Introduction:** The mental health of the veterinarian population is under increasing scrutiny, in part due to several recent high-profile veterinarian suicides. Although unique emotional stressors within the occupation have been identified, the effects on the recipients of veterinary care have not yet been investigated. Evidence from other medical professions suggests that poor mental health in a caregiver may have a negative impact on the recipients of care. This project explores the impact of veterinarian mental and emotional health on clients and patients, through outcomes including veterinarian-client communication during clinical appointments, and client satisfaction.

**Methods:** Small animal veterinarians and their clients were recruited throughout southwestern Ontario from November 2017 through January 2019. Each veterinarian participant completed an initial questionnaire including five validated psychometric scales measuring stress, anxiety, depression, compassion fatigue, burnout, and resilience. Interactions between veterinarians and their clients were audio-video recorded, and both clients and veterinarians completed questionnaires on communication and satisfaction following each interaction. Outcomes measured included client satisfaction, veterinarian satisfaction, and patient-centered communication from the perspective of the veterinarian, the client, and a third-party observer. Regression models will be used to investigate associations of communication and satisfaction outcomes with veterinarian mental health scores.

**Anticipated Results:** We hypothesize that poor mental health among veterinarians will have a negative impact on veterinarian-client communication, veterinarian satisfaction, and client satisfaction.

**Significance:** This study is the first to explore the impact of veterinarian mental and emotional health on the recipients of veterinary care. The results will drive intervention efforts and inform wellness education in the veterinary profession.

## **Nanoparticle-mediated Low Z radiotherapy as a potential treatment paradigm for critically located tumours**

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**Introduction:** Irradiation of gold and gadolinium nanoparticles (GNPs & GdNPs) produces bursts of photons due to the photoelectric effect. GNPs are biocompatible molecules that increase the radiation dose to the tumor while reducing the dose to surrounding healthy tissue. We have developed a novel clinical linear accelerator (linac) beam by replacing the standard copper/tungsten target photon source with a sintered diamond target. In computer models, the diamond target is predicted to yield 400% greater low energy photons, resulting in a 7.7 fold dose enhancement in the NP vicinity. NP-mediated targeted linac radiation has the potential to aid in the treatment of cancers like pancreatic and head and neck tumors. The zebrafish platform is ideally suited for the transplantation of human cancer cells, as larvae are transparent and lack an adaptive immune system.

**Methods & Results:** Using transmission electron microscopy (TEM), cell uptake of GNPs was found to be cell specific, with greatest mitochondrial and lysosomal retention in FaDu hypopharyngeal carcinoma cells, but minimal uptake in Panc1 pancreatic cancer cells. In in vitro viability assays, FaDu cells demonstrated decreased survival in low-Z irradiated cells in the presence of GNPs or GdNPs compared with standard beam and non-irradiated cells. NP labeled FaDu or Panc1 cells were injected into casper zebrafish larvae and irradiated with standard or low-Z beams. Cell proliferation was measured by live-cell fluorescent microscopy and quantified ex vivo. GNP-labelled FaDu cells demonstrated reduced proliferation when irradiated with the low-Z beam. Panc1 cells demonstrated reduced proliferation with both standard and low-Z radiation in vitro.

**Conclusions:** Decreased survival in low Z-irradiated GNP-labelled FaDu cells may be attributable to the optimized intracellular localization of GNPs. We have provided preclinical data for a potentially effective treatment to improve patient outcomes in head and neck cancer.

## **Screen time and active leisure time in offspring of parents with severe mental illness**

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**Background:** Youth who spend more time using screens are more likely to have poor mental health. Conversely, active free time is associated with better mental health. More screen time and less time in active leisure pursuits may be particularly problematic in youth at a familial high risk for mental illness.

**Methods:** Among 296 participants of the FORBOW (Families Overcoming Risks and Building Opportunities for Well-being) cohort aged 6-21, we examined whether parental diagnosis of severe mental illness (SMI; major depressive disorder, schizophrenia or bipolar disorder) and current levels of depression and anxiety in the parent influenced the amount of screen time and time spent in active behaviours (i.e., reading, physical activity and socializing) in their offspring

**Results:** Screen time in youth was unrelated to parental SMI or current levels of parental depression and anxiety. However, parental SMI and higher levels of current anxiety and depression in the mother were associated with youth spending less time in active behaviors.

**Conclusions:** Children of parents with SMI may benefit from programs encouraging active behaviours. Treating depression and anxiety in parents, especially mothers, may promote active leisure time in their offspring. This in turn may protect young people at risk from developing mental illness

## **The development of an interprofessional opportunity between two health professions**

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1, Mount Saint Vincent University; 2, Dalhousie University

**Introduction:** Interprofessional education outcomes include transfer of knowledge and skills between professions, improved understanding of values, and professional roles that results in improved professional collaboration and patient care. Interprofessional team opportunities between dietetic and dental hygiene students working with new immigrants and refugees were developed at a university-based dental clinic.

**Methods:** Program content and decisions were evidenced-informed and based on collaboration with faculty in dietetics and dental hygiene programs at two Halifax universities.

**Anticipated Results:** Objectives of the experience, scope of practice guidelines, and a patient pamphlet were developed collaboratively between faculties. Translators on site assist with translation of material to patients. Evaluation questionnaires were developed for students, patients, and supervisors that will be administered at the conclusion of each academic term. Students will complete a critical reflection regarding their role in patient centered care. Responses will inform program modifications.

**Conclusions/Significance:** Dietetic students can participate in patient-centered care alongside dental hygiene students in the prevention and care of oral health disease. This experience promotes interprofessional learning opportunities, encourages students to consider cultural barriers to care, develop a range of practice competencies, including communication and counselling skills, work with an underserved population, understand the importance of giving back and increase their profile as a contributing health profession.

## **Inuit Qaujimajatuqangit and community-based participatory research: The alignment of Inuit and academic ways of knowing**

Jenny Rand, Dalhousie University

**Introduction:** The research processes that take place with Inuit communities are as important as the findings these studies reveal. There is a growing body of literature that highlights community-based participatory research (CBPR) as a successful approach for collaboration between Universities and Indigenous communities. However, missing from the literature are studies examining the congruency of CBPR with Indigenous ways of knowing.

**Methods:** This doctoral study used a case study approach to examine a CBPR project conducted in partnership with communities across Nunavut that aimed to adapt, pilot and utilize the Community Readiness Model (CRM) with Inuit communities to improve community readiness for HIV prevention interventions. This case study examined the alignment of the principles of Inuit Qaujimajatuqangit (Inuit ways of knowing) and CBPR. Two Eyed Seeing provided the conceptual framework for this study and data was collected from CRM project documents, interviews with CRM project team members, and the researcher's reflective journal entries. Data was analyzed through thematic analysis.

**Results:** The results of this study provide an in-depth understanding of how Western (Academic) and Inuit ways of knowing interact within a CBPR study.

**Significance:** Examining CBPR and IQ as Western and Inuit ways of knowing that can be drawn on together in research is a step toward ensuring two ways of knowing can be upheld within research in equitable, culturally affirming ways. The findings from this study have utility across disciplines and build on a growing body of literature that takes a critical examination at research processes with Inuit communities.



## **Becoming the Adoptive Parent of an Orphan Disease: A Look at PCYT1a (CCT $\alpha$ ) and Its Associated Rare Diseases**

Taryn Reid<sup>1</sup>, Dr. Christopher MacMaster<sup>1</sup>

1, Dalhousie University

**Introduction:** Rare diseases, often referred to as orphan diseases, are conditions that affect less than 1 in 2000 persons. PCYT1a is the gene that codes for CTP: phosphocholine cytidyltransferase (CCT). This is the rate-limiting enzyme in the Kennedy pathway. The Kennedy pathway is the pathway used to convert choline to phosphatidylcholine (PC, the major phospholipid in eukaryotic cell membranes). Mutations in PCYT1a have been reported to cause one of three diseases: spondylometaphysial dysplasia with cone-rod dystrophy, Leber congenital amaurosis, or congenital lipodystrophy with severe fatty liver disease. We are exploring the unusual phenomenon of how different mutations in the same gene can cause three different diseases.

**Methods:** The human PCYT1a gene and the mutant variants associated with the above inherited diseases will be subcloned into a yeast expression vector and then transformed into a yeast strain defective in PC synthesis. We will determine if limiting choline affects growth rates to see if the different PCYT1a mutants affect their ability to synthesize PC. Based on differences observed, we will select 2-3 mutants that cause each disease and generate them in zebra-fish using CRISPR/Cas9 technology to look at the phenotypes. We can then try to treat the zebra-fish by using various strategies to augment phospholipid metabolism to determine if the disease can be ameliorated.

**Anticipated Results:** We are expecting that we will see differences in the growth rates of the transformed yeast. We are also expecting to see a similar phenotype presenting in the zebra-fish as is commonly seen in humans with the associated disease.

**Significance:** If we are able to find a drug or small molecule that is able to improve the phenotype in zebra-fish, this will be a starting point to move forward to determine its efficacy to treat humans with PCYT1a mutations.

(Supported by CIHR)

## Exploring the Implementation of Outdoor Play in Nova Scotia's Pre-primary Program

Brenna Richard, Mount Saint Vincent University

**Introduction:** Outdoor play (OP) influences children's physical (1), cognitive (2), and social-emotional (3) well-being. Guidelines encouraging the use of the outdoors as a valuable learning environment are provided within Nova Scotia's Pre-primary Program, which is now available to children in the year before starting school (4). Documented barriers to the implementation of OP in similar early learning settings include safety concerns (5) and fear of litigation issues (6). This study will uncover the process of the program's OP implementation and identify ways in which program sites can overcome challenges in actualizing OP.

**Methods:** This research follows a qualitative, exploratory, single-case study approach. One elementary school with a Pre-primary Program was purposively selected as an exemplar of OP. Data collection includes focus groups and interviews with the program's parents, ECEs, school teachers, the school principal and staff from the provincial government and regional centre for education. Data collection will also include a "show-and-tell" activity with children in the program, photographs of the program's OP space, and document review.

**Anticipated Results:** Thematic, inductive analysis including reviewing, coding, and theming will be conducted for all data sources. Bronfenbrenner's (7) ecological systems model will be the lens through which the analysis and reporting process will be guided.

**Significance:** With the Pre-primary Program expected to be province-wide by 2020 (4), the results of this study may be used in providing OP implementation strategies to not only existing program sites but future sites as well. This information will be especially beneficial to the Department of Education and Early Childhood Development, ECEs and school administrations.

1. Gray et al., 2015; 2. Zamani, 2017; 3. Bundy et al., 2009; 4. NS DEECD, 2018; 5. Tandon et al., 2017; 6. Brussoni et al., 2014; 7. Bronfenbrenner, 1994.

## **Indigenous Youth: Experiences with the Canadian Corrections System**

Samantha Rioux, Mount Saint Vincent University

**Introduction:** Indigenous youth continue to be overrepresented in the Canadian Corrections System (CCS) (1) Since the year '06, the number of Indigenous youth admitted to correction facilities rose from 21% of all admissions to 37% of all admissions in the year '16/'17 (1). With the most recent YCJA implemented in the year '03, the changes that were put in place decreased youth involved in the CCS, (2) yet the number of Indigenous youth involved in CCS continue to rise (3), despite the explicit provision in the statute that states “particular attention must be given to the circumstances of young Aboriginal offenders” (4). This study will bring to light the experiences of young Indigenous offenders and identify changes that could potentially help decrease the number of Indigenous admitted.

**Methods:** This research follows a qualitative, exploratory, multi-case approach. Talking circles will take place in Indigenous communities that welcome the research. Youth, who have experienced spending some amount of time in any aspect of the CCS are welcome to take part in the talking circle to share their personal experiences. Data collection will include talking circles (focus groups) and potential interviews.

**Anticipated Results:** Analysis will include reviewing, coding and theming for all of the data sources collected. A multi-lens approach will be used- social determinants of health (5), Indigenous social determinants (6) of health and the YCJA (4)

**Significance:** With the number of Indigenous youth admitted in some capacity to the CCS it is important to hear from the youth who are directly experiencing the CCS. Currently, there has been no known Canadian study that has looked directly at the experiences of Indigenous youth through a qualitative approach. The information that arises through the talking circles, may provide insight into the lived experiences of Indigenous youth and provide preventative measures in reducing the number of Indigenous youth who experience the CCS.

## **Socioeconomic inequalities in brain cancer incidence in Canada: 1992 – 2010**

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**Introduction:** The socioeconomic gradient of brain cancer incidence in Canada is poorly understood. This study aimed to measure socioeconomic inequalities in brain cancer incidence in Canada from 1992 to 2010.

**Methods:** We used a unique pooled dataset from the Canadian Cancer Registry (CCR), the Canadian Census of Population (CCP) and the National Household Survey (NHS) to measure brain cancer incidence in Canada. The concentration index I was used to measure income- and education-related inequalities in brain cancer in Canada, and for men and women separately. Time trend analyses were conducted to examine the changes in socioeconomic inequalities in brain cancer in Canada over time.

**Results:** The results indicated that brain cancer incidence increased from 7.29 to 8.17 per 100,000 over the study period. While the incidence increased in Eastern Canada, it did not increase in the provinces west of Ontario viz., Saskatchewan, Manitoba, Alberta and British Columbia. The C results suggested the concentration of brain cancer incidence increased among socioeconomically-disadvantaged individuals in Canada, especially in recent years. Trend analyses suggested that income-related inequality in the incidence of brain cancer increased for females. A significant increase in education-related inequality in brain cancer incidence was also observed for males.

**Conclusions:** The increasing trend in the concentration of brain cancer incidence among socioeconomically disadvantaged populations in Canada warrants attention. Further studies are required to understand the increasing trend in socioeconomic inequalities in brain cancer in Canada.

## Religiosity and the Adoption of Sex Education Policies

Kate Russell, Emory University

**Introduction:** Sexually transmitted infections (STIs) have reached historic highs among US youth, leading to poor health outcomes. Comprehensive sex education (CSE) has been proven to be effective in reducing risky sexual behavior<sup>1</sup>; yet, sex education has declined by 20% across the nation since 20002. The literature does not address the factors that influence CSE policy adoption nationwide.

**Methods:** Data from the 2012 and 2016 School Health Policies and Practices Study (SHPPS) collected by the Centers for Disease Control and Prevention (CDC) is combined with data containing religiosity measures from the 2014 Pew Religious Landscape study and demographic data from the US Census. Logistic regressions with state and year fixed effects were run to test the hypothesis of whether increased religiosity of a state decreased the number of school districts within that state adopting CSE.

**Results:** Results showed no relationship between religiosity or political ideology of a state and CSE adoption locally within that state. However, the number of school districts requiring schools to notify parents before teaching sex education was significantly associated with a higher number of districts with a CSE policy.

**Conclusions/Significance:** This study reveals an important factor impacting CSE policy adoption locally in the US: parents. School boards react to backlash by allowing parents to intervene on their children's sex education. Public health advocates should tailor interventions to inform parents about the benefits of CSE and help schools communicate better with parents, with the goal of increasing CSE adoption nationally.

### References

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2. Lindberg, L. D., Maddow-Zimet, I., & Boonstra, H. (2016). Changes in adolescents' receipt of sex education, 2006–2013. *Journal of Adolescent Health*, 58(6), 621-627.

## **Accessing child health services and social supports: Experiences of international graduate student parents**

Abdullah Saif, Memorial University of Newfoundland

**Introduction:** Access to healthcare and social supports is among the important contributing factors to determine a population's health status. However, understanding 'access' has always remained a complex process, especially when it involves immigrants or any other newcomer groups such as the international students whose experience of using health care and social supports may differ from the native-born population. This ongoing study has emerged from the observation that the experiences of international graduate student parents in accessing child healthcare and social support services are often overlooked in the research literature. It indicates that a gap exists in our understanding of the factors that are likely to impact health service access among such a non-native population. Thus, the objective of my study is to reduce this knowledge gap by identifying barriers and facilitators that are likely to influence international graduate student parents' access to child healthcare and social supports.

**Method:** I will conduct a qualitative study on the international graduate students with children at the Memorial University of Newfoundland. The data will be collected through semi-structured individual interviews. I will use the Interpretative Phenomenological Analysis (IPA) method to analyze the data and gain a deep understanding of the meaning and significance of each participant's embodied experience.

**Anticipated result:** I expect to identify various social and environmental factors that are likely to impact my research population's access to child health services and social supports.

**Significance:** In recent years, Newfoundland's international student community has been extended and many students with families are coming every year now. My study will give us a direction to a broader understanding of their experiences of accessing child health services. It will help find effective ways to improve the quality of child health service delivery in Newfoundland.

## **Assessing price-elasticity assumptions of sugar sweetened beverage tax modelling studies: A literature review**

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**Background:** Taxing sugar sweetened beverages (SSB) and unhealthy sugary food has been considered as a fiscal intervention to reduce the rising prevalence and burden of obesity in whole populations. Due to the challenges of conducting interventions on the short and long-term impacts of taxation on demand or body weight outcomes, modelling studies are used to make recommendations for taxation. However, there is a heterogeneous range of modelling studies with different own- and cross- price elasticity (PE) of sugary goods used to estimate the change in quantity demanded. We present a literature review to provide insight on the range of PE used in modelling studies and the justifications for the values chosen.

**Methods:** Studies that reported using modelling to investigate changes in consumption, PE, body mass index or obesity/overweight prevalence due to price increases or taxation of SSBs were identified using PubMed. Studies published prior to 2008 and studies that do not estimate changes in consumption or demand through modelling were excluded. Data related to own- and cross- PE values and justifications and sources for the chosen values were extracted from the chosen articles.

**Results:** 22 peer reviewed studies met our inclusion criteria. Price elasticity estimates ranged from -0.46 to -2.26. Common assumptions of many studies included a 100% pass through rate of tax to consumers, the use of historic trends to predict future SSB consumption and they assumed no compensatory behaviour. The studies varied widely in their definition of SSBs and price elasticities used, which translated to differences in results related to the impact of SSB taxation on prevalence of obesity or changes in demand.

**Conclusion:** Taxing SSBs or unhealthy food is a promising public health intervention, however current studies are heterogeneous in their assumptions and price elasticity values used. Further evaluations of modelling studies are required to make recommendations for policy changes.

## **Observed Psychopathology in Offspring of Parents with Major Depressive Disorder, Bipolar Disorder and Schizophrenia**

Andrea Sandstrom, Nova Scotia Health Authority; Dalhousie University

**Background:** Children of parents with mood and psychotic disorders are at an elevated risk for a range of behavioral and emotional problems. However, as the usual reporter of psychopathology in children is the parent, reports of early problems in children of parents with mood and psychotic disorders may be biased by the parents' own experience of mental illness and their mental state.

**Methods:** Independent observers rated psychopathology using the Test Observation Form in 378 children and youth between the ages of 4 and 24 (mean age 10 at the first assessment) who had a parent with major depressive disorder, bipolar disorder, schizophrenia, or no history of mood and psychotic disorders.

**Results:** Observed attentional problems were elevated in offspring of parents with major depressive disorder, bipolar disorder and schizophrenia (effect sizes ranging between 0.31 and 0.56). Oppositional behavior, and language and thought problems showed variable degrees of elevation (effect sizes 0.17 to 0.57) across the three groups' offspring of affected parents, with the most difficulties observed in offspring of parents with bipolar disorder. Observed anxiety was increased in offspring of parents with major depressive disorder and bipolar disorder (effect sizes 0.19 and 0.27 respectively) but not in offspring of parents with schizophrenia.

**Conclusions:** While externalizing problems, are a general manifestation of familial risk for severe mental illness, anxiety may be a specific marker of liability for mood disorders. Observer assessment may improve early identification of risk and selection of youth who may benefit from targeted prevention.



## Auditory Training for Central Auditory Processing Disorder from mild Traumatic Brain Injury

Melanie Santhikumar, Dalhousie University

**Introduction and Methods:** Central Auditory Processing Disorder (CAPD) is caused by damage to the central auditory system affecting neural processing (ASHA, 2005). CAPD includes difficulty following conversations in background noise, having sound sensitivities, and other auditory related issues (Marshall, Bayley, McCullagh, Veliknja, Berrigan, 2012). Of the 42 million people diagnosed annually with mild Traumatic Brain Injury (mTBI)(Prince & Bruhns, 2017), 58 percent suffer from CAPD (Vander Werff, Rieger, 2017) causing communication difficulties. This poses a barrier not only in their personal life, but also in their rehabilitation goals by not being able to effectively communicate with other health professionals (Koochi et al.,(2017).CAPD is treated using formal auditory training supervised by an audiologist (Geffner & Ross-Swain, 2007). Currently, the limited research using formal auditory training on patients with mTBI show gains in ability to process speech in noise (WeiHING, 2017) as well as certain electrophysiological measurements (Marangoni-Castan, Luiz & Gil, 2017). This research project will focus on the finding the optimal frequency and length of sessions for long term consolidation (Molloy et al., 2012;Wright & Sabin, 2007). The use of a recent computer based auditory training program, CAPDOTS, will also be evaluated for its effectiveness on auditory processing for those with mTBI. Participants with mTBI will be assigned to three groups: no auditory training, formal auditory training, and use of the computer based auditory training, CAPDOTS.

**Anticipated Results:** Expected results include finding an optimal frequency and length for efficiency as well as evaluating the program CAPDOTS so that it may offer an accessible alternative to clients.

**Significance:** Treating the auditory aspect of mTBI will improve the quality of life for patients in all areas, from personal to interactions with other health professionals and help in their rehabilitation journey.

## **Control of Goaltender Lower Body Personal Protective Equipment**

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**Introduction:** An ice hockey goaltender's leg pads are extremely important to both safety and performance in hockey. Modern goaltender leg pads are built around the butterfly position, where the goaltenders drop to their knees, internally rotate their hips to bring the lower leg parallel to the ice surface. During the butterfly and other movements, leg pads rotate around the long axis of the leg to improve performance; however, sometimes leg pads do not return to their neutral position after the completion of a movement. In order to improve this performance limitation, we must first understand how goaltenders interact with their equipment. Therefore, the purpose of this study is to quantify the interface forces between the goaltender's skate and their leg pad, in two types of pads.

**Methods:** Interaction forces between the skate and the leg pads will be collected using a Tekscan 3600E pressure sensor attached to the underside of a flexible-tight leg channel pad and a stiff-wide leg channel leg pad. Passive motion capture cameras (Optitrack) will be used to obtain movement references for the force data. Participants will perform common goaltender movements on synthetic ice in a randomized order. Peak interface forces will be averaged for each participant, and group means will be calculated for each movement and compared between equipment conditions.

**Anticipated Results:** We predict that the flexible-tight leg pads will have significantly greater interaction forces compared to the stiff-wide condition. This will result in the flexible-tight leg pads being more responsive to goaltender movements, resulting in more control of the pads.

**Significance:** Quantifying differences in leg pad control will provide equipment manufacturers with information to why goaltenders opt for certain pads. Understanding how the design of the pads affects responsiveness to goaltender movements allows manufacturers to implement alterations to the pads that may result in better performance.

## Molecular Regulation of Type-II Toxin-Antitoxin Systems in Streptococcus mutans

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**Introduction:** *Streptococcus mutans* is a primary etiological agent of tooth decay worldwide. Among several virulence-associated traits, *S. mutans* can form persister cells in response to antibiotics and antimicrobials. Recent studies show that *S. mutans* harbors two type-II toxin-antitoxin (TA) modules, *mazEF* and *relBE*, which may contribute to the formation of persister cells. However, how *S. mutans* regulates these systems is unclear.

**Methods:** During studies of *S. mutans* Clp stress proteins, we identified a ClpP-deficient mutant defective in persister cell formation. We therefore extended our study into the effects of *clpP* deletion on transcriptional and proteolytic regulation of *MazEF* and *RelBE* systems of *S. mutans* in response to various stresses. Shuttle vectors constructed with *luxAB* fused to the promoter region of *mazEF* or *relBE* were transformed into *S. mutans* UA159 (wt) and  $\Delta$ *clpP* mutant for lux reporter assays. Two plasmids, pMazE-His and pRelB-His, were also constructed and transformed into UA159 and  $\Delta$ *clpP* for analysis of MazE and RelB (antitoxins) proteins by Western blotting.

**Results:** The lux reporter assays showed that quorum-sensing (QS) peptide analogs up-regulated transcription of *relBE* to some extent, but had little effect on transcription of *mazEF*. Increased temperatures (42°C) had little effect on transcription levels of both type-II systems, while acidic pH5.5 down-regulated both *mazEF* and *RelBE*. Western blot analysis showed that antibiotics induced the levels of MazE and RelB proteins, but the proteins were rapidly decreased in the UA159 strain. In contrast, increased levels of MazE and RelB retained in the  $\Delta$ *clpP* mutant regardless of the stress conditions.

**Conclusion:** Antibiotics, QS-peptide analogs and certain stress may induce differential transcription of *mazEF* and *relBE* TA modules. Importantly, the ClpP protease is required for the balanced regulation of these systems, which may be a mechanism to restrict persister cell formation in *S. mutans*.

## **"Exploring the Gaps in LGBTQ2S Health Knowledge: A Theory on People-Centred Health Services"**

Jennifer Searle, School of Nursing, Dalhousie University

**Introduction:** The purpose of this queer phenomenological study is to explore the relationships between LGBTQ2S (lesbian, gay, bisexual, transgender, queer, and Two Spirit) patients and primary care providers (PCPs), against stigma-embedded heteronormative landscapes of health settings to better understand how gaps in health knowledge contribute to negative health outcomes.

**Methods:** Purposeful sampling will be used to recruit 10-15 PCPs and 10-15 LGBTQ2S HSUs. The size of the sample (N=20-30) and focus groups (5-7 participants each; 2-3 focus groups per participant group) are commensurate with phenomenological design. Following REB approval, recruitment strategies will include a social media campaign. One-to-one phenomenological interviews will be conducted with PCPs only; this intends to shift the burden of bridging gaps in knowledge onto PCPs. Interviews lasting 60-90 minutes will be in a place and at a date/time of mutual convenience; they will be audio recorded and transcribed verbatim. Preliminary data from interviews will be supplied to focus group participants with the intent of contributing a deeper level of analysis to the group discussion. Focus groups will maintain a separation of participant groups to foster independently emerging themes via interpretive analysis along the axes of time, body, space, and relation.

**Results/Anticipated Results:** Phenomenological research does not form specific hypotheses; however, this project aims to illuminate key gaps in knowledge in relation to professional scopes of practice, which intends to produce findings that can be developed into broad strategies that potentiate equitable and inclusive assessments of underserved patient populations.

**Conclusion/Significance:** The proposed project is designed to gain perspective on heteronormativity as a key social determinant of LGBTQ2S health outcomes by exploring how PCPs inadvertently perpetuate LGBTQ2S health inequities via exclusionary health practices.

# **The Experiences of Women with High-Risk Pregnancy on Hospitalized Bed Rest: A Recreation Perspective**

Annie Shannon-Dwyer, Dalhousie University

**Introduction:** Bed rest, a prescribed treatment to reduce symptoms associated with complicated pregnancies, often results in adverse physical, emotional, and social health consequences on antepartum women and their families. Among the impacts of bed rest are changes to women's recreation. Recreation provides opportunities for individuals to experience purposeful leisure while building strengths and independence. Meaningful recreation improves health, well-being, and overall quality of life. The purpose of this project is to investigate the experiences of high-risk pregnant women on various levels of bed rest from a recreation perspective.

**Methods:** This project will be conducted using an explorative case study design. Approximately three pregnant women in hospital on bed rest will be engaged in journaling over the course of one to two weeks. Journaling will serve as an elicitation mechanism during one-on-one interviews, where participants will be asked to discuss their experiences on bed rest by examining their journal entries. Interviews will be audio recorded, transcribed, and analyzed using thematic analysis.

**Anticipated Results:** Study findings will include narratives of pregnant women's experiences on hospitalized bed rest. Findings are intended to provide deep insight into the recreation experiences of the women, and will highlight opportunities for change in current care practices.

**Significance:** This approach will engage patients in critically assessing their recreation opportunities and engagement on hospitalized bed rest. This study has the potential to spark change in the way the healthcare system values recreation for women with high-risk pregnancy on bed rest and the opportunities for meaningful recreation for this group.

## Mental Illness, Meaning-Making, and the Material Mind

Sarah Smith, Queen's University

**Introduction:** Neuroscientists are increasingly using functional magnetic resonance imaging to identify several types of mental illness, including depression, bipolar disorder, and schizophrenia, to help improve diagnostic accuracy in people experiencing psychiatric distress. In response, mental health scholars and activists have voiced concerns about the ethics of diagnosing mental illness using these technologies, using socially-oriented and anti-materialist theories to challenge biomedical approaches to mental illness.

**Method:** I used textual and theoretical analysis to identify key themes in psychiatric texts describing patient experiences with fMRI scans as a diagnostic tool.

**Results:** Using these methods, I identified three major themes regarding patient attitudes towards fMRI scans as a mental illness diagnostic tool: skepticism, validation, and indifference. These testimonies mirror many of the ethical concerns surrounding the use of fMRI scans, including the fear that their diagnosis would define their personalities and lives. However, it is evident that for some patient-participants, brain scans provided a sense of validation or closure from diagnostic uncertainty.

**Significance:** My results demonstrate that critical disability and mad theoretical approaches to mental illness cannot account for the diverse experiences of psychiatric patients in their diagnostic journeys. My research demonstrates a need for more nuanced theoretical and ethical approaches to mental health research. Further patient-centred research should adopt an intersectional approach to understand the relationship between mental illness, gender, race, and sexuality and how other systems of power, both inside and outside psychiatry, impact the meanings that are given to these scans from both a material and social perspective.

## Adverse Childhood Experiences: Early Childhood Educators Awareness and Perceived Support

Marla Smith, Mount Saint Vincent University

**Introduction:** Adverse Childhood Experiences (ACEs) refer to impactful experiences a child endures before the age of 18. These can include, but are not limited to, childhood psychological, physical and sexual abuse; physical and emotional neglect and household dysfunction (Hughes et al., 2017). ACEs provide stress in young children, which can lead to changes in brain structure and function (Sciaraffa et al., 2018). Children who experience adversity are more likely to display challenging behaviour, especially in early childhood education settings. Quality early childhood education can help children show resiliency, especially in those who have experienced previous adversity (Sciaraffa et al., 2018). Therefore, early childhood educators (ECEs) have the potential to use their relationship as a tool for helping children within their care. Although ECE's have the potential to support all children, especially those who experience adversity (Mortensen et al., 2018), Canadian research does not focus on ACEs, children and the early childhood education environment.

**Methods:** This research will use a qualitative approach. Six to 12 ECEs from different child care centres across Halifax will be recruited. Semi-structured interviews will be held with each participant to gain their perspective on their awareness and perceived support related to adverse childhood experiences.

**Anticipated results:** Once data is reviewed, thematic analysis described by Braun and Clarke (2009) will begin. The researcher will transcribe and review the material further creating codes and themes that relate back to the semi-structured interviews.

**Significance:** So far, research has not focused on ACEs, children and the early childhood education environment, therefore, this research will help to fill that gap. Findings may provide direction for future policy changes in Nova Scotia related to support for early childhood educators working with children who have experienced early adversity.

## What is a 'Kin' student? Kinesiology at Dalhousie University

Stacie Smith, School of Health & Human Performance, Dalhousie University

**Introduction:** The Division of Kinesiology at Dalhousie University is one of the more popular choices of study among undergraduate students. It is great preparation for many post graduate programs, such as Medicine and Physiotherapy. The goal of this study was to determine what exactly a 'Kin' student at Dalhousie looks like. The study will determine why they came to Dalhousie for this program and what they liked and disliked about the program. It will also determine what areas of the Kinesiology program at Dalhousie are doing well and what areas need improvement, along with the steps to develop these areas.

**Methods:** Comprehensive research into comparable Kinesiology programs in Canada regarding their offerings, requirements & infrastructure within their programs was done to compare Dalhousie's program with others across the country. A survey was then distributed electronically, as well as in person in a focus group setting, to all current and former Kinesiology students at Dalhousie to ask their thoughts about their experience in the Kinesiology program.

**Ongoing Results:** This will result in enhanced & updated curricula in Dalhousie's Kinesiology program.

**Conclusions:** This study has been able to showcase the positives and negative of the current Kinesiology program at Dalhousie from current students, alumni and faculty. This has also shown what a "Kin" student looks like. By comparing this program to similar Kinesiology programs in Canada, there can be only improvements made to bring it up to the same level as others.



## **From Knowing to Doing Well: Visualizing Good Long-Term Care (LTC) Staff Mental Health and Dementia Literacy**

Denise Snyder<sup>1</sup>, Katie Aubrecht<sup>1</sup>

1, Saint Francis Xavier University

**Introduction:** There is increasing awareness of the importance of LTC staff mental health and dementia care education and training to quality of care and quality of work. This poster will share results from a review and synthesis of current realities and trends in mental health and dementia care education and training for front line staff within LTC homes in Canada. With a focus on participatory arts-informed and intersectional approaches and conducted with the aim of analyzing how mental health and dementia care can be viewed as expressing ‘good’ staff mental health and dementia care literacy.

**Methods:** A qualitative study involving an environmental scan and comprehensive review of peer-reviewed academic and grey literature on mental health and dementia literacy, education and training for LTC staff. As well as provincial programs and targeted review of literature related to older adults living in nursing homes. Materials were analyzed and interpreted using the Mental Health Literacy Framework, which examines the knowledge and beliefs people hold about mental health, and an intersectional disability studies approach.

**Results:** Participatory arts-informed and intersectional approaches to education and training and care practice can support meaningful engagement of people living with mental health and dementia in LTC and their caregivers in the knowledge to action process, by acknowledging and encouraging sensitivity to social and relational aspects of care.

**Conclusions/Significance:** Results have value for the continuing care sector, with implications for LTC administrator and health authority decision-making related to person-centred care, staff satisfaction, safety and quality control. Findings also have value for adult education sectors, with the potential to support appropriate and effective LTC staff program development and evaluation.

## **Impact of High-Fidelity Simulation on Healthcare Student Readiness for Interprofessional Learning**

Thomas Southall, Memorial University of Newfoundland

**Introduction:** Preparing future healthcare professionals to work effectively within interprofessional teams requires examination of current readiness for interprofessional education (IPE) among undergraduate health sciences students. One IPE approach consists of using computerized human patient simulators for high fidelity interprofessional education (HF-IPE), however the readiness of undergraduate health sciences students to undergo HF-IPE remains unclear. Our study aims to explore two questions: (1) are undergraduate health sciences students ready for interprofessional learning, and (2) does participation in HF-IPE result in a higher level of readiness for interprofessional learning compared to participation in a low fidelity (LF) interprofessional simulation.

**Methods:** Research will follow a pretest – posttest repeated measures design to compare HF and LF “readiness”. Readiness will be measured using the Readiness for Interprofessional Learning Scale (RIPLS), a commonly used and validated 5-point Likert scale questionnaire. The simulations involve teams of students from medicine, nursing, and pharmacy programs. Each team will participate in a HF and a LF anaphylaxis-simulation. Following completion of the simulation and questionnaire, the results will be compared pre-post for significant changes.

**Anticipated Results:** Based on current literature examining healthcare students of various programs, interprofessional simulations, and use of RIPLS it is reasonable to hypothesize that participation in HF-IPE simulation will result in increased readiness for interprofessional practice as measured by the RIPLS questionnaire.

**Conclusion:** There is a need for more research measuring health sciences student readiness for HF-IPE learning, and the effects of participation in such simulations. Through participation in HF-IPE and distribution of the RIPLS questionnaire we aim to measure the impact of participation in HF-IPE on readiness for interprofessional learning.

## Why are patients presumed competent to decide about healthcare?

Arlo Sporn, Department of Philosophy, University of Toronto

**Introduction:** When a doctor proposes a treatment for their patient, the patient's right to consent to or refuse that treatment is contingent on their decision-making capacity—also known as their competence. There is a prevailing legal standard in healthcare settings according to which adult patients are presumed to be competent to make medical decisions, until those who wish to interfere with their decisions prove the contrary. The justification for this presumption is unsettled in the literature; yet at present there is nearly no interactive discourse between those who disagree on the topic. Those who have written on the topic tend not to provide detailed arguments in favour of their positions, and frequently fail to address competing justifications. This lack of debate is troubling because different ways of justifying the presumption of competence may imply different methods of its adoption, including exceptions and limitations to its application. For example, different approaches might have diverging implications regarding whether the presumption ought to be extended, as it is now, to groups such as the mentally ill, or patients treated in intensive care units.

**Methods:** I categorized the existing justifications that have been offered for the presumption of competence in healthcare decision-making (PC) and evaluated their relative strengths through philosophical analysis.

**Results:** I find that there are three broad justifications for the PC: (1) it is epistemically justified based on the statistical likelihood that any given person is, in fact, competent; (2) it minimizes negative moral consequences; and (3) it is required by our deeply held (non-consequentialist) moral principles. After briefly explaining why I take the first approach to be the least promising, I explicate and motivate the second and third approaches.

**Conclusion:** I suggest that approach (3) is the most promising with regard to its prospects for informing hospital or statutory policy surrounding the

**The experiences of Indigenous students applying to Canadian medical schools:  
Barriers and facilitators to admission**

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1, Dalhousie University; 2, Indigenous Wellness Lab

**Introduction:** Indigenous peoples are underrepresented in the health professions, particularly in medicine. Currently, Indigenous physicians represent only 0.25% of physicians in Canada. Indigenous students may experience barriers in the medical school admissions process, including the costs associated with preparing for and going through the application process, being first in their family to attend university, having limited access to educational and extracurricular opportunities, and limited access to role models who have completed the process. To date, no studies have examined the unique experiences of Indigenous students applying to Canadian medical schools (CMS). Therefore, the purpose of this project is to understand the experiences of Indigenous students in relation to barriers and facilitators they encountered throughout the CMS application and admissions processes.

**Methods:** This multiple methods study will be conducted using an online survey and optional follow-up, semi-structured phone interviews. The survey will include both closed and open-ended questions to understand the scope of experiences of Indigenous students applying to CMS. The open-ended qualitative questions will be analyzed using thematic analyses. Quantitative analyses will be used to calculate the proportion of students who reported encountering specific barriers and facilitators, and how these differ between experiences: First Nations, Metis or Inuit applications, urban or rural Indigenous.

**Anticipated Results:** Findings will provide insight into Indigenous students' experiences applying to CMS, highlighting barriers and facilitators that exist in the admissions process that can be acted upon to reduce the inequities that currently exist.

**Significance:** It is hoped that this study will influence policy and program development around enhancing recruitment, admissions, and success of Indigenous students to medical school, leading to a greater number of practicing Indigenous physicians.

**Responding to the needs of older women who experience intimate partner violence:  
A national survey of service providers**

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1, Dalhousie University; 2, University of New Brunswick

**Introduction:** There is a lack of knowledge on the specific supports and services available to women midlife and older who experience intimate partner violence (IPV) in Canada. Presently, many IPV services target women of childbearing age, although these services do not necessarily exclude older women, they often overlook the unique needs of this demographic. The purpose of this study was to examine the current support services available for older women who experience IPV in Canada.

**Methods:** A systematic web search was conducted to locate Canadian programs, organizations, and other supports for older women who experience IPV. Key information (i.e. type of program, location served) was recorded from each of the services' websites. Invitations to participate in a web-based survey were extended to the administrators of the supports identified in the web search in order to gather more detailed data.

**Results:** The web search yielded approximately 80 services that appeared, explicitly or implicitly, to support older women who experience IPV. Invitations were sent to these services and 25 full or partial responses were recorded. Responses from the survey offered a description of some of the current services being provided, populations who access these services, areas where more knowledge or training is needed, and other organizations who support older women who experience IPV.

**Conclusion/significance:** Findings from this study draw attention to the range of services that are available in Canada, however an increased number of initiatives are needed to support older women who experience IPV. Given some of the unique and cross-sectional features of this population (i.e. language minorities, racialized minorities, rural dwelling,) innovative and collaborative solutions are required to navigate the barriers that interfere with the development and provision of these services.

## The Perceived Benefits and Barriers of Everyday Cycling by Children in Halifax, Nova Scotia: A Qualitative study

Kathryn Stone, Dalhousie University

**Background:** Physical inactivity and air pollution are significant global health concerns. Physical inactivity among Canadian children is a particular concern because most children are not meeting national physical activity guidelines. To combat these concerns, promoting sustainable transportation modes is a valuable strategy. Cycling as a form of active transportation has significant health and environmental benefits, but its benefits and barriers from the perceptions of children are understudied.

**Purpose:** The purpose of this study is to describe the benefits and barriers to everyday cycling in Halifax from the perspectives of children who cycle.

**Methods:** Qualitative description was used in this study to describe participant experiences. Four families were recruited with the use of social media and posters. Data collection consisted of four open-ended interviews with six children all between the ages of 6-10 years. Data analysis started with transcribing the audio-recorded interviews verbatim, and using thematic analysis to code.

**Findings:** Six themes were derived from the data, with three themes being benefits to cycling, and three themes being barriers to cycling. Benefits include a connection to nature and social life, features of the physical environment, and confidence. Barriers include infrastructure, features of the physical environment, and the car culture.

**Conclusion:** Children perceive the benefits from cycling to outweigh the barriers. Barriers such as features of the environment (bad weather, hills) and car culture are barriers to cycling, but could be lessened by good cycling infrastructure. All barriers appeared to be minor for children in terms of wanting to cycle.

## **Exploring the efficacy of virtual reality interventions for increasing range of motion in elderly populations**

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1, School of Health & Human Performance, Dalhousie University

**Introduction:** Virtual reality (VR) refers to a computer-generated immersive environment, which can simulate real experience. The use of VR technology in therapeutic settings is proposed to aid in various assessments and treatments related to mobility and quality of life, yet knowledge related to its effectiveness in certain aspects is limited. The current study employs a VR intervention with elderly populations, designed to exercise range of motion (ROM) in the spine and shoulders, while decreasing fear of participation and maximizing enjoyment.

**Methods:** Healthy adults (n = 20, aged > 65) will be recruited to engage in an eight-session study, and randomized into intervention and control groups. The intervention group will engage in six sessions over a two-week period, involving 20-minute sessions of ROM exercises followed by 10 minutes of using VR goggles to explore a 360° nature scene. The control group will also engage in six sessions over a two-week period, receiving only 20 minutes of ROM exercises (i.e., without subsequent VR use). Motion capture analysis will be used to measure kinematic variables of the spine and shoulders in a pre/post design, along with questionnaires examining self-reported neck disability and fear of movement (kinesiophobia), to examine changes in both groups.

**Anticipated Results:** Anticipated results include: increased range of motion in both groups, with greater improvements in the VR group relative to the control; greatest kinematic changes appearing in spinal rotation and shoulder abduction; decreases in self-reported neck disability and kinesiophobia; and greater kinematic improvements for female participants in both groups as compared to males.

**Significance:** The current work informs on the efficacy of using VR as an intervention to increase spinal and shoulder ROM and decrease kinesiophobia in elderly populations, which may in turn improve quality of life and ease in completing activities of daily living.

## **Activating Cancer Communities through an Exercise Strategy for Survivors (ACCESS); A Patient Perspective**

Caroline Straub, Dalhousie University

**Introduction:** Cancer is the leading cause of death in Canada. However, advances in cancer treatment have led to increased survivorship. However, many cancer survivors experience disease burden or long term side effects of cancer treatment. These side effects impact physical, psychological, and social health, as well as negatively impacting quality of life. This in turn can contribute to increased rates of morbidity and early mortality. The literature suggests that physical activity is a safe and effective method for reducing many of these negative side effects in cancer survivors, in addition to promoting better overall health and preventing chronic disease. However, only a small percentage of Canadian cancer survivors are physically active. Activating Cancer Communities through an Exercise Strategy for Survivors (ACCESS) is a new exercise program (September 2018) in Halifax, NS that offers cancer patients the opportunity to take part in physical activity/exercise with other patients/survivors and trained exercise professionals in a safe and supportive environment. Purpose: As this is a new program, the purpose of this study is to assess the effectiveness and sustainability of the ACCESS program.

**Methods:** Participant perceptions and experience of the program will be investigated during a post-program semi-structured interview. This will include examining potential barriers and benefits of the program.

**Anticipated Results:** The current study hypothesizes that it is expected that all participants will experience some benefit and barriers to the ACCESS program.

**Significance:** Findings from this study will help support the development of sustainable physical activity/exercise programming for cancer survivors throughout Nova Scotia.



## **Investigation of Pesticide-associated N-nitrosamines in Human Serum and Urine in Prince Edward Island**

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**Introduction:** Epidemiological data supporting the link between pesticide exposure and several types of cancers are continually mounting.<sup>1</sup> Many pesticides used in Canada's maritime provinces are classified as "probable human carcinogens" by the US Environmental Protection Agency.<sup>2</sup> In addition, pesticides containing secondary amines can interact with nitrite present in the environment to form highly carcinogenic N-nitrosamines. The primary objective of this study was to identify specific nitrosatable pesticides and associated N-nitrosamines in human serum and urine.

**Methods:** Human serum and urine samples collected by the Atlantic Partnership for Tomorrow's Health (Atlantic PATH) study were analyzed from two populations: (i) 30 healthy adults residing at least five years in PEI in areas where groundwater nitrate contamination, an indicator of agricultural pesticide use, is more than 3 mg/L; and (ii) 30 healthy adults residing in Halifax, NS for at least five years (urban area control group). Samples were analyzed via ultra-high pressure liquid chromatography (UHPLC)/high-resolution accurate mass (HRAM) orbitrap mass spectrometry (MS).

**Anticipated Results:** The central hypothesis of this study is that N-nitrosamines formed endogenously after exposure to nitrosatable pesticides and nitrites can be detected as biomarkers in serum and urine of individuals living in areas of intensive pesticide use. It is anticipated that the number of biomarker detections, as well as peak areas of biomarkers, will be statistically significantly higher in biomatrices of PEI participants than in those of NS participants.

**Significance:** Exposure to N-nitrosamines is an area of study that requires further investigation for cancer risk assessment in environments vulnerable to agricultural pesticide and nitrate pollution. The ultimate goal of this study is to improve the health of not only Atlantic Canadians but also people affected by environmental pesticide exposure around the world.

# **Impact of Culture on Resident Centered Care and Meal Satisfaction in Long Term Care**

Safura Syed<sup>1</sup>, Linda Mann<sup>1</sup>

1, Mount Saint Vincent University

**Introduction:** Within Canada's growing ageing population, 30% comprises of the senior immigrant population (Ng, et al. 2012). As the population of senior immigrants increases, those living with health difficulties and functional impairments may require long-term care (LTC) placement (Starr, et al., 2015). Research shows culture and cultural preferences during mealtime are an important resident-centered care concept (Chaudhury, et al., 2013; Tolson, et al., 2012; Ducak & Keller, 2011). Unmet cultural food and dining preferences is one of the risk factors for weight loss and poor food and fluid intake in seniors and elderly living in LTC (Soenen, & Chapman, 2013; Tamura, et al., 2013). Individual cultural preferences are likely linked to familiarity and sensory acceptance of foods, yet limited research has been conducted in this area (Keller, et al., 2015). The role of dietetic professionals can bridge the gap between ageing through the lifecycle and quality of life through a resident-centered care approach.

**Methods:** The research on ethnic and diverse members of the senior population (65 years and older) in LTC settings that reside in Halifax Regional Municipality will be studied through a qualitative lens accompanied by interpretive phenomenological theory (IPA).

**Anticipated Outcomes:** Anticipated outcomes include increased awareness of how individual cultural preferences impacts meal satisfaction and food intake.

**Significance:** This study can help dietetic professionals make amendments to the current menu planning and meal service practices. It can also allow coordination with interdisciplinary members in LTC to provide training to improve cultural competency.

# **Evaluation of a Commercial Food Environment Dataset in Newfoundland and Labrador**

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1, Dalhousie University

**Introduction:** Food environments, including the composition and distribution of food retailers in an area or region, have the potential to shape population-level diets and associated disease risk. Community food environments have conventionally been studied using secondary data from commercial sources. However, commercially sourced secondary data has been shown to suffer from bias. Dataset errors and biases have been explored in urban jurisdictions but there are relatively few studies in smaller population centres. To address this gap, we evaluated the accuracy of a commercial dataset in the province of Newfoundland and Labrador (NL).

**Methods:** To assess the accuracy of a commercial data provided by DMTI Spatial, we utilized a ground-truthed dataset provided by the NL government. Several indicators of accuracy including concordance, sensitivity, positive-predictive value (PPV), and geocoding errors were all calculated using ArcGIS.

**Results:** The combined datasets consisted of 1125 unique stores. Of the 1125, there were 380 stores that existed in both datasets and were considered true-positive stores. The mean positional error between a ground-truthed point and test point was 17.72 kilometres. When compared to the ground-truthed dataset, DMTI supermarkets had the greatest agreement and DMTI Gas Stations had the least agreement. Only 4% of commercial data points in rural areas matched every criteria examined in comparison with the ground-truthed data.

**Conclusion:** The DMTI Spatial dataset exhibited a low level of agreement with ground-truthed data. Particularly, retailers in rural areas or classified as a gas station suffered from misclassification and/or geocoding errors.

**Significance:** By evaluating the accuracy of a commercial dataset in this jurisdiction, we have revealed a high degree of systematic error and the potential for datasets to suffer more bias in less populated regions, having significant implications for conclusions drawn from these datasets in the future.

## Can online grocery shopping save consumers' time and increase healthy eating?

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1, Dalhousie University

**Introduction:** Healthy eating is associated with a lower risk of developing many diseases. Insufficient time to plan, purchase and prepare nutritious meals has been identified as having an impact on the food people choose to purchase and consume. The trend of online grocery shopping is rapidly growing due to time pressures and public demand for convenience. However, it is unclear as to how the potential time saved may influence consumer behavior, particularly in terms of the purchasing and consumption of healthy food.

**Methods:** This study will employ a mixed methods approach in three specific parts. 1) A scoping review will identify and examine what is known about key factors in the relationship between time pressure and consumer behaviour. 2) To explore how factors uncovered in the review are operationalized by consumers who are utilizing online grocery shopping, a cross-sectional set of intercept surveys at stores in Halifax using validated item scales will be conducted (n = x) and quantitatively analyzed. 3) Finally, in-depth semi-structured qualitative interviews (n = x) exploring online shopping experiences will be carried out with a subset of the study participants and key policy stakeholders.

**Anticipated Results:** Preliminary results of the scoping review will be available by the conference. Prospective results will aim to uncover how consumers are using online grocery shopping and the influence on food purchases. It is anticipated that online grocery shopping will moderate the relationship between time scarcity and consumer purchasing decisions. Specifically, that perceived time saved may lead to healthier food choices.

**Significance:** Exploring consumers experiences with online grocery shopping and how it may influence food choice will provide valuable insight that will help to guide future research and policies to support healthy eating.

## **Potential Role of DVL3 in Causing the Childhood Blinding Disorder FEVR**

Sarah van der Ende<sup>1</sup>, Dr. Christopher MacMaster<sup>1</sup>

1, Dalhousie University

**Introduction:** Familial Exudative Vitreoretinopathy (FEVR) is an inherited childhood blinding disorder that affects approximately 600,000 patients worldwide, with an addition 12,500 infants born with FEVR each year. Caused by the inability to vascularize the retina, FEVR is a two-stage disease: before and after complications arise. Current best practices only treat the second stage of the disease, which seeks to prevent blinding complications but does not restore vision. A genetic diagnosis is critical in early treatment; however, not all of the causative genes are known. Dishevelled 3 (DVL3) interacts with other known causative FEVR genes and has been proposed as a candidate gene for FEVR as we have observed mutations in this gene in FEVR patients.

**Methods:** DVL3 acts in several different Wnt signalling pathways that contribute to retinal vascularization. I will perform structure and functional analysis of the DVL3 mutations observed in patients to determine if they affect DVL3 function.

**Anticipated Results:** These mutations in the DVL3 gene are believed to alter the function of DVL3 in canonical and non-canonical Wnt signalling, thus affecting retinal vascularization.

**Significance:** There are several important consequences of DVL3 being confirmed as FEVR-causing: faster and more accurate diagnosis of patients via a direct genetic test and more accurate genetic counselling for FEVR patients and family members will be facilitated. In addition, knowledge of the molecular basis of a genetic disease is an important and necessary step to move toward treatment and development of a treatment. Determining how mutations in DVL3 could cause FEVR will increase our knowledge of disease mechanism, enabling treatment development to repair the faulty retinal vasculature and enable life-long vision.

## **Brain measures to detect hearing deficits related to noise exposure in humans**

Patricia Van Roon, Dalhousie University

**Introduction:** Some adults experience difficulties understanding speech in noisy environments even though, when tested clinically, their hearing tests reveal thresholds within the normal range (0.25–8 kHz). Animal research shows intense sounds, that cause temporary hearing loss, may later result in unrecoverable damage to connections (synapses) between the inner ear (cochlea) and the auditory nerve (i.e., the pathway from the ear to the brain). Behavioural and 150aphthalene research indicate loud noise exposures (e.g., concerts, sports arenas) can cause similar damage in humans. The damage, called cochlear synaptopathy, may account for hearing problems reported by individuals who experience regular exposure to loud sounds and whose accumulation of damage could lead to permanent hearing deficits. Standard clinical tests cannot detect this damage in humans.

**Methodology:** This research uses state-of-the-art computational models of auditory nerve activity to design sounds for eliciting significantly different response patterns in people with cochlear synaptopathy. Collection of non-invasive brainwave recordings will occur in normal-hearing people and in a large pool of industrial workers with known noise-exposure histories. Special ear-canal electrodes will record brainwave responses specific to the region of auditory nerve activity.

**Anticipated Results:** By using advanced multiple-stimulus techniques, recordings of several responses occur more quickly and efficiently. Group-level brainwave analyses and an additional auditory test battery will confirm the presence of cochlear synaptopathy.

**Significance:** Current clinical hearing tests remain insensitive to cochlear synaptopathy, allowing noise-induced damage to go unrecognized until significant irreversible damage becomes unavoidable. These sensitive measures will enable early detection of auditory damage thus preventing hearing loss, improving hearing outcomes, mental health, quality of life, and mitigating health care costs.

## Exploring clinical and educational experiences of new-grad nurses working with children with intellectual disabilities

Emma Vanderlee, Dalhousie University

**Introduction:** Not all nurses feel prepared to care for children with intellectual disabilities (IDs). Fear, negative attitudes, stereotypes and lack of education are some of the reasons that parents and nurses provide when referring to nurses' discomfort and inability to provide necessary competent and safe care for children with IDs. These findings include nurses with a variety of years' experience; however, few studies have focused on newly graduated nurses. There are also few studies that have identified clear solutions to improving nursing care for children with IDs for new graduates that focus on education and competencies.

**Methods:** Feminist post-structuralism and discourse analysis will be used to explore the clinical and educational experiences of newly graduated nurses who are actively working with children with IDs. These methodologies will help to understand the beliefs, values, and practices of newly graduated nurses through the use of semi-structured interviews.

**Anticipated Results:** The anticipated results of this study are to learn the beliefs, values, and practices of newly graduated nurses working with children with IDs and provide suggestions for improving the education and competencies of nurses.

**Significance:** Because children with IDs spend more time in the health care system than typically developing children, have more co-morbidities, and experience stigma and stereotypes, it is imperative that we examine the type of care provided by nurses, what the best care should be, and what education and competencies would improve care to ensure children with IDs receive optimal levels of care in healthcare settings.

## Exploring Promising Practices of Person-Centered Care for Older Adults in Home and Community Care: A Scoping Review

Deanna Vervaecke, Dalhousie University

**Introduction:** The world's population is aging. Older adults are heterogeneous in their health status, care needs, and care preferences. Health care systems need to adapt to older adults' diverse preferences and needs. Person-centered (PC) care has been proposed as a care model that is responsive to older adults' varying health care needs and values. Home and community care (HCC) are also expanding and can support the common preference of older adults to age at home. The purpose of this review was to synthesize the current promising practices of PC care and other centered care approaches for older adults in HCC.

**Methods:** Following the Arksey and O'Malley framework, a scoping review of peer-reviewed literature was conducted. Four studies met inclusion and exclusion criteria. Extracted data were analyzed using summative content analysis.

**Results:** Three of the promising practices were visits provided in the older adults' homes and one was a quality improvement strategy for an HCC service. The promising practices involved needs assessments, the creation of an action plan, and regular follow-up. None of the studies defined centeredness term(s) used. "PC" was the most used term. Barriers to, facilitators of, and recommendations for promising practices of PC care and other centered care approaches for older adults in HCC settings existed at system, setting, health care professional, care practice, and participant levels.

**Conclusions:** Evidence from this study may have implications for reorienting health care systems towards PC HCC. Movements toward PC care and HCC also suggest that educating a variety of health care professionals about PC HCC and integrating PC HCC into existing systems through policy, programming, implementation, and evaluation is necessary. Future research should contribute to studies on promising practices of PC HCC for older adults and should be conducted in a variety of countries to determine different health care systems' impacts on implementation.



## **Gene Expression Profiles of Potential Selective Estrogen Receptor Modulators in Banded Killifish (Fundulus 153aphthalen)**

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1, Acadia University

**Introduction:** Selective Estrogen Receptor Modulators or SERMs, are hormone therapy drugs used to combat hormone-positive breast cancers. These drugs are tissue selective and can act as either antagonists or agonists. Ideally, SERMs are antagonists in the breast tissue (limit and/or inhibit breast tumour growth), and agonists in other tissues of the body (carry out the essential functions of estrogen). Dr. Amitabh Jha and his team at Acadia have synthesized two novel 6-(4-Hydroxypiperidino)153aphthalene-2-ol based SERMs that have shown potential in preliminary biological studies.

**Methods:** The mechanism of action of these drugs can be assessed through differential gene expression studies. Gene pathways of interest for these SERMs include cyclin D1, rap1gap, and foxP3. *Fundulus diaphanous*, a fish species with many human protein-coding orthologs is an ideal model organism. By extracting RNA from gill tissue of fish treated with the various SERMs and using quantitative PCR techniques, gene expression profiles can provide insight toward the mechanism of these SERMs.

**Results:** The extracted RNA showed high integrity on a 1% bleach gel. qPCR analysis shows reasonably stable expression for foxp3, rap1gap, and cyclin D1 when treated with DMSO alone. B-actin was discovered to be variably expressed for DMSO treatments and so it was discarded as a reference gene. Elongation factor  $\alpha$  was found to be much more suitable, as it was stably expressed during DMSO and SERMs treatments. The transcription factor foxP3 did not vary in expression during SERMs treatment. Cyclin D1 increased in expression for both novel SERMs and 17- $\beta$  estradiol at the six-hour time point.

**Significance:** This work is significant for the understanding of the cellular pathways modified by these drugs. These data are also useful for the synthesis of future potential SERMs, working toward better treatment options for hormone-positive breast cancers.

## **Impact of Attentional Loading on Postural Control of Older Adults, Across Different Task Constraints**

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1, Lakehead University

**Introduction:** Postural control, along with the performance of other voluntary actions, may be jeopardized when a secondary task is involved. This finding has been confirmed empirically via dual-task paradigms. From a conceptual standpoint, the interference emerging during the performance of such tasks is linked to processes occurring during motor programming stage of the information processing continuum, resulting in what is known as “bottle-neck effect”. In the context of postural control, the magnitude of this effect differs across populations, task demands and the nature of the attentional loading. The purpose of this research is to examine if/to what extent, older adults may be affected by various types of secondary tasks, while maintaining posture on different support surfaces.

**Method:** Healthy older adults (65+), will be recruited and complete tasks with and without cognitive load (visual vs. calculation) while maintaining postural control on two surfaces (compliant vs. non-compliant). A series of repeated measures factorial ANOVAs will be used to examine the possible effects of these constraints on postural control as derived from measures of center of pressure (COP) (path length, sway area, anteroposterior sway, mediolateral sway and COP velocity).

**Anticipated Results:** It is anticipated that postural control of older adults may not be affected when relatively simple attentional and task demands are introduced, but it will be jeopardized when the individuals will be asked to carry more complex attentional tasks with higher demands.

**Significance:** Conceptually, this research will confirm that the degree to which attention impacts voluntary actions is affected by many different constraints. From a practical perspective, it will suggest that postural control of older adults may be jeopardized when involved in challenging postural tasks while performing activities demanding a substantial amount of attention.

# The Effect of ALDH1A3 and Retinoic Acid Signaling on Breast Tumour Metabolism

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**Introduction:** Dysregulation of many metabolic pathways is vital for survival and therapy resistance of tumour cells. Aldehyde dehydrogenase 1A3 (ALDH1A3) and its product retinoic acid (RA) have tumour-promoting roles in certain breast cancer models; whether this accelerated growth is attributable to metabolic reactions of ALDH1A3 besides RA synthesis is unknown. As the first assessment of how this signaling pathway affects breast tumour metabolism, we implanted breast cancer cells with varying levels of ALDH1A3 activity in mice, treated them with RA, and quantified metabolites of resulting tumours.

**Methods:** Female NOD/SCID mice +/- RA pellet were xenografted with +/- ALDH1A3-overexpression (ALDH1A3-OE) MDA-MB-231 breast cancer cells and resulting tumours were harvested for mass spectroscopy-based metabolomics. Thus far, the tumours +/- RA treatment were analyzed. Eigen MS normalization enhanced variance in biological groups and reduced intragroup variance. This permitted detection of metabolite variations between treatment groups. Unsupervised clustering was used to ensure RA-treated tumours and untreated control tumours clustered separately based on metabolites.

**Results and Anticipated Results:** RA-treated tumours had significantly lower abundance of many metabolites, including thiamine, n-acetyl-glucosamine, n-acetyl-putrescine, taurine, 7-methylguanosine, xanthosine, and methionine. In contrast, glycerophosphocholine was significantly more abundant in the RA-treated samples. Future experiments will reveal if ALDH1A3 similarly alters metabolism in breast tumours.

**Significance:** Overlap is expected between the ALDH1A3-OE and RA metabolite profiles. Changes observed exclusively in the ALDH1A3-OE samples may imply that ALDH1A3 has other metabolic roles besides RA synthesis. Understanding how the ALDH1A3 and RA signaling pathway affects tumour metabolism will lead to novel strategies for therapeutic intervention in breast cancer.

## **The Identity Project: Targeting Self-Concept as a Social Determinant of Health for Formerly Homeless Youth**

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**Introduction:** An estimated 35,000 to 40,000 Canadian youth (aged 13–25 years) are homeless at some point during the year. Once youth become entrenched in street life, exiting homelessness and escaping poverty becomes harder. Incorporating identity capital (a sense of purpose and control, self-efficacy, and self-esteem) alongside other transition-related supports is a promising approach to enhance the life trajectories of youth. This study aims to examine the impact of an identity capital intervention on: 1) hope, community integration, social connectedness, and self-esteem; 2) the number of youths pursuing education, employment, or skills training; and 3) the number of youths who return to homelessness and live below the poverty line. An understanding of participants' perception of the benefits and areas for improvement of this intervention will be attained.

**Methods:** Study design-Mixed-methods, before-and-after pilot study. Population-Youth ages 18-26 who have transitioned out of homelessness in the past 36 months. Intervention-Participants received weekly training on identity-enhancing topics such as self-understanding, creating a life of purpose, strategic career development, and exploring solutions to transition-related challenges for 6 weeks. Data Collection and Analysis-Focus group and survey data will be collected every 3 months for a total follow-up length of 9 months.

**Results:** Preliminarily, significant increases in physical community integration and self-esteem were seen immediately post-intervention. Improved but non-significant changes were found in hope, social connectedness and psychological community integration. Emerging qualitative themes include: reconstructing identity, regaining control, and reaffirming potential.

**Conclusions:** This project will help illuminate the role of identity-based interventions in the spectrum of transition-related supports for formerly homeless youth and underscores the role of identity as a social determinant of health

## Reframing Responses to Youth Suicide at Queen's University

Grace Wedlake, Queen's University

**Introduction:** Suicide is the leading health-related cause of death for young adults in Canada. Between the years of 2010 – 2011, at least four students died by suicide at Queen's University. Due to these unexpected circumstances, there was not only the expectation for the university to offer public statements of condolences, but also to put together an action plan to address youth suicide on campus.

**Method:** I conducted a discourse analysis of Queen's University's responses to student suicide – both short-term and long term – including emails from administration, statements on the Principal's Blog, and the Student Mental Health and Wellness Strategy published in November 2012. I used critical suicidology to analyze these texts for evidence of the way suicide on university campuses is framed through a lens which prioritizes the medicalization of suicide.

**Results:** Based on this analysis, I identified three components to the narrative surrounding suicide which are perpetuated in the university's responses: (1) suicide is an individual problem, (2) which is understood only through medicine and, (3) is static and unchanging. This narrative does not address the societal injustices which can contribute to suicide, nor does it acknowledge collective responsibility to the problem of suicide. To shift this narrative, I propose adopting Jennifer White's theory of suicide as a "wild" problem to offer a more expansive understanding of suicide on university campuses.

**Conclusion:** The narrative produced by university discourses around youth suicide continues to view suicide as a static, individualized problem which can be explained and resolved through biomedicine. Shifting these university responses away from this narrative toward suicide as a "wild" problem could open up the possibility of a more nuanced approach to suicide which recognizes a multiplicity of solutions and meanings that could better benefit students at risk of dying by suicide.

## **Electromyographic Analysis of Gluteal Muscles During Therapeutic Resistance Exercise with Varying Knee Angles**

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**Introduction:** The purpose of this study is to investigate the gluteus medius (Gmed), gluteus maximus (Gmax), and tensor fascia latae (TFL) activation at two specific knee angles in a resisted side-stepping exercise. This is in an effort to identify the optimal method of administering exercises to maximize gluteal activation. It is hypothesized that the activation will be greater in the stance limb than the moving limb. Additionally, a deeper squat (greater knee angle) will increase muscle activation in the gluteal muscles while decreasing TFL activation. This ratio of muscle activation will result in a larger gluteal-to-TFL activation (GTA) index in the deeper squat.

**Methods:** Using electromyography (EMG) bilaterally over the 3 muscles, and an electrogoniometer to monitor knee angle, 24 participants will perform a side stepping exercise with elastic resistance around the ankles. All will perform the exercise with knee angles of 40° and 60°; order of angle will be randomized. The data will be normalized to percentage of maximum voluntary isometric contractions (MVIC), peak amplitude will be determined, and statistical analysis will use a repeated measures ANOVA.

**Anticipated Results:** It is anticipated that the deeper 60°squat will increase Gmed and Gmax activation while lowering TFL activation. This will then result in a greater GTA index with a deeper squat.

**Significance:** The results will aide our understanding of optimal gluteal strengthening and exercise administration. They will provide more precise knee angles to increase gluteal activation in resisted side-stepping exercise.

## Assessing the Effectiveness of an Interdisciplinary Session on Medical Student Knowledge of Healthcare and Pharmacare

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**Introduction:** Enhancing learners' understanding of the healthcare system is a fundamental objective of the Association of Faculties of Medicine of Canada (AFMC) as discussed in their publication "The Future of Medical Education in Canada (FMEC): A Collective Vision for MD Education." Further, multidisciplinary education and collaboration are important in the provision of healthcare. An interdisciplinary teaching session on the Canadian healthcare system and pharmacare was devised and introduced to a medical school curriculum where student learning was evaluated.

**Methods:** An interdisciplinary session was designed by a physician, a pharmacist, and medical/public health students and integrated into the 2nd year University of Alberta medical school curriculum. Prior to the session, students reviewed selected readings and completed a pre-session quiz on the healthcare system/pharmacare with questions reviewed by a physician/pharmacist as important to clinical practice. The 2-hour classroom session comprised of expert presentations from the Faculty of Pharmacy, School of Public Health, and Faculty of Medicine and Dentistry representing patient and clinician viewpoints. After the session, students repeated the same knowledge quiz.

**Results:** 106 medical students completed the pre-session quiz, and 102 completed the post-session quiz. Students scored a mean of 5.28 (SD 1.88) out of 11 items on the pre-session quiz. Students scored a mean of 7.65 (SD 3.12) out of 11 items on the post-session quiz. Students averaged a higher score on every quiz item post-session. Paired t-test for quiz results showed a significant increase in learning gaining approximately 14.6% ( $p < .001$ ).

**Conclusion:** This session is an example of a successful integrative approach to increasing medical student knowledge of the Canadian healthcare system. Pre-session and post-session test results showed clear knowledge uptake for all learning objectives.

## A Thematic Analysis of Online Print Media: Timothy Schmalz's Homeless Jesus and Perceptions of Homelessness

Kaitlin Wynia, McMaster University

**Introduction:** Research underscores the notion that homelessness is a persistent public health issue in Canada. While negative social stigmas associated with homelessness can lead to social isolation, poor health, and avoidance of social services, public art may have the potential to counter negative social stigmas and foster positive public dialogue. This public health issue is taken up in Timothy Schmalz's Homeless Jesus (2013). Homeless Jesus is a bronze life-size sculpture of Jesus who appears homeless and who is sleeping on a street bench. Although it has been theorized that public art can promote positive social change by instigating dialogues about social issues and by challenging oppressive ways of thinking, behaving, and speaking, there is a need for social scientific evidence to support these claims.

**Methods:** This project investigates how Homeless Jesus is portrayed in mass media and what this portrayal reveals about how art can influence societal perceptions of public health issues. I use a thematic analysis of online print media from the Canadian Broadcasting Corporation, the National Post, the Toronto Star, and the Hamilton Spectator. All articles that contained the phrase, "Homeless Jesus", were included in the analysis (N=22).

**Results:** Homeless Jesus is portrayed favorably in the media. It is depicted as fitting in with the physical urban environment and as making a space more welcoming for those experiencing poverty. This sculpture is also depicted as a symbol of a community's commitment to social inclusion and as a stimulus for acts of charity.

**Conclusion:** This project showcases how public art can be used to communicate and represent a community's values and aspirations. Likewise, this project reveals how public art can bring forward alternative ideas about a given public health issue.



## **‘Behind the Scenes’: Students’ weight-bias attitudes and perceived effectiveness of a weight-bias reduction intervention**

Josh Yusuf, Dalhousie University

**Introduction:** Weight biases are negative attitudes, explicit or implicit, held toward or against people living with overweight or obesity. These attitudes permeate all levels of society, including the healthcare and education settings. Medical professionals and students are not exempt from the prevailing attitudes towards obesity, that is, as an individual choice and responsibility. Currently, there is a lack of effective weight-bias reduction interventions. The ‘Behind the Scenes’ intervention combined an educational presentation with the ‘Balancing the Scales’ video to reduce Health Profession students’ weight-bias attitudes at a Dalhousie University Interprofessional Health Education (IPHE) event in 2017. This proposed project will conduct an analysis of the intervention data.

**Methods:** Multiple Methods were used to collect data at the IPHE event. The pre- and post-modified Anti-Fat Attitudes (AFA) test scores will be analyzed to determine changes in weight-bias attitudes. A qualitative description of written feedback will assess Health Professions students perceived effectiveness of the intervention.

**Results/Anticipated Results:** Pre- and post-modified AFA test scores are expected to display a reduction in weight-bias attitudes among Health Profession Students. A qualitative description of the written responses will produce themes which represent Health Professions students’ perspectives of the positive and negative aspects of the intervention, and potential improvements to the intervention.

**Conclusion/Significance:** The results of this data analysis will be used to inform and improve future interventions in order to reduce weight-bias attitudes in Health Profession students. The analysis also has potential to inform policy regarding weight bias at an organizational level.

## A qualitative exploration of students' experience with a quality physical education curriculum in Nova Scotia

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**Introduction:** Canadian school-aged children and youth are failing to meet recommended physical activity and sedentary behaviour guidelines. School-based physical education (PE) programs are thought to be an effective public health approach to addressing physical inactivity amongst students. However, without adequate monitoring or accountability, it is difficult to support students in achieving recommended physical activity levels and to ensure they are being taught according to quality daily PE guidelines. In Nova Scotia, the current PE curriculum for Grades 7-9 aims to enhance students' health and continued development of physical literacy. However, little is known about how the current PE curriculum is being implemented, or the types of transferable skills students are acquiring as a result.

**Methods:** In-depth semi-structured interviews will be conducted with 12-16 Grade 8 students (phase one), where interview questions will explore their perceptions and experiences of PE. Findings from thematic analysis of student interviews, will be used to inform the development of a semi-structured interview guide for use with interviewing 12-16 PE teachers responsible for delivering the Grade 7-9 PE curriculum (phase two), regarding their perspective on students' PE experiences. A thorough examination of all interview data, along with document analysis of the Nova Scotia 7-9 PE curriculum (phase three), will be conducted to explore any gaps for reducing physical inactivity and increasing physical literacy among students.

**Anticipated Results:** This information will be used to advance our knowledge of the current provincial PE curriculum, how it is being delivered and to determine novel, effective policy and programmatic school-based PE strategies.

**Significance:** Understanding adolescent physical literacy development remains a priority as levels of physical activity participation within this population are alarmingly low.

## **Off limits: Ethical boundaries of co-constructed knowledge when working with men who have a criminal record**

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**Introduction:** Occupational therapy is a client-centered profession that has demonstrated an interest in working with people transitioning to the community post-incarceration. Limited empirical evidence about the role of occupational therapy in the community with criminalized men presents a challenge to occupational therapists filling this role.

**Methods:** A community-mapping activity presents a novel approach to collecting information about the alignment of occupational therapist priorities and priorities of men with a criminal record in a Canadian community. Criminalized men and an occupational therapist researcher identified important and meaningful services, programs, and/or resources on an enlarged map of their city. Markers were colour coded to represent the men or the occupational therapist. Analysis employed a constant comparison method to code markers into categories and generate frequency counts to allow for between group comparisons of identified points. Archive theory and everyday life theories informed a critical analysis related to power differentials and social sanctioning of occupation to discuss differences between identified points.

**Results:** A lack of congruence regarding valued occupations was noted when it was observed that only 30% of points identified by the men and the researcher overlapped. However, as points identified by the men and the researcher were included, the map existed as a permanent resource to help orient men with a criminal record to potentially valuable programs, services, and resources.

**Conclusion:** Tensions between the theory and practice of client-centred occupational therapy where self-referencing bodies of academic literature and notions of acceptable versus unacceptable occupations may limit an occupational therapist's ability to prioritize or acknowledge the existence of non-sanctioned occupations. As a result, the types of interventions or services that criminalized men may find most useful may be omitted from practice.

## **The Cards You Are Dealt: Stories of Labeled Men**

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**Introduction:** Returning to the everyday life post-incarceration is a complex transition that ex-prisoners are often expected to make with minimal resources. Despite calls to action for community-driven solutions to community integration, funding and research to support such actions remain scarce. Because occupational therapists believe that access to equal opportunities to engage in meaningful activities is a human right, establishing evidence-based approaches to working with marginalized populations is key.

**Methods:** A participatory action research (PAR) project was facilitated by an occupational therapist as a group intervention with men with a criminal record living in Ontario. A three-phase process informed by the Photovoice method was followed. The group engaged in data collection and analysis to develop a shared critical consciousness and a plan to decrease stigma. The men assumed the role of co-researchers, exercising their agency to co-create knowledge (Wang & Burris, 1997) whilst in a supportive environment.

**Results:** The co-researchers curated photographs into a visual display to represent individual and collective narratives of everyday life. A successful community grant authored by the co-researchers funded the publication of a softcover book distributed to public libraries, community organizations, and government officials. A number of community presentations were delivered by the co-researchers to community groups and graduate level students to decrease stigma around men with a criminal record and promote anti-oppressive approaches to research.

**Conclusion:** Men with a criminal record experience a number of barriers to community integration and are often denied opportunities to advocate for their own needs. PAR is an evidence-based approach that occupational therapists (and other allied healthcare professionals) may facilitate as a group intervention that can equip marginalized populations with tools to create and disseminate knowledge.