

11th Annual Showcase of Health Research 2016

➤ **Friday, February 5, 2016
8:30am to 1:30pm**

Best Western Plus Nor'Wester Hotel
and Conference Centre
Highway 61, Thunder Bay, ON



For more information, please contact

Hillary Maxwell, *Research Coordinator*

Tel: 807-343-4300, ext.4404

Fax: 807-346-5243

Email: maxwellh@tbh.net





➤ Since 2006 the Centre for Applied Health Research at St. Joseph's Care Group has hosted what has become the premier annual venue for the dissemination of research relevant to the health of Northwestern Ontarians.

The Centre for Applied Health Research is pleased to host "Making a Difference: 2016 Showcase of Health Research".

This event is made possible through the generous support of the Leadership Team at St. Joseph's Care Group.

2016 Schedule of Events

8:30 am	Registration and Poster Set up - <i>Kaministiquia Room</i>
9:00 am	Welcome and Opening Remarks <i>Michel Bédard</i> , Scientific Director, <i>St. Joseph's Care Group</i> <i>Myrna Holman</i> , Vice President of People, Mission & Values, <i>St. Joseph's Care Group</i>
9:15 am	Producing narratives on access to mental health services in rural communities: A participatory project with young people experiencing psychosis <i>B Gladstone</i> , <i>E Stasiulis</i> , <i>C Cheng</i> , <i>S Nadin</i> , <i>S Davidson</i> , <i>K Boydell</i> , - <i>The Hospital for Sick Children, University of Toronto</i> , <i>St. Joseph's Care Group, University of Ottawa, University of New South Wales</i>
9:35 am	Age-related differences in the underlying neural correlates of a novel visuomotor adaptation task <i>A Hantjts</i> , <i>J Lawrence-Dewar</i> - <i>Thunder Bay Regional Research Institute</i>
9:55 am	Individualized on-road training to enhance safe driving in seniors: A randomized controlled trial <i>E Sawula</i> , <i>J Polgar</i> , <i>M M Porter</i> , <i>S Nakagawa</i> , <i>S Gagnon</i> , <i>B Weaver</i> , <i>S Dubois</i> , <i>M Bédard</i> - <i>Lakehead University, Western University, University of Manitoba, University of Ottawa, Northern Ontario School of Medicine, St. Joseph's Care Group</i>
10:15 am	Symptoms of depression and anxiety in Northern Ontario School of Medicine third year comprehensive community clerkship students <i>J Swerdlyk</i> , <i>S Dubois</i> - <i>Northern Ontario School of Medicine, St. Joseph's Care Group</i>

10:35 am	Poster Presentations and Nutritional Break - <i>McGillivray Room</i>
11:05 am	An examination of clients designated alternate level of care but declared ineligible for long-term care <i>L Macdonald</i> , <i>S Dubois</i> , <i>C Gibbons</i> , <i>J Sillman</i> , <i>M Perkovic</i> , <i>R Scott</i> , <i>M Bédard</i> - <i>St. Joseph's Care Group</i>
11:25 am	Dialectical Behaviour Therapy for clients presenting to St. Joseph's Care Group mental health and addictions programs: A program evaluation <i>C Pope</i> , <i>A Mushquash</i> , <i>St. Joseph's Care Group DBT Team</i> - <i>Lakehead University, St. Joseph's Care Group</i>
11:45 am	Nursing at its best: Discovery, dreaming, designing, destiny <i>S Peirce</i> , <i>R Berardi</i> , <i>G Knutson</i> , <i>K Poole</i> - <i>St. Joseph's Care Group, Lakehead University</i>
12:05 pm	Tailoring smoking cessation services to special populations <i>P Smith</i> , <i>K Gerlach</i> , <i>V Proper</i> , <i>L Seamark</i> - <i>Northern Ontario School of Medicine, Thunder Bay Regional Health Sciences Centre, Meno Ya Win Health Centre</i>
12:25 pm	Poster Presentations and Lunch - <i>McGillivray Room</i>

Poster Presentations

- 1. Social anxiety-maintaining factors as mediators of the relationship between anxiety sensitivity and negative reinforcement drinking**
V Pitura, K A Maranzan - Lakehead University
- 2. Examining the viewpoints of Lakehead Public School students on physical activity participation**
J Harvey, E Pearson, P Sanzo, A Lennon - Lakehead University
- 3. Examining the viewpoints of Lakehead Public School staff on increasing daily physical activity in elementary schools**
A Lennon, E Pearson, P Sanzo, J Harvey - Lakehead University
- 4. The prevalence of high residential radon in Thunder Bay, Ontario, 2015.**
G Czinkota, L Sieswerda - Thunder Bay District Health Unit
- 5. An analysis of current and forecasted patient visits to the emergency department and its effect on hospital admissions**
A Rawana, D Savage, B Weaver - Northern Ontario School of Medicine
- 6. Improving the quality of measurement in Ontario small and rural hospitals**
J Maki, D Murray, L Bevan, K Hunter, J Yang, B Chan, J Rogers - Sioux Lookout Meno Ya Win Health Centre, Centre for Effective Practice, Garrison Health Advisory Services, University of Toronto
- 7. A qualitative analysis of perceived learning outcomes among student members of Compass North interprofessional student-led clinic**
B Gunka, C Sawula, M Haggarty, D Doble - Lakehead University, Northern Ontario School of Medicine
- 8. Preliminary evaluation of mental health and health promotion workshops: A service learning project**
J McCann, D Lagadouro, C Petrik, E Sherman - Northern Ontario School of Medicine, Lakehead University
- 9. Depressed elderly in long-term care homes**
C Marchese, M Stones - Lakehead University
- 10. Mindfulness-Based Cognitive Therapy for depression symptoms in older adults with memory difficulties and caregivers of family members with dementia**
L Ozen, S Dubois, M Short, E Sawula, M Bédard - Lakehead University, St. Joseph's Care Group
- 11. Building capacity for healthcare staff in mental health and addictions**
L Ozen, J Sillman, C Gibbons, T McKinnon, M Bédard - Lakehead University, St. Joseph's Care Group
- 12. The effects of student-led simulation on perceived interprofessional competencies**
A Sharp, I Newhouse - Northern Ontario School of Medicine, Lakehead University
- 13. An evaluation of interprofessional providers' perspectives on palliative care education in Northwestern Ontario**
S Nadin, S Hendrickson, ML Kelley, A Mihalus - Lakehead University
- 14. Assessing family members' satisfaction with end-of-life care in long-term care**
S Nadin, ML Kelley, J Marcella - St. Joseph's Care Group, Lakehead University
- 15. Measurement error and assessment of movement proficiency in atypically developing children: Clinical relevance**
E Przysucha - Lakehead University
- 16. Translating inpatient tobacco intervention research into practice: Making the case for using randomized trial benchmarks**
P Smith, V Proper - Northern Ontario School of Medicine, Thunder Bay Regional Health Sciences Centre
- 17. Getting the message right: NorthBEAT's innovative and participatory approach to knowledge translation and exchange**
C Cheng, S Nadin, M Katt, C Lem, S Cook - St. Joseph's Care Group, Canadian Mental Health Association Thunder Bay Branch, Lakehead University, InVizzen Knowledge Brokers Inc.
- 18. Applying complexity theory to health services research: A scoping review**
D Thompson, D Stanley - Lakehead University, University of Windsor
- 19. Exploratory and confirmatory factor analysis on the Leadership Behaviour Description Questionnaire**
J Plata, P Reguly, V Kristman - Lakehead University
- 20. Evaluation of client satisfaction in an employee and family assistance program**
S Chomycz, C Clara - Lakehead University, St. Joseph's Care Group
- 21. Patient satisfaction and mental health among patients attending Group Medical Visits**
E Portt, G Tippin, A Maranzan, D Dutka, L Hutchinson, M Austin - Lakehead University, St. Joseph's Care Group

*Presenter in Purple

22. **Therapeutic taping does not improve pain, range of motion, and power in patients with patellar tendinopathy**
M Massei, P Sanzo, E Przynucha - Lakehead University
23. **Spring loaded cane mechanism: The use of this instrument in minimizing ground reaction forces at the upper extremity**
C Zerpa, T Gervasi, E Przynucha, P Sanzo, D Vasiliu, A Mohammed - Lakehead University
24. **Changes in electromyographic activity in muscles of the arm and hand as a result of a 10-day hand training program using robotic training in stroke survivors**
V B K Johnson, T Milner - Lakehead University, McGill University
25. **The CHOICES Program: Evaluating treatment effectiveness for youth with substance use and risk behaviour issues**
A Killen, P Heikkinen, F Schmidt - Lakehead University, Thunder Bay Counselling Centre, Children's Centre Thunder Bay
26. **Identifying client factors associated with outcomes from Same-Day Counselling**
V Ewen, A R Mushquash, C J Mushquash, S K Bailey, J M Haggarty, S Dama - Lakehead University, St. Joseph's Care Group, Northern Ontario School of Medicine
27. **Whey protein supplementation improves rehabilitation outcomes in hospitalized geriatric patients: A double blinded, randomized controlled trial**
S Niccoli, A Kolobov, T Bon, S Rafilovich, H Munro, K Tanner, T Pearson, S Lees - Northern Ontario School of Medicine, St. Joseph's Care Group
28. **The effect of concussion on reaction time and dual tasking ability on a driving simulator: Some preliminary results**
D Dumphy, C Zerpa, B Weaver, D McKee, M Bédard - Lakehead University, Northern Ontario School of Medicine, St. Joseph's Care Group
29. **The impact of fatigue on fatal crash responsibility**
R Scott, S Dubois, B Weaver, M Bédard - St. Joseph's Care Group, Lakehead University, Northern Ontario School of Medicine
30. **Assessing change in older drivers: A longitudinal analysis of Candrive data**
H Maxwell, B Weaver, H Tuokko, M Porter, G Naglie, M Rapoport, B Vrkljan, S Marshall, I Gélinas, B Mazer, M Bédard - Lakehead University, Northern Ontario School of Medicine, University of Victoria, University of Manitoba, Baycrest Geriatric Health Care Centre, University Health Network, University of Toronto, McMaster University, University of Ottawa, Ottawa Hospital Research Institute, McGill University, St. Joseph's Care Group

*Presenter in Purple

Producing narratives on access to mental health services in rural communities: A participatory project with young people experiencing psychosis

- **Brenda Gladstone**
Child and Youth Mental Health Research Unit, The Hospital for Sick Children
- **Elaine Stasiulis**
Child and Youth Mental Health Research Unit, The Hospital for Sick Children
- **Chiachen Cheng**
Centre for Applied Health Research, St. Joseph's Care Group
- **Shevaun Nadin**
Centre for Applied Health Research, St. Joseph's Care Group
- **Simon Davidson**
Department of Psychiatry, University of Ottawa
- **Katherine Boydell**
The Black Dog Institute, University of New South Wales

Background/Objectives: Young people experiencing psychosis and living in rural and remote communities are at increased risk of higher rates of harmful alcohol use and social isolation. Further, they often face barriers to early access to specialized intervention services. This participatory project uses an innovative arts-based research methodology to address issues of access to (mental) health care by young people experiencing psychosis in a rural community.

Methods: 9 young people (16-23 years) worked together, guided by adult facilitators, to produce individual 2-3 minute multi-media digital stories consisting of visual images, music and voice-over narration to describe how they manage the experience of psychosis in everyday life. Participants learned to think critically about their own stories, as well as the stories of their peers. Project activities were documented using participant observation and informal interviewing, formal group discussion, and detailed observational and reflexive field notes.

Results: In this presentation we share one or two digital stories to demonstrate young people's help-seeking experiences in rural communities. In addition, as part of the overall analysis, we describe the audiences young people wanted to share their stories with and why; and the impact that the participatory, qualitative and arts-based study had on the young participants.

Conclusion: Digital stories are powerful vehicles for young people experiencing psychosis to tell stories about issues they identify as important. In addition to gaining new skills through the digital storytelling process, young people want these stories to be used to educate and provoke audiences who can instigate individual- and system-level change.

Age-related differences in the underlying neural correlates of a novel visuomotor adaptation task

- **Andréa Hantjjs**
Thunder Bay Regional Research Institute
- **Jane Lawrence-Dewar**
Thunder Bay Regional Research Institute

Background/Objectives: Visuomotor adaptation is the ability to correct movements in response to an error, and becomes increasingly important during the aging process. Neuroimaging has observed an age-related increase in frontal brain activity and decline in occipitotemporal activity when performing motor tasks involving stationary targets. This posterior-anterior shift has been attributed to functional compensation for cognitive decline. The present study uses functional magnetic resonance imaging (fMRI) to assess age-related differences in neural correlates underlying visuomotor transformations involved in a moving-target task.

Methods: During fMRI scans, 37 participants (49.7 ± 17.5 years; 23 males) performed a moving-target task in which visual feedback of a cursor was either normal or manipulated as a flip over the x- or y-axis. Regions of neural activity involved in the distorted conditions of the task were measured, and activations were compared between three age groups: young (age range = 22-39), middle (age range = 41-58), and older (age range = 65-80).

Results: Premotor, supplementary motor, and primary motor regions, located in the frontal area of the brain, were identified to have greater activity in the older age group, likely associated with an increased need for motor preparation. Greater temporal and parietal regions associated with spatial attention and coordination were engaged in young and middle age groups, respectively.

Conclusion: Consistent with previous findings, observations of greater frontal activity were associated with lesser temporal and parietal activity in older age groups when compared to younger. Future research should confirm how the relationship between visuomotor behaviour and its neural networks are affected by age.

Individualized on-road training to enhance safe driving in seniors: A randomized controlled trial

- **Erica Sawula**
Department of Health Sciences, Lakehead University
- **Jan Polgar**
School of Occupational Therapy, Western University
- **Michelle M. Porter**
Centre on Aging, University of Manitoba
- **Satoru Nakagawa**
Centre on Aging, University of Manitoba
- **Sylvain Gagnon**
School of Psychology, University of Ottawa
- **Bruce Weaver**
Northern Ontario School of Medicine
- **Sacha Dubois**
Centre for Applied Health Research, St. Joseph's Care Group
- **Michel Bédard**
Department of Health Sciences, Lakehead University

Background/Objectives: In Canada, seniors' are driving more than they did in the past. To date, much attention has been devoted to identifying unsafe senior drivers, and less research has examined approaches to enhancing their safe driving behavior. This study examined the effectiveness of different driver training component combinations with individualized feedback.

Methods: After stratification by age and sex, participants (65+, n=78) were randomized to one of three groups: 1) Basic training (BT; control; received in-class safe driving education only); 2) On-road training (ORT; received both in-class education and on-road training); 3) On-road and simulator training (ORT+S; received in-class education, on-road training, and simulator training). To analyze differences across the three study groups, we used analysis of covariance. The outcome measure was the number of unsafe-driving actions after training, and the covariate was the same variable, pre-training. A blinded, independent rater scored on-road driving performance based on video and GPS output.

Results: The BT group achieved an average reduction of 7.18 (95% CI: 0.11, 14.26) unsafe-driving actions; the ORT group and the ORT+S group achieved an average reduction of 41.64 (95% CI: 26.21, 53.29) and 38.69 (95% CI: 22.20, 52.16) unsafe-driving actions. Post-training on-road driving scores of the ORT and ORT+S groups differed significantly from the BT group ($p < .001$ for both), but not from each other ($p = .707$).

Conclusion: The findings demonstrate that achieving considerable improvements in older adults' driving relies on on-road training and that individualized feedback supplementation should be the focus of more inquiry.

Symptoms of depression and anxiety in Northern Ontario School of Medicine third year comprehensive community clerkship students

- Jennifer Swerdlyk
Northern Ontario School of Medicine
- Sacha Dubois
Northern Ontario School of Medicine

Background/Objectives: The third year Comprehensive Community Clerkship (CCC) occurs in rural cities, located away from the home campus, thus medical students can be isolated from their supports including family and friends for extended periods of time. Our study examined symptoms of anxiety and depression associated with the CCC.

Methods: Web-based self-report survey administered pre-CCC, and three, six, and eight months. The Patient Health Questionnaire-9 (PHQ-9) and Generalized Anxiety Disorder-7 (GAD-7) were used to measure symptoms of depression and anxiety, respectively. A multi-level approach was used to analyze symptom change over time. A second model included the time by number of surveys completed interaction to assess whether change over time depended on surveys completed.

Results: A total of 55% (n=31) of all students responded to at least one survey time-point, 31% (n=21) responded to two or more survey time-points. At three months (Model 1), PHQ-9 and GAD-7 mean scores had increased from 4.0 (95% CI: 2.2-5.8) and 5.5 (95% CI: 3.5-7.5) at baseline to 7.7 (95% 5.1-10.2) and 8.3 (5.3-11.3) at 3 months. While depression and anxiety symptoms had reduced at eight months, they were still significantly greater than baseline ($p < .05$). For those students completing all four survey time points (Model 2), mean depression and anxiety symptom scores crossed moderate thresholds (scores ≥ 10) at three and eight months.

Conclusion: For several students, the results of the PHQ-9 and GAD-7 were clinically significant at multiple time points, indicating the need for education and possible intervention (e.g., counseling, pharmacotherapy) during this placement.

An examination of clients designated alternate level of care but declared ineligible for long-term care

- Laurie Macdonald
Older Adult Rehabilitation, St. Joseph's Care Group
- Sacha Dubois
Centre for Applied Health Research, St. Joseph's Care Group
- Carrie Gibbons
Centre for Applied Health Research, St. Joseph's Care Group
- Janet Sillman
Administration, St. Joseph's Care Group
- Mary Perkovic
Mental Health Rehabilitation, St. Joseph's Care Group
- Rebecca Scott
Centre for Applied Health Research, St. Joseph's Care Group
- Michel Bédard
Centre for Applied Health Research, St. Joseph's Care Group

Background/Objectives: One of the goals of the Ministry of Health and Long-Term Care is to provide the right care, at the right time, in the right place. Our evaluation examined ten older adult clients at Lakehead Psychiatric Hospital who were considered alternative level of care (ALC) but were deemed ineligible for long-term care (LTC) by the Community Care Access Centre (CCAC). We wanted to characterize these clients focusing on responsive behaviors, illness symptoms, and care needs.

Methods: Responsive behaviors and occupation disruptiveness were captured using the Cohen-Mansfield Agitation Inventory (CMAI) and Neuropsychiatric Inventory - Nursing Home (NPI-NH) respectively. Staff received standardized training and administered both tools on each client at two time points (2013 and 2015). Safety devices (i.e., use of a Pinel waist belt in the bed or wheelchair, use of a compact seatbelt or a security cover in a wheelchair) were also recorded. Data were presented using Radar graphs.

Results: After reviewing results of the CMAI, NPI-NH, and use of safety devices with stakeholders, three clients were recommended for re-assessment by the CCAC. Of these, two were eventually declared eligible for LTC by the CCAC. After a change in responsive behaviors, a fourth client was also deemed eligible for LTC. Of the remaining six clients three remained ALC, one client is currently under assessment by CCAC, and two have passed away.

Conclusion: This group of tools allows for enhanced communication among stakeholders including CCAC, LTC, and the hospital sector as well as identifying gaps in the health care continuum.

Dialectical Behaviour Therapy for clients presenting to St. Joseph's Care group mental health and addictions programs: A program evaluation

- **Carley Pope**
Department of Psychology, Lakehead University
- **Aislin Mushquash**
Mental Health Outpatient Programs, St. Joseph's Care Group
- **St. Joseph's Care Group DBT Team**

Background/Objectives: Evidence supports the effectiveness of DBT in improving the lives of individuals struggling with suicidal and/or high risk behaviours by helping them create a life they feel is worth living and building skills for managing emotions and stressors. DBT services have been implemented and validated for use in mental health programs and separately in addictions programs. However, less is known about the impact of DBT services for a joint mental health and addictions population. The purpose of this program evaluation was to evaluate the impact of a DBT program recently implemented across St. Joseph's Care Group Mental Health and Addictions Programs. Under this model, behavioural difficulties (e.g., self harm, substance use) across client groups are given equal importance and targeted through DBT.

Methods: Individuals enrolled in the comprehensive DBT treatment program completed program evaluation measures at baseline, 6-months, and 12-months. Measures included an assessment of borderline personality disorder symptoms, quality of life, depression, anxiety, and adaptive coping skills.

Results: Analyses showed that mean symptom scores are trending in the desired directions, lending support to the effectiveness of the comprehensive DBT program for clients from St. Joseph's Care Group Mental Health and Addictions Programs.

Conclusion: Available data supports the use of a joint DBT program across mental health and addictions populations in reducing a range of psychiatric symptoms and coping skills.

Nursing at its best: Discovery, dreaming, designing, destiny

- **Shelley Peirce**
Collaborative Practice, St. Joseph's Care Group
- **Robert Berardi**
Collaborative Practice, St. Joseph's Care Group
- **Glenna Knutson**
School of Nursing, Lakehead University
- **Karen Poole**
School of Nursing, Lakehead University

Background/Objectives: St. Joseph's Care Group (SJCG) 2013 Employee Experience Survey revealed that the majority of nursing staff felt their voice was not being heard. Designing a strategy to support conditions that foster the best of nursing can improve nursing satisfaction, enhance communication, and improve client outcomes. The goal is to build a collaborative picture of what guides and drives excellent nursing that can be used to support future practice, research, and interprofessional practice. The objective of this study is to address - "What is the best of nursing at SJCG, and how can it flourish?"

Methods: Appreciative inquiry is an organizational change methodology inclusive of four steps: Discovery, Dreaming, Designing, and Destiny. The study team utilized a quality improvement process (University Health Network) to elicit nurses' understanding of the best of nursing within SJCG. A qualitative data gathering approach was utilized, with nursing focus groups, using a world café approach, or individual interviews. Participants were asked to share stories that reflected their perception of the best of nursing from their experience.

Results: Data from 15 participants was analyzed and themed during the summer of 2015, with preliminary results identifying 5 overarching themes. The themes identified were: time, teamwork, therapeutic relationships, leadership, and education.

Conclusion: Nurses at SJCG are most satisfied when they have the ability to provide holistic client centred care in a healthy work environment.

Tailoring smoking cessation services to special populations

- **Patricia Smith**
Behavioural Medicine, Northern Ontario School of Medicine
- **Keri Gerlach**
Maternity Centre, Thunder Bay Regional Health Sciences Centre
- **Veronica Proper**
Supportive Care, Thunder Bay Regional Health Sciences Centre
- **Lisa Seamark**
Stroke Prevention, Meno Ya Win Health Centre

Background/Objectives: The smoking prevalence in Northwestern Ontario remains higher than the provincial average (26% vs. 17%). It remains the number one cause of preventable death, yet accessing smoking cessation services is difficult for many population subgroups. A standardized smoking cessation program was implemented prenatal/postpartum women and their partners and hospitalized inpatients and outpatients in Thunder Bay and Sioux Lookout.

Methods: The Moving On to Being Free™ program uses a centralized counselor in each location to help interested patients develop a personalized quit or reduction plan based on relapse prevention and enhancing self-efficacy. Patients spend 60 minutes with their counselor to develop a plan and then receive ongoing telephone counseling for two months as well as 3, 6, and 12 months after their initial visit.

Results: Moving On has been well received by each subgroup. Hospitalized inpatients receive the program during their hospital stay and receive follow-up post-discharge. Prenatal/postpartum women and their partners receive the program and support to address social pressures associated with smoking and pregnancy. These clients are encouraged to focus on their own health rather than just that of the baby for motivation. Rural and remotely located patients often direct their own follow-up by contacting their counselor when in Sioux Lookout for medical appointments or when they have phone access. Enrollment and cessation outcomes will be reported.

Conclusion: A single smoking cessation program can be tailored to the needs of specialized populations. The use of a standardized program will allow comparison between populations to inform practice.

Social anxiety-maintaining factors as mediators of the relationship between anxiety sensitivity and negative reinforcement drinking

- **Victoria Pitura**
Department of Psychology, Lakehead University
- **K. Amanda Maranzan**
Department of Psychology, Lakehead University

Background/Objectives: Anxiety sensitivity (AS) has been implicated in both social anxiety and negative reinforcement drinking. Prior research has shown that anxious rumination (implicated in maintaining social anxiety), serves to mediate the relationship between AS and negative reinforcement drinking. As such, other anxiety-maintaining factors may also serve a role.

Methods: Undergraduates (N = 180) from Lakehead University completed self-report measures of: AS (physical, cognitive, and social concerns), anxiety-maintaining factors (anticipatory rumination/processing, post-event rumination/processing, self-focused attention, and safety behaviours), and negative reinforcement drinking motives (coping-anxiety, coping-depression, and conformity motives).

Results: Employing a bootstrapping approach to mediation, analyses revealed that only anticipatory rumination/processing significantly mediated the relationship between total AS and coping-anxiety drinking motives ($ab = .03$, $CI = .01 - .06$). Similar findings were obtained when AS physical ($ab = .07$, $CI = .01 - .14$), cognitive ($ab = .08$, $CI = .02 - .15$), and social concerns ($ab = .08$, $CI = .02 - .16$) were set as the predictor. Lastly, findings showed that only safety behaviours significantly mediated the relationship between AS social concerns and conformity motivated drinking ($ab = .09$, $CI = .002 - .20$).

Conclusion: Within the context of social anxiety, higher AS appears to predict greater anticipatory rumination/processing, which subsequently leads to drinking as a means of reducing anxiety. However, subtle differences are obtained depending on whether AS is conceptualized as a uni- or multi-dimensional construct. Findings may have implications for those working with socially anxious clients to address problematic drinking.

Examining the viewpoints of Lakehead Public School students on physical activity participation

- **Jacqueline Harvey**
School of Kinesiology, Lakehead University
- **Erin Pearson**
School of Kinesiology, Lakehead University
- **Paolo Sanzo**
School of Kinesiology, Lakehead University
- **Aleyah Lennon**
School of Kinesiology, Lakehead University

Background/Objectives: According to recent data, only 9% of children and youth aged 5-17 meet National physical activity (PA) guidelines. It has been recommended that society-wide approaches be taken to improve child health including making schools centers for community engagement. While fully implemented daily phys-ed has been reported among 55% of Canadian school administrators, a disconnect exists between PA-related school policies and participation among students, whereby rates fall below average. Given the importance of PA on health indices, the aim of this project was to explore student viewpoints on barriers and facilitators to PA participation among Lakehead Public School (LPS) students.

Methods: Researchers conducted focus groups with children in grades five and six at LPSs using a semi-structured format. Sessions were analyzed using inductive content analysis by two researchers independently.

Results: Students reported levels of PA that fall below recommendations. Barriers to participation included personal struggles (e.g., overweight), preference for technology over PA, and school rules (e.g., playground restrictions). Facilitators to PA included enjoying activities, structured programs (e.g., student mentors), social support (e.g., peer involvement), and previous experience with PA (e.g., mastery). Recommendations for increasing PA in schools included strategic scheduling (e.g., integrating PA into other subjects), involving students in phys-ed planning, and integrating non-traditional activities to promote inclusion.

Conclusion: These student viewpoints and recommendations may be beneficial for local administrators and teachers seeking to enhance PA engagement among students in service of improving child health.

Examining the viewpoints of Lakehead Public School staff on increasing daily physical activity in elementary schools

- **Aleyah Lennon**
School of Kinesiology, Lakehead University
- **Erin Pearson**
School of Kinesiology, Lakehead University
- **Paolo Sanzo**
School of Kinesiology, Lakehead University
- **Jacqueline Harvey**
School of Kinesiology, Lakehead University

Background/Objectives: Children's physical activity (PA) levels have been linked to improved physical/mental health and enhanced academic performance, which highlights the importance of implementing PA-based initiatives during childhood. Schools have been identified as promising avenues for encouraging PA behaviours. However, administrators/staff are under pressure to optimize academic performance, impacting time allocated towards PA. Therefore, the purpose of this project was to explore the viewpoints on barriers and facilitators experienced by Lakehead Public School (LPS) employees regarding PA involvement.

Methods: Thirteen school employees (6 principals/vice principals; 7 grade 5/6 teachers) representing six schools participated in semi-structured interviews. Interviews were digitally recorded, transcribed verbatim, and analyzed using inductive content analysis by independent researchers.

Results: Employees recognized numerous health benefits of daily PA; however, noted that this practice was not a priority due to barriers including lack of time, a focus on academic achievement, and a lack of expertise/resources to implement appropriate and safe PA initiatives. Facilitators for PA engagement included supportive school cultures led by administrators/staff who valued and prioritized PA, engaged parents, and partnerships with community champions.

Conclusion: Achieving broader and sustained implementation of PA requires comprehensive approaches and partnerships between schools, families, and community stakeholders. Participant recommendations for enhancing PA was discussed in the context of local partnerships, and included mandatory hands-on, board-wide Professional Development staff training; engaging students/families (e.g., offering PA-focused evening events); and strategic planning (e.g., integration across the curriculum).

The prevalence of high residential radon in Thunder Bay, Ontario, 2015

- **Garnet Czinkota**
Environmental Protection, Thunder Bay District Health Unit
- **Lee Sieswerda**
Environmental Protection, Thunder Bay District Health Unit

Background/Objectives: The purpose of this study is to determine the prevalence of the hazardous levels of radon (Rn) in Thunder Bay homes. Rn is a Class A carcinogen. This study is to inform public health policy that would reduce the burden of illness.

Methods: In the winter of 2014/2015, 465 long term radon alpha track detectors were collected from homes in Thunder Bay, Ontario, Canada.

Results: The geometric mean of Rn concentration was 75.3 Bq/m³ for Thunder Bay. Thunder Bay has 16.7% of the homes over 200 Bq/m³ and 0.8% were over 600 Bq/m³. The percentage of homes in each municipal ward over 200 Bq/m³ are; McIntyre 41% (n=87), Neebing 30% (n=50), Red River 15% (n=78), Current River 14% (n=65), Northwood 5% (n=79), McKellar 2% (n=50), and Westfort 0% (n=53). The homes in McIntyre Ward supplied by well water have higher Rn levels than those supplied by municipal water. The 60 homes in McIntyre Ward served by the municipal water supply have an average Rn concentration of 126 Bq/m³ while the 26 homes serviced by private wells have an average Rn concentration of 281 Bq/m³.

Conclusion: Homes with high Rn concentrations using well water need to consider both structural Rn remediation (usually sub soil depressurization) as well as water remediation. A further finding was an association between Rn concentration and whether a home was built over clay or not.

An analysis of current and forecasted patient visits to the emergency department and its effect on hospital admissions

- **Alana Rawana**
Northern Ontario School of Medicine
- **David Savage**
Northern Ontario School of Medicine
- **Bruce Weaver**
Northern Ontario School of Medicine

Background/Objectives: The number of emergency department (ED) visits across Ontario has increased annually over the past two decades, leading to overcrowding and longer wait times. We investigated the pattern of ED use at the local health integration network (LHIN) level. ED visits and admissions throughout Ontario over 11 years were quantified and the data was used to forecast patient visits in 2018 and 2023. Forecasts were used to predict hospital admissions, the number of patient bed days required compared to available bed days and the required ED physician hours of coverage.

Methods: Retrospective ED visit data for the period 2003-2013 was obtained through the National Ambulatory Care Reporting System collected through the Canadian Institute for Health Information.

Results: There has been an increase in patient visits to the ED across Ontario between the years 2003-2013, with increases ranging from 4% to 37% depending on LHIN. Admission rate to hospital from the ED generally decreased across LHINs between 2003 and 2013. All EDs across Ontario are expected to experience increases in patient visits in the future. The forecasted need for ED physicians varied widely depending on the LHIN. The largest discrepancy between required and current available beds was observed in the Central Toronto LHIN.

Conclusion: This research will assist strategic planners and facilitate resource allocation for emergency medicine services. The results suggest that many hospitals will experience increased demand for services and will have to plan accordingly to ensure that overcrowding is minimized and wait times do not exceed provincial standards.

Improving the Quality of Measurement in Ontario Small and Rural Hospitals

- **Jennifer Maki**
*Quality and Support Services,
Sioux Lookout Meno Ya Win Health Centre*
- **David Murray**
Executive Office, Sioux Lookout Meno Ya Win Health Centre
- **Lindsay Bevan**
Centre for Effective Practice
- **Katie Hunter**
Centre for Effective Practice
- **Jimmy Yang**
Garrison Health Advisory Services
- **Benjamin Chan**
*Institute for Health Policy, Management and Evaluation,
University of Toronto*
- **Jess Rogers**
Centre for Effective Practice

Background/Objectives: A long-standing challenge in rural settings is that indicators developed in larger hospitals often do not reflect the type of services and practical realities found in rural hospitals. Eleven small and rural hospital in the NWLHIN came together with the Centre for Effective Practice, to identify a set of starting quality indicators that best reflect the unique challenges faced in delivering care in rural settings.

Methods: One hundred process and outcome indicators were extracted from a literature review of best practices, existing quality initiatives underway in Ontario, and consultations with experts. A modified Delphi methodology was chosen as an appropriate means to narrow down the initial list of quality indicators reflective of delivering care in small and rural settings. Sixteen Delphi panelists were nominated by participating hospital leadership to ensure balanced representation across clinical and administrative personnel as well as stakeholders with expertise in systems and quality improvement

Results: After the first round of the Delphi panel, forty-two indicators reached consensus and advanced to the third and final round, and two additional indicators were added. After the second round, only two additional indicators advanced. Fifty-eight of the one hundred indicators reached consensus for exclusion and were therefore eliminated. Following the final round of ranking, the consensus list of indicators totaled twenty. This list will be shared at the conference.

Conclusion: An additional phase of work is underway to develop a scorecard for the eleven participating hospitals' use, and a set of refined indicators where data will be collected for measurement and performance management.

A qualitative analysis of perceived learning outcomes among student members of Compass North interprofessional student-led clinic

- **Barbara Gunka**
School of Nursing, Lakehead University
- **Carleigh Sawula**
School of Kinesiology, Lakehead University
- **Maira Haggarty**
Northern Ontario School of Medicine
- **Daphne Doble**
Northern Ontario School of Medicine

Background/Objectives: Compass North interprofessional student-led clinic (SLC) endeavours to improve the health and wellbeing of underserved populations in our community. Through partnerships with Shelter House and Anishnawbe Mushkiki Clinic, students from various disciplines collaboratively deliver health promotion and clinical care with the assistance of licensed professionals. Literature examining the educational value of student participation in the development process and outreach initiatives of a SLC is lacking.

Methods: Data was derived from 35 surveys collected from 2013 to 2015, with response rates from Compass North members of 69% and 67% each academic year. Two researchers independently coded the data through a grounded theory approach until reaching theoretical saturation. The researchers compared findings to finalize the code structure, which was re-applied to the data. After resolution of any coding discrepancies, major themes were identified.

Results: The main themes that emerged were Interprofessional Collaboration, Behind-the-Scenes Processes, Tenacity, Influencing Change, and Research. Supporting subthemes and illustrative direct quotations were presented. The context of student respondent demographics, roles within the organization, and length of participation was provided.

Conclusion: As SLCs become increasingly integrated in the training of healthcare providers it is important to understand their educational value. This study has important implications for student, faculty, and community participation with SLC's. Future research should evaluate changes over time in student attitudes towards interprofessional collaboration using standardized measures.

Preliminary evaluation of mental health and health promotion workshops: A service learning project

- **Jessica McCann**
Northern Ontario School of Medicine
- **Dyane Lagadouro**
Northern Ontario School of Medicine
- **Carmen Petrik**
Northern Ontario School of Medicine
- **Elizabeth Sherman**
School of Nursing, Lakehead University

Background/Objectives: In partnership with Compass North Student-Led Health Outreach, Anishnawbe Mushkiki Health Centre and Shelter House, students of the Northern Ontario School of Medicine have developed health-related workshops to address the needs of marginalized populations in Thunder Bay. Workshops were designed to address the needs identified by the 2014/15 Compass North Student-Led Health Outreach Needs Assessment. Gaps in health and social services for marginalized populations were determined with the objective to help complement existing services. Centered on mental health and health promotion, workshops were evaluated for effectiveness, as well as student utility in delivering health promotion to marginalized populations.

Methods: As of December 2015, three comprehensive workshops have been created and facilitated based on current literature and evidence-based practices. Prior to delivery, material was reviewed by registered healthcare professionals and workshop site staff. The workshops were then delivered once monthly at both Shelter House and Anishnawbe Mushkiki locations. Following delivery, participants, hosts and presenters were given the opportunity to evaluate their overall experience and relevance of the material by completing a 3-point Likert scale survey accompanied by open-ended questions.

Results: To date, 3 workshops have been given with attendance ranging from 4 to 13 per session. Of the respondents, 91% indicated that they learned something from the workshop, 96% enjoyed it, and 83% stated they would attend another. Most would also recommend the workshop to others.

Conclusion: Workshops have been well received and are being increasingly recognized within the intended population. Three more workshops will take place in 2016.

Depressed elderly in long-term care homes

- **Carlina Marchese**
Department of Psychology, Lakehead University
- **Michael Stones**
Department of Psychology, Lakehead University

Background/Objectives: Depression rates in Long Term Care Homes (LTCH) can be very high for the elderly. This study divided depression into two components: dysphoria (sadness, unhappiness), and anhedonia (loss of interest or pleasure). It sought to explore the relationship between dysphoria and anhedonia against diagnosed depression, anti-depressant medication use, and subsequent mortality using interval censored data from a 1 year incidence sample from Ontario long-term care residents followed up to 13 months.

Methods: The Resident Assessment Instrument (RAI 2.0) was the main tool used and was collected from over 600 Ontario LTCH facilities at multiple assessment points, resulting in 76,181 records (N = 20,414; 66.4% female; age at first assessment m = 83.82). Generalized mixed linear model analyses were used to examine the data.

Results: Approximately 46% of participants were on an anti-depressant medication daily, while 1.5% were on an as needed basis. The as needed (PRN, meaning pro re nata) anti-depressant use was associated with a higher death rate than those on a daily dose or no use. Those who had dysphoria or anhedonia were more likely to have died. Dysphoria and anhedonia were predictors of each other, and were both related to a diagnosis of depression on record. However, anti-depressant medication use only predicted dysphoria.

Conclusion: Elderly who were depressed or on PRN anti-depressants were more likely to have died. The relationship between PRN medication use, depression, and death in the elderly merits further study.

Mindfulness-Based Cognitive Therapy for depression symptoms in older adults with memory difficulties and caregivers of family members with dementia

- **Lana Ozen**
Department of Health Sciences, Lakehead University
- **Sacha Dubois**
Centre for Applied Health Research, St. Joseph's Care Group
- **Megan Short**
Department of Psychology, Lakehead University
- **Erica Sawula**
Department of Health Sciences, Lakehead University
- **Michel Bédard**
Centre for Applied Health Research, St. Joseph's Care Group

Background/Objectives: Depression symptoms are common for older adults in early stages of dementia and family caregivers. Mindfulness-Based Cognitive Therapy (MBCT) improves depression symptoms in various populations, but has not yet been tested in older adults with memory difficulties or caregivers.

Methods: To be included in the study, older adults with memory difficulties (seniors) had to score 19-25 on the Montreal Cognitive Assessment and caregivers had to score > 26. Participants were randomized into either the MBCT group, one for seniors (n=5) and one for caregivers (n=5), or the waitlist control group (4 seniors and 5 caregivers). Questionnaires were completed before and after the MBCT and waitlist periods: Geriatric Depression Scale, Five Facet Mindfulness Questionnaire (FFMQ), and the Self-Compassion Scale.

Results: Analyses of covariance revealed that, compared to control groups, no changes were observed on any of the outcome measures in the MBCT groups. For all participants who completed the MBCT intervention (seniors and caregivers; n=15), planned correlations showed that increases in scores on the non-judging facet of the FFMQ were associated with reductions in depression symptoms, $r(14) = -.785$, $p = .001$. Also, increases in self-compassion scores were associated with reductions in depression symptoms, $r(14) = -.558$, $p = .031$.

Conclusion: Learning to view ones' inner experience non-judgmentally is a core skill taught in MBCT. Results from this study indicate that the ability to be non-judgmental and to be self-compassionate correspond with improvements in depression symptoms in seniors and caregivers. These findings could inform future RCTs examining MBCT for depression.

Building capacity for healthcare staff in mental health and addictions

- **Lana Ozen**
Department of Health Sciences, Lakehead University
- **Janet Sillman**
Administration, St. Joseph's Care Group
- **Carrie Gibbons**
Centre for Applied Health Research, St. Joseph's Care Group
- **Tammy McKinnon**
Corporate Learning, St. Joseph's Care Group
- **Michel Bédard**
Centre for Applied Health Research, St. Joseph's Care Group

Background/Objectives: St. Joseph's Care Group (SJCG) has committed to enhance staff knowledge in supporting people with a mental illness. The goal of this project was to develop a corporate-wide survey to ask staff about mental health topics that would be of value to them in their work.

Methods: First, researchers met with the Building Capacity Committee to develop a list of mental health topics. Next, a draft of the survey was developed and piloted by 15 staff. The survey was then revised and designed online using REDCap. The survey link was emailed to all 1713 staff. Using a Likert-type scale (from 1 "Not Important" to 5 "Very Important"), participants were asked how important it was to learn more about mental health topics, divided into two categories: General and Advanced.

Results: The total response rate was 29% (494/1713). The top ranked General topics were: 1) How to engage with someone who has a mental illness (M=4.39, SD=0.94), 2) Understanding Mental Health (M =4.34, SD=0.90), and 3) Managing Challenging Behaviours (M=4.33, SD=1.00). The top ranked Advanced topics were 1) Strategies to manage signs, symptoms and behaviors related to mental illness (M=3.71, SD=1.37), 2) Fundamental Treatments in mental health (M=3.54; SD=1.42), and 3) Goal setting with clients who have complex issues (M=3.48, SD=1.53).

Conclusion: The survey results were informative in identifying eight training topics. The training modules were delivered in Fall 2015. SJCG's commitment to build capacity in mental health in staff may contribute to quality of care for clients with mental illness.

The effects of student-led simulation on perceived interprofessional competencies

- **Alexis Sharp**
Northern Ontario School of Medicine
- **Ian Newhouse**
School of Kinesiology, Lakehead University

Background/Objectives: Since the foundation of the Lakehead Interprofessional Student Society (LIPSS) in 2013, student-led interprofessional education (IPE) has become more prominent at Lakehead University. Interprofessional education (IPE) occurs when students from two or more disciplines learn about, from, and with each other to foster effective collaboration and improve future health outcomes. On February 28th 2015, LIPSS implemented the second annual student-led simulation challenge (SimChallenge) at Lakehead University to encourage and promote IPE.

Methods: The purpose of this research project was to examine the learning outcomes of the 2015 SimChallenge while expanding on the results from 2014. The event was evaluated using the W(e)Learn Framework and a semi-structured questionnaire. These questionnaires inquired about aspects such as the students' perceived interprofessional competencies, their experiences of the event, and how the simulations could be improved.

Results: Results indicated that the SimChallenge was a large success with 95% (n=36) of the participants reporting that they would recommend the experience to their peers. On average, all interprofessional competencies examined improved from pre to post SimChallenge. A common theme from the semi-structured questionnaire was that the standardized patients/actors made the simulations feel real. In addition participants' noted the value of the facilitators, with four of the five top scores from the W(e)Learn Program Assessment making note of this.

Conclusion: These results highlight the benefits of student-led simulation in fostering positive interprofessional experiences early on in students' professional lives. Since IPE is known to promote communication and encourage patient-oriented care, these experiences have the potential to foster enhanced medical outcomes.

An evaluation of interprofessional providers' perspectives on palliative care education in Northwestern Ontario

- **Shevaun Nadin**
Centre for Education and Research on Aging & Health, Lakehead University
- **Stephanie Hendrickson**
Centre for Education and Research on Aging & Health, Lakehead University
- **Mary Lou Kelley**
Centre for Education and Research on Aging & Health, Lakehead University
- **Amanda Mihalus**
Centre for Education and Research on Aging & Health, Lakehead University

Background/Objectives: The North West Local Health Integration Network released a comprehensive plan to further develop quality palliative care (PC) in Northwestern Ontario (NWO) with PC education for health care providers as a main component. This evaluation explored the PC education interests and preferences of interprofessional (IP) health care providers in NWO.

Methods: A questionnaire assessed IP providers' likelihood of taking part in PC education, barriers they may face, their interest in various PC topics, and their educational scheduling, format and style preferences. Descriptive statistics and frequency analyses were used to summarize educational interests and preferences.

Results: Participants (n = 250) worked in communities across NWO, representing a variety of disciplines. Most participants indicated they were likely to participate in PC education in the future. Lack of time and funding were the most commonly indicated barriers to participation. Topics and levels of interest varied by discipline, however topics of interest across disciplines included End-Of-Life/Comfort Care, PC Approach to Chronic Disease Management and Dementia Care. Most preferred weekday scheduling of 1-2 hour or 1/2 - full day events occurring in home communities.

Conclusion: This project provides a descriptive snapshot of the PC educational interests and preferences of IP health care providers in NWO. These findings can assist PC education planners to meet educational needs of regional health care providers.

Assessing family members' satisfaction with end-of-life care in long-term care

- **Shevaun Nadin**
Centre for Applied Health Research, St. Joseph's Care Group
- **Mary Lou Kelley**
Centre for Education and Research on Aging & Health, Lakehead University
- **Jill Marcella**
Regional Palliative Care Program, St. Joseph's Care Group

Background/Objectives: Measuring families' satisfaction with end-of-life care (EOLC) is an important way to indicate quality of care. To date, validated measures of satisfaction with EOLC in long-term care (LTC) are lacking. Thus, we adapted the CANHELP Lite (a valid EOLC satisfaction measure) to the LTC context. We aimed to create a version of the CANHELP that could assess families' perceptions of quality EOLC in LTC facilities.

Methods: Phase 1: evaluated the CANHELP terminology to determine whether wording modifications were required to reflect the LTC context. Also to assess whether the CANHELP covered all domains relevant to satisfaction with EOLC in LTC, a literature review was conducted to elucidate those domains. Modifications were made as required. Phase 2: sought feedback on the questionnaire through cognitive interviews with family members (n = 118) of LTC residents. Modifications were made iteratively as suggested by the interviews. Phase 3: assessed the instrument properties through a mail-out pilot of the revised survey to a second sample of family members (n = 134).

Results: Phases 1 & 2 resulted in several revisions to the CANHELP including wording, formatting and content changes. The result was a 22-item, self-administered version of the CANHELP that is specific to LTC. Phase 3 demonstrated the revised tool had a good range of item endorsement and good internal consistency.

Conclusion: This research provides a new, self-administered, valid version of the CANHELP that can be used to measure family members' perceptions of, and satisfaction with EOLC in LTC settings.

Measurement error and assessment of movement proficiency in atypically developing children: Clinical relevance

- **Eryk Przysucha**
School of Kinesiology, Lakehead University

Background/Objectives: Often clinicians incorporate a test without an insight into its psychometric properties. The amount of measurement error embed in testing often leads to false-positive or negative inferences, which have critical implications for the patient. The purpose of this research was to examine the assumptions of different scoring systems for Movement Assessment Battery for Children Test (MABC-2), and the relative (ICC correlations) and absolute reliability (SEM) for Total Test Score (TTS) and three subsections.

Methods: Forty typically functioning children (18 boys, 22 girls), between the ages of 7 and 10, completed two thirty-minute sessions, involving the administration of MABC-2, by the same researcher in the same laboratory setting. The normality, skewness and kurtosis assumptions, and the reliability for TTS and three subsections were examined for test-retest reliability (ICC coefficient) and SEM.

Results: Overall, the standard scores met the necessary (normality) assumptions, thus should be considered by the practitioners ahead of the two other scoring systems. In terms of the test-retest reliability the analysis revealed ICC of .67 for manual dexterity, and aiming/catching subsections, .64 for balance, and .65 for TTS. These results indicated a moderate degree of reliability. The SEM for standard scores was 2.25, 1.78, and 1.92 for manual dexterity, aiming and catching and balance sections respectively, and 1.80 for TTS.

Conclusion: Overall, the analysis of different aspects of reliability for TTS and the three subsections suggested that the MABC-2 is not a reliable assessment tool. Thus, clinical practitioners should consider the results emerging from this test with caution, and possible relay on additional resources when making decisions in regards to diagnosis or placement of the individual.

Translating inpatient tobacco intervention research into practice: Making the case for using randomized trial benchmarks

- **Patricia Smith**
Behavioural Medicine, Northern Ontario School of Medicine
- **Veronica Proper**
Supportive Care, Thunder Bay Regional Health Sciences Centre

Background/Objectives: Hospitalization is an opportunity for tobacco cessation. However, there is limited research that demonstrates the effectiveness of cessation interventions in practice that were previously found efficacious in randomized clinical trials (RCTs). This single group effectiveness study examines whether an inpatient nurse case-managed cessation program found efficacious in previous RCTs would replicate when translated into practice.

Methods: The RCT protocols and measures were used. At central hospital admitting, all patients were asked about tobacco use. A smoking cessation RN used this to identify smokers, screened for eligibility (18+ yr, medically and cognitively stable), explained the study and obtained informed consent, and provided 60 minutes of bedside education/counselling based on relapse prevention and enhancing self-efficacy. The RN called patients post-discharge for counselling at 2, 7, 14, 21, 30, 45, and 60 days, and at 3, 6, and 12 months for tobacco use.

Results: From May 2013-Jan 2015, 25% of smokers refused the program, 68% were ineligible, and 7% enrolled (N=153) among whom 35% were abstinent at 1-yr post-discharge. Refusal and abstinence rates were identical to the RCTs. Enrollment was lower than the RCTs due to higher ineligibility. Higher ineligibility was due to more patients being medically unstable and more missed due to hospital gridlock.

Conclusion: Using an evidence-based intervention informed program implementation and provided benchmarks for interpretation. Benchmarks highlighted lower enrollment was due to higher ineligibility, not higher refusal, and the reasons could be identified by comparing to the RCT ineligibility outcomes. Abstinence identical to the RCTs helped establish effectiveness.

Getting the message right: NorthBEAT's innovative and participatory approach to knowledge translation and exchange

- **Chiachen Cheng**
Centre for Applied Health Research, St. Joseph's Care Group
- **Shevaun Nadin**
Centre for Applied Health Research, St. Joseph's Care Group
- **Mae Katt**
Centre for Rural and Northern Health Research, Lakehead University
- **Carole Lem**
Centre for Applied Health Research, St. Joseph's Care Group
- **Shelia Cook**
InVizen Knowledge Brokers Inc.

Background/Objectives: NorthBEAT (Barriers to Early Assessment and Treatment) is a three-year, mixed-method, project that examined the service needs of people with psychosis and its intersection with three marginalized populations: rural and remote residents, Aboriginal people, and youth. In the final year, knowledge translation and exchange (KTE) workshops were held with participants and stakeholders. The objectives were to: 1) validate the interpretation of the study findings, 2) co-create arts-based products from the data, and 3) brainstorm with stakeholders on possible KTE audiences and venues. This presentation will describe and present the results from those workshops.

Methods: The approach of the workshops was a safe place for conversation; each workshop agenda was adjusted to meet the needs of the participating group. Exercises included simple arts-based, verbal and written approaches to provide a variety of ways for people to contribute their lived experiences and perceptions. Particular attention was given to the OCAP (Ownership, Control, Access, Possession) principles and indigenous ways of knowing and seeing.

Results: Three workshops were held with participants and stakeholders (i.e., one with youth participants, one with family participants, and one with service provider participants or project stakeholders). The discussions and knowledge exchange products from each of the workshops will be shared.

Conclusion: Bringing together multiple stakeholders, including the voice of youth and family members strengthened the project and its results by engaging these groups with the project results; the knowledge exchange products developed in this workshop will be shared with mental health service decision-makers and funders in Ontario.

Applying complexity theory to health services research: A scoping review

- **David Thompson**
School of Nursing, Lakehead University
- **Darren Stanley**
Faculty of Education, University of Windsor

Background/Objectives: There are calls for better use of theory to inform health services research. Complexity theory has been identified as potentially useful. However, how best to conceptualize and operationalize complexity theory in health services research is uncertain. This poster will report on the results of a scoping review exploring the use of complexity theory in health services research. In doing so, it will introduce the viewer to key attributes of complexity theory and describe the most common applications of complexity theory within health services research.

Methods: A scoping review of published research in English was conducted using CINAHL, EMBASE, Medline, Cochrane, and Web of Science databases. We searched terms synonymous with complexity theory and used both quantitative and qualitative analysis to summarize the data.

Results: We included 44 studies in this review: 27 were qualitative, 14 were quantitative, and 3 were mixed methods. Case study was the most common method. Long-term care was the most studied setting. The majority of research informed by complexity theory was exploratory and focused on relationships/interactions between health care workers. Authors described complexity theory in their research in a variety of ways. The most common attributes of complexity theory used in health services research included relationships, self-organization, and diversity.

Conclusion: Complexity theory is used in many ways across a variety of research designs to explore a multitude of phenomena. In particular, complexity theory appears useful to explore relationships and interactions amongst health care workers in long-term care.

Exploratory and confirmatory factor analysis on the Leadership Behaviour Description Questionnaire

- **Jennifer Plata**
Department of Health Sciences, Lakehead University
- **Paula Reguly**
Department of Health Sciences, Lakehead University
- **Vicki Kristman**
Department of Health Sciences, Lakehead University

Background/Objectives: The Leadership Behaviour Description Questionnaire (LBDQ) has been utilized for almost 50 years to characterize leadership behaviours for application to health issues such as workplace accommodation and employee satisfaction. Leadership behaviours are difficult to define; however, the 40-item LBDQ has shown to be a reliable and valid questionnaire. Yet, it is often difficult to use in survey research due to the length of the questionnaire. The objective of this study was to determine if the LBDQ can be shortened.

Methods: Supervisors from Canada and the United States were invited to participate in a 30-minute survey that used 7 questionnaires to study supervisor behaviours and job modifications, the LBDQ being one of the questionnaires. A total of N=804 observations were recorded for the original dataset. After removal of any supervisors who did not complete all 40-items, the dataset was split in half for an exploratory factor analysis (EFA) (n=279) followed by a confirmatory factor analysis (CFA) (n=278). Goodness of fit statistics were analyzed for the CFA measurement model.

Results: The EFA showed support for an 11-item questionnaire consisting of two latent variables: Initiating Structure and Consideration. The CFA measurement model produced acceptable goodness of fit statistics with the subsample (n=278), and the entire dataset (N=804).

Conclusion: The reduced scale showed good reliability and validity and could serve to improve utility of the LBDQ in health research. Future studies should investigate the validity of this reduced scale with a larger dataset.

Evaluation of client satisfaction in an employee and family assistance program

- **Suzanne Chomycz**
Department of Psychology, Lakehead University
- **Cathy Clara**
Behavioural Sciences Centre, St. Joseph's Care Group

Background/Objectives: Employee and family assistance programs (EFAPs) provide counselling to individuals in the workplace, optimize individual health, and minimize the potential for personal or work problems to negatively influence productivity and the work environment. However, the effectiveness and value of EFAPs has always been a concern. Additionally, there is a lack of literature available on client satisfaction with such programs, especially ones in Ontario.

Methods: A comprehensive review of the current literature was conducted on program evaluations related to EFAPs, with ones measuring client satisfaction being of particular interest. Client satisfaction and basic demographic information over the last 10 years was collected and analyzed from a local EFAP.

Results: Clients were primarily male (60%) and employed full time (63%). All clients participated in individual counselling, with the mean number of visits per client being three. Ninety-three percent of new clients were either very satisfied or mostly satisfied with the helpfulness of the assistance they received (N = 18,146). Ninety-nine percent of clients believed that their counsellor understood their situation quite well or satisfactorily and that they would recommend these services to a coworker or significant other. Ninety-eight percent of clients rated their counsellor as either very good or good.

Conclusion: Clients were satisfied with the services they received. Suggestions for additional outcome measures are provided for program improvement.

Patient satisfaction and mental health among patients attending Group Medical Visits

- **Erika Portt**
Department of Psychology, Lakehead University
- **Gregory Tippin**
Department of Psychology, Lakehead University
- **Amanda Maranzan**
Department of Psychology, Lakehead University
- **Donna Dutka**
Mental Health Outpatient Programs, St. Joseph's Care Group
- **Lois Hutchinson**
Mental Health Outpatient Programs, St. Joseph's Care Group
- **Mary Austin**
Mental Health Outpatient Programs, St. Joseph's Care Group

Background/Objectives: A Group Medical Visit (GMV) is a treatment format whereby health providers meet with a group of patients at the same time. GMVs are frequently utilized for the purpose of managing psychotropic medications. This study examined patient satisfaction with GMVs as well as quality of life and mental health symptomatology among patients attending GMVs.

Methods: Patients attending an ongoing GMV for medication management were invited to complete a weekly patient satisfaction questionnaire at each visit. A psychiatrist and nurse led the GMVs. The number of patients attending the GMV varied with each appointment. All patients who attend the GMVs were also invited to receive a package of questionnaires by mail that assessed quality of life, mental health symptomatology, satisfaction with individual psychiatric appointments, and satisfaction with GMVs.

Results: Twenty-six patients completed the weekly patient satisfaction questionnaire, with eight participants completing it more than once. The average response to the weekly questionnaire item, "overall, I felt the quality of care and services today were" was 4.08 (SD=1.00) on a Likert-type scale ranging from 1 to 5, with 5 indicating higher satisfaction. Four patients completed the questionnaire packages sent by mail. Descriptive statistics of this data are presented.

Conclusion: Item averages on weekly questionnaires ranged from good to very good levels of satisfaction. This study provides preliminary information regarding patients' perspectives of GMVs. Satisfaction with the GMVs could not be statistically compared to satisfaction with individual appointments due to sample size limitations, necessitating further research into this growing approach to practice.

Therapeutic taping does not improve pain, range of motion, and power in patients with patellar tendinopathy

- **Michael Massei**
School of Kinesiology, Lakehead University
- **Paolo Sanzo**
School of Kinesiology, Lakehead University
- **Eryk Przysucha**
School of Kinesiology, Lakehead University

Background/Objectives: Patellar tendinopathy (PT) is a common overuse injury in active populations characterized by tendon pain and swelling. Signs and symptoms vary in intensity often impacting functional and sport performance. Therapeutic taping is proposed as a treatment for knee pain but currently it is unclear whether this is helpful for this condition. This pilot study examined the effects of Kinesiotape (KT), Leukotape (LT), placebo tape (PT), and no tape (NT) on pain, range of motion (ROM), and power.

Methods: Ten physically active participants (2 females, 8 males; mean age 25 years; weight 86 kg; height 180 cm) with PT were involved in four test sessions (NT, PT, LT, KT) to examine the effectiveness of the tapes on knee pain (visual analog scale), strength (manual muscle tester), and power (vertical jump height).

Results: There was no significant interaction ($p = .53$) or main effects for time ($p = .65$) or taping condition ($p = .68$) for pain. The same was true for knee flexion ($p = .16$) and extension ($p = .45$) ROM; as well as for the measure of power ($p = .75$), when the different conditions were compared.

Conclusion: Although the results were somewhat surprising, they were robust as the application of tape did not affect any of the dependent measures of interest. From the clinical perspective, it is likely that the effectiveness of the use of therapeutic tape is population, joint, and injury specific.

Spring loaded cane mechanism: The use of this instrument in minimizing ground reaction forces at the upper extremity

- **Carlos Zerpa**
School of Kinesiology, Lakehead University
- **Tiffany Gervasi**
School of Kinesiology, Lakehead University
- **Eryk Przysucha**
School of Kinesiology, Lakehead University
- **Paolo Sanzo**
School of Kinesiology, Lakehead University
- **Dan Vasiliu**
School of Kinesiology, Lakehead University
- **Aya Mohammed**
School of Kinesiology, Lakehead University

Background/Objectives: Physiotherapists prescribe the use of canes to patients as an adjunct to rehabilitation following chronic and acute lower extremity injuries. The main concern, however, is that the use of canes may cause upper extremity injuries because of the amount of ground reaction forces transferred to the arm holding the cane. This study examined the effect of a spring loaded cane mechanism in minimizing ground forces transmitted to the arm through the cane as an avenue to diminish the possibility of upper extremity injuries.

Methods: For this study, 25 participants were recruited through convenience sampling. A T-Scope brace was fitted on the participant knee to simulate an injury. A cane with 3 spring loaded stiffness settings (rigid, 50%, 25%) was used. For each cane setting, participants walked over a force plate 5 times and each time ground reaction forces produced at the tip of the cane were recorded in units of Newtons.

Results: Descriptive statistics revealed that the mean ground reaction force for the 25% stiffness setting ($M=67.70$, $SD=27.89$) was lower than the rigid ($M=73.71$, $SD=31.85$) and 50% ($M=73.23$, $SD=30.84$) stiffness settings. One way repeated measures ANOVA indicated significant differences between the three settings, $F(2, 48)=4.39$, $p<0.05$, $\eta^2=0.27$. Bonferroni post hoc analysis revealed significant differences between the rigid and 25% stiffness settings.

Conclusion: The use of a spring loaded cane mechanism offers an avenue for health providers to minimize the possibilities of further injuries at the upper extremity when prescribing the use of a cane to patients during rehabilitation treatments.

Changes in electromyographic activity in muscles of the arm and hand as a result of a 10-day hand training program using robotic training in stroke survivors

- **Vineet B K Johnson**
School of Kinesiology, Lakehead University
- **Theodore Milner**
*Department of Kinesiology and Physical Education,
McGill University*

Background/Objectives: Hand training provided with robotic apparatus has been shown to improve hand function. However, the extent to which these changes can be maintained will depend on changes in descending cortical command signals to the respective muscle, and how these signals are coordinated. The primary objective of this project is to explore the changes in electromyographical (EMG) signals consequent to hand function training.

Methods: A total of 7 participants who sustained a single stroke as approved by CRIR Ethics Board, Montreal were recruited. Each participant was trained to perform 2-finger, 3 finger and 4 finger grasping tasks using a robotic device. EMG was recorded from 12 muscles (FDI, APB, FDS, ED, FCU, ECU, FCR, ECRL, BB, TB, Adel, Pdel) in the upper limb that control intrinsic and extrinsic function of the hand, function of arm and shoulder. Participants were also assessed using Chedoke Arm and Hand Inventory (CAHAI-9) to determine changes in hand function.

Results: All subjects improved in hand function as determined by CAHAI-9. These changes were also reflected in EMG in six (FDI, ED, FCR, ECU, FCU, Adel) of the twelve muscles.

Conclusion: The observed changes in EMG activity possibly reflect changes in greater integration of the descending inputs to the muscle either at cortical or at the level of the spinal cord. Further research is required to understand how these signals are similar to healthy control subjects and the various mechanisms that are mediating these changes. Understanding these mechanisms can pave better hand training protocols in stroke survivors.

The CHOICES Program: Evaluating treatment effectiveness for youth with substance use and risk behaviour issues

- **Amy Killen**
Department of Psychology, Lakehead University
- **Pia Heikkinen**
Thunder Bay Counselling Centre
- **Fred Schmidt**
Children's Centre Thunder Bay

Background/Objectives: In partnership with the St. Joseph's Care Group and Children's Centre Thunder Bay, the CHOICES Program at the Thunder Bay Counselling Centre assists youth (aged 12-17) and their families who experience difficulties at home, school, or in the community related to at-risk behaviour and substance use issues. It is a 10-week group program which covers a wide range of relationship, coping, and life skills. This is the first formal evaluation of the CHOICES program in Thunder Bay.

Methods: Ninety-four youth participants completed the CHOICES program. Information on communication, decision making, goal setting, substance use, coping skills, social skills, and self-esteem were collected using the Global Appraisal of Individual Needs-Short Screener (GAIN-SS) and the Rebound CHOICES Questionnaires. Additional questionnaires were collected from parents/guardians (n = 64) regarding program information and youth benefits.

Results: The most frequently reported substances included alcohol (n = 53), cannabis (n = 38), and tobacco (n = 35). Youth most frequently endorsed making friends/being social (n = 3) as the greatest aspect of the program, while parents also reported social skills as the number one benefit (n = 14). The majority of parents/guardians (91.7%) rated the youth as doing better than before CHOICES. Parents reported many positive outcomes for youth including increased drug awareness (84.5%), getting along better with others (77.1%), making better decisions (76.6%), and achieving goals (76.6%). A Wilcoxon signed-rank test reported a significant and clinically meaningful changes in reduced anxiety (z = -2.464, p = 0.014).

Conclusion: The CHOICES Program displayed significant and positive outcomes by decreasing anxiety and contributing to positive life choices. The implications of these results for future services will be discussed.

Identifying client factors associated with outcomes from Same-Day Counselling

- **Victoria Ewen**
Department of Psychology, Lakehead University
- **Aislin Mushquash**
Mental Health Outpatient Programs, St. Joseph's Care Group
- **Christopher Mushquash**
Department of Psychology, Lakehead University
- **S Kathleen Bailey**
Department of Psychology, Lakehead University
- **John Haggarty**
Mental Health Outpatient Programs, St. Joseph's Care Group
- **Sumeet Dama**
Northern Ontario School of Medicine

Background/Objectives: Implementation of single-session counselling has the potential to increase the availability and accessibility of mental health services. This model of care is being implemented at select locations throughout Canada, however, limited research is available validating its use. Some stakeholders have expressed concerns regarding the utility of single-session counselling, especially for those with more severe mental health concerns. The current study evaluates the use of a single-session counselling service (i.e., Same-Day Counselling) offered through St. Joseph's Care Group Mental Health Outpatient Programs. This service allows clients to schedule an appointment with a counsellor on the day(s) they need it, as often as needed. Preliminary data indicated that clients are benefiting from the service. Building on these findings, the current study seeks to: (a) determine if clients are benefiting from the service in a larger sample; and (b) determine if client factors are associated with outcomes from the service.

Methods: Data on client factors were collected from clinical health charts and analyzed with data from the Same-Day Counselling service evaluation.

Results: Clients' mental health and functioning improved significantly after attending Same-Day Counselling. The majority of client factors (e.g., demographics, symptom type, past/present mental health treatment) were not significantly associated with client outcomes.

Conclusion: This study is designed to contribute to the literature on the validity of single-session counselling. The results indicate that a variety of clients can benefit from this model of care. This information will help inform counsellors, health care providers, and policy makers regarding the implementation of single-session counselling.

Whey protein supplementation improves rehabilitation outcomes in hospitalized geriatric patients: A double blinded, randomized controlled trial

- **Sarah Niccoli**
Medical Sciences Division, Northern Ontario School of Medicine
- **Anton Kolobov**
Geriatric Assessment Program, St. Joseph's Care Group
- **Trevor Bon**
Geriatric Assessment Program, St. Joseph's Care Group
- **Seda Rafilovich**
Geriatric Assessment Program, St. Joseph's Care Group
- **Heather Munro**
Geriatric Assessment and Rehabilitative Care, St. Joseph's Care Group
- **Kim Tanner**
Geriatric Assessment and Rehabilitative Care, St. Joseph's Care Group
- **Trina Pearson**
Geriatric Assessment and Rehabilitative Care, St. Joseph's Care Group
- **Simon Lees**
Medical Sciences Division, Northern Ontario School of Medicine

Background/Objectives: Over the next 20 years, the proportion of seniors in Canada is expected to almost double, increasing the number of individuals suffering from frailty and sarcopenia. These conditions may be associated with nutritional protein deficiency and can lead to functional dependence and decreased quality of life. Studies have shown a benefit to increasing daily protein intake to improve strength gains in response to exercise. The purpose of this study is to determine whether a leucine-rich whey protein supplement will improve rehabilitation in hospitalized geriatric patients.

Methods: Participants aged 60 and up were recruited from the Geriatric Assessment and Rehabilitative Care program at St. Joseph's Care Group. Participants were randomized into either the control group, or whey protein supplement (WPS) group. WPS continued throughout their stay. Pre- and post- study measures included functional tests and serum biomarkers.

Results: WPS significantly increased average daily protein intake for both males and females (1.44 ± 0.25 g/kg/day and 1.41 ± 0.14 g/kg/day, respectively), compared to the control group (0.94 ± 0.09 g/kg/day and 1.08 ± 0.09 g/kg/day, respectively). Participants significantly improved their grip strength and knee extensor force ($p \leq 0.05$) in the WPS group, while both WPS and control groups demonstrated improved gait speed and Timed Up-and-Go ($p \leq 0.05$). There was also a significant positive correlation between change in serum prealbumin and percent-increase knee extensor force in the WPS group ($p \leq 0.05$).

Conclusion: These findings support the use of WPS to improve protein nutritional status and rehabilitation outcomes in a clinical setting in a frail, elderly population.

The effect of concussion on reaction time and dual tasking ability on a driving simulator: Some preliminary results

- **Dennis Dumphy**
School of Kinesiology, Lakehead University
- **Carlos Zerpa**
School of Kinesiology, Lakehead University
- **Bruce Weaver**
Northern Ontario School of Medicine
- **Dave McKee**
Sports Medicine Clinic, Lakehead University
- **Michel Bédard**
Centre for Applied Health Research, St. Joseph's Care Group

Background/Objectives: Safe driving requires brain control, execution, and coordination of human motor skills. Concussions cause impairment of perception and motor coordination skills affecting human ability to drive safe. The purpose of this study was to determine the effect of concussions on driver reaction time and dual tasking ability in a simulated driving environment.

Methods: Healthy participants (n=27) were recruited via convenience sampling. Concussed participants (n=7) were recruited and given medical clearance through the Lakehead Concussion Clinic. Testing was performed with an STISIM Model 400 driving simulator. Participants were exposed to multiple reaction time scenarios including pedestrian, vehicle, and cyclist incursions. Dual tasking ability was measured using STISIM dual task scenarios requiring the participant to press a button on the dash when the appropriate symbol is displayed.

Results: Concussed mean reaction times measured in milliseconds (M=1230, SD=165) were higher than healthy mean reaction times (M=1074, SD=202). There was a statistically significant difference in mean reaction times between healthy and concussed participants, $t(32)=2.239$, $p=.032$. Concussed mean dual task count on the number of passes (M=1.43, SD=0.656) was lower than healthy mean dual task count (M=2.26, SD=0.787). There was a statistically significant difference in mean dual task passes between healthy and concussed participants, $t(32)=2.870$, $p=.007$. Levene's test for measures of reaction time and count revealed equal variance shared between both groups.

Conclusion: Results of this study show statistically significant differences between the reaction times and dual task pass rates of healthy and concussed participants in relation to different traffic scenarios during driving simulation.

The impact of fatigue on fatal crash responsibility

- **Rebecca Scott**
Centre for Applied Health Research, St. Joseph's Care Group
- **Sacha Dubois**
Centre for Applied Health Research, St. Joseph's Care Group
- **Bruce Weaver**
Centre for Research on Safe Driving, Lakehead University
- **Michel Bédard**
Centre for Applied Health Research, St. Joseph's Care Group

Background/Objectives: We sought to quantify the impact of fatigue on crash culpability in relation to non-impaired and impaired drivers.

Methods: Using a case-control design, fatal USA crash data from the Fatality Analysis Reporting System(1987-2009) were used to compute adjusted crash culpability odds ratios by impairment status (BAC, drug status confirmed via blood test) for passenger-type vehicles. Cases committed a miscellaneous driver-related factor (e.g., speeding) a proxy measure of crash culpability, controls did not. Impairment categories were: BAC=.00, drug negative, coded as fatigued by the investigating officer (fatigued); Drug positive, BAC=.00 (Drug+); drug negative, BAC .01-.07 (BAC+); drug negative, BAC .08+ (BAC8+); drug positive, BAC .01-.07 (Drug+BAC+); drug positive, BAC .08+ (Drug+BAC8+). Drivers nonimpaired were BAC=.00, drug negative, not fatigued.

Results: There were 203,551 drivers tested for drugs and alcohol: 2,839 (1.4%) fatigued, 9,127 (4.5%) BAC+, 49,714 (24.4%) BAC8+, 23,246 (11.5%) Drug+, 3,813 (1.9%) Drug+BAC+, 16,817 (8.0%) Drug+BAC8+. Fatigued male drivers aged 25 (OR: 2.46; 95% CI: 2.12-2.84), 45 (3.03; 2.53-3.62), and 65 (1.73; 1.42-2.11), had increased adjusted odds of culpability compared to non-impaired referents. Fatigued drivers (aged 45) had: increased adjusted odds of culpability compared to BAC+ (1.98; 1.63-2.41) and Drug+ (1.47; 1.23-1.77); equivalent odds to Drug+BAC (1.05; 0.83-1.31); and reduced odds compared to BAC8+ (0.61; 0.50-0.73) and Drug+BAC8+ (0.69; 0.57-0.84).

Conclusion: After controlling for age, sex, total vehicles, driving record, fatigued drivers had increased culpability odds compared to those nonimpaired, drug or BAC positive (<.08 BAC). Educational and public health policies for fatigue should be considered within impairment campaigns.

Assessing change in older drivers: A longitudinal analysis of Candrive data

- **Hillary Maxwell**
Centre for Research on Safe Driving, Lakehead University
- **Bruce Weaver**
Northern Ontario School of Medicine
- **Holly Tuokko**
Department of Psychology, University of Victoria
- **Michelle Porter**
Centre on Aging, University of Manitoba
- **Gary Naglie**
Department of Medicine and Rotman Research Institute, Baycrest Geriatric Health Care Centre
- **Mark Rapoport**
Department of Psychiatry, University of Toronto
- **Brenda Vrkljan**
School of Rehabilitation Science, McMaster University
- **Shawn Marshall**
Faculty of Medicine, University of Ottawa
- **Isabelle Gélinas**
School of Physical and Occupational Therapy, McGill University
- **Barbara Mazer**
School of Physical and Occupational Therapy, McGill University
- **Michel Bédard**
Centre for Applied Health Research, St. Joseph's Care Group

Background/Objectives: As Canada's population ages, the proportion of older drivers on the road increases. While driving is often integral to maintaining seniors' independence and community involvement, it is imperative to strike a balance between mobility and safety. The ultimate goal of the Canadian Driving Research Initiative for Vehicular Safety (Candrive) is to extend the safe driving period for older adults. Part of this process includes documenting the natural progression of older road users' driving behaviours, cognition, and physical health over time.

Methods: 928 drivers over the age of 70 years were recruited at 7 Canadian sites. Over a period of 5 years, physical, cognitive, and driving behaviour data (e.g., frequency and restriction) were collected via a series of annual assessments. For participants with a minimum of 3/5 data collection points, a series of linear mixed models were employed to examine change in outcome measures over time.

Results: For the 799 participants included in the analyses, many health and driving behaviour outcomes showed statistically significant changes over time. For example, number of medical conditions increased; for the 554 participants who completed all five assessments (mean of 6.99 (SD=3.24) at baseline to 10.47 (SD=4.59) by Year 5, $p < .001$); rate of change was even greater for those with fewer assessments (i.e., withdrawals). Cognitive measures did not demonstrate statistically significant change, regardless of withdrawal status.

Conclusion: Results suggest that while participants' health declined and driving behaviour changed over time, their cognitive performance remained relatively stable.

Author List

Mary Austin
Mental Health Outpatient
Programs, St. Joseph's
Care Group
austinm@tbh.net

S. Kathleen Bailey
Department of Psychology,
Lakehead University
skbailey@lakeheadu.ca

Michel Bédard
Centre for Applied
Health Research,
St. Joseph's Care Group
mbedard@lakeheadu.ca

Robert Berardi
Collaborative Practice,
St. Joseph's Care Group
berardir@tbh.net

Lindsay Bevan
Centre for
Effective Practice
lindsay.bevan@effective-practice.org

Trevor Bon
Geriatric Assessment
Program, St. Joseph's
Care Group
bont@tbh.net

Katherine Boydell
The Black Dog Institute,
University of New
South Wales
katherine.boydell@sickkids.ca

Chiachen Cheng
Centre for Applied Health
Research, St. Joseph's
Care Group
chengch@tbh.net

Suzanne Chomyc
Department of Psychology,
Lakehead University
schomyc@lakeheadu.ca

Cathy Clara
Behavioural Sciences
Centre, St. Joseph's
Care Group
info@bscnorth.ca

Sheila Cook
InVizzen Knowledge
Brokers Inc.
sheila@infacilitation.com

Garnet Czinkota
Environmental Protection,
Thunder Bay District
Health Unit
gvczinko@lakeheadu.ca

Sumeet Dama
Northern Ontario
School of Medicine
sdama@nosm.ca

Simon Davidson
Department of Psychiatry,
University of Ottawa
davidson@cheo.on.ca

Daphne Doble
Northern Ontario
School of Medicine
ddoble@nosm.ca

Sacha Dubois
Centre for Applied
Health Research,
St. Joseph's Care Group
dubois@tbh.net

Dennis Dumphy
School of Kinesiology,
Lakehead University
ddumphy@lakeheadu.ca

Donna Dutka
Mental Health Outpatient
Programs, St. Joseph's
Care Group
dutkad@tbh.net

Victoria Ewen
Department of Psychology,
Lakehead University
vewen@lakeheadu.ca

Sylvain Gagnon
School of Psychology,
University of Ottawa

Isabelle Gélinas
School of Physical and
Occupational Therapy,
McGill University

Keri Gerlach
Maternity Centre,
Thunder Bay Regional
Health Sciences Centre
gerlachk@tbh.net

Tiffany Gervasi
School of Kinesiology,
Lakehead University
tegersa@lakeheadu.ca

Carrie Gibbons
Centre for Applied
Health Research,
St. Joseph's Care Group
gibbonsc@tbh.net

Brenda Gladstone
Child and Youth Mental
Health Research Unit,
The Hospital for
Sick Children
brenda.gladstone@sickkids.ca

Barbara Gunka
School of Nursing,
Lakehead University
bbgunka@lakeheadu.ca

Moira Haggarty
Northern Ontario School
of Medicine
mohaggarty@nosm.ca

John Haggarty
Mental Health Outpatient
Programs, St. Joseph's
Care Group
haggartyj@tbh.net

Andréa Hantjiss
Thunder Bay Regional
Research Institute
hantjisa@tbh.net

Jacqueline Harvey
School of Kinesiology,
Lakehead University
jharvey3@lakeheadu.ca

Pia Heikkinen
Thunder Bay
Counselling Centre
pia@tbaycounselling.com

Stephanie Hendrickson
Centre for Education
and Research on
Aging & Health,
Lakehead University
shendric@lakeheadu.ca

Katie Hunter
Centre for
Effective Practice
katie.hunter@effective-practice.org

Lois Hutchinson
Mental Health Outpatient
Programs, St. Joseph's
Care Group

Vineet BK Johnson
School of Kinesiology,
Lakehead University
vineet.johnson@lakeheadu.ca

Mae Katt
Centre for Rural and
Northern Health Research,
Lakehead University
maekatt@shaw.ca

Mary Lou Kelley
Centre for Education
and Research on
Aging & Health,
Lakehead University
mlkelley@lakeheadu.ca

Amy Killen
Department of Psychology,
Lakehead University
ajkillen@lakeheadu.ca

Glenna Knutson
School of Nursing,
Lakehead University
gknutson@lakeheadu.ca

Anton Kolobov
Geriatric Assessment
Program, St. Joseph's
Care Group
ankoloca@gmail.com

Vicki Kristman
Department of Health
Sciences, Lakehead University
vkristma@lakeheadu.ca

Dyane Lagadouro
Northern Ontario
School of Medicine
dlagadouro@nosm.ca

Jane Lawrence-Dewar
Thunder Bay Regional
Research Institute
dewarja@tbh.net

Simon Lees
Medical Sciences Division,
Northern Ontario
School of Medicine
simon.lees@nosm.ca

Carole Lem
Centre for Applied Health
Research, St. Joseph's
Care Group
lemc@tbh.net

Aleyah Lennon
School of Kinesiology,
Lakehead University
elennon@lakeheadu.ca

Laurie MacDonald
Older Adult Rehabilitation,
St. Joseph's Care Group
macdonal@tbh.net

Jennifer Maki
Quality and Support
Services, Sioux Lookout
Meno Ya Win Health Centre
jmaki@slmhc.on.ca

K. Amanda Maranzan
Department of Psychology,
Lakehead University
kamaranz@lakeheadu.ca

Jill Marcella
Regional Palliative Care
Program, St. Joseph's
Care Group
marcellj@tbh.net

Carlina Marchese
Department of Psychology,
Lakehead University
cmarches@lakeheadu.ca

Shawn Marshall
Faculty of Medicine,
University of Ottawa

Michael Massei
School of Kinesiology,
Lakehead University
mmassei@lakeheadu.ca

Hillary Maxwell
Centre for Research
on Safe Driving,
Lakehead University
hmaxwell@lakeheadu.ca

Barbara Mazer
School of Physical and
Occupational Therapy,
McGill University

Jessica McCann
Northern Ontario School
of Medicine
jesmccann@nosm.ca

Dave McKee
Sports Medicine Clinic,
Lakehead University
davecliffmckee@gmail.com

Tammy McKinnon
Corporate Learning, St.
Joseph's Care Group
mckinnont@tbh.net

Amanda Mihalus
Centre for Education
and Research on
Aging & Health,
Lakehead University
acmihalu@lakeheadu.ca

Theodore Milner
Department of Kinesiology
and Physical Education,
McGill University
theodore.milner@mcgill.ca

Heather Munro
Geriatric Assessment
and Rehabilitative Care,
St. Joseph's Care Group
munroh@tbh.net

Author List

Author List

David Murray
Executive Office,
Sioux Lookout Meno
Ya Win Health Centre
dmurray@slmhc.on.ca

Aislin Mushquash
Mental Health Outpatient
Programs, St. Joseph's
Care Group
mushquaa@tbh.net

Christopher Mushquash
Department of Psychology,
Lakehead University
chris.mushquash@lakeheadu.ca

Shevaun Nadin
Centre for Applied Health
Research, St. Joseph's
Care Group
nadins@tbh.net

Gary Naglie
Department of Medicine
and Rotman Research
Institute, Baycrest Geriatric
Health Care Centre

Satoru Nakagawa
Centre on Aging,
University of Manitoba

Ian Newhouse
School of Kinesiology,
Lakehead University
inewhous@lakeheadu.ca

Sarah Niccoli
Medical Sciences Division,
Northern Ontario School
of Medicine
[sanicol@lakeheadu.ca](mailto:saniccol@lakeheadu.ca)

Lana Ozen
Centre for Applied Health
Research, St. Joseph's
Care Group
ozenl@tbh.net

Erin Pearson
School of Kinesiology,
Lakehead University
espearso@lakeheadu.ca

Trina Pearson
Geriatric Assessment
and Rehabilitative Care,
St. Joseph's Care Group
pearsont@tbh.net

Shelley Peirce
Collaborative Practice,
St. Joseph's Care Group
peirces@tbh.net

Mary Perkovic
Mental Health Rehabilitation,
St. Joseph's Care Group
perkovma@tbh.net

Carmen Petrik
Northern Ontario School
of Medicine
cpetrick@nosm.ca

Victoria Pitura
Department of Psychology,
Lakehead University
victoriapitura@hotmail.com

Jennifer Plata
Department of Health
Sciences, Lakehead University
jplata@lakeheadu.ca

Jan Polgar
School of Occupational
Therapy, Western University

Karen Poole
School of Nursing,
Lakehead University
kpoole@lakehead.u.ca

Carley Pope
Department of Psychology,
Lakehead University
cpope@lakeheadu.ca

Michelle Porter
Centre on Aging,
University of Manitoba

Erika Portt
Department of Psychology,
Lakehead University
eportt@lakeheadu.ca

Veronica Proper
Supportive Care,
Thunder Bay Regional
Health Sciences Centre
properv@tbh.net

Eryk Przysucha
School of Kinesiology,
Lakehead University
eprzysuc@lakeheadu.ca

Seda Rafilovich
Geriatric Assessment
Program, St. Joseph's
Care Group
seda.rafilovich@gmail.com

Mark Rapoport
Department of Psychiatry,
University of Toronto

Alana Rawana
Northern Ontario
School of Medicine
arawana@nosm.ca

Paula Reguly
Department of Health
Sciences, Lakehead University
pmreguly@lakeheadu.ca

Jess Rogers
Centre for
Effective Practice
jess.rogers@effective-practice.org

Paolo Sanzo
School of Kinesiology,
Lakehead University
psanzo@lakeheadu.ca

David Savage
Northern Ontario
School of Medicine
dsavage@nosm.ca

Carleigh Sawula
School of Kinesiology,
Lakehead University
csawula@lakeheadu.ca

Erica Sawula
Department of Health
Sciences, Lakehead University
esawula@lakeheadu.ca

Fred Schmidt
Children's Centre Thunder Bay
fschmidt@childrenscentre.ca

Rebecca Scott
Centre for Applied
Health Research,
St. Joseph's Care Group
scottre@tbh.net

Lisa Seamark
Stroke Prevention,
Meno Ya Win Health Centre
lseamark@slmhc.on.ca

Alexis Sharp
Northern Ontario
School of Medicine
asharp@nosm.ca

Elizabeth Sherman
School of Nursing,
Lakehead University
esherman@lakeheadu.ca

Megan Short
Department of Psychology,
Lakehead University
mshort@lakeheadu.ca

Lee Sieswerda
Environmental Protection,
Thunder Bay District
Health Unit
lee.siewerda@tbdhu.com

Janet Sillman
Administration,
St. Joseph's Care Group
sillmanj@tbh.net

Patricia Smith
Behavioural Medicine,
Northern Ontario
School of Medicine
psmith@nosm.ca

Darren Stanley
Faculty of Education,
University of Windsor
dstanley@uwindsor.ca

Elaine Stasiulis
Child and Youth Mental
Health Research Unit,
The Hospital for
Sick Children
elaine.stasiulis@sickkids.ca

Michael Stones
Department of Psychology,
Lakehead University
michael.stones@lakeheadu.ca

Jennifer Swerdlyk
Northern Ontario
School of Medicine
jcswerdl@lakeheadu.ca

Kim Tanner
Geriatric Assessment
and Rehabilitative Care,
St. Joseph's Care Group
tannerk@tbh.net

David Thompson
School of Nursing,
Lakehead University
dsthomp1@lakeheadu.ca

Gregory Tippin
Department of Psychology,
Lakehead University
gtippin@lakeheadu.ca

Holly Tuokko
Department of Psychology,
University of Victoria

Dan Vasiliu
School of Kinesiology,
Lakehead University
dvasiliu@gmail.com

Brenda Vrkljan
School of Rehabilitation
Science,
McMaster University

Bruce Weaver
Northern Ontario
School of Medicine
bweaver@lakeheadu.ca

Author List

Jimmy Yang
Garrison Health
Advisory Services
jyang@garrisonhealth.ca

Carlos Zerpa
School of Kinesiology,
Lakehead University
czerpa@lakeheadu.ca

