

2020 UBC OKANAGAN

Interdisciplinary Student Health Conference

Thursday March 5, 2020

5:30 – 8:30 pm

Reichwald Health Sciences Centre, UBC Okanagan



THE UNIVERSITY OF BRITISH COLUMBIA

Contents

| | |
|---|-----------|
| Schedule | 6 |
| Map | 7 |
| Level 1..... | 7 |
| Level 2..... | 8 |
| Directory | 9 |
| Keynote and Adjudicators | 11 |
| Category: Science | 12 |
| Giulia Rossi, Applied Science; Helena Nunes, Arts and Sciences..... | 12 |
| Evaluation of an Extract from the Plant Vitex Rotundifolia as a Novel Mosquito Repellent. .. | 12 |
| Ryan Bonnie, Science; Kaden Workun, Engineering..... | 13 |
| Microencapsulation platform for oral delivery of microbiome-based therapy and detection using electronic chip..... | 13 |
| Hatem Zubaidi, Science | 14 |
| Intestinal Permeability: Not all fats are created equal..... | 14 |
| Mehdi Ahmadian, Education | 15 |
| Influence of Acute Intermittent Hypoxia on in Vivo Cardiac function | 15 |
| Mariana Gutierrez Salazar, Medicine | 16 |
| Ascending Aortic Length, Rather than Diameter, is Associated with Type A Aortic Dissection | 16 |
| Category: Population & Public Health | 17 |
| Madalon Burnett, Medicine | 17 |
| What makes a rural community healthy? | 17 |
| Martin Cheung, Medicine; Matthew Lum, Medicine | 18 |
| A scoping review of polypharmacy interventions in patients with stroke, heart disease and diabetes | 18 |
| J. Brianna Creelman, Medicine | 19 |
| Household food security and nutritional assessment of children and families receiving food support from Pamoja Community Based Organization in East Seme Ward, Kisumu County, Kenya | 19 |
| Karim Davarani, Health and Social Development; Aidan O'Callahan, Arts and Science..... | 20 |
| I'M T'CARE: Indigenous methodologies towards health equity for Urban and Rural Indigenous communities | 20 |
| Patricia Massell, Medicine | 21 |
| Healthcare Provider's Perspectives on the Challenges of Medical Travel in Northwestern BC | 21 |

| | |
|---|-----------|
| Category: Medical Technology..... | 22 |
| Alexander Corbett, Science; George Ng, Engineering | 22 |
| Development of a highly-specific exosome isolation and characterization platform..... | 22 |
| Jordan McKenzie, Medicine..... | 23 |
| Feasibility of an Assisted Chart Review for Assessing the Development of Radiation Pneumonitis..... | 23 |
| Yousif Murad, Medicine | 24 |
| Quantifying molecular forces using serial TGT | 24 |
| Andrew Nicholson, Engineering; Joan Brewer, Arts & Sciences..... | 25 |
| X-ray Vision: Seeing Radiation from Medical Procedures | 25 |
| Sebastian Sabry, Applied Science; James Fowler, Applied Science, Mathias Labonte, Irving K Barber School of Arts and Science..... | 26 |
| Comparing a set of intraoral stent material candidates for the reduction of radiation therapy side effects in head and neck cancer patients..... | 26 |
| Lydia Wood, Irving K Barber School of Arts and Science; Nicole Ketter, Irving K Barber School of Arts and Science | 27 |
| The effects of virtual reality on depressive symptoms and sedentary behaviour in inpatient stroke survivors: A pilot randomized controlled trial..... | 27 |
| Category Quality Improvement / Evaluation | 28 |
| Mariana Gutierrez Salazar, Medicine | 28 |
| Perioperative Complications with Single-Event Bilateral, Staged Bilateral, and Unilateral Hip Reconstruction Surgery in Children with Cerebral Palsy | 28 |
| Caroline Cechinel Peiter, Federal University of Santa Catarina; ,..... | 29 |
| Continuity of care and transitional care of children with chronic conditions | 29 |
| Adeeb Malas, Medicine | 30 |
| Cox-Maze procedure in surgical ablation of atrial fibrillation: treatment outcomes in Kelowna General Hospital. | 30 |
| Thish Rajapakshe, IK Barber School of Arts and Sciences; Lebohang Kolisang, Medicine | 31 |
| An Evaluation of the Impact of Transitioning to ERCP Under General Anesthesia | 31 |
| Kaitlin Toplak, Medicine | 32 |
| Assurance of Timely Access to Diagnostics and Treatment by Local Breast Health Clinic..... | 32 |
| Category: Patient Intervention | 33 |
| Lucas Arnold, Medicine | 33 |
| Interventions to improve physical activity in children, youth, and young adults with congenital heart disease: a scoping review..... | 33 |
| Conor Barrie, Medicine..... | 34 |

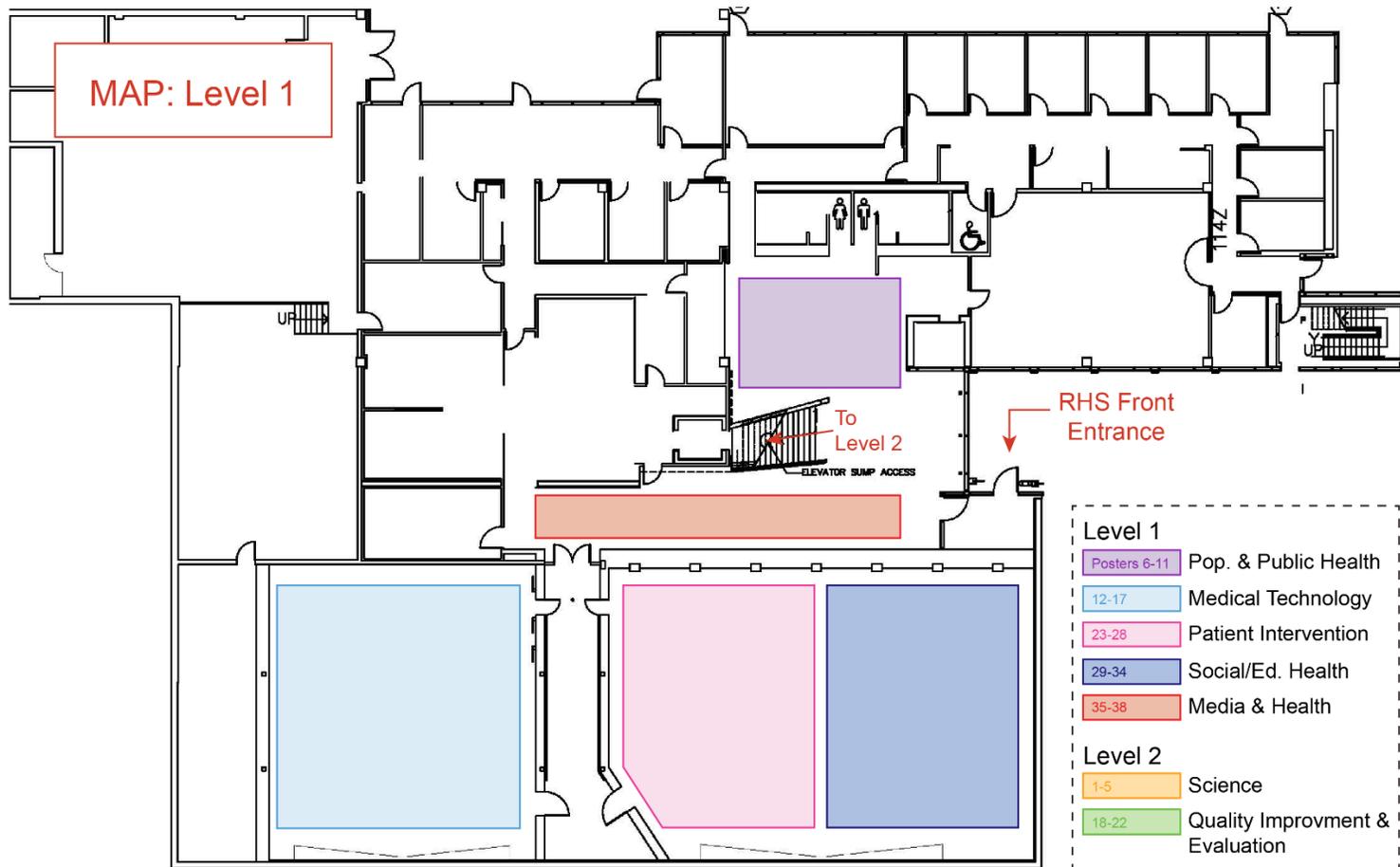
| | |
|--|-----------|
| Central Okanagan Youth Concussion Study: Validating a Screening Questionnaire in Kelowna's Youth Population | 34 |
| Ali Skalk, Medicine..... | 35 |
| Testing the efficacy of an abbreviated AIH protocol in improving cardiovascular function in individuals with spinal cord injury | 35 |
| Tami Lin, Medicine..... | 36 |
| Clinical Outcomes of Pancoast Tumours Treated with Trimodality Therapy in British Columbia | 36 |
| Allyssa Hooper, Medicine | 37 |
| Case Report: Primary Infertility Treatment in Patient with Acute Intermittent Porphyrin..... | 37 |
| Liisa Wainman, Medicine..... | 38 |
| A Breath of Fresh Air: Acute Intermittent Hypoxia Shows Promise to Improve Cardiovascular and Ventilatory Function in Incomplete Spinal Cord Injury | 38 |
| Category: Social / Educational Aspects of Health..... | 39 |
| Talia Del Medico, Medicine | 39 |
| The Efficacy of Education Sessions on Improving High School Students Knowledge on Consent, Sexual Assault, and Local Resources Involved in Supporting Sexual Assault Survivors | 39 |
| Jill Robinson, College of Graduate Studies; Maya Pilin, College of Graduate Studies..... | 40 |
| The Impact of Cannabis Legalization in Canada on Young Adolescents' Perceptions | 40 |
| Connie Ku, Sciences | 41 |
| Post-Cannabis Legalization Substance Use Perceptions in Canadian Youth | 41 |
| Kaitlyn Harding, Medicine | 42 |
| Development of the Student-run Stroke Management and Prevention Clinic (The S2MP Clinic) using Intervention Mapping | 42 |
| Carley Paterson, IK Barber School of Arts and Science | 43 |
| Self-efficacy as a predictor of early semester distress in university students..... | 43 |
| Monique Walsh, Interdisciplinary Graduate Studies (Social Work and Health and Management) | 44 |
| Informally Learning Collaboration in the Workplace: A Comparative Case Study of Institutional Factors within Primary Healthcare Workplaces | 44 |
| Category: Media and Health | 46 |
| Mirna Hennawy, Medicine; Emily Medema, Engineering | 46 |
| Integration of Goal-Setting and Internet of Things in Health and Wellness Communities..... | 46 |
| Liam R. King, Health and Social Development..... | 47 |
| A Qualitative Evaluation of Young Indigenous Men's Health and Wellness While Using Digital Media..... | 47 |

Angela Leung, Health and Social Development; Noman Mohammad, Science 48
 Smoke-free Dads: A game changer for better health..... 48
Kaylene Scheil, Irving K. Barber School of Arts and Sciences 49
 Conditioned Incentive of Alcohol and Cannabis Cues in Relation with Level of Substance Use49

Schedule

| | | | | | | | |
|-------------|---|---|--|--|--|--|---|
| 5:00 PM | Registration opens | | | | | | |
| 5:30 PM | Welcome and Keynote Address - RHS 260 and 257 | | | | | | |
| | Poster Presentations | | | | | | |
| | Science <i>2nd floor South</i> | Population & Public Health <i>1st floor atrium</i> | Medical Technology <i>RHS 257</i> | Quality Improvement / Evaluation <i>2nd floor North</i> | Patient Intervention <i>RHS 260</i> | Social / Educational Aspects of Health <i>RHS 260</i> | Media and Health <i>1st floor atrium</i> |
| Adjudicator | Dr. Barbara Oliveira | Dr. Miranda Cary | Dr. Rebecca Feldman | Mr. Jason Curran | Ms. Connie Bolding | Dr. Christine Voss | Dr. Harry Miller |
| 6:30 PM | Giulia Rossi Helena Nunes | Madalon Burnett | Alexander Corbett George Ng | Mariana Gutierrez Salazar | Lucas Arnold | Talia Del Medico | Mirna Hennawy Emily Medema |
| 6:42 PM | Ryan Bonnie Kaden Workun | Martin Cheung Matthew Lum | Jordan McKenzie | Caroline Cechinel Peiter | Conor Barrie | Jill Robinson Maya Pilin | Liam R. King |
| 6:54 PM | Hatem Zubaidi | J. Brianna Creelman | Yousif Murad | Adeeb Malas | Ali Skalk | Connie Ku | Angela Leung Noman Mohammad |
| 7:06 PM | Mehdi Ahmadian | Karim Davarani Aidan O'Callahan | Andrew Nicholson Joan Brewer | Thish Rajapakshe Lebohang Kolisang | Tami Lin | Kaitlyn Harding | Kaylene Scheil |
| 7:18 PM | Mariana Gutierrez Salazar | Patricia Massell | Sebastian Sabry James Fowler Mathias Labonte | Kaitlin Toplak | Allyssa Hooper | Carley Paterson | |
| 7:30 PM | | | Lydia Wood Nicole Ketter | | Liisa Wainman | Monique Walsh | |
| 7:42 PM | Open session - adjudicator deliberation | | | | | | |
| 8:15 PM | Awards and closing - RHS 260 and 257 | | | | | | |

Map
Level 1



Level 2



Directory

| Last Name | First Name | Poster # | Category | Presentation time |
|-------------------|------------|----------|--|-------------------|
| Ahmadian | Mehdi | 4 | Science | 7:06 |
| Arnold | Lucas | 23 | Patient Intervention | 6:30 |
| Barrie | Conor | 24 | Patient Intervention | 6:42 |
| Bonnie | Ryan | 2 | Science | 6:42 |
| Brewer | Joan | 15 | Medical Technology | 7:06 |
| Burnett | Madalon | 6 | Population & Public Health | 6:30 |
| Cechinel Peiter | Caroline | 19 | Quality Improvement / Evaluation | 6:42 |
| Cheung | Martin | 7 | Population & Public Health | 6:42 |
| Corbett | Alexander | 12 | Medical Technology | 6:30 |
| Creelman | J. Brianna | 8 | Population & Public Health | 6:54 |
| Davarani | Karim | 9 | Population & Public Health | 7:06 |
| Del Medico | Talia | 29 | Social / Educational Aspects of Health | 6:30 |
| Fowler | James | 16 | Medical Technology | 7:18 |
| Gutierrez Salazar | Mariana | 5 | Science | 7:18 |
| Gutierrez Salazar | Mariana | 18 | Quality Improvement / Evaluation | 6:30 |
| Harding | Kaitlyn | 32 | Social / Educational Aspects of Health | 7:06 |
| Hennawy | Mirna | 35 | Media and Health | 6:30 |
| Hooper | Allyssa | 27 | Patient Intervention | 7:18 |
| Ketter | Nicole | 17 | Medical Technology | 7:30 |
| King | Liam R. | 36 | Media and Health | 6:42 |
| Kolisang | Lebohang | 21 | Quality Improvement / Evaluation | 7:06 |
| Ku | Connie | 31 | Social / Educational Aspects of Health | 6:54 |
| Labonte | Mathias | 16 | Medical Technology | 7:18 |
| Leung | Angela | 37 | Media and Health | 6:54 |
| Lin | Tami | 26 | Patient Intervention | 7:06 |
| Lum | Mathew | 7 | Population & Public Health | 6:42 |
| Malas | Adeeb | 20 | Quality Improvement / Evaluation | 6:54 |
| Massell | Patricia | 10 | Population & Public Health | 7:18 |
| McKenzie | Jordan | 13 | Medical Technology | 6:42 |
| Medema | Emily | 35 | Media and Health | 6:30 |
| Mohammad | Noman | 37 | Media and Health | 6:54 |
| Murad | Yousif | 14 | Medical Technology | 6:54 |
| Ng | George | 12 | Medical Technology | 6:30 |
| Nicholson | Andrew | 15 | Medical Technology | 7:06 |
| Nunes | Helena | 1 | Science | 6:30 |
| O'Callahan | Aidan | 9 | Population & Public Health | 7:06 |

| Last Name | First Name | Poster # | Category | Presentation time |
|------------|------------|----------|--|-------------------|
| Paterson | Carley | 33 | Social / Educational Aspects of Health | 7:18 |
| Pilin | Maya | 30 | Social / Educational Aspects of Health | 6:42 |
| Rajapakshe | Thish | 21 | Quality Improvement / Evaluation | 7:06 |
| Robinson | Jill | 30 | Social / Educational Aspects of Health | 6:42 |
| Rossi | Giulia | 1 | Science | 6:30 |
| Sabry | Sebastian | 16 | Medical Technology | 7:18 |
| Scheil | Kaylene | 38 | Media and Health | 7:06 |
| Skalk | Ali | 25 | Patient Intervention | 6:54 |
| Toplak | Kaitlin | 22 | Quality Improvement / Evaluation | 7:18 |
| Wainman | Liisa | 28 | Patient Intervention | 7:30 |
| Walsh | Monique | 34 | Social / Educational Aspects of Health | 7:30 |
| Wood | Lydia | 17 | Medical Technology | 7:30 |
| Workun | Kaden | 2 | Science | 6:42 |
| Zubaidi | Hatem | 3 | Science | 6:54 |

Keynote and Adjudicators

Keynote Presentation

“Locally relevant, globally conscious: A research program and vision”

Kathleen Martin Ginis, PhD, O.M.C.

Reichwald Family UBC Southern Medical Program Chair in Preventive Medicine

Professor, Department of Medicine

Director, Centre for Chronic Disease Prevention and Management

Science

Barbara Oliveira, PhD

Postdoctoral Fellow, Exercise, Metabolism and Inflammation Lab

Faculty of Health and Social Development, UBC Okanagan

Population and Public Health

Miranda Cary, PhD

Postdoctoral Research Fellow

Faculty of Health and Social Development, UBC Okanagan

Medical Technology

Rebecca Feldman, PEng, PhD,

Assistant Professor, Medical Physics

Department of Computer Science, Mathematics, Physics, and Statistics, I.K. Barber School of Arts and Sciences, UBC Okanagan

Quality Improvement/Evaluation

Jason Curran, BSc, BJourn, MPH, PhD (candidate)

Regional Practice Lead, Research and Knowledge Translation, Interior Health

Patient Intervention

Connie Bolding, BIS, MIS

Manager Library Services, Interior Health

Social/Educational Aspects of Health

Christine Voss, PhD

Assistant Professor, Faculty of Medicine, Centre for Chronic Disease Prevention and Management

Southern Medical Program FLEX Director

Media and Health

Harry Miller, PhD, R.Psych

Clinical Neuropsychologist

Psychology Clinic Director, Associate Director of Clinical Training, Lecturer, Psychology

I.K. Barber School of Arts and Sciences UBC Okanagan

Category: Science

Poster #: 1

Presentation time: 6:30 pm

Giulia Rossi, Applied Science; Helena Nunes, Arts and Sciences

Evaluation of an Extract from the Plant *Vitex Rotundifolia* as a Novel Mosquito Repellent.

Background: Half of the global population is at risk of mosquito-transmitted diseases. Malaria, dengue fever, chikungunya, and Zika result in over 350 million cases per year. Malaria treatment costs exceed \$12 billion USD annually. Current synthetic repellents contribute to the growth of resistance in the vectors, increasing the urgency to evaluate the efficacy of natural compounds as repellents and to develop novel techniques to prevent transmission.

Objective: Examine the repellency of Rotundial, a compound extracted from the leaves of the invasive plant *Vitex Rotundifolia*, commonly known as the beach vitex, in order to develop an affordable anti-mosquito paint.

Methods: A commercial extract from beach vitex was obtained and evaluated for the presence of Rotundial using Nuclear Magnetic Resonance (NMR). Repellency, toxicity and contact irritancy of the extract were tested on adult female yellow-fever mosquitoes in a custom built High-throughput Screening System. The effectiveness of the plant extract was compared against commonly used commercial mosquito repellent compounds N,N- Diethyl-meta-toluamide (DEET) and Picaridin. Rotundial environmental fate was predicted using the Estimations Program Interface (EPI) Suite from the US Environmental Protection Agency (EPA).

Results: Preliminary results indicate that the commercially available extracts of beach vitex did not contain measurable concentrations of Rotundial. The results of our spatial repellency, contact, irritancy and toxicity studies confirm this as they showed minimal effects on adult mosquitoes in this suite of tests. EPI evaluations indicated that Rotundial has a predicted lifespan of less than 2 weeks in the environment.

Discussion: In light of the above, either the commercial extract was older than 2 weeks and all the Rotundial had degraded, or it did not contain Rotundial to begin with. Additionally, Rotundial's predicted environmental fate indicated chemical instability, which can be further investigated with a synthetically produced sample.

Conclusion: Future studies with synthetically produced Rotundial are currently in progress..

Poster #: 2

Presentation time: 6:42 pm

Ryan Bonnie, Science; Kaden Workun, Engineering

Microencapsulation platform for oral delivery of microbiome-based therapy and detection using electronic chip

Background: Inflammatory bowel disease (IBD) is a chronic digestive disease which is growing globally. Current therapies are suboptimal as they may not achieve long-term remission and have severe side effects. Probiotics are a billion-dollar industry, offering a promising therapy for an incredibly large range of ailments including IBD. However, there are a multitude of factors currently limiting the effectiveness of probiotics including low viability of bacteria from production processes, limited survival past the acidic stomach and poor colonization in the oxidized gut of patients. Our lab has developed designer probiotics; bioengineered strains of bacteria which have demonstrated increased survival and colonization in the gut of mice resulting in protection from colitis in a mouse model colitis.

Hypothesis :Microencapsulated bacteria will be protected from the stresses of lyophilization and will have higher viability post processing compared to unencapsulated bacteria.

Objectives :

1. Develop a chip for the rapid detection and identification of bacteria in a sample.
2. Determine whether microencapsulation of designer probiotics improves the viability of bacteria subjected to lyophilization and long-term storage compared to unencapsulated bacteria.

Methods:In collaboration with Hoorfar lab, we have developed a platform for the microencapsulation of bacteria with the aim of increasing the viability of the probiotic. To assess whether probiotic bacteria have survived the microencapsulation process and are still viable after processing, we are also developing a chip with a series of gas sensors integrated into a 3D-printed microfluidic device to detect volatile organic chemicals (VOC's). VOC's are generated by bacteria, each generating a unique combination. Using gas chromatography to separate the different VOC's and thus creating a pattern, the sensors can be used to identify the bacteria being analyzed. Luria-Bertani (LB) media is inoculated with designer E. coli to create a liquid culture which is then serially diluted and plated on LB plates for quantification of bacteria. The bacteria are then microencapsulated and lyophilized before being plated for quantification to determine its viability.

Results:Successful genetic modification of the designer probiotics has been confirmed through Western blotting. Colonization has been observed in mice through immunofluorescence. Results of viability testing are still being collected.

Poster #: 3

Presentation time: 6:54 pm

Hatem Zubaidi, Science

Intestinal Permeability: Not all fats are created equal

Background: Intestinal permeability (IP), known as 'leaky gut' syndrome in the alternative medicine field has attracted much attention with diet touted as the cure for this condition. IP is a change in permeability (relative to normal) in the intestine, leading to a disruption in the epithelial barrier. Antigens (foreign substances) pass into the bloodstream and initiate an immune response. Changes to IP have been attributed to chronic inflammatory diseases (e.g., inflammatory bowel disease and celiac disease), however the vast majority of associations are correlative. There is evidence to suggest that a diet rich in n-6 polyunsaturated fatty acids (n-6 PUFA) worsens IP, however few studies have explored the effects of different types of dietary fats on IP. More research on the influence of dietary components, including fat on IP are needed.

Hypothesis: Different types of dietary fat will influence IP, with corn oil (n-6 PUFA) leading to worsened IP.

Objectives: This study examined the effects of different dietary fats: 1) milk fat (saturated fats (SFA)), 2) olive oil (monounsaturated fat (MUFA)), 3) corn oil (n-6 PUFA), and 4) Mediterranean fat blend (40.8% calories from fat with 19% SFA, 68% MUFA, 13% total PUFA (2% n-3 PUFA)) on IP.

Methods: A mouse model of colitis referred to as Mucin 2 deficient (Muc2^{-/-}) were fed isocaloric, isonitrogenous rodent chow blended with various dietary fats (40% total fat) for 9 weeks. Muc 2^{-/-} mice are unable to secrete intestinal mucus which is important for intestinal mucosal protection. As a result, Muc 2^{-/-} develop spontaneous colitis. IP was assessed using the 4-kDa fluorescein isothiocyanate-conjugated (FITC) dextran test. FITC is an assay that indirectly measures IP.

Results: The results demonstrate that saturated fats (15.2 ug/ml) result in improved IP, whereas n-6 PUFA (50.6 ug/ml) have worsened IP. Suggesting that the type of fat consumed does influence IP.

Conclusion: Acknowledging that different types of dietary fats alter IP will provide insight into development of dietary guidelines for individuals living with diseases such as IBD and celiac disease which are associated with increased IP.

Poster #: 4

Presentation time: 7:06 pm

Mehdi Ahmadian, Education

Influence of Acute Intermittent Hypoxia on *in Vivo* Cardiac function

Background: Acute intermittent hypoxia (AIH) is an intervention known to elicit long-lasting neural plasticity within the sympathetic nervous system (SNS). Whether AIH-induced plasticity within sympathetic efferent neurons augments cardiac function *in vivo* remains to be elucidated. It was hypothesized that exposure to AIH would improve cardiac function.

Objective: To investigate whether AIH-induced sympathoexcitation increases cardiac function in rodents.

Methods: Four male Wistar rats were anesthetized and ventilated. Following baseline measurements, rats were exposed to 10 cycles of hypoxia (10% O₂) lasting 45 s with 5 min of hyperoxia (100% O₂) recovery following each hypoxia cycle. Follow-up measurements were made at 30, 60, and 90 minutes following AIH. For *in vivo* assessment of cardiac function, we used direct left ventricular (LV) catheterization that provided us with continuous measurement of LV pressure volume relationships from which stroke volume (SV) and pre-load recruitable stroke work (PRSW) were calculated.

Results: Compared to baseline (SV = 197 ± 61 µl; PRSW = 118 ± 28 mmHg), both indices of cardiac function were increased at 30 (SV = 215 ± 100 µl; PRSW = 133 ± 35 mmHg), 60 (SV = 223 ± 96 µl; PRSW = 128 ± 24 mmHg), and 90 minutes post-AIH (SV = 246 ± 93 µl; PRSW = 143 ± 15 mmHg).

Conclusions: Our preliminary data showed that AIH augments cardiac function as evidenced by an increase in SV and PRSW. Introducing such an intervention may provide a straightforward, non-pharmacological therapy in clinical populations suffering from reduced cardiovascular function associated with the loss and/or weakened SNS activity, like in those with spinal cord injury. Future studies are encouraged to examine the efficacy of AIH therapy on improving cardiac function in this population.

Poster #: 5

Presentation time: 7:18 pm

Mariana Gutierrez Salazar, Medicine

Ascending Aortic Length, Rather than Diameter, is Associated with Type A Aortic Dissection

Introduction: Ascending aortic diameter is the benchmark biomarker for the risk of type A aortic dissection (TAAD), and is used to select patients for prophylactic surgery. However, the majority of TAADs occur below the surgical threshold diameter of 55 mm, indicating that screening patients at risk for TAAD using diameter alone is a limited strategy. We aim to determine the role of both ascending aortic length and diameter in risk prediction and prevention of TAAD.

Methods: Computed tomography scans from patients with acute type A dissections (n= 51), aortic aneurysms (n= 121), and controls (n=200) were analyzed from aortic annulus to the innominate artery using multiplanar reconstruction. Measurements of diameter and length of the ascending aorta were collected. Due to immediate changes in aortic morphology post-dissection, lengths and diameters in the dissection group were adjusted to pre-dissection sizes based on models from published literature. This formed the pre-dissection group. Univariate and multivariate regression analysis was used and mean values, 95% confidence intervals, and correlations are reported.

Results: On average, ascending aortic length was longer in the pre-dissection group (104.2 [96.0, 109.3] mm) and the aneurysm group (107.0 [99.6, 118.7] mm), compared to controls (83.2 [74.5, 90.7]mm) ($p<0.001$). The diameter of the ascending aorta was largest in the aneurysm group (52.0 [45.9, 58.0]mm, $p<0.001$) and similar between controls and the pre-dissection group (33.4 [30.7, 36.73] mm vs. 35.2 [32.6, 40.3] mm, $p=0.26$). In the control group, ascending aortic length correlated with diameter ($r^2=0.35$, $p<0.001$), age ($r^2=0.17$, $p<0.001$), sex ($r^2=0.23$, $p<0.001$), and T1 to L5 height ($r^2=0.10$, $p<0.001$). After adjustment for these factors, the pre-dissection group was 17.82 [14.27, 21.37] mm longer than controls ($p<0.001$), and 11.13 [5.82, 16.45] mm longer than aneurysms ($p<0.001$), while aneurysms were found to be 6.67 [2.37, 11.00] mm longer than controls ($p<0.002$).

Discussion and Conclusion: Patients with type A dissection were associated with longer aortas than both aneurysms and normal controls. As with previous studies, we demonstrate that diameter did not distinguish this cohort of patients with TAAD from controls. Therefore, considering length of the ascending aorta may improve risk prediction and prevention of TAAD.

Category: Population & Public Health

Poster #: 6

Presentation time: 6:30 pm

Madalon Burnett, Medicine

What makes a rural community healthy?

Background: In Canada, rural community members receive less access to health care and have a disadvantage in some health outcomes. However, some regions of rural Canada, such as the East Kootenays, have higher indices of health. Studies on rural health outcomes typically examine what makes rural communities unhealthy, rather than what promotes health.

Hypothesis/Objectives: Our study aims to identify factors that affect health within communities in the East Kootenays. As this was an exploratory qualitative study, no hypothesis was developed a priori.

Methods: I interviewed 10 community leaders in Sparwood to determine factors that influence health in their community. We focused the 30-minute interviews on the broader community instead of facility-based healthcare, and developed our semi-structured interview guide using the socio-ecological model of health. Interviews were transcribed and coded to reveal themes that were repeated by multiple participants.

Results: We identified 5 major themes from our interviews: coal mining, culture, recreation opportunities, services for children and youth, and climate. Sparwood has features consistent with a single industry town that can negatively impact health, such as a culture supporting environmental destruction, challenges with shift work and substance use, and unequal distribution of wealth. Other challenges include lack of child care, and difficulties with accessibility for seniors. There were also several protective factors in the community such as positive programs for children and youth, strong generational ties, and excellent active recreation opportunities.

Conclusions/Clinical Impact: In developing policy to promote rural health it is critical to understand what factors are important to residents. As a single industry town, Sparwood has the potential to be an unhealthy community, but the protective factors we identified could lead to the higher indices of health seen in this area. We plan to recommend the following to local policy makers: (1) promoting a more diversified economy, (2) continue to develop active recreation, (3) make sure facilities are accessible, especially for seniors in the winter, and (4) work on better access to childcare. Our next steps are to repeat this study in other communities in rural BC to find factors that can positively influence health in rural communities.

Poster #: 7

Presentation time: 6:42 pm

Martin Cheung, Medicine; Matthew Lum, Medicine

A scoping review of polypharmacy interventions in patients with stroke, heart disease and diabetes

Background: Patients with cardiometabolic disease, specifically, stroke, heart disease and diabetes have a high prevalence of polypharmacy and subsequently are at high risk of adverse health outcomes resulting from pharmaceutical interactions. Interventions to better manage or reduce polypharmacy in these populations may help improve patient outcomes; however, there is a paucity of data in this area, which needs to be investigated.

Aim of the review: The purpose of this scoping review was to identify and synthesize the available evidence pertaining to polypharmacy interventions in patients with cardiometabolic disease(s) and to determine what outcomes measures were assessed and how they were impacted by study interventions.

Methods: We followed an evidence-based scoping review guiding framework to address our study objectives. Three electronic databases (MEDLINE, EMBASE, CINAHL) were searched for all relevant studies up to May 2019. The Cochrane Library was also searched; studies included in relevant reviews were screened for inclusion. Reference lists of all included papers were also manually reviewed to identify additional articles. Interventions to address polypharmacy and measures used to assess efficacy of interventions were qualitatively described.

Results: Overall, six studies met the inclusion criteria. No study focused on stroke populations. The majority of interventions were clinical pharmacist interventions reporting on a variety of outcomes including surrogate lab markers, quality of life and patient satisfaction scores, drug-related problems (DRPs), and healthcare utilization and costs. The findings from the included studies generally indicated improvements in outcome measures described, however, a high risk of bias was prevalent. Increased frequency and duration of follow-up with patients appeared to contribute to significant improvements in quality of life, disease control and cost-savings in outpatient and in-patient settings.

Conclusions: Polypharmacy interventions have shown efficacy at improving a variety of patient and healthcare system outcomes. However, our analysis of the identified studies suggests low-quality evidence and significant knowledge gaps regarding patients with stroke and cardiometabolic multimorbidity. This signals a need for further high-quality research to both confirm these findings and include these other high-risk patient populations to validate these findings.

Poster #: 8

Presentation time: 6:54 pm

J. Brianna Creelman, Medicine

Household food security and nutritional assessment of children and families receiving food support from Pamoja Community Based Organization in East Seme Ward, Kisumu County, Kenya

Background: Access to food is a basic human right; however, in Kenya, 47% of the population faces food insecurity. More than 25% of Kenyan children have stunted growth, with HIV-affected households bearing the greatest burden. Pamoja Community-Based Organization in Kisumu County, Kenya, works with 2,000 families impacted by HIV to improve their health. In this study, Pamoja sought to assess nutritional status amongst households with children under the age of five in East Seme Ward.

Objectives: The main objective of this project was to conduct a baseline food and nutritional assessment within Pamoja. Specifically, the project aimed to assess food insecurity among Pamoja households, conduct growth monitoring among children under five enrolled in Pamoja's Orphans and Vulnerable Children program, and provide information to help guide Pamoja's household economic strengthening interventions.

Methods: A total of 365 households with children under five receiving food support participated. Community Health Workers collected height, weight, and mid-upper arm circumference (MUAC) of children under five. Household food security data was collected through surveys such as the Household Food Insecurity Access Scale (HFIAS) and Household Dietary Diversity Scale (HDDS) using Qualtrics online survey software.

Results: 469 children (12% of the area's population of children under five) participated in the study. 118 (25.1%) were stunted, 63 (13.4%) were underweight, and 38 (8.1%) were wasted. Six (1.3%) children had MUAC measurements demonstrating undernourishment and were referred to medical care. Almost all household heads (>96%) reported anxiety and uncertainty about their food supply. HFIAS results indicated that 362 (99.2%) households were food insecure. The average HDDS score was 6 (± 1.54) points out of a possible 12. Most household heads (>88%) reported consuming grains, fats, vegetables, sugars, and chocolate/tea in the past 24 hours, while meat and eggs were rarely consumed.

Conclusions: The most prevalent form of undernutrition in this study population is stunting, which typically suggests chronic nutrient deficiency. Dietary diversity results may indicate nutrient deficiency, as the diet is lacking sources of protein. Most households are severely food insecure. This baseline data enables Pamoja to effectively target nutrient-deficient families and track their service delivery and impact.

Poster #: 9

Presentation time: 7:06 pm

Karim Davarani, Health and Social Development; Aidan O'Callahan, Arts and Science
I'M T'CARE: Indigenous methodologies towards health equity for Urban and Rural
Indigenous communities

Background: The Canadian Institute of Health Research and the Public Agency of Canada have declared diabetes and obesity among the four most urgent Indigenous health challenges. Over sixty percent of Indigenous people in B.C. live in off-reserve, urban and rural communities. They face health challenges related to access barriers, systemic racism, and structural violence. They want culturally appropriate and safe health care provision. The Partnership Accord between seven BC interior First Nations, First Nations Health Authority (FNHA), and Interior Health (IH), originally signed in 2012, and renewed in 2019 to 2024 states, "We have reaffirmed our commitment to provide the people of the interior Nations equitable access to quality and culturally safe care that meets the needs of patients and families." Yet urban-rural Indigenous communities indicate this is not happening.

Research question: Can we increase access to culturally safe diabetes/obesity care for urban rural Indigenous communities in the BC Interior by achieving the following objectives?

Partner with six urban rural BC interior, Indigenous communities, UBC and IHA, using community-led Indigenous methodologies, Traditional and Western knowledge to:

1. Co-develop and deliver a policy brief emphasizing the health care calls to action to be enacted on by the Partnership Accord to improve access to culturally safe health programs/services for urban-rural Indigenous communities.
2. Co-design and implement a culturally relevant Indigenous-led telediabetes/obesity program in these communities

Methods/Results: A literature review informed the creation of an impactful policy brief. Target goals and ways to address identified needs were identified. Community gatherings, Traditional Talking Circles, and IH input helped shape site specific Traditional and Western approaches to diabetes/obesity programs and tele-health clinic processes in safe environments/locations.

Indigenous diabetes/obesity programs have been developed and implemented. Specialists and Indigenous GPs have co-created an accredited diabetes/obesity training workshop. Indigenous GPs will be trained and help implement the clinics.

Conclusions: Effective delivery of a community-informed policy brief will move the Partnership Accord forward on working together more effectively to improve access to culturally safe diabetes/obesity care for urban-rural BC Indigenous communities.

Indigenous Diabetes/Obesity programs and outreach telediabetes/obesity clinics improve access to culturally safe care and improve overall wellness.

Poster #: 10

Presentation time: 7:18 pm

Patricia Massell, Medicine

Healthcare Provider's Perspectives on the Challenges of Medical Travel in Northwestern BC

BACKGROUND: Each year, countless rural patients from Northwestern BC travel to access medical care not available locally. Socio-economic, cultural, and geographical barriers in BC make this process exceptionally challenging. Little research has been done in this field in BC – and gaps in our knowledge exist. Healthcare providers (HCPs) are intimately involved in this process and can offer unique insights into the medical travel system.

OBJECTIVES: The goal was to answer the following questions:

1. What are the challenges faced by patients from Northwestern BC required to travel for medical care?
2. What challenges exist for HCPs caring for these patients?
3. What can be done to improve patient experiences?

METHODS: Semi structured interviews were used to capture HCP perspectives on medical travel in Northwestern BC. Ten half-hour interviews were completed with HCPs from a variety of backgrounds. Thematic analysis was used to identify important themes. Ethics approval was obtained by UBC's Behavioral Research Ethics Board.

RESULTS: HCPs identified challenges across the breadth of medical travel. The two most common identified challenges were financial burden and travel delays (100% of interviews). Other identified patient stressors included anxiety in the face of uncertainty due to travel delays, unfamiliarity with urban centers, and separation from loved ones. The main challenges faced by providers burden of time spent arranging for transfers, and lack of awareness about resources. Strategies HCPs found helpful for improving patient experiences include financial supports, subsidized accommodation in urban centres, and grouping of multiple medical appointments in one visit. Many felt that more critical care teams are needed meet the needs of rural patients and offered ideas of how to improve the current system.

CONCLUSION: Understanding the challenges faced by rural patients undertaking medical travel is vital to future improvement of this critical service. Overall, this study identifies common stressors that rural patients experience across the breadth of medical travel. HCPs remarked that “when things work, they really work”, but felt that often the system “isn't firing on all cylinders”. Our research identified areas that could be targeted to improve experiences for patients in rural BC.

Category: Medical Technology

Poster #: 12

Presentation time: 6:30 pm

Alexander Corbett, Science; George Ng, Engineering

Development of a highly-specific exosome isolation and characterization platform

Background: Exosomes are nano-sized extracellular vesicles (~30-100nm) shed by all cell types when late endosomes fuse to the cellular limiting membrane. They are formed following the invagination of the endosomal membrane at which point they take on the physiological signature of the parent cell. Because of the exosome's ability to act as targeted delivery vessels, these structures can function semi-analogously to viruses and hormones effecting changes in their recipient cells. Unfortunately, exosomes have yet to be isolated in a pure fraction as they overlap in all known physical properties with microvesicles, another class of extracellular vesicles that are shed directly from the cell membrane. As such, it is unknown which of these extracellular structures has the diagnostic potential for diseases such as cancer, diabetes, and neurodegeneration that is often reported in the literature.

Objectives: We set out to develop isolate techniques able to purify a bone fide exosome sample so that its biological function may be tested without the confounding variable of the microvesicle.

Summary: To do this, we are attempting a two-pronged approach. With microfluidic technologies based on acoustophoresis, a method that uses standing acoustic waves, we are able to separate spherical objects of various sizes into distinct outlets. With fluorescence microscopy we can detect structures containing Green Fluorescent Protein genetically coupled to CD63, a suspected exosomal marker, and adhere such structures to an imaging surface with relative specificity. As these two approaches provide methods for separating extracellular vesicles from crude samples, we are confident that more precise methods of isolation than those currently employed in the field can be developed to lead to pure exosome sample.

Poster #: 13

Presentation time: 6:42 pm

Jordan McKenzie, Medicine

Feasibility of an Assisted Chart Review for Assessing the Development of Radiation Pneumonitis

Introduction, Research Question and Hypothesis: Manual chart review is a labour-intensive process that requires a significant time investment for clinical researchers. Our project aims to evaluate the feasibility and accuracy of an assisted chart review program, using an in-house computer algorithm, to identify patients who developed radiation pneumonitis (RP) after receiving curative radiotherapy. We hypothesize that the computer algorithm will be able to accurately identify the desired patient cohort in less time than standard manual chart review.

Research Methods: A retrospective chart review was completed for patients who received curative radiation therapy (RT) for stage II-III lung cancer from January 1, 2013 to December 31, 2015 at BC Cancer Kelowna. In the manual chart review, RP diagnosis and grading were recorded using Common Terminology Criteria for Adverse Events (CTCAE) v4.0. From the Cancer Agency Information System (CAIS) charts of 50 patients, a total of 1413 clinical notes and radiology reports were extracted for review. The in-house computer program was built using the Natural Language Toolkit (NLTK) Python platform. Python version 3.7.2. was used to run the computer algorithm. The output of the computer program is a list of the full sentences containing the key terms, along with the document ID's and dates from which these sentences were extracted. The computer program results were compared to the manual chart review results.

Results: The algorithm was able to ascertain 23 out of 25 patients who developed RP grade 1 or greater (sensitivity = 0.92, 95%CI:0.74-0.99; specificity = 0.36, 95%CI:0.18-0.57), and all 9 patients with RP grade 2 or greater (sensitivity = 1.0, 95%CI: 0.66-1.0; specificity = 0.27, 95%CI:0.14-0.43). The utility of the algorithm would be avoiding unnecessary manual review of 22% of the non-RP patients, including their 198 (14% total) electronic documents.

Conclusion and Clinical Implications: This feasibility study showed that the computer program was able to assist with the identification of patients who developed RP after curative radiotherapy. This work has a potential to improve future clinical research, as the computer program can perform chart review in a more time and effort efficient manner, compared to the traditional manual chart review.

Poster #: 14

Presentation time: 6:54 pm

Yousif Murad, Medicine

Quantifying molecular forces using serial TGT

Background: Mechanical forces play a key role in signal transduction in wide range of biological processes such as cell migration and differentiation. Measuring these forces is of growing interest and a range of methods have been developed for this purpose, including molecular force sensors (MFSs). We developed a new MFS, the “Serial Tension Gauge Tether” (serial TGT), to quantify molecular forces with pN sensitivity. Of interest in our lab is understanding the forces involved in rolling adhesion, which is the process by which leukocytes find their target site while being carried by blood in the venules and capillaries.

Hypothesis: We hypothesize that the serial TGT can be used to quantify the molecular forces involved in cell rolling adhesion as used by leukocytes in the course of the inflammatory response.

Methods: To test this hypothesis, we use polystyrene beads, coated with P-selectin glycoprotein ligand-1 (PSGL-1) to mimic leukocytes. P-selectin, a receptor expressed on endothelial cell surfaces which facilitated leukocyte rolling adhesion, is conjugated to the serial TGT which is tethered to the surface of a flow chamber. The flow chamber provides for a small channel that mimics the properties of a venule or capillary. Therefore, this experimental setup is designed to mimic the conditions of leukocyte rolling in venules and capillaries in vitro. Buffer can be introduced into the channels at a controlled rate as to simulate different blood flow conditions.

Data acquisition is achieved through total internal reflection fluorescence (TIRF) microscopy to detect the fluorescent labels on serial TGT which provide the molecular force reading.

Results: Data generated from these experiments is analyzed using custom developed Matlab code. Results show an increase in the force applied across the P-selectin—PSGL-1 interaction as a function of the applied buffer flow rate. That is, higher shear stress conditions lead to increased force application onto the beads and across P-selectin—PSGL-1 interaction.

Conclusions: The serial TGT design is shown to be suitable for studying molecular forces in dynamic processes such as rolling adhesion. This step paves with way for using the serial TGT with human-derived cells under physiological conditions.

Poster #: 15

Presentation time: 7:06 pm

Andrew Nicholson, Engineering; Joan Brewer, Arts & Sciences

X-ray Vision: Seeing Radiation from Medical Procedures

Introduction: Some minimally invasive surgical procedures use X-rays to see inside the body during the operation. The resulting X-ray scatter is a workplace hazard for medical professionals involved. Radiation sources can be visualized using a pinhole camera, a well understood method of image creation, but it requires more scatter than is present from a typical procedure in order to create an image. In this project, an X-ray camera was developed to visualize these hazards, using much less scatter than a pinhole camera, to help educate staff and physicians on the presence of scatter in order to minimize their exposure.

Question & Hypothesis: Can X-ray scatter sources be identified at lower radiation levels than with a pinhole camera? This work hypothesizes that X-ray scatter can be imaged using a newly-developed tomographic reconstruction (TR, used in CT scans) camera, and that this TR camera can be used to visualize the scatter sources in less time than a pinhole camera can.

Methods: Pinhole and TR cameras were designed and fabricated. The cameras contain an imaging plate that is sensitive to X-rays. To verify camera behaviour, point source images were captured using direct X-ray beams, and processed. Direct x-ray beams were used for this preliminary study because images can be captured in fractions of a second, rather than 10s of minutes required for scatter radiation. Two point sources also provided an efficient way to develop and characterise the reconstruction methods. Scatter measurements were taken using a torso phantom placed on the patient support table, with the camera 1 m from the scatter source; the X-ray machine was run during several trials. Images of the X-ray scatter were captured using both a pinhole and the TR camera.

Results: The TR camera created a clearer image of X-ray scatter after four minutes of continuous X-rays, compared to an X-ray pinhole camera that required 40 minutes of X-ray exposure.

Conclusion: Preliminary results show that an image of x-ray sources can be created with aTR camera using lower dose, so lower exposure time, than a pinhole camera. Further refinement of the TR camera and image reconstruction methods are underway.

Poster #: 16

Presentation time: 7:18 pm

Sebastian Sabry, Applied Science; James Fowler, Applied Science, Mathias Labonte, Irving K Barber School of Arts and Science

Comparing a set of intraoral stent material candidates for the reduction of radiation therapy side effects in head and neck cancer patients

Introduction: Head and neck cancer patients are often treated with radiotherapy, during which healthy oral cells are damaged, leading to post-therapy symptoms such as dry mouth, tooth decay, and loss of taste. These symptoms are often exacerbated by backscatter of the radiation from dental restorations. The purpose of this project is to reduce adverse side effects in head and neck cancer patients who undergo radiotherapy, specifically those with dental restorations. Currently mouthguards have been experimented with and have shown to reduce adverse side-effects from backscattered radiation. This study aims to identify an ideal material for this purpose.

Research Question: What is an ideal stent material to reduce adverse side-effects from radiotherapy without reducing the procedure's efficacy? The ideal material must be easy to manufacture, not damaged during radiotherapy, safe for intraoral use and attenuates backscattered radiation efficiently. We hypothesize that the optimal material will be a composite of polymers to cover different subsets of these requirements.

Research Methods: A total of ten materials are being tested for mechanical and molecular uniformity pre and post saliva and radiation exposure (phase one). These materials include ethylene-vinyl acetates (EVAs), acrylics, and dental resins. Mechanical properties tested include surface roughness, density, and elastic modulus, and we are monitoring the molecular structure via Raman spectroscopy. In addition, we are measuring the attenuation coefficients of each material when exposed to scattered radiation. This is done by simulating the radiation on a test phantom and measuring the scattering attenuation of each material via film dosimetry.

Results: We observed no changes in the molecular composition of the materials pre and post radiation and saliva exposure, however, certain mechanical properties varied with and without saliva. At this point we do not have results for mechanical properties post-radiation or attenuation coefficients.

Conclusions: Continuing, the project will encompass a systematic approach to compare materials tested in phase one, to find the optimal stent material. Then with a final customized composite material, an in-vivo clinical study will be implemented to test the performance compared to standard mouthguards currently in place.

Poster #: 17

Presentation time: 7:30 pm

Lydia Wood, Irving K Barber School of Arts and Science; Nicole Ketter, Irving K Barber School of Arts and Science

The effects of virtual reality on depressive symptoms and sedentary behaviour in inpatient stroke survivors: A pilot randomized controlled trial

Background: Depressive symptoms and sedentary behaviours are common after stroke and are associated with sub-optimal rehabilitation and recovery. Given the association between depressive symptoms and sedentary behaviour, it is plausible that efforts to address depressive symptoms among stroke inpatients may decrease sedentary behaviours. Virtual Reality (VR) has garnered substantial attention as a cost-effective treatment approach in stroke rehabilitation. Prior stroke and VR research has primarily focused on physical and functional rehabilitation outcomes. However, the use of VR to improve depressive symptoms post-stroke has yet to be studied.

Hypothesis: Our primary hypothesis is that the protocol will demonstrate sufficient feasibility (e.g. recruitment and retention, administrative and participant burden) to support a subsequent larger randomized controlled trial (RCT). We expect that the VR program will significantly improve measures of depressive symptoms and sedentary behaviour in people with stroke receiving inpatient rehabilitation compared to a usual-care control group.

Methods/Design: We developed a VR-gaming program, comprised of relaxation, leisure, and activity games, for stroke inpatients. Stroke survivors are offered three 15-30 minute VR sessions per week for the duration of their inpatient rehabilitation. At each session, patients self-select a game and work with a trained clinician administering the VR program. Forty-eight patients receiving stroke rehabilitation, with an expected length of stay of 14 days or longer, will be enrolled in this single-blinded pilot RCT. Half of the participants will be randomly assigned to a usual care alone control group. The other half will be assigned to the VR-gaming program (VR + usual care). Data on study process, resources, management, and scientific parameters will be collected throughout the study to determine feasibility of study methodology. Depressive symptoms and sedentary behaviour will be assessed at baseline, post-intervention, and 3-weeks post discharge, using the Hospital Anxiety and Depression Scale and the Measure of Older Adults' Sedentary Time.

Conclusion: The feasibility data gathered in this pilot study will inform the development of a larger more robust multi-site RCT. If the VR-gaming program improves depressive symptoms and sedentary behaviour among stroke inpatients, such improvements may lead to better engagement in rehabilitation and thus more optimal recovery after stroke.

Category Quality Improvement / Evaluation

Poster #: 18

Presentation time: 6:30 pm

Mariana Gutierrez Salazar, Medicine

Perioperative Complications with Single-Event Bilateral, Staged Bilateral, and Unilateral Hip Reconstruction Surgery in Children with Cerebral Palsy

Purpose: Hip displacement is a common complication of cerebral palsy (CP), affecting one in three children. Hip reconstructive surgery may be performed in bilateral, bilateral staged procedures, or unilateral procedures to improve hip stability and reduce pain. There is currently limited evidence on the complication rates of hip reconstruction surgery in children with CP, particularly with comparison between surgical strategies.

Methods: A retrospective chart review was performed for patients with CP who underwent hip reconstructive surgery at a tertiary care paediatric centre, between 2003 and 2018. Complications were recorded from the first surgical procedure for 24 months (+/- 60 days) after the most recent surgical procedure. Event rates were compared between procedure types.

Results: Sixty-one children with a mean age at initial surgery of 8.6 years (ranging from 2-16.5 years) were reviewed. A total of 18 patients were included in the single-event bilateral procedure group, 32 in the unilateral procedure group, and 11 in the staged bilateral procedures group. In the single-event bilateral group, seven (38.8%) patients received blood transfusions. Four (22.2%) patients required unplanned procedures to treat complications and two (11.1%) required readmission to hospital. In the staged bilateral procedures group, four (36.4%) patients required blood transfusion in the first stage and one (9.1%) patient required blood transfusion during the second stage procedure. Overall, two (18.2%) patients required an unplanned procedure, and one (9.1%) patient required readmission to hospital. In the single-event unilateral group, eight (25.0%) patients required blood transfusion. Five (15.6%) patients required an unplanned procedure and two (6.3%) required readmission to hospital. Six (18%) patients went on to require contralateral hip procedures within the two-year duration of follow-up. Reasons for readmission to hospital included urinary tract infection, pain control, pneumonia, fracture, and poor feeding. The most frequent unplanned procedure was hip spica cast change.

Conclusions: Preliminary results of this study show that rate of blood transfusion, unplanned procedures, and readmission to hospital were similar in all groups. No conclusions can be made regarding the selection of surgical care based on these results, therefore further analysis of surgical procedure and complexity, patient comorbidities, and postoperative immobilization is needed.

Poster #: 19

Presentation time: 6:42 pm

Caroline Cechinel Peiter, Federal University of Santa Catarina; ,
Continuity of care and transitional care of children with chronic conditions

Introduction: Continuity of care is characterized as the degree of coherence, connection and consistency, according to the patient's need, and involves a series of health care events. To attain better continuity of care, healthcare providers focus on improving care transitions. Transitions are defined as a set of actions that aim to promote the transfer of the patient from one point of health care to another in a safe and timely manner. Patients with chronic conditions require different points of health care in the search for comprehensive care, which makes the integration of the network indispensable. Children with chronic conditions are at risk for disruption of continuity of care; but this population has not been the central focus of discussion of studies on transitions in care.

Objective: To analyze the continuity of care for children with chronic conditions transitioning between health services in a Health Care Network in southern Brazil.

Methods: An integrated mixed methods design was used; including both grounded theory and cross-sectional design. Two hospitals in the south of Brazil participated in the study. Data were collected through semi-structured interviews and The Care Transitions Measure (CTM-15) between February to September 2019. Thirty-five participants (30 health professionals and five parents) were interviewed and 167 surveys were collected from parents of children discharged from hospital.

Results: Transitional care from the hospital to community was a process conducted by the interprofessional team, where nurses were referred to as the leader of the team. It was highly apparent that healthcare providers gave special attention to the management of children with chronic conditions, ensuring high levels of continuity between healthcare providers and services. These data were supported by our quantitative data where the mean CTM score was 90.1 on a 100 point scale (SD=11.7), suggesting families experienced a high level of transitional care.

Conclusions: Although the availability of resources is essential for the continuity of care in the health care network, the efforts of health professionals can increase the quality of transitional care, improving the quality of life of children with chronic conditions and families during throughout their care journey.

Poster #: 20

Presentation time: 6:54 pm

Adeeb Malas, Medicine

Cox-Maze procedure in surgical ablation of atrial fibrillation: treatment outcomes in Kelowna General Hospital.

Background: Atrial fibrillation (AF), the most common rhythm disturbance of the heart, carries a significant burden on patients' health, such as increased stroke risk. A surgical ablative method characterized by a series of maze-like incisions, dubbed the Cox-Maze (CM) procedure, is often used as an adjunctive treatment to cure AF in patients receiving cardiac surgery for other purposes. Other institutions have reported success rates between 66% and 92%. Since the treatment outcome of the procedure varies significantly based on patient population, operator experience and specific lesions induced, we conducted a study to report local success rates in Kelowna General Hospital's (KGH) new cardiac surgery unit. Hypothesis The primary hypothesis is that patients receiving the CM procedure at KGH have a different rate of success, as defined by freedom from atrial tachyarrhythmias (ATAs), than reports in the literature.

Methods: A retrospective chart review was conducted on patients who received the CM procedure at KGH between January 1, 2013 and March 31, 2018 (N=63). Final follow-up for data collection was June 30, 2019. Success was defined as freedom from ATAs (AF, atrial flutter, and atrial tachycardia) up to the time points studied as per expert consensus guidelines. Success rates at 12- and 18-months post-surgery were estimated using the Kaplan-Meier method. Additionally, univariate Cox regression was used to examine individual associations with demographic and preoperative factors.

Results: Patients in the study had an average age of 68.7 ± 7.3 and 68% were male. 57% of patients had preoperative paroxysmal AF. The 12- and 18-months post-surgery freedoms from ATAs rates were 67.2% (95%CI=53.5-77.7%) and 63.4% (95%CI=49.5-74.4%), respectively. Younger age ($p=0.024$) and preoperative paroxysmal type of AF ($p=0.012$) were found to contribute to successful treatment outcomes 12 months post-surgery, while only preoperative paroxysmal type ($p=0.045$) was associated with success 18 months post-surgery.

Conclusions: The treatment outcomes of the CM procedure at KGH matched some of what is discussed in the literature; however, there remains a care gap in achieving the higher success rates reported in similar patient populations. Implementation of quality improvement initiatives may be key to improving care for patients receiving CM at KGH.

Poster #: 21

Presentation time: 7:06 pm

Thish Rajapakshe, IK Barber School of Arts and Sciences; Lebohang Kolisang,
Medicine

An Evaluation of the Impact of Transitioning to ERCP Under General Anesthesia

Endoscopic Retrograde Cholangiopancreatography (ERCP) is a technique used to diagnose and treat specific pathologies of the biliary or pancreatic ductal systems through the combined use of endoscopy and fluoroscopy. Kelowna General Hospital (KGH) performs close to 1,000 ERCP procedures each year. Due to recent changes in practice, ERCP procedures that were previously performed under procedural sedation are now performed under general anesthesia. This change in practice may impact outcomes for patients, resources and the healthcare team. As such, a retrospective outcomes-based analysis was performed to identify differences between patients pre- and post-procedural scores in several key metrics, including failure rates, time spent in recovery rooms, related-incident readmission rates, and mortality.

The analysis consisted of (1) a review of the number of serious patient safety events recorded in the BC Patient Safety & Learning System (PSLS) for the year prior to and following the implementation of this practice change, (2) a chart review of several process metrics, efficiency indicators, and critical quality outcomes for a two-month period in the months preceding (N=158) and following (N=150) this practice change and (3) a review of referral trends available from IH's administrative database system.

Key findings include: (1) a significant reduction in the number of safety events in the one year following the practice change, (2) similar or superior outcomes in the post-cohort compared to the pre-cohort regarding intraprocedural or other follow up procedural quality and safety outcomes, (3) evidence suggesting that the ERCP program is now currently serving a broader and more medically complex population than prior to this practice change, and (4) a similar overall OR utilization time and time in Post Anesthesia Recovery.

In conclusion, and of relevance for other facilities across BC and Canada, these findings demonstrate this change in practice resulted in improvements in patient safety while maintaining other quality metrics.

Poster #: 22

Presentation time: 7:18 pm

Kaitlin Toplak, Medicine

Assurance of Timely Access to Diagnostics and Treatment by Local Breast Health Clinic

Background: Breast health clinics (BHCs) allow for centralized care and same-day triple assessment of women with suspected malignancy. While Canada lacks consistent standards for BHCs, it does have national guidelines on diagnostic and treatment intervals. With significant variation across the Canadian context in terms of meeting national guidelines, there are a growing number of provincial initiatives to identify and accelerate the phases of care for breast and other cancers.

Objectives: The objective of this study was to determine the efficacy of a BHC in regard to wait times for both diagnostic and treatment pathways. This paper provides a critical analysis of pre and post clinic targets in an effort to identify areas for quality improvement.

Methodology: A retrospective chart review was performed on women with breast cancer (n=540) presenting to the Rae Fawcett Breast Health Clinic in Kamloops, BC, from 2015-2019. This cohort study compared 324 patients seen before the clinic opened on May 30th, 2017 with 216 patients seen after its establishment. Multiple demographic and treatment variables were extracted to evaluate time intervals within both diagnostic and treatment pathways. Results were analyzed using linear regression models.

Results: Wait times were significantly reduced after the establishment of a BHC in both women who directly accessed the BHC and others who were treated by traditional means, though more notably in the former. Reduction in time intervals varied from 8, 16, and 24 days for imaging, biopsy, and treatment, respectively. The referral method to the clinic was also associated with a difference in overall treatment interval, a reduction of 18 days was seen with patients referred through the screening mammography program (SMP) compared to their own family physician.

Conclusion: The BHC, through its significant reduction in wait times, has allowed for more timely access to care. In large, the BHC has been found to have wait times that fall within recently released provincial guidelines, although there is still room for improvement. This analysis may serve to guide future quality improvement initiatives.

Category: Patient Intervention

Poster #: 23

Presentation time: 6:30 pm

Lucas Arnold, Medicine

Interventions to improve physical activity in children, youth, and young adults with congenital heart disease: a scoping review

Background: Approximately one percent of children are born with congenital heart disease (CHD). It is increasingly recognised that physical activity plays an important role in optimising long-term health and quality of life outcomes for individuals with CHD. The aim of this scoping review is to gain a better understanding of existing physical activity interventions for this population to inform clinical counselling approaches and future research in the area of health promotion in CHD.

Research Question: What interventions are used to increase physical activity in individuals with CHD?

Methods: We performed a scoping review. We searched Medline, CINAHL, Web of Science and SportDiscus for studies with search terms relating to or describing interventions related to physical activity and CHD. Data were extracted on sample characteristics, intervention details and results, and factors that may bias the intervention results. We completed an analysis of content and reported summary statistics.

Results: 2295 potentially relevant publications were identified. After screening titles and abstracts, 140 publications underwent a full article screen by 2 authors and 30 full text articles (20 unique studies) were included. Included studies tended to be small (median sample size n=26), and included a wide range of ages (5-25 yrs) and cardiac diagnoses. Over half of the studies had a control group (n=4 RCTs, n=7 non-randomised studies), with the rest being a pre-post design (n=9). 18 of the 20 studies were exercise trials, with improved fitness outcomes reported in 12 out of 17 of them and none observing adverse events. 7 of the studies evaluated intervention effects on physical activity with only 3 observing significant increases in physical activity levels. 3 studies included elements of behaviour change interventions aimed to improve physical activity levels, with only 1 of the studies demonstrating effectiveness.

Conclusions: Structured exercise programs are effective at improving fitness outcomes in children, youth, and young adults with CHD, but participation in such programs alone is unlikely to result in meaningful and sustained improvements in the quantity of physical activity. More research is needed to evaluate interventions that effectively improve participation in habitual physical activity.

Poster #: 24

Presentation time: 6:42 pm

Conor Barrie, Medicine

Central Okanagan Youth Concussion Study: Validating a Screening Questionnaire in Kelowna's Youth Population

Background: Over 20 % of students, grades 7-12, in a Canadian province reported sustaining a Traumatic Brain Injury (TBI). Up to 35% of children who experience a TBI will develop post-concussion syndrome (PCS). It is also common that these patients are not properly diagnosed, sometimes even after seeing a pediatric emergency physician. Among other complications of PCS, it is known that a history of TBI is correlated with substance misuse. Following a TBI, there is a clinical window of opportunity where substance misuse interventions can help to prevent long-term substance misuse. Additionally, if a TBI is properly diagnosed, appropriate interventions can be made to address the root cause of many PCS complications. This is dependent upon the timely and accurate detection of TBIs. TBI screening can be done in adults with the Rivermead Post Concussion Questionnaire (RPQ), but data for pediatric populations is non-existent. Given the nature of the questionnaire, it is conceivable that youth would answer the questions differently as compared to adults. Thus, the RPQ requires validation prior to implementation in younger populations.

Hypothesis: We hypothesize that the RPQ can be used as a concussion screening tool in youth with a clinical sensitivity of 90% and specificity of 80%.

Objectives: The primary goal of this study is to assess the validity of the RPQ in the context of Kelowna's youth.

Methods: This is a cross-sectional study involving 87 participants. Participants will complete a survey, which includes the RPQ as well as secondary variables. Subsequently, they will undergo a medical examination, using two of the current gold standard exams in TBI diagnosis. The participants' survey answers will be compared to the findings of their medical examination. Basic demographic information and secondary variables will also be assessed for correlations to substance misuse and other PCS complications using R studio. Participants aged 13-24 are being recruited from 5 community agencies who are collaborating partners with the study. These agencies have expressed interest in using the RPQ if it is validated.

Results, Discussion and Conclusion: Data collection is on-going and preliminary results should be available for presentation at the conference.

Poster #: 25

Presentation time: 6:54 pm

Ali Skalk, Medicine

Testing the efficacy of an abbreviated AIH protocol in improving cardiovascular function in individuals with spinal cord injury

BACKGROUND: Individuals with cervical and upper-thoracic spinal cord injury (SCI) have depressed blood pressure (BP), altered cardiovascular (CV) function and respond poorly to hemodynamic challenges due to disrupted efferent sympathetic pathways. Therapeutically targeting the sympathetic nervous system to increase BP in individuals with SCI is necessary for improving CV function and reducing stroke risk. Acute intermittent hypoxia (AIH; brief bouts of hypoxia) is a therapy shown to increase activity in neural circuitry below the injury level in those with incomplete SCI. In able-bodied individuals, acute AIH exposure elicited increased and sustained sympathetic activation. For individuals with incomplete C5-T6 SCI, who have some spared descending sympathetic pathways, AIH may increase sympathetic activity and thereby CV function. Typically, AIH is prescribed at a frequency of 15x90s, which can be time consuming. We, therefore, seek to test whether both the typical AIH protocol and an abbreviated protocol (5 bouts of the same hypoxic/normoxic stimuli), improve CV function in individuals living with C5-T6 SCI.

HYPOTHESES: This project aims to 1) examine the effects of a single typical exposure of AIH on CV function and 2) compare these effects to an abbreviated AIH exposure. We hypothesize that: 1) AIH exposure will increase BP and improve orthostatic tolerance in able-bodied and incomplete SCI individuals, and 2) abbreviated AIH exposure will have similar effects on CV function.

METHODS: We will recruit participants with C5-T6 autonomic complete (n=10) and incomplete (n=10) SCI, and able-bodied participants (n=10) for three visits (one screening, two experimental). Experimental visits will consist of typical or abbreviated AIH exposure (randomized and counterbalanced), with head up tilt before and after AIH exposure. Measures will include resting BP, heart rate, arterial oxygen saturation, and forearm vascular resistance (proxy for sympathetic activation). Traditional AIH exposure will use end tidal forcing to expose participants to 15x90s bouts of isocapnic (PETO₂ 40 mmHg) hypoxia (PETO₂ 55 mmHg) interspersed with 60s periods of normoxia (PETO₂ 100 mmHg), while abbreviated AIH will consist of 5x90s hypoxic bouts.

SIGNIFICANCE: We submit that AIH presents a promising option to improve CV function and prevent stroke and other CV diseases in the SCI population.

Poster #: 26

Presentation time: 7:06 pm

Tami Lin, Medicine

Clinical Outcomes of Pancoast Tumours Treated with Trimodality Therapy in British Columbia

Introduction: Superior sulcus tumours, or Pancoast tumours, are a unique and rare subset of lung carcinomas, and are some of the most challenging thoracic malignancies to treat due to their inconvenient location and potential involvement of adjacent structures. The current gold standard of care is trimodality treatment, which consists of induction chemoradiotherapy followed by radical surgical resection. The aim of this study is to report the results of trimodality approach in British Columbia (BC) to add to the current literature of Pancoast tumors and help determine a treatment regimen that could ultimately improve clinical outcomes.

Methods: 1364 patients with upper lobe lung carcinomas who were treated in BC between 2000-2015 were retrospectively reviewed for a total of 32 patients who met the study criteria. Patient-, disease-, and treatment-related data were collected. Treatment outcomes will be assessed via statistical analyses of local, nodal, and distant recurrence rates and overall survival rates.

Results: 32 patients met the study criteria and were diagnosed with Pancoast tumour and completed trimodality treatment. Median age at consultation was 59 years old, with a range of 43 to 75. Patients had an average smoking history of 44 pack years. Five patients received adjuvant chemotherapy, two of whom did not finish their original course of neoadjuvant chemotherapy. One patient was unable to complete their full course of radiotherapy. 15 patients (47%) had pathological complete response (pCR) after induction chemoradiotherapy, and 13 patients (40%) showed minimal microscopic residual disease (91-99% tumor necrosis). 19 patients (59%) had passed away at the time of abstract submission.

Conclusion: There continues to be a dearth of knowledge surrounding clinical outcomes of patients with Pancoast tumours, particularly those who qualified for trimodality therapy. While trimodality treatment has shown to yield markedly improved rates of complete resection and local control of Pancoast tumors than previous therapies, existing data reveal clinical outcomes that leave much to be desired. Further work on this study with full statistical analysis of recurrence and survival rates is pending, from which we will explore predictive and prognostic variables that improve patient outcomes and contribute to further understanding of this disease entity.

Poster #: 27

Presentation time: 7:18 pm

Allyssa Hooper, Medicine

Case Report: Primary Infertility Treatment in Patient with Acute Intermittent Porphyria

Background: Acute intermittent porphyria (AIP) is a rare autosomal dominant disorder that results in deficiency of the heme biosynthetic enzyme porphobilinogen deaminase. This deficiency can result in the accumulation of porphyrin precursors which cause a variety of neurovisceral symptoms including abdominal pain and peripheral neuropathies. These symptoms can be precipitated by endogenous factors such as menstruation and pregnancy or by exogenous factors such as medication and hormones. As a result, hormonal infertility treatments may precipitate acute attacks of AIP. This case report demonstrates a successful treatment protocol and aims to expand upon the limited literature surrounding assisted reproduction in patients with AIP.

Case Summary: A 36-year-old G0 patient with AIP presented with an 18-month history of primary infertility. Previous AIP symptoms included occasional abdominal pain but no history of severe attacks or neurological symptoms. Basic fertility evaluations revealed normal ovarian reserve and hysterosalpingogram. The patient underwent three cycles of superovulation and intrauterine insemination (IUI), one superovulation and oocyte retrieval, and two in vitro fertilization (IVF) cycles.

Results: In order to minimize acute AIP attacks, various precautions were taken. Clomiphene was administered vaginally in order to avoid first pass metabolism during superovulation and IUI. Superovulation was achieved, however the IUI cycle was unsuccessful. Clomiphene was then administered orally for two subsequent cycles. The patient did not experience any AIP symptoms with oral clomiphene, however, both cycles were unsuccessful. IVF was then performed without exogenous progesterone administered during the luteal phase. The cycle resulted in pregnancy, however a missed abortion was detected at 7-weeks gestation. A second IVF cycle was conducted with vaginal progesterone BID administered after the LH surge and continuing until 10-weeks gestation. No AIP symptoms were precipitated with the use of vaginal progesterone.

Discussion: Hormonal therapy and interventions were gradually escalated throughout this case in order to minimize acute AIP attacks. While this case presentation is rare, this treatment protocol may serve as an outline for future infertility patients that have contraindications to exogenous hormone therapy.

Conclusion: The patient did not experience any acute AIP attacks throughout infertility treatment and is currently 34-weeks gestation without any reported obstetrical complications.

Poster #: 28

Presentation time: 7:30 pm

Liisa Wainman, Medicine

A Breath of Fresh Air: Acute Intermittent Hypoxia Shows Promise to Improve Cardiovascular and Ventilatory Function in Incomplete Spinal Cord Injury

Background: Individuals with spinal cord injury (SCI) exhibit decreased blood pressure (BP) as a result of disrupted descending sympathetic input to the heart and vasculature following injury predisposing them to early development of cardiovascular disease. An emerging therapy that has shown promise to increase activity in neural circuitry below the injury is acute intermittent hypoxia (AIH). AIH has been demonstrated to improve descending control to both respiratory and motor systems among individuals with incomplete SCI. In able-bodied (AB) individuals, it has been demonstrated that sympathetic activity increases for a period of 30-90 minutes following exposure to AIH. Since individuals with incomplete SCI have remaining functional descending sympathetic pathways, it is plausible that AIH may also increase activity in sub-lesional sympathetic circuitry in these individuals thereby improving cardiovascular function.

Hypothesis: Exposure to AIH in an AB individual and an individual with an incomplete C7 SCI will elicit similar increases in systolic blood pressure (SBP), heart rate (HR) and ventilation (VE) 60 minutes following AIH. **Methods** One individual with a C7 incomplete SCI and a body-size matched able-bodied individual were exposed to a single bout of AIH [15 x 90s of isocapnic (PETCO₂ 40 mmHg) AIH (PETO₂ 55 mmHg)], interspersed with 60s of normoxia (PETO₂ 100 mmHg; PETCO₂ 40 mmHg) and monitored for 60 minutes following. Continuous BP was measured by finometry, VE was measured by spirometry, HR was measured by ECG. These variables were compared immediately post-hypoxia and 60 minutes following exposure.

Results: 60 minutes following AIH, the participant with SCI increased their SBP by 10 mmHg and VE by 2.2 L/min, whereas the AB participant increased their SBP by 6 mmHg and VE by 1.4 L/min. Both participants experienced small decreases in HR.

Discussion: It is plausible that the individual with SCI experienced greater increases in BP and ventilation as a result of greater chemosensitivity and lower baseline BP. Interestingly, the AB individual increased their tidal volume to increase their VE and the individual with SCI increased their frequency of breathing to increase VE. **Conclusion** AIH presents the potential for a simple, low-cost therapy for cardiovascular function in this population.

Category: Social / Educational Aspects of Health

Poster #: 29

Presentation time: 6:30 pm

Talia Del Medico, Medicine

The Efficacy of Education Sessions on Improving High School Students Knowledge on Consent, Sexual Assault, and Local Resources Involved in Supporting Sexual Assault Survivors

Introduction: Rates of sexual assault in Canada have been reported to be highest in adolescents aged 15-24. Previous trends have shown that self-reported sexual assault cases have remained relatively stable over the past 15 years, with only about half of high school victims reporting the incident. With this knowledge, and considering that high school students are more likely to delay seeking medical treatment following sexual assault, this project assessed the efficacy of education sessions improving high school students knowledge on consent, sexual assault, and local resources, such as the Sexual Assault Response Team (SART), involved in supporting sexual assault survivors.

Methods: Students ages 15-18 in grades 10-12 participated in one 1-hour SART Outreach presentation with content on sexual assault and consent, SART services, and local supports. Students completed an optional, anonymous post-presentation quality improvement survey. The survey compared students' knowledge on the subject content before and after the presentation and the relevancy of the content to high school students using a 5-point scale. Comparisons were analyzed with Wilcoxon signed rank test.

Results: 91 students attended the presentation and completed the survey. Knowledge on sexual assault increased by an average of 1.02 ($P < 0.001$) from 3.65 to 4.66 (1 = No Knowledge, 5 = Very Knowledgeable) with a large effect size ($d = 1.2$). Knowledge on local resources increased by an average of 1.84 ($P < 0.001$) from 2.70 to 4.53 (1 = No Knowledge, 5 = Very Knowledgeable) with a large effect size ($d = 1.8$). The average score of the relevance of the SART outreach presentation was 4.67 (1 = Not Relevant, 5 = Very Relevant).

Conclusion: Students who participated in the SART Outreach presentation showed an increase in both knowledge acquisition around consent, sexual assault, and of the local resources that offer support to sexual assault survivors. The students reported that this topic was relevant and important information for their age. Future implications of this project include helping to increase students' comfort in seeking support and accessing local resources following a sexual assault incident. In turn, this will help ensure adolescents are receiving appropriate support and medical attention following an assault and increase incident reporting.

Poster #: 30

Presentation time: 6:42 pm

Jill Robinson, College of Graduate Studies; Maya Pilin, College of Graduate Studies
The Impact of Cannabis Legalization in Canada on Young Adolescents' Perceptions

Introduction: Since the legalization of cannabis in Canada in October 2018, research has not reached a clear conclusion on how legalization impacts adolescents' perceptions of the substance. This study sought to examine how the nationwide legalization of recreational cannabis in Canada impacted youth opinions of legalization.

Methods: Surveys were administered to 398 Grade 8 students in May 2017 (pre-legalization) and 377 Grade 8 students in December 2018 (post-legalization). Participants completed an open-ended question regarding their opinion on cannabis legalization and a ranking of whether legalization of cannabis was very good to very bad on a 4-point Likert-scale.

Results: A mixed methods approach was taken in this study. Qualitative analyses revealed that young adolescents primarily hold negative views towards cannabis legalization. Quantitative analyses revealed that no significant difference existed between qualitative theme frequencies or ratings when comparing responses prior to and following legalization.

Conclusions: These results suggest that legalization of recreational cannabis use in Canada had little effect on youth perceptions of cannabis legalization in one urban center in British Columbia soon after legalization took place.

Poster #: 31

Presentation time: 6:54 pm

Connie Ku, Sciences

Post-Cannabis Legalization Substance Use Perceptions in Canadian Youth

Background: On October 17th, 2018, the Cannabis Act was passed in Canada to regulate cannabis. There has been limited research on the post-legalization cannabis use amongst adolescents. Therefore, it is unknown whether the Cannabis Act has contributed to changes in the perceptions and social norms surrounding cannabis use.

Objective: This study aims to consolidate research on the perceived access and perceived risk of cannabis use; and examine the relationships between grade, gender, recency of use, and social norms of cannabis use.

Hypothesis: (1) There is a statistically significant relationship between perceived access and perceived risk. (2) Grade and gender have a statistically significant relationship to the perceived access and perceived risk of cannabis use. (3) There is a positive correlation between recency of cannabis use and increased perceptions of access and decreased perceived risk. (4) Injunctive norms have a stronger correlation with perceived access and perceived risk than descriptive norms for both primary caregivers and peers. (5) Both descriptive and injunctive norms of peers have a stronger influence than from primary caregivers.

Methods: Longitudinal data was collected from Vernon, B.C. via Healthy Activities and Behaviours Inventory Test using a series of Likert scales. Data was analyzed via Statistical Package for Social Sciences.

Results: $n = 709$; 28.2% grade 8, 34.6% from grade 9, and 37.2% from grade 10; 48.2% male and 51.8% female. The relationship between the perceived access and perceived risk of cannabis use were strongly related ($r = .57$, $p < .001$). Grade 10 had the highest ease of access perceptions of cannabis use. Males had higher perceptions of cannabis use compared to females. Grade and gender had weaker correlations, less statistical significance, and lower odds ratios than factors of recency, approval, and friends' cannabis use.

Clinical Impact/Conclusion: These correlations may be useful to construct realistic harm-reduction curriculums to inform youth of the possible outcomes of using cannabis. Further survey implementation will be required to explore the trajectory of the perceived biases and norms regarding cannabis use. Ultimately, understanding these perceptions will help predict the trends in future youth substance use and evaluate the effectiveness of the Cannabis Act in Canada

Poster #: 32

Presentation time: 7:06 pm

Kaitlyn Harding, Medicine

Development of the Student-run Stroke Management and Prevention Clinic (The S2MP Clinic) using Intervention Mapping

Background: Inadequate delivery of long-term chronic care stroke services has led to 84% of stroke survivors reporting at least one unmet healthcare need and inexcusably high rates of secondary events. A novel solution is to utilize entry-to-practice clinical students to deliver collaborative stroke care in a Student Run Clinic (SRC). **Objective:** To describe the development of the Student-run Stroke Management and Prevention Clinic (The S2MP Clinic), an evidence-based and theoretically informed secondary prevention program for stroke survivors, following intervention mapping.

Methods: Intervention Mapping, a systematic process used for developing effective interventions, is comprised of six steps: 1) Conducting a needs assessment; 2) Identifying proximal intervention objectives; 3) Selecting theory-based intervention methods and practical strategies; 4) Integrating the strategies into an organized intervention; 5) Creating an implementation plan; and 6) Developing an evaluation plan. Completion of all of the steps serves as a blueprint for designing, implementing and evaluating a theory- and evidence-based intervention.

Results: The S2MP Clinic is a patient-centered, collaborative, health promotion clinic, run by medical, nursing, social work, occupational therapy, and kinesiology students, under supervision by clinical health professionals. After receiving training in collaborative care planning, motivational interviewing and brief action planning counselling techniques, and the Fitness and Mobility Exercise (FAME) program, student teams will deliver the S2MP to stroke survivors. In nine weekly, 60 to 90 minute sessions, stroke survivors will work with members of their student team, and receive 1) education about stroke and chronic disease self-management in the areas of medical/behavioural management, emotional management, and life-role management; and 2) training to develop self-management skills of problem solving, decision making, goal setting and action planning. After each weekly clinical session, participants will convene as a group for peer-support and be taken through the FAME program.

Conclusion: Next steps are to engage clinicians and patients for their input, and then evaluate the S2MP. If evaluation of the S2MP Clinic produces positive results, the next step will be to develop an implementation intervention to ensure successful uptake and delivery of the program in community and outpatient settings.

Poster #: 33

Presentation time: 7:18 pm

Carley Paterson, IK Barber School of Arts and Science

Self-efficacy as a predictor of early semester distress in university students

Background, Hypotheses, Objectives: Life as an undergraduate student can be complicated. The majority of students juggle academic, work, and personal demands daily. Recent research has suggested that the majority of Canadian students feel overwhelmed. The present study aimed to identify factors that contribute to students' stress to inform strategies that might help students cope. We predicted that a) the more time demands placed on students, the more they would report symptoms of depression, anxiety, and stress and b) higher levels of self-efficacy would decrease emotional distress.

Methods and Results: Students' socio-demographic, academic experiences, and well-being were assessed at the beginning of the fall semester using an online survey (N=740). Emotional distress and self-efficacy were assessed using the Depression Anxiety Stress Scale (DASS) and the Academic and Coping Self-Efficacy Scales, respectively. A series of hierarchical multiple regression analyses were conducted to identify variables that predicted emotional distress. For all three analyses, the first model consisted of gender. Coping Self-Efficacy subscales, the Academic Self-Efficacy Scale, and course load and work status were added sequentially, resulting in four models. The best-fitting models accounted for 26.4% of the variance of DASS stress scores, 32.8% of variance DASS depression scores, and 19.4% variance of DASS Anxiety scores. For all regressions, male gender was associated with less emotional distress, while greater coping self-efficacy significantly predicted less emotional distress. Although higher levels of academic self-efficacy significantly predicted less depression and anxiety, it did not significantly predict levels of stress. Working part-time (but not full-time) significantly predicted higher levels of stress, but did not predict levels of depression or anxiety. Course-load did not account for additional variance in any of the models. Students' concerns and hopes for the semester were also explored. Qualitative analyses are underway.

Discussion and Conclusion: Although various constraints on time like work or school demands may contribute to a sense of stress or symptoms of anxiety and depression, the results of this study illustrate that coping and academic self-efficacy are more important for understanding student well-being. The development of programs promoting student self-efficacy may help to minimize stress and emotional distress.

Poster #: 34

Presentation time: 7:30 pm

Monique Walsh, Interdisciplinary Graduate Studies (Social Work and Health and Management)

Informally Learning Collaboration in the Workplace: A Comparative Case Study of Institutional Factors within Primary Healthcare Workplaces

Background: Recent policy changes in primary care are asking healthcare professionals to work in collaborative teams and across organizational boundaries. There is a gap in the literature on how this redesign is impacting, and impacted by, the physical and cultural workplace environment; the sociomaterial work relations; and the knowledge translation of collaboration (Bareil et al. 2015, Rule & Dunston, 2016, McDougall et al. 2016). The aim of this research is to examine, using a sociomaterial lens, institutional factors that shape the informal learning of collaboration in primary healthcare within British Columbia.

Research Question: What institutional factors enable the informal learning of intra-and inter-organizational collaboration to occur in primary healthcare workplaces within British Columbia?

Objectives:

1. Conduct a comprehensive review of how learning collaboration within the sociomaterial context of the workplace has been previously documented.
2. Explore, document, and extend knowledge on informally learning how to collaborate in and across primary care workplaces.
3. Compare the learning factors between two diverse business models (public and private) that co-exist within British Columbia.

Framework: To situate informal learning of collaboration, this research will be framed using Illeris (2010)'s holistic model of workplace learning, incorporating interactions between individual, relational, and environmental actors.

Methodology:

Phase 1: Apply a multifaceted approach to data collection at two examples of collaborative success from the public and private realm of primary healthcare delivery (Tracy & Hinrichs, 2017). Methods include: document analysis; semi-structured interviews; and focus groups.

Phase 2: Conduct a comparison using an unordered meta-mix-master chart across the institutional factors identified *within* the public healthcare workplaces and then *within* private workplaces (Mills & Gay, 2016).

Phase 3: Conduct a comparative cross-site analysis *between* the private and public to identify new questions and issues, which will continue to inform the analysis as it evolves (Mills & Gay, 2016).

Discussion: New knowledge created around workplace learning could enhance learning, embodiment, and design of collaboration. In the realm of British Columbia's primary care delivery this type of knowledge could further the implementation of primary care transformation; deepen the emphasis on collaborative networking; and support design of intra- and inter-organizational collaborations.

Category: Media and Health

Poster #: 35

Presentation time: 6:30 pm

Mirna Hennawy, Medicine; Emily Medema, Engineering

Integration of Goal-Setting and Internet of Things in Health and Wellness Communities

Background: Healthcare services of small communities are unable to meet the demands of growing populations. Development of new platforms to facilitate service interactions (SI) between physicians and patients requires understanding goal-setting models and incorporating online channels to make use of limited physician time while maintaining the integrity of patient care and promoting health. Integrating patient data into mobile applications requires the use of internet of things (IoT) devices, such as Fitbits, but the intercommunication between devices will require secure, private and protected networks.

Objectives: (1) To illustrate effective and ineffective uses of healthcare systems within healthcare services to optimize resource use. (2) To determine the most feasible IoT device for online interactions for facilitating physician-patient interactions.

Methods: Qualitative thematic analyses were conducted on data from interviews of four community leaders involved in health and wellness programming in Lake Country and the Okanagan Rail Trail. Patterns from the current goal-setting literature were used to guide data extraction from transcripts of the interviews. Comparative literature review of IoT devices was completed, specifically examining the cost and development efforts of different modes of connectivity.

Results: Effective use patterns aligned with the current literature, echoing the need for goal-setting as a prerequisite to success. Ineffective patterns also emerged, outlining that disturbances in the goal-setting process can derail effectivity of goals. Current options for IoT devices are abundant, but differences across cost will limit feasibility in small community healthcare services.

Discussion: Effective SI via an interactive online platform between physicians and patients will optimize patient health. The most effective uses require the completion of goal-setting cycles, but disturbances can prevent goal attainment, consequently withholding services from communities. In terms of IoT, the most viable and privacy-compliant device for a healthcare online platform is a mobile application. However, it is expensive and not attainable by smaller communities.

Conclusions: Employing evidence-based effective goal-setting strategies into an online platform that receives health measures from IoT devices directly will allow physician-patient interactions to transcend clinic hours without placing additional strain on the financially stretched healthcare system

Poster #: 36

Presentation time: 6:42 pm

Liam R. King, Health and Social Development

A Qualitative Evaluation of Young Indigenous Men's Health and Wellness While Using Digital Media

Background: Indigenous youth commit suicide at rates that are 5 to 11 times higher than that of non-Indigenous Canadians. Research has shown that these youth often attribute feelings of shame about their identity to this epidemic. Many Indigenous scholars have recognized that since contact with European settlers, white society has depicted Indigenous peoples as part of a primitive and dying race and cast them aside as being violent, alcohol-addicted criminals in order to justify the colonization of Indigenous peoples' and their lands. These understandings of Indigenous peoples have been particularly potent towards Indigenous men and if they are present within digital media, then it has the potential to influence their identity development. Now more than ever before, youth are immersing themselves in digital media which shapes their search for self-identity. However, very little is known about how Indigenous male youth use digital media for their development of self-identity and whether this is having a negative or positive influence on their health.

Objectives: The overall objective of this project is to build knowledge around what is important to young Indigenous men when navigating digital media and how this interacts with their development of self-identity, health and wellness.

Hypotheses/Questions: What types of digital platforms are young Indigenous men using? To what extent are young Indigenous men encountering images of Indigenous people and how do they relate to these images? How do young Indigenous men feel their identity, and in turn their health and wellness, is being impacted by these representations of Indigenous people?

Methodology/Methods: We have partnered with UBCO's Aboriginal Centre, where we will be inviting 10 young Indigenous men to a research-sharing circle and have open-discussions regarding digital media. Data will be analyzed from a critical Indigenous masculinity lens and use Indigenous storywork principles to guide the understandings of these young men's stories.

Discussion/Conclusion: This project adds to the current literature by providing insight into how digital media effects Indigenous youth's identity, health and wellness. Our hope is that the knowledge from this project will help create future community-based projects to support young Indigenous peoples as they navigate the digital world.

Poster #: 37

Presentation time: 6:54 pm

Angela Leung, Health and Social Development; Noman Mohammad, Science
Smoke-free Dads: A game changer for better health

Background: Parental smoking has a significant impact on child health, and while much has been invested into resources for smoking cessation for mothers, fathers have been supported less so. Previous research with fathers indicates that their desire to be healthy role models for their children strengthens motivation for smoking cessation, and points to the need for tailored cessation resources. While men's response to a new smoking cessation group-based program, Dads in Gear (DIG), has been overwhelmingly positive and feasibility testing has shown favourable quit rates, its reach is inherently limited. Since recent research suggests that gaming can be a powerful tool for health behaviour change, it is important to explore the use of mobile technologies and gamification to extend the reach of DIG. The objective of this project was to build and test a prototype for a DIG smartphone app to help fathers reduce and quit smoking, while also supporting their engagement in fathering and other positive health behaviours.

Methods: Evidence-based strategies to support smoking cessation, and previous research with fathers participating in DIG were drawn upon to guide the development of prototypes for the smartphone app. In addition, current literature was reviewed regarding gamification strategies, health-related apps, and smartphone app design to guide prototype development. Fathers who currently smoke or previously quit are being recruited to participate in 90-minute consultation group discussions to provide feedback on the prototypes. Data gathered will be content analyzed and summarized.

Findings: Preliminary prototype features and initial feedback and suggestions from the consultation groups will be summarized and presented at the conference.

Conclusion: The DIG smartphone app has the potential to reach a wide range of fathers who smoke and provide a valuable addition to existing smoking cessation resources. Unlike other smoking cessation resources, it is aimed at empowering fathers to be involved, healthy and smoke-free dads by providing both general and personalized support that can be accessed just by reaching into their pockets. Through the app, fathers will be encouraged to embark on their journey to quit smoking and become the dads they want to be for the growth of their children.

Poster #: 38

Presentation time: 7:06 pm

Kaylene Scheil, Irving K. Barber School of Arts and Sciences

Conditioned Incentive of Alcohol and Cannabis Cues in Relation with Level of Substance Use

Introduction: Conditioned incentive theories of addiction explain substance use through conscious and unconscious cognitive motives to seek pleasure rewards. Automatic cognitive processes are developed through implicit associative learning by pairing alcohol and drug-related cues to elicit a craving response. This type of classical conditioning pairs substance cues with incentive salience which creates compulsive drug-seeking and drug-taking behaviour.

Adolescence through young adulthood is an age-group particularly vulnerable to addiction and high levels of sensitivity to incentive salience stimuli. During this time, the developing brain exhibits high neuroplasticity as the nucleus accumbens in the reward circuit matures first. This creates exaggerated reward sensitivity while higher-order functions such as executive functioning mature later. Increased activity in the dopaminergic mesolimbic circuit, particularly in the nucleus accumbens, is associated with riskier choices and more impulsive judgements.

Methods: The recent legalization of cannabis in Canada has sparked the need for research surrounding the individual and societal impact of these legislative changes. Participants ($N = 200$) are undergraduate students from the University of British Columbia in Okanagan who have registered for psychology research participation credits under SONA systems.

The present study is examining the concurrent predictive validity of the affective reaction to cannabis and alcohol pictures in university students. Students will fill out a questionnaire measuring attractiveness and liking responses to alcohol and cannabis conditioned incentive cues. These cues will be categorized as goal-directed (both proximal and distal) and signal-directed. Ratings are then compared with responses on personality questionnaires while considering the interaction with alcohol and cannabis use frequency, quantity, and problems.

It is hypothesized that greater frequency of alcohol and cannabis use will be associated with a greater rating of liking and attraction across proximal and distal goal-directed as well as signal-directed measures.

Findings, implications and summary: Incentive sensitization demonstrates that repeated exposure to potentially addictive drugs can induce a psychological sensitivity by continuously rendering cognitive processes hypersensitive to drug-related stimuli and actions. This research will provide information on conditioned incentive of use following cannabis legalization paired with alcohol-related cue stimuli.

While this study is currently still in progression, analysis of initial findings will be presented.

