

LONDON JOINT MENTAL HEALTH RESEARCH DAY

PROGRAM & ABSTRACT BOOK

June 21, 2018

8:00 am - 4:30 pm

DoubleTree by Hilton
300 King St, London

WELCOME TO THE LONDON JOINT MENTAL HEALTH RESEARCH DAY

On behalf of the Planning Committee, we would like to welcome you to the London Joint Mental Health Research Day.

This year, the Department of Psychiatry at Western University, the Lawson Health Research Institute – Mental Health Group, and Parkwood Institute Research – Mental Health have collaborated to host the *London Joint Mental Health Research Day*.

Thank you for attending this conference. Please do not forget to fill out the event evaluation, your feedback is greatly appreciated.

Sincerely,

The Research Day Co-Chairs,

Dr. Marnin J. Heisel

Director of Research
Department of Psychiatry
Schulich School of
Medicine & Dentistry
Western University

Dr. Cheryl Forchuk

Assistant Director
Program Leader
Mental Health Group
Lawson Health Research
Institute

Dr. Arlene MacDougall

Parkwood Institute Research –
Mental Health Lead
Director of Research & Innovation,
Mental Health Care, St. Joseph's
Health Care London

This event is an Accredited Group Learning Activity (Section 1) as defined by the Maintenance of Certification Program of the Royal College of Physicians and Surgeons of Canada, and approved by Continuing Professional Development, Schulich School of Medicine & Dentistry, Western University. You may claim a maximum of 5.25 hours (credits are automatically calculated).

Each participant should claim only those hours of credit that he/she actually spent participating in the educational program.

This program has no commercial support.

CPD OBJECTIVES

At the end of the 2018 London Joint Mental Health Research Day, participants will be able to:

1. Identify and discuss innovative basic, clinical, and population-level mental health care and substance misuse research being conducted locally;
2. Demonstrate enhanced familiarity with research being conducted locally on the etiology, pathophysiology, prevention, intervention, service delivery, recovery and rehabilitation of mental disorders;
3. Reflect upon diverse methodological approaches to conducting innovative and impactful research in mental health care;
4. Consider the potential value inherent in academic, healthcare, community, advocacy, and policy partnerships in enhancing mental health care, research, and service delivery.

KEYNOTE LECTURE OBJECTIVES

By the end of the morning keynote lecture, participants will be able to:

1. Demonstrate an enhanced familiarity with novel neurostimulation approaches that assess neuroplasticity in vivo;
2. Describe neuroplasticity and related prefrontal cortical deficits in patients with Alzheimer's dementia or who are at risk for dementia;
3. Describe novel intervention research protocols that aim to enhance neuroplasticity and prefrontal cortical function in patients with Alzheimer's dementia or who are at risk for dementia.

By the end of the afternoon keynote lecture, participants will be able to:

1. Demonstrate an enhanced understanding of the nature of stigma and how it affects people with a mental illness;
2. Identify which anti-stigma interventions are effective;
3. Discuss what can be done to help eliminate stigma, from clinical and lived-experience perspectives;
4. Consider aspects of cultural, institutional, familial, societal and self stigma, from a personal narrative.

25% of this program is dedicated to participant interaction.

SCHEDULE OF EVENTS AND ACTIVITIES

8:00 – 8:30 AM	Continental Breakfast and Poster Display
8:30 – 8:45 AM	Welcome and Introduction Drs. Arlene MacDougall, Cheryl Forchuk and Marnin Heisel
8:45 – 10:00 AM	Morning Keynote Address Dr. Tarek Rajji <i>Neurostimulation for Cognition in Alzheimer's Disease and High-Risk Populations</i> Moderator: Dr. Marnin Heisel
10:00 – 10:30 AM	Break and Poster Display <i>Located on the second-floor foyer</i>
10:30 – 12:00 PM	Morning Oral Presentations Breakout Sessions
12:00 – 1:00 PM	Lunch and Poster Display <i>Located on the second-floor foyer</i>
1:00 – 2:15 PM	Afternoon Keynote Panel Dr. Heather Stuart, <i>Mental Illness Stigma</i> Mr. Brett Batten, <i>Say "Hi" to the Dogs and Use My Name</i> Moderator: Dr. Arlene MacDougall
2:15 – 2:30 PM	Break and Poster Display <i>Located on the second-floor foyer</i>
2:30 – 3:30 PM	Afternoon Oral Presentations Breakout Sessions
3:30 – 3:45 PM	Final Break
3:45 – 4:15 PM	Awards Presentations and Concluding Remarks Dr. Cheryl Forchuk
4:15 – 4:30 PM	Evaluation Completion
4:30 PM	Adjournment

– MORNING ORAL PRESENTATIONS –

Presentation abstracts begin on page 12
(The presenting author's name appears in **bold**)

Room A

Depression and Suicide
Moderator: Marnin Heisel

Room B

Advances in Clinical Care and Training
Moderator: Julie Walsh

Room C

Severe and Persistent Mental Illness
Moderator: Deb Corring

10:30 – 10:50	Treatment Resistant Depression (TRD): Where Are We and Where Do We Need to go? Rybak, I., Sethi, R., & Burhan, A.M.	Simulation in Gentle Persuasive Approaches in Dementia Care Sealy, P., & Coatsworth-Puspoky, R.	Spatial Incoherence of Large-Scale Cortical Networks Relates to Formal Thought Disorder in Schizophrenia Palaniyappan, L., Al-Radaideh, A., Gowland, P., & Liddle, P.
10:50 – 11:10	Identification of the Social Functional Biomarker for Patients with Major Depressive Disorder through Structural Neuroimaging Zhou, R., Chen, J., Zhao, G., Xia, W., Peng, D., Wang, J., Palaniyappan, L., & Fang, Y.	Training in Developmental Disabilities in Canadian Psychiatry Residency Programs O'Flanagan, S., Hocke, V., & Nicolson, R.	Multi-site RCT of Panax Ginseng targeting Epigenetics and N-methyl-D-aspartic acid(NMDA)glutamate signaling in negative and depressive symptoms in Treatment Resistant schizophrenia Chiu, S. S., Campbell, R., Cernvosky, Z., Dua, V., Copen, J., & Husn, M.
11:10 – 11:30	Complexity in Mood Disorder Diagnosis: fMRI Connectivity Networks Predict Medication Class Response in Complex Mood Disorder Patients Osuch, E., Gao, S., Wammes, M., Théberge, J., Williamson, P., Neufeld, R. J., Du, Y., Sui, J., & Calhoun, V.	Mini Mental State Exam: Translation and Clinical Use with Deaf Adults Chovaz, C., & Core, A.	What Clinicians Say About the Experience of Working with Individuals on Community Treatment Orders (CTOs): A Systematic Review Corring, D., O'Reilly, R., Sommerdyck, C., & Russell, E.
11:30 – 11:50	Notes from the Edge: Are There Differences in the Psychosocial and Clinical Characteristics of Suicide Decedents Who Leave Electronic Notes, Paper Notes, or No Notes? Eynan, R., Shah, R., Heisel, M. J., Eden, D., Jhirad, R., & Links, P. S.	Extrinsic Factors Influencing the Patients' Motivation for Engagement and Retention in the Addiction Recovery Process: A Systematic Literature Review Harerimana, B., Forchuk, C., Csiernik, R., Kerr, M., & Muchiri, E.	Analysis of Speech Connectivity in Schizophrenia Colton, V., & Palaniyappan, L.

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– AFTERNOON ORAL PRESENTATIONS –

Presentation abstracts begin on page 12
(The presenting author's name appears in **bold**)

Room A

Post-Traumatic Stress Disorder
Moderator: Paul Frewen

Room B

Homelessness, Housing and Inclusion
Moderator: Cheryl Forchuk

Room C

Global and Migrant Mental Health
Moderator: Arlene MacDougall

2:30 – 2:50	<p>Predictors of Treatment Outcome in Veterans with Military-Related PTSD</p> <p>Richardson, D., Contractor, A. A, Armour, C., St. Cyr, K., Elhai, J. D., & Sareen, J.</p>	<p>Preventing Homelessness among Families: A Shelter Diversion Pilot Project</p> <p>Forchuk, C., Russell, G., Richardson, J., & Perreault, C.</p>	<p>Ethnic Differences in Clinical Presentation at First Hospitalization After Psychosis Onset among First-Generation Migrant Groups</p> <p>Anderson, K. K., MacDougall, A. G., & Rodrigues, R.</p>
2:50 – 3:10	<p>Overlapping Frontoparietal Networks in Response to Oculomotion and Traumatic Autobiographical Memory Recall: Implications for Eye Movement Desensitization and Reprocessing</p> <p>Harricharan, S., Tursich, M., Densmore, M., Frewen, P., McKinnon, M., & Lanius, R.</p>	<p>An Overview of Evaluation Results of Homeless Serving Programs</p> <p>Richardson, J.</p>	<p>Risk of Involuntary Admission among First-Generation Ethnic Minority Groups with First-Episode Psychosis</p> <p>Rodrigues, R., MacDougall, A. G., & Anderson, K. K.</p>
3:10 – 3:30	<p>Sudarshan Kriya Yoga (SKY) in Post Traumatic Stress Disorder (PTSD): A Feasibility Study</p> <p>Vasudev, K., Ionson, E. L., Inam, S., Chaudhari, S., Ghodasara, S., & Vasudev, A.</p>	<p>Sport and Social Inclusion: An Evaluation of Active for Life</p> <p>Oudshoorn, A., Misener, L., & Richards, J.</p>	<p>The Global MINDS (Mental Health INcubator for Disruptive Solutions) Fellowship Program: Transdisciplinary Students Addressing Complex Global Mental Health System Challenges Through Social Innovation</p> <p>MacDougall, A.G., Sule, R., Carswell J., Bird, R., Wathen, N., Janzen Le Ber, M., Branzei, O., Ruhara, R., Mutiso, V., Ndeti, D., Saxton, K., & Rodger, S.</p>

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– MORNING KEYNOTE ADDRESS –

DR. TAREK RAJJI **NEUROSTIMULATION FOR COGNITION IN ALZHEIMER'S DISEASE AND HIGH-RISK POPULATIONS**

Canada Research Chair
in Neurostimulation for Cognitive Disorders
Chief, Adult Neurodevelopment and
Geriatric Psychiatry Division
Deputy Physician-in-Chief of Research
Centre for Addiction and Mental Health
Associate Professor of Psychiatry
University of Toronto



Dr. Rajji obtained his M.D. from the American University of Beirut, Lebanon. He completed residency in general psychiatry at the University of Texas Southwestern Medical Center and clinical training in geriatric psychiatry at Western Psychiatric Institute and Clinic in Pittsburgh. In 2006, he joined CAMH and the University of Toronto as a research fellow in geriatric psychiatry and then as a clinician scientist and an Assistant Professor of Psychiatry in December 2009. He was promoted to Associate Professor in July 2013. Dr. Rajji is a Fellow of the Royal College of Physicians and Surgeons of Canada and certified by the American Board of Psychiatry and Neurology with subspecialty in Geriatric Psychiatry.

Dr. Rajji has been leading several clinical initiatives at CAMH. He also received numerous research awards and honours. His research is supported by private, provincial, federal, national, and international agencies.

Dr. Rajji's research focuses on restoring brain function in older patients with severe mental illness and Alzheimer's disease. Towards this goal, he combines neurostimulation, cognitive, functional, and pharmacological methods to study and enhance neuroplasticity across the lifespan with a special focus on late life.

– AFTERNOON KEYNOTE PANEL –

DR. HEATHER STUART **MENTAL ILLNESS STIGMA**



Heather Stuart, MA (Sociology, University of Western Ontario), PhD (Epidemiology, University of Calgary) is a Full Professor in the Departments of Public Health Sciences, Psychiatry, and the School of Rehabilitation Therapy at Queen's University. She also holds the Bell Canada Mental Health and Anti-Stigma Research Chair at Queen's. Dr. Stuart is also the Senior Consultant to the Mental Health Commission of Canada's Opening Minds, Anti-stigma initiative and the past Chair of the World Psychiatric Association's Stigma and Mental Health Scientific Section. Dr. Stuart's research focuses on mental health services evaluation with a specific focus on the destigmatization of mental illnesses. She has contributed to the peer reviewed scientific literature in the areas of mental health needs assessments; suicide and suicide prevention; stigma and stigma reduction; and workplace mental health and is the co-author of several books. Her most recent books deal with anti-stigma programming and human rights legislation.

MR. BRETT BATTEN **SAY "HI" TO THE DOGS AND USE MY NAME**

Brett Batten has lived with mental illness for about four decades. Brett's story describes the remarkable impact of serious mental illness upon a person's life and family. From the depths of solitary confinement, to receiving a national mental health award, Brett has been on a lengthy path to recovery that included arrests, incarcerations, and a verdict of Not Criminally Responsible (NCR).

As a patient in the Forensic Psychiatry Program at St. Joseph's Health Care London where he received support, treatment and rehabilitation he was encouraged to make advocacy part of his recovery. His journey has included many mental health care professionals and support staff, whom he credits with nurturing his talent for writing and speaking.



From being behind bars, experiencing depression, mania, psychosis, PTSD, and surviving suicide, Brett was also the individual winner of the 2012 Mental Health Champion Award presented by St. Joseph's Health Care Foundation and the Canadian Mental Health Association and is the recipient of the Canadian Alliance on Mental Illness and Mental Health Community Individual Champion of Mental Health for 2014.

POSTER PRESENTATIONS

Abstracts for poster presentations begin on page 18

(The presenting author's name appears underlined)

- Board #1** **Anxiety and Its Role in Suicide Ideation Among a Sample of Community-Residing Older Adults**
S. Benjamin Peckham, Alina Sotskova, Gordon L. Flett, & Marnin J. Heisel
- Board #2** **TELEPROM-G: A Study Evaluating Access and Care Delivery of Telehealth Services among Community-Based Seniors**
Boniface Harerimana, Cheryl Forchuk, Richard Booth, Amer Burhan, Akshya Vasudev, Wanrudee Isaranuwatchai, Puneet Seth, D Ramsey, Abraham Rudnick, Marnin Heisel, & Jeffrey Reiss.
- Board #3** **An Evaluation of Theory, Simulation, and Gentle Persuasive Approach (GPA) Training on First Year BScN students' Clinical Competency**
Pat Sealy, & Robin Coatsworth-Puspoky
- Board #4** **Evaluating TEACH (Tackling the Education of Adolescent & Child Health) in Psychiatry, a Pediatric Mental Health Curriculum for Family Medicine Residents**
Nina McCurdy, Kimberly Fielding, Saadia Hameed, Syed Naqvi, Stacey Espinet, Sandra Gotovac, & Margaret Steele
- Board #5** **Diagnostic Accuracy of Referrals in an Academic Consultation-Liaison Service**
James Charbonneau, Sandra Ulch, Rebecca King, Jennifer Barr, Carla Garcia, & Michael Mak
- Board #6** **The Impact of Violent Gaming on Social Cognition as a Function of Trait Empathy**
Shannon Compton, Mary B. Ritchie, Ian G.R. Jones, Richard W.J. Neufeld, & Derek G.V. Mitchell
- Board #7** **The Effects of Induced Anxiety on Low Level Visual Processing**
Stephen R. Pierzchajlo, & Derek G.V. Mitchell
- Board #8** **An Examination of the Influence of Trait Empathy on the Association Between Violent Media Exposure and Impaired Social Cognition**
Mary B. Ritchie, Stephen Pierzchajlo, Shannon Compton, Richard W. J. Neufeld, & Derek G. V. Mitchell
- Board #9** **Ventricular Volume in Frontotemporal Dementia and Genetically At-Risk Family Members: Results from the GENFI Study**
Tamara P. Tavares, Derek G.V. Mitchell, Robert Bartha, Christen Shoesmith, John van Swieten, Daniela Galimberti, Caroline Graff, Maria Carmela Tartaglia, Fabrizio Tagliavini, James B. Rowe, Robert Laforce Jr, Giovanni B. Frisoni, Alexandre de Mendonça, Sandro Sorbi, Barbara Borroni, Mario Masellis, Jonathan Rohrer, & Elizabeth Finger
- Board #10** **Exploring the Role of the Brain's Defensive System in Personal Space Regulation**
Joana B. Vieira, Stephen R. Pierzchajlo, & Derek G.V. Mitchell
- Board #11** **Dissociable Impact of Fear on Executive Functioning Versus Reinforcement Learning**
Minha Yoon, Joana B Vieira, & Derek G.V. Mitchell
- Board #12** **The Dissociative Freezing Response Onset Scale following Traumatic stress (D-FROST): Assessing post-traumatic tonic immobility**
Chantelle S. Lloyd, Ruth A. Lanius, Matthew F. Brown, Richard J. Neufeld, Paul A. Frewen, & Margaret C. McKinnon

- Board #13** **Resting-State Rewiring: Pulvinar Resting-State Functional Connectivity in PTSD and its Dissociative Subtype**
Braeden Terpou, & Ruth Lanius
- Board #14** **Ultra-High Field Morphometry in Drug-Naïve First Episode Psychosis**
Tushar Das, Kara Dempster, Michael Mackinley, Peter Jeon, Joe Gati, Jean Theberge, Ali Khan, & Lena Palaniyappan
- Board #15** **Parietal Connectivity in Schizophrenia and Psychotic Bipolar disorder: A Combined Structural and Dynamic Functional Connectivity Study**
Tushar Das, Peter Liddle, & Lena Palaniyappan
- Board #16** **Searching for a Stratification Marker for Antioxidant Use in Schizophrenia and Bipolar disorder: A Meta-Analysis of MRS Studies of Anterior Cingulate Glutathione**
Avyarthana Dey, Alborz Javadzadeh, Priyadharshini Sabesan, Joaquim Radua, Jean Theberge, & Lena Palaniyappan
- Board #17** **Structural Covariance in Drug-Naïve First Episode Psychosis. An Ultra-High Field MRI Study**
Tushar Das, Kara Dempster, Michael Mackinley, Peter Jeon, Joe Gati, Jean Theberge, Ali Khan, & Lena Palaniyappan
- Board #18** **Brain-Wide Functional Dysconnectivity in Schizophrenia: Parsing diathesis, Resilience and the Effects of Clinical Expression**
Shuixia Guo, Wei Zhao, Haojuan Tao, Liu Zhening, & Lena Palaniyappan
- Board #19** **Functional Glutamate Measurements in First-Episode Schizophrenia Using 7-Tesla Magnetic Resonance Spectroscopy**
Peter Jeon, Michael MacKinley, Kara Dempster, Lena Palaniyappan, & Jean Théberge
- Board #20** **Aberrant Myelination of the Cingulum Bundle in Patients with Schizophrenia: A 7T MTI/DTI Study**
Lena Palaniyappan, Ali Radaideh, Olivier Mougín, Penny Gowland, & Peter Liddle
- Board #21** **Deviant Cortical Sulcation Related to Schizophrenia, but Not Cognitive deficits, Likely Predate Brain Development in the Second Trimester**
Lena Palaniyappan
- Board #22** **Progressive Post-Onset Reorganisation of MRI-Derived Cortical Thickness in Adolescents with Schizophrenia**
Lena Palaniyappan, & Anthony James
- Board #23** **Not a Nuisance Any More: Global fMRI Signal at Rest, Processing Speed and Symptom Severity in Schizophrenia**
Annabel Umeh, Peter Liddle, Susan Francis, & Lena Palaniyappan
- Board #24** **Off-Label Use of Second Generation Antipsychotics in Primary Care**
Nima Gheisarzadeh, Kelly Anderson, & Daniel Lizotte
- Board #25** **Examining the Relationship between Internal Drivers of Motivation and Functional Outcomes in a Cross-Section of Individuals with Psychotic Disorders**
Sahana Kukan, Ross M.G. Norman, Arlene G. MacDougall, & Kelly K. Anderson

- Board #26** **The Burden of Mood and Anxiety Disorders Among Immigrant and Refugee Populations in Canada: A Systematic Review**
Jordan Edwards, Malini Hu, Amardeep Thind, Saverio Stranges, Maria Chiu, & Kelly K. Anderson
- Board #27** **‘Such a Scary Place for a Kid’: The Impact of Adolescent Hospitalization on Adult Psychiatric Units**
Samantha McRae, Kathy Speechley, G. Y. Zou, & Kelly K. Anderson
- Board #28** **Igniting the MINDS (Mental Health INCubator for Disruptive Solutions) of London-Middlesex**
Arlene MacDougall, Abe Oudshoorn, Ross Norman, Eugenia Canas, Richard Booth, Kelly K. Anderson, Dan Lizotte, Kaitlin Saxton, Andre Vashist, Jill Lynch, Alec Cook, Scarlett Davidson, Jessie House, Lisa Bitacola, Jay Macdonald, Chris Babcock, & Lina Bowden
- Board #29** **Recovery Through Creative Arts Program: A Program Evaluation**
Arlene MacDougall, Rahel Eynan, Catherine McInnes, Andrea Halwa, Elizabeth Price, Kaitlin Saxton, Emily Lu, & Jennifer Speziale
- Board #30** **Extending the CREATE Psychosocial Rehabilitation Toolkit to Kenyan Mental Healthcare Settings: A Feasibility Study**
Regina Casey, Elizabeth Price, Mitchell Canes, Terry Krupa, Rosemary Lysaght, Ruth Ruhara, Richelle Bird, Marlene Janzen Le Ber, Victoria Mutiso, Sean Kidd, David Ndeti, & Arlene MacDougall

ABSTRACTS

ORAL PRESENTATIONS

Presenting author's name has been underlined

Ethnic Differences in Clinical Presentation at First Hospitalization After Psychosis Onset among First-Generation Migrant Groups

Kelly K. Anderson, Arlene G. MacDougall, & Rebecca Rodrigues

Objectives: Some ethnic minority groups have an increased risk of developing a psychotic disorder, and often face negative and coercive pathways to care. However, it is less clear whether there are also ethnic differences in clinical presentation. Our objective was to assess whether there were differences across ethnic minority groups in clinical presentation at the first psychiatric hospitalization after psychosis onset. **Methods:** We constructed a retrospective cohort of incident cases of non-affective psychosis occurring in Ontario between 2009 and 2016 using health administrative data. We followed this cohort for two-years and extracted data from the first psychiatric hospitalization record. The cohort was linked to data from Immigration, Refugee, and Citizenship Canada to ascertain migrant status and country of origin, and we compared symptoms, behaviour, and level of functioning between migrant groups and a general population comparison group. **Results:** Migrants from the Caribbean, South Asia, East Asia, and Africa had more positive symptoms and fewer depressive symptoms, relative to the general population. Caribbean migrants were more likely to be perceived as a risk to others and had higher ratings on the aggressive behavior scale. All migrant groups had a lower prevalence of alcohol and substance use at first admission. **Conclusions:** Our findings suggest that some first-generation migrant groups may differ in clinical presentation at the first hospitalization after psychosis onset. It is unknown whether the observed differences are due to delayed help-seeking, the perception of service providers, or true differences in clinical presentation across ethnic minority groups.

Multi-site RCT of Panax Ginseng targeting Epigenetics and N-methyl-D-aspartic acid(NMDA)glutamate signaling in negative and depressive symptoms in Treatment Resistant schizophrenia

Simon S. Chiu, Robbie Campbell, Zack Cernvosky, Varinder Dua, John Copen, & Mariwan Husn

Introduction: Evidence suggest that epigenetics and NMDA signaling may contribute towards treatment resistant schizophrenia (TRS). Panax Ginseng inhibits histone deacetylase: HDAC involved in chromatin remodeling and gene transcription regulation. **Objective:** of RCT study was to evaluate the safety and efficacy of Panax Ginseng in improving negative, depressive and neurocognitive deficits in Treatment resistant schizophrenia(TRS). Our primary therapeutic endpoint is response rate of negative symptom: $\geq 30\%$ reduction in SANS (Scale for Assessment of Negative Symptoms). **Method:** multi-site: 8-week randomized placebo-controlled. TRS schizophrenia patients with persistent negative symptoms: SANS score > 24 , received standardized Panax Ginseng capsules: Ginsana-115, Boehringer-Ingelheim, Switzerland (GS)] and were randomized into three groups: 1) Placebo group; 2)100 mg-GS daily group; 3) 200 mg-GS daily group for 8 weeks with a 2-week cross-over period. We administered Neuro-cognitive Screening (NCS), PANSS, SANS, BPRS, HAM-D at baseline and at regular intervals. **Results:** The response rate of treatment completers for Ginseng effect on negative symptoms: SANS score was 50.0% for 200 mg-GS treatment vs 9.1 % for Placebo (Pearson Chi square: 4.82, $p < 0.03$). Ginseng's response rate for subsyndromal depressive symptoms: HAM-D scores, was 70.0 % for 200 mg-GS treatment vs 18.2 % for placebo (Person Chi square: 5.74, $p < 0.001$). GS-200 mg significantly ($p < 0.05$) reduced Flat Affect subscale of SANS and the total HAMD scale, with no cognitive enhancing effects. Panax Ginseng was highly tolerated with no serious adverse events. **Conclusion:** Panax Ginseng in improving negative and depressive symptoms, may offer novel therapeutic strategy in TRS.

Mini Mental State Exam: Translation and Clinical Use with Deaf Adults

Cathy Chovaz, & Angela Core

The Canadian Association of the Deaf estimates that 357,000 Canadians are culturally and linguistically Deaf. As the Canadian Deaf population ages and the prevalence of dementia increases (Plassman, Langa, Fisher, Heeringa, Weir, Ofstedal, & Wallace, 2007) it is critical that cultural and linguistic assessment tools be developed and tested. The Mini-Mental State Exam (MMSE) (Folstein, Folstein & McHugh, 1975) is a screening tool used to assess cognitive impairment and can be used over time to evaluate cognitive decline. It has been published in over 50 languages and has been shown to be an effective tool when culture and education level have been taken into consideration. However, the MMSE was developed for English speaking hearing people, and the test items and instructions often do not translate well into American Sign Language (ASL) using an interpreter (Dean, Feldman, Morere & Morton, 2009). Our objective in this study was to translate the original MMSE into ASL and record it on video. We will describe the translation process including the rigorous detail to the preservation of content meaning and linguistic differences. We have administered the electronic ASL- MMSE to 30 culturally Deaf adults and will describe the results. This will be a useful tool for family physicians, psychiatrists and other mental health clinicians to use with Deaf patients who consider ASL to be their preferred language.

Analysis of Speech Connectivity in Schizophrenia

Vanessa Colton, & Lena Palaniyappan

Formal thought disorder (FTD) is a major symptom of many psychotic disorders. FTD presents itself through abnormalities of thought, language and communication. Nonetheless, there are issues in the detection and analysis of thought disorders. Current methods of detection rely heavily on clinical judgement. A novel software, SpeechGraphs, is proving to be a useful measure of speech connectivity. The present study used speech graphs to quantify speech in patients with schizophrenia and in healthy controls. It was hypothesized that speech connectivity would be lower in patients than in controls. The hypothesis was tested using a sample of participants consisting of untreated acutely psychotic first-episode patients, who were later diagnosed with schizophrenia, and non-psychotic healthy controls. It was found that connectivity measures, generated by SpeechGraphs, were significantly lower in the patients who were diagnosed with schizophrenia than in controls. These findings suggested that speech graphs are able to detect FTD in patients with schizophrenia. In addition, speech graphs may be useful in the early detection of schizophrenia in first-episode acutely psychotic patients. Future research should examine how speech graphs can be used to detect other psychotic disorders.

What Clinicians Say About the Experience of Working with Individuals on Community Treatment Orders (CTOs): A Systematic Review

Deborah Corring, Richard O'Reilly, Christina Sommerdyck, & Elizabeth Russell

Objective: CTOS have been the subject of many research studies. Qualitative studies provide an understanding of the experience of working with individuals on CTOs that quantitative studies cannot. This paper reports the results of a systematic review of qualitative studies focused on understanding the experiences of clinicians working with individuals who are subjects of CTOs. **Methods:** Relevant databases and grey literature were searched. For inclusion in the review, a study had to have used a qualitative methodology for data collection and analysis, and to have focused on examining the clinician perspective of working with individuals on CTOs. **Results:** Fourteen papers met criteria and represented the views of more than 700 clinicians from 6 jurisdictions around the world. Three themes were found: an endorsement of the benefits of CTOs despite tensions that exist within and between clinicians around certain aspects of CTOs; a belief that medication compliance is a central aspect of CTOs; and acknowledgement that there is still room for improvement in the consistency of implementation, monitoring, and administration of CTOs. **Conclusions:** Clinicians view CTOs as providing benefits to their clients but struggle with the coercive nature of these tools. We discuss ways to reduce these tensions and other suggestions clinicians had for improving CTOs. The results of this review suggest strategies clinicians can use when carrying out their responsibilities under CTOs within the recovery and other client-centred paradigm. The results also provide recommendations for policy makers as they revisit legislation governing CTOs.

Notes from the Edge: Are There Differences in the Psychosocial and Clinical Characteristics of Suicide Decedents Who Leave Electronic Notes, Paper Notes, or No Notes?

Rahel Eynan, Ravi Shah, Marnin J. Heisel, David Eden, Reuven Jhirad, & Paul S. Links

Suicide notes are intimate last communications left behind by suicide decedents. Traditionally, suicide notes are handwritten on paper, walls, body parts, or mirrors. The advent of new electronic technologies have created new forms of communication such as email, text messages, and postings on social media sites. Electronic suicide notes have been reported with increasing frequency; however, only one study examined the differences between suicide decedents who left electronic notes and those who left paper notes or no note. The aim of this study was to explore the differences in psychosocial and clinical antecedents of suicide decedents who left electronic notes, paper notes, or no notes. The study was embedded in the Southwestern Ontario Suicide Study (SOSS). The SOSS was designed as a three-year case series of consecutive deaths by suicide that occurred in Southwestern Ontario between 2012 and 2014. Data on psychosocial and clinical antecedents were collected from the decedent's most responsible clinician with a modified version of the Manchester questionnaire used in the UK. Of the 476 suicides files reviewed, 45.8% contained a suicide note: 74.3% were paper notes and 25.7% were electronic notes. Multivariate regression analyses indicate that 3 characteristics differentiated decedents who left electronic notes from those who left no note. Those who left electronic notes were more likely to be younger in age, less likely to have mental illness, and less likely to have a history of multiple admissions to a mental health unit. Future studies with larger samples need to examine the content of electronic suicide notes, consider the timing of the SMS, and appraise whether there was the intent of help-seeking in the text messages.

Preventing Homelessness among Families: A Shelter Diversion Pilot Project

Cheryl Forchuk, Gordon Russell, Jan Richardson, & Chantelle Perreault

The fastest growing homeless subpopulation in Canada—families with dependent children—has expanded by over 50% between 2005 and 2009. This population has more than triple the average length of stay in emergency shelters, posing significant social and financial costs for both the families and the greater community. Successful strategies for preventing family homelessness remain understudied. This project evaluated a shelter diversion program piloted at Rotholme Women's and Family Shelter of London, Ontario. Data was collected from three sources: 1) formal interviews with members of families participating in the pilot program; 2) focus groups with members of families residing at Rotholme who did not participate in the pilot program; and 3) focus groups with staff at Rotholme to gain service provider perspectives. Findings demonstrated that Rotholme's pilot program successfully diverted families from shelter. A total of 406 individuals from 117 families accessed the program between April 2016 and December 2017. A low percentage of these families ended up in a shelter, with only 3% confirmed to be in shelter between April 2017 and December 2017. At least 90% of the families who participated in formal interviews continued to be housed after 18-months follow up. Participants maintained baseline levels of community integration, quality of life, service utilization, and child health indicators across follow ups. Qualitative findings led to the development of a framework of three interrelated risk factors contributing to family homelessness: life challenges, lack of understanding of the system, and difficulty with conflict.

Extrinsic Factors Influencing the Patients' Motivation for Engagement and Retention in the Addiction Recovery Process: A Systematic Literature Review

Boniface Harerimana, Cheryl Forchuk, Rick Csiernik, Michael Kerr, & Elizabeth Muchiri

Background: Research has shown that up to 80% of patients enrolled for treatment are lost to follow-up in the first three months. This review summarized studies examining extrinsic factors influencing addiction care outcomes and evaluating various empirical definitions used to assess these outcomes. **Methods:** Using the Preferred Reporting Items for Systematic reviews and Meta-Analysis guidelines, two researchers retrieved peer-reviewed research articles from electronic databases: MEDLINE, PsychINFO, CINAHL, and Cochrane Central Register of Controlled Trials databases. Two researchers independently identified and selected peer-reviewed articles published in English and French between 1946 and 30th October 2017. **Results:** The initial search retrieved 1,478 articles, which after checking their titles, abstracts, and full-text assessment were narrowed down to 18 studies included in this review. Results demonstrate that patients' motivation for engagement and retention in the addiction recovery process are influenced by extrinsic factors, including motivation-enhancing health care structures and therapeutic relationships, supportive social networks, and patients' characteristics. Empirical definitions for patients' motivation for engagement and retention in the addiction recovery process varied across all reviewed studies. **Discussion:** Synthesized evidence underlines extrinsic factors, such as addiction care structures, therapeutic relationships, and patients' supportive social networks are essential for enhancing patients' motivation and retention in treatment. **Conclusion:** This review supports that extrinsic factors impact on patients' motivation for engagement and retention in the addiction recovery process; and thus, influence addiction treatment outcomes. This review highlights a lack of research using consistent empirical definitions to examine interactions between extrinsic factors and patients' motivation and retention outcomes.

Overlapping Frontoparietal Networks in Response to Oculomotion and Traumatic Autobiographical Memory Recall: Implications for Eye Movement Desensitization and Reprocessing

Sherain Harricharan, Mischa Tursich, Maria Densmore, Paul Frewen, Margaret McKinnon, & Ruth Lanius

Background: Oculomotor movements have been shown to aid in retrieval of episodic memories as they serve as a sensory cue that can engage frontoparietal networks to reconstruct visuospatial details of a traumatic memory with respect to one's self and surroundings. Frontoparietal networks are not only critical to oculomotion but also serve key functions in the recollection of autobiographical episodic memory and emotion regulation. We therefore sought to investigate how oculomotion influences recollection of traumatic memories in frontoparietal brain regions in post-traumatic stress disorder (PTSD). **Methods:** 39 participants (healthy controls, n=19; PTSD, n=20) recollected both neutral and traumatic autobiographical memories with concurrent different oculomotor stimuli. The frontal (FEF) and supplementary eye fields (SEF) were used as seed regions for psychophysiological interactions (PPIs) to investigate connectivity patterns in SPM12. **Results:** During traumatic memory recall, PTSD showed increased FEF connectivity with the right dorsolateral prefrontal cortex and the right anterior insula, whereas controls showed increased FEF connectivity with the right posterior insula and the right dorsomedial prefrontal cortex as compared to PTSD during horizontal eye movements. Moreover, PTSD showed increased SEF connectivity with the left angular gyrus and the right dorsomedial and dorsolateral prefrontal cortex, whereas controls showed greater SEF connectivity with the precuneus as compared to PTSD during horizontal eye movements. **Conclusions:** These findings shed light on the intersection between oculomotion and memory recall in PTSD and provide a neurobiological account for how oculomotion may influence the frontoparietal cortical representation of traumatic memories. Implications for eye movement desensitization and reprocessing are discussed.

The Global MINDS (Mental Health INcubator for Disruptive Solutions) Fellowship Program: Transdisciplinary Students Addressing Complex Global Mental Health System Challenges Through Social Innovation

Arlene G. MacDougall, Raksha Sule, Jessica Carswell, Richelle Bird, Nadine Wathen, Marlene Janzen Le Ber, Oana Branzei, Ruth Ruhara, Victoria Mutiso, David Ndeti, Kaitlin Saxton, & Susan Rodger

Objectives: The Global MINDS Fellowship Program (GMFP) is a year-long opportunity for students with diverse academic backgrounds to apply social innovation tools and processes to incubate disruptive solutions to a complex mental health system challenge proposed by a local Community Partner (CP). **Methods:** The inaugural GMFP 2017-8 brought together 10 Fellows from Western University and 10 from Kenya at a Summer Institute in Machakos, Kenya, to form 4 teams who worked closely with Faculty Mentors, CPs and stakeholders to develop and pitch their solutions and receive funding up to \$5000. Teams subsequently worked to demonstrate proof of concept of their solutions while also participating in continuous knowledge and professional capacity development activities. **Results:** Fellows from two teams will present their solutions and preliminary outcomes. 1) To improve mental health awareness and decrease stigma, an 'Advocacy Incubator' was established to provide resources for individuals with lived experience of mental illness to develop and implement mental health advocacy initiatives. A qualitative process evaluation capturing Incubator outputs and effects on participants is underway. 2) Team VisAbility Kenya created a trained university student volunteer network to host community-based recreational activities that promote inclusion, meaningful participation, and mental health awareness in response to the need for the recognition of the rights and abilities of those living with mental illness in Machakos. Project evaluation is focused on capturing the experiences of volunteers and participant engagement in activities. **Future evaluation:** A case study of the GMFP's transformational learning approaches and the impacts of GMFP from student, faculty and community perspectives is planned.

Training in Developmental Disabilities in Canadian Psychiatry Residency Programs

Sarah O'Flanagan, Volker Hocke, & Rob Nicolson

Objectives: Numerous studies have found that mental health in people with developmental disabilities is a significantly underserved clinical area. Although the Royal College of Physicians and Surgeons of Canada requires that "Patients with developmental delay across the life span, with or without comorbid psychiatric disorder, must be included" during training in the PGY 2 and PGY 3 years, the type and extent of this experience is not defined. The purpose of this study is to identify the similarities and differences in curricula related to developmental disabilities in Canadian Psychiatry Residency programs. **Methods:** This study used a survey with 3 multipart questions. The surveys were sent to Psychiatry Residency directors at all 17 medical schools in Canada. **Results:** All respondents reported that some didactic teaching happens in their program specific to developmental disabilities (DD), however the time dedicated to teaching, and the opportunities for clinical rotations differ significantly. Only 33% of programs require a rotation in DD, and the length of required and elective rotations varies significantly across Canada, as does the expertise of lecturers and clinical supervisors. **Discussion/Conclusion:** The amount of time dedicated to training Psychiatry residents in developmental disabilities varies significantly in both didactic teaching and in clinical opportunities. Residents exposure to people with developmental disabilities will likely be significantly different at one Canadian Medical School than at another. Differences in requirements may have an impact on skills, levels of confidence in treating this population, and quality of care for future psychiatrists working with people with developmental disabilities.

Complexity in Mood Disorder Diagnosis: fMRI Connectivity Networks Predict Medication Class Response in Complex Mood Disorder Patients

Elizabeth Osuch, Shuang Gao, Michael Wammes, Jean Théberge, Peter Williamson, Richard J. Neufeld, Yuhui Du, Jing Sui, & Vince Calhoun

Objective: This study determined the clinical utility of an fMRI classification algorithm differentiating bipolar disorder (BD) from major depressive disorder (MDD) in patients with challenging diagnoses. **Methods:** 99 individuals aged 16-27 were scanned in 3 groups—BD, MDD and healthy controls. Resting state fMRI data of these known diagnosis patients were analyzed by estimating maximally spatially independent components (ICs), constructing a similarity matrix among subjects, partitioning the matrix in kernel space and optimizing support vector machine classifiers and IC combinations. The trained classifier was then applied to 12 additional patients with unclear mood disorder diagnoses. Unknown subjects were given vote ratios for BD and MDD, resulting in a diagnosis. **Results:** Classification was approximately 93% accurate among individuals with known diagnoses. The five maximally contributory ICs included nodes of four “classic” large-scale networks, most often split between two ICs; the caudate and the autonomic processing regions of thalamus and insula. The “gold-standard” involved medication response to euthymia. Remarkably, the algorithm diagnosis was consistent with optimal psychiatric treatment, indicated by medication class of sustained recovery, in 11 of 12 complicated cases (i.e., 92% accuracy). **Conclusions:** This classification algorithm performed admirably in a context that is rarely evaluated—the classification of difficult to diagnose patients. Notably, it addressed the question that biologically-based classification algorithms and imaging biomarkers most urgently need to answer—what medication class is most likely to help the patient attain sustained recovery. **Implications:** Further research can enhance this biologically-based approach and extend these findings to be more clinically accessible.

Sport and Social Inclusion: An Evaluation of Active for Life

Abe Oudshoorn, Laura Misener, & Jenna Richards

The purpose of this study was to conduct a mixed methods evaluation of a sports program geared towards individuals experiencing homelessness and/or mental health challenges. The program evaluated was a multi-sport program delivered collaboratively by two organizations supporting people experiencing homelessness in a mid-sized city in Canada. The evaluation focused on two potential program outcomes: increased physical literacy and increased social inclusion. Participant outcomes were measured over a two-year period. Program participants were adults who accessed the program independently, through the support of an organization, or through the support of a volunteer. The population was diverse in regard to mental health status, housing status, and sports experience; however, poverty, homelessness, and mental health challenges were common to all participants. Grounded in Putnam's (2000) theory of social capital (networks, norms, and trust), this mixed methods evaluation study followed a QUAN-Qual model, or primarily quantitative data supported by qualitative data. Study variables of physical literacy and social inclusion were measured at the outset and conclusion of the intervention. Qualitative interviews supplemented this data to capture any nuanced changes that were not detected by the research tools. The presentation will include both qualitative and quantitative study findings, including themes from a qualitative thematic analysis, as well as pre-post changes in social inclusion and physical literacy. This evaluation led to the development of a best practices manual for running sports programs geared towards inclusion of those with complex mental health and social challenges. These best practices will also be presented.

Spatial Incoherence of Large-Scale Cortical Networks Relates to Formal Thought Disorder in Schizophrenia

Lena Palaniyappan, Ali Al-Radaideh, Penny Gowland, & Peter Liddle

Background: The thickness of cerebral cortex varies across individuals as well as across different regions within an individual. Shared trophic or plastic influences such as repeated task-related recruitment of extant brain regions results in morphological covariance within large-scale brain networks. Pathological processes disrupting functional co-activation can result in higher than expected degree of variability within networks in an individual level, resulting in spatial incoherence. We studied spatial incoherence of cortical thickness in 17 cortical networks identified on the basis of well-known patterns of intrinsic connectivity, to identify the spatially incoherent networks and relate them to differences in severity of thought disorder among patients with schizophrenia (SCZ). **Methods:** Ultra-high field 7Tesla anatomical MRI scans were obtained from 20 SCZ subjects in early stages of illness, and 19 matched healthy controls (HC). Cortical thickness was estimated using Freesurfer v5.0, across 17 networks based on the parcellation scheme of Yeo et al. We computed within-network coefficient of variation in thickness (CVT) across vertices that constitute each network. Higher CVT of a network in a subject indicates higher spatial incoherence within the network for that individual. **Results:** Salience Network (Ventral), Default Mode Network and Central Executive Network (Dorsal) showed most significant reduction in MRI-derived cortical thickness (networks #8, #12, #15 as well as #16 of Yeo atlas). Only the Salience and Executive Networks (network #8 and #12) showed higher coefficient of variation in SCZ compared to HC, indicating either a failure of coordinated maturation or co-ordinated function. Higher spatial incoherence of Salience Network related to reduced mean thickness of Central Executive Network in patients; this relationship was not seen in HC (Fisher's z test, $p=0.02$). Both higher coefficient of variation in Salience Network and lower mean thickness in Central Executive Network predicted the severity of positive but not negative thought disorder scores. **Discussion:** Our results indicate that (1) large-scale cortical networks involved in information processing (Salience and Executive Networks) show spatial incoherence in schizophrenia (2) the degree of spatial incoherence relates to the severity of disorganisation of thoughts and language in patients. Spatial incoherence may be the result of a dysmaturational or functional dysplastic effect reflecting inefficient cortical recruitment in schizophrenia.

Predictors of Treatment Outcome in Veterans with Military-Related PTSD

J. Don Richardson, Ateka A. Contractor, Cherie Armour, Kate St. Cyr, Jon D. Elhai, & Jitender Sareen

Veterans with combat or peacekeeping experience are at increased risk of posttraumatic stress disorder. Military-related PTSD often presents with psychiatric comorbidities, such as major depressive disorder and alcohol use disorder which further contributes to impaired psychosocial functioning. Military-related PTSD demonstrates poor treatment response when compared to civilian PTSD. This study examined the predictors of treatment outcomes in a cohort of consecutive veterans receiving treatment for military-related PTSD at the Parkwood Operational Stress Injury (OSI) Clinic. The diagnosis of PTSD was made using the Clinician-Administered PTSD Scale (CAPS). As part of "treatment-as usual," all patients complete at intake and at each follow-up appointment, the PTSD Checklist-Military Version (PCL-M), Beck Depression Inventory (BDI-II), and the Short Form Health Survey (SF-36) at intake and either the SF-36 or the SF-12 at follow-up. All patients received psychoeducation about PTSD and combined pharmacotherapy and psychotherapy. Analyses demonstrated a significant and progressive improvement in PTSD severity over the two-year period [Yuan-Bentler χ^2 (40, $N = 117$) = 221.25, $p < .001$]. We found that comorbid depressive symptom severity acted as a significant predictor of PTSD symptom decline ($\beta = -.44$, $SE = .15$, $p = .004$). However, neither alcohol misuse severity nor the number of years with PTSD symptoms (chronicity) were significant predictors of treatment response. This study highlights the importance of treating comorbid depression and demonstrates that significant symptom reduction, including loss of probable PTSD diagnosis, are possible in veterans with chronic military-related PTSD.

From Silos to a System: How Evidence Shapes How We Get There

Jan Richardson

This submission highlights the possibilities to consider research and evaluation topics and interests related to solving homelessness. Attendees will be invited to discuss research interests and how a shared information system will assist in thoughtful research with reliable data based on informed participant consent. In 2017, the City of London along with 12 homeless serving programs formed the London Homeless Prevention Network (the Network) to implement a shared Homeless Management System (HMIS). A web based software developed by the Government of Canada known as the Homeless Individuals and Families Information System (HIFIS) was selected as the software for implementation. The implementation of HIFIS in London represents a significant opportunity as programs move from relatively siloed service delivery to a more collaborative approach empowered by real time information sharing. The HMIS provides immediate information regarding individuals and families experiencing homelessness and engaged in services provided by homeless serving programs in London. This information includes: primary demographic information of participants and their use of services; and, aggregate reports of service use. By working together and sharing information, organizations can better understand homelessness, improve services, and reduce and prevent homelessness in London. In April of 2018, the Network successfully launched HIFIS in a shared environment with over one million records to date and became the first Canadian community to implement the system at this scale. A significant milestone has been achieved towards coordinating and streamlining services and essentially solving homelessness together.

Risk of Involuntary Admission among First-Generation Ethnic Minority Groups with First-Episode Psychosis

Rebecca Rodrigues, Arlene G. MacDougall, Kelly K. Anderson

Background: It is well established in the international literature that ethnic minority groups often have more complex and aversive pathways to care. However, Canadian data on this trend is lacking, particularly regarding involuntary admissions. We sought to examine the risk of involuntary admission among first-generation ethnic minority groups. **Methods:** Using health administrative data, we constructed a retrospective cohort of first-onset cases of psychotic disorder in Ontario between 2009 and 2016. This cohort was linked to data from Immigration, Citizenship, and Refugee Canada for information on migrant status and country of origin. We followed the cohort for a two-year period after first diagnosis to ascertain the first psychiatric hospitalization event, and compared the risk of having involuntary status for first-generation ethnic minority groups relative to a general population reference group. **Results:** Of the 6204 psychiatric hospitalizations in our study cohort, 18.9% ($n=1172$) were attributed to first-generation migrants. After adjustment for socio-demographic, clinical, and service-use factors, migrants from Europe ($OR=1.89$, $95\%CI=1.19-3.00$), the Caribbean ($OR=1.77$, $95\%CI=1.05-2.99$), and Africa ($OR=2.55$, $95\%CI=1.34-4.86$) had higher rates of involuntary admission, compared to the general population. There was also evidence of effect modification by gender, with African males having particularly high rates of involuntary admission ($OR=6.63$, $95\%CI=1.40-31.38$). **Conclusions:** Our findings are consistent with the international literature showing increased rates of involuntary admission among some ethnic minority groups with first-episode psychosis. Interventions aimed at improving pathways to care could be targeted at these groups to reduce disparities in access to care for people with psychotic disorders.

Treatment Resistant Depression (TRD): Where Are We and Where Do We Need to go?

Jouri Rybak, Rickinder Sethi, & Amer M. Burhan

Introduction: Major depression affects 1/10 Canadians and becomes chronic in about a third of the patients. Over half of those receiving first line treatments for depression do not achieve full response and about two thirds require 4 sequential acute treatment trials to achieve remission. Treatment resistant depression (TRD) refers to depression that does not respond to usual lines of treatment and tends to become chronic resulting in high level of disability, poor QOL and high service utilization. **Objective:** This review is part of an ongoing national study to reach Canadian expert consensus on an algorithm for the assessment and management of TRD. **Methods:** Recruitment of national experts, involved in Canadian guideline production (CANMAT), and validate a consensus of a care pathway via modified Delphi methodology. **Results:** In this presentation, we will present results of the evidence-based review of best practices related to assessment and management of TRD and outline a draft pathway of assessment and management for TRD. **Conclusion:** Given the challenges that TRD imposes on patients, families and systems of care, a validated standardized assessment and care pathway will provide the opportunity to explore prognostic variables, improve care outcomes and facilitate better knowledge translation and transfer to mental health and primary care setting.

Simulation in Gentle Persuasive Approaches in dementia care (GPA): A Knowledge Translation Intervention (KTi) for First Year BScN Students

Pat Sealy, & Robin Coatsworth-Puspoky

Background: Gentle Persuasive Approach (GPA) is a 7.5-hour education curriculum which has changed health care providers' perceptions of older adults with dementia and improved their therapeutic approach. Many first year BScN students have not had any prior exposure to individual with dementia, leading to concerns that retention and application of this information is questionable. **Purpose:** A 10-minute KTi simulation and 15-20-minute debriefing for GPA was developed using social learning theory and self-efficacy theory. **KTi: Simulation:** Two weeks after GPA training, students engaged in a GPA simulation with a standardized patient who has dementia. Students were given the description of the simulation case scenario and debriefing form prior to the simulation. The 10-minute simulation was videotaped. In pairs, students established a therapeutic relationship with the patient while providing care. The simulation focussed on students demonstrating and applying GPA techniques (personhood, 8As, SPEED, Stop and Go, and validation therapy). Students reviewed their video in pairs after the simulation and recorded areas of strengths and improvements using the debriefing form. Students then debriefed in their clinical groups with their instructors where they shared successes, areas for improvement in learning, and perceptions related to competency and confidence using GPA strategies.

Evaluation: The KTi reinforced the core clinical skills and strategies of GPA in first year BScN students. Next steps involve evaluating students' perceptions of and effectiveness of social learning theory with the KTi enhance sustainability of the intervention.

Sudarshan Kriya Yoga (SKY) in Post-Traumatic Stress Disorder (PTSD): A Feasibility Study

Kamini Vasudev, Emily L. Ions, Samin Inam, Sumit Chaudhari, Sheena Ghodasara, & Akshya Vasudev

Objective: The Sudarshan Kriya Yoga (SKY) program has previously shown safety and efficacy in some PTSD samples involving victims of natural disasters and war veterans. This study investigated the feasibility of applying SKY in PTSD samples resulting from a wider range of trauma experience. **Methods:** Thirty-two male and female participants aged 18-75 were enrolled in a single centre, open-label feasibility trial over 16 months. All participants attended a 6-day instructional phase of SKY followed by 7 follow-up sessions over 11 subsequent weeks. Participants were assessed at baseline, weeks 4, 8, 12, and 24 on various psychological and physiological measures. **Results:** Thirteen out of 32 participants withdrew from the study prior to the week 12 visit. Of these 8 withdrew for study unrelated reasons while 5 withdrew due to factors related to the intervention. At week 12 participants experienced a significant decrease in PTSD symptoms following study intervention, as indicated by a mean (\pm SE) 10.19 (\pm 2.93) point fall in Post-traumatic stress disorder check list (PCL-5) scores ($p=.002$). There was an insignificant fall in mean (\pm SE) rater assessed depression (Hamilton Depression Scale, 1.10 (\pm 1.13), $p=.345$), self-rated depression (Beck Depression Inventory, 3.95 (\pm 2.78), $p=.171$) and anxiety (Hamilton Anxiety Scale, 3.95 (\pm 2.78), $p=.171$). **Conclusion:** It is feasible to recruit, enroll, and retain participants for a future larger scale randomized controlled trial in a clinical sample of PTSD resulting from a wide range of trauma. SKY seems to offer the potential to relieve PTSD symptoms and co-morbid depression and anxiety in these patients.

Identification of the Social Functional Biomarker for Patients with Major Depressive Disorder Through Structural Neuroimaging

Rubai Zhou, Jun Chen, Guoqing Zhao, Weiping Xia, Daihui Peng, Jijun Wang, Lena Palaniyappan, & Yiru Fang

Objectives: Most patients with the major depressive disorder (MDD) have social functional (SF) impairments, and functional improvement often lags behind the improvement in depressive symptoms. However, it is still unclear what determines the deficits and outcomes of social function in MDD patients. The aim of this study was to investigate the biomarkers of SF in patients with MDD using structural MRI. **Methods:** 3T anatomical MRI was obtained from 109 MDD patients, with 46 in high-SF (Sheehan Disability Scale (SDS) < 18) and 63 in low-SF (SDS ≥ 18) groups at baseline. 33 patients were followed up for 12 weeks. Voxel-based morphometry (VBM) was performed to locate brain regions with significant grey matter (GM) changes in relation to social function. **Results:** Right parahippocampal volume was significantly reduced in low-SF MDD subjects in the VBM analysis compared to high-SF MDD subjects ($p<0.05$, FDR correction). The right parahippocampal GM was not related to the overall symptomatic severity or the typology but correlated well with the total scores, psychological and work/school condition scores of Quality of Life Scale. Furthermore, patients in the high-SF group at baseline continued to show superior social functioning and greater right parahippocampal volume than the low-SF group at 12-week, supporting the durability of this neural biomarker for social function in MDD. **Conclusions:** GM volume of the right parahippocampal region marks the social functional ability and quality of life in patients with MDD. Treatment strategies that produce a morphological effect on this region may have favorable functional consequences in MDD patients.

ABSTRACTS

POSTER DISPLAYS

(The presenting author's name appears underlined)

Board #1

Anxiety and its Role in Suicide Ideation Among a Sample of Community-Residing Older Adults

S. Benjamin Peckham, Alina Sotskova, Gordon L. Flett, & Marnin J. Heisel

Objectives: 1) To investigate the role of anxiety in contributing to the presence, onset, and exacerbation of late-life suicide ideation. 2) To evaluate the psychometric properties of the Geriatric Anxiety Inventory (GAI) among community-residing older adults. **Methods:** A prospective longitudinal study investigating psychological risk and resiliency factors potentially associated with the presence, onset, or exacerbation of suicide ideation among 173 community-residing, cognitively-intact, adults, 65 years or older. Participants completed assessment batteries at baseline and at 2-4-week, 6-12 month, and 1-2-year follow-up points, including measures of cognitive functioning and of psychological risk (anxiety, depression, suicide ideation) and resiliency factors (psychological well-being, satisfaction with life). **Results:** Anxiety ratings were significantly associated with the severity of suicide ideation at baseline assessment and predicted the onset/exacerbation of suicide ideation over time. The GAI demonstrated strong psychometric properties, including internal consistency, test-retest reliability over brief and longer-term periods of follow-up, construct validity, and criterion validity, differentiating between participants with or without a history of suicide behaviour. **Conclusions:** Anxiety appears to contribute to thoughts of suicide among community-residing older adults. Routine assessment of anxiety with psychometrically-sound scales, such as the GAI, may enhance assessment practices and contribute to a more nuanced consideration of psychological contributors to thoughts of suicide among older adults.

Board #2

TELEPROM-G: A Study Evaluating Access and Care Delivery of Telehealth Services among Community Based Seniors

Boniface Harerimana, Cheryl Forchuk, Richard Booth, Amer Burhan, Akshya Vasudev, Wanrudee Isaranuwatthai, Puneet Seth, D Ramsey, Abraham Rudnick, Marnin Heisel, & Jeffrey Reiss.

The TELEPROM-G one-year pilot study, funded by the Canadian Frailty Network and approved by the Western Research Ethics Board, tested a digital system for health care provider (HCP) engagement with seniors living in the community with depressive symptoms. As this population further increases, the health sector will need to adapt in order to improve accessibility to care. eHealth technology solutions with this population have not been widely or rigorously tested. **Objectives:** 1) examine the feasibility of implementing and evaluating an electronic client health record (CHR) in the senior population; 2) identify improvements and modifications to the CHR or its features.

Eight HCPs and thirty seniors were recruited. Both groups received training in using the technology; HCPs on their desktops, seniors on Chromebooks. Both were able to monitor changes in health and functional well-being. The secure encrypted CHR, developed by InputHealth, tracked patient-reported health outcomes, facilitated clinical evaluation, and supported video-conferencing, i.e. real-time clinical interactions in the client's home. Research staff and InputHealth technicians provided support on technical issues encountered by participants.

The successful recruitment, retention and engagement of seniors demonstrated their willingness to participate in research of this kind. A mixed-methods (quantitative and qualitative) design was used to assess the feasibility of implementing the CHR with this population. HCP and client feedback from interviews and focus groups has provided valuable information to enhance the CHR technology prior to conducting further multi-site studies.

Board #3

An Evaluation of Theory, Simulation, and Gentle Persuasive Approach (GPA) Training on First Year BScN students' Clinical Competency

Pat Sealy, & Robin Coatsworth-Puspoky

Background: Gentle Persuasive Approach (GPA), developed by Laurie Shindel Martin, provides clinicians with the skills and knowledge to care for residents with dementia. There has been no published research on the effectiveness of this program with first year BScN students. **Purpose:** The purpose of this research is to evaluate the impact of knowledge uptake from theory, 7.5 hours of training of the student version of GPA, and a simulation of dementia. **Methodology, Sample and Setting:** An online survey was completed based on the students' clinical experiences in winter, 2016. 14 students (24%) of students completed the survey. **Results:** Even though six of 14 students had some previous experience working with residents with dementia in long term care settings, students with one exception reported being scared or lacking confidence in working with residents with dementia prior to the clinical course. Students reported being confident or very confident in caring for individuals with dementia by the end of the semester in regard to the personhood and safety of the resident or personal safety. "Personhood helped me to have a better understanding of the individual as a whole. It makes it easier to sympathize with their situation, when you can understand them better." **Conclusions:** Students will care for individuals with dementia in a variety of settings. Further research is needed to examine the effectiveness of GPA training with a larger sample of nursing students, however the preliminary results indicate that GPA does increase perceptions of confidence in caring for individuals with dementia.

Board #4

Evaluating TEACH (Tackling the Education of Adolescent & Child Health) in Psychiatry, a Pediatric Mental Health Curriculum for Family Medicine Residents

Nina McCurdy, Kimberly Fielding, Saadia Hameed, Syed Naqvi, Stacey Espinet, Sandra Gotovac, & Margaret Steele

Background: Approximately 75% of pediatric mental health concerns present first in primary care settings yet the family medicine residency program at the Schulich School of Medicine and Dentistry currently does not provide formal teaching in child/adolescent psychiatry. Given this educational gap, an online curriculum was developed to support family medicine residents in providing frontline mental health care to children and adolescents. **Method:** Residents were randomly assigned to either the control (n=22) or intervention (n=22) group. At baseline, all residents completed questionnaires about their demographics, educational background, and their knowledge, beliefs, confidence, and comfort level with assessing and managing child/adolescent mental health concerns. Residents were also videotaped completing standardized patient assessments. Residents in the intervention group were then provided with the online curriculum. One month later, both groups repeated the questionnaires and videotaped interviews. T-tests were used to compare the two groups' average change in questionnaire scores and the Roter Method of Interaction Process Analysis, a coding system designed for analyzing patient-provider interactions, was used in the video analysis. **Results:** Residents who received the online curriculum had a significantly larger improvement in knowledge ($p=0.02$), confidence ($p<0.01$), and comfort scores ($p<0.01$) than those in the control group. The greatest change in residents' beliefs occurred related to psychosocial factors. Analysis of the videotaped patient interactions is currently underway. **Conclusion:** The TEACH online curriculum is an effective intervention for improving family medicine residents' knowledge, comfort, and confidence when providing child and adolescent mental health care.

Board #5

Diagnostic Accuracy of Referrals in an Academic Consultation-Liaison Service

James Charbonneau, Sandra Ulch, Rebecca King, Jennifer Barr, Carla Garcia, & Michael Mak

Study Objectives: The objectives of this study are to: (1) Test if certain syndromes are frequently misdiagnosed as another. Hypothesis – delirium is frequently misdiagnosed as depression; (2) Test for differences in diagnostic accuracy between referrals received from medicine vs. surgery vs. ICU. Hypothesis – intensive care and medicine are more accurate vs surgery as the former receive some training in delirium treatment; and (3) Test for certain patient characteristics that predict misdiagnosis. Hypothesis – female gender, history of psychosis or mood disorder are associated with poor diagnostic accuracy. **Methods:** The diagnoses from the referring services will be retrospectively compared to diagnoses made by the CL Service. We will analyze for associations between patient variables and diagnoses. Our data source is extracted from chart review and CL referral forms, and will include 1000 consecutive referrals. The study will: (1) Describe the statistical distribution of referral diagnoses; (2) Describe statistical patterns of misdiagnosis; (3) Determine variables (if any) that predict failure to make an accurate diagnosis; and (4) Determine if certain Psychiatric diagnoses are made with greater accuracy by referring services. **Results:** Preliminary analysis from ~ 750 charts reveal that over 50% of referred depression patients in fact have delirium when assessed by CL psychiatry. **Conclusions:** Delirium is commonly misdiagnosed as depression by referring services. **Implications for Care:** Greater accuracy in diagnosis facilitates earlier appropriate treatment, leading to shorter stays, better resource use efficiency (reduce health care costs from mistreatment and inappropriate use of mental health services) and lower morbidity/mortality.

Board #6

The Impact of Violent Gaming on Social Cognition as a Function of Trait Empathy

Shannon Compton, Mary B. Ritchie, Ian G.R. Jones, Richard W.J. Neufeld, & Derek G.V. Mitchell

The debate over whether violent videogames affect social behaviour has been ongoing for decades while videogames become increasingly immersive, realistic, and accessible. While the literature on the affects of violent gaming on behaviour is extensive, the proposition that it increases the risk for aggressions remains controversial. Furthermore, there is a lack of research on how individual differences can affect susceptibility to these influences. Callous traits are one of the strongest predictors of antisocial behaviour and yet there is limited research on how differences in these traits interact with violent gaming to affect risk for antisocial behaviours. The present study will determine the impact of violent gaming on social cognition as a function of individual differences in trait empathy. Our hypothesis is that violent gaming will interact with callous traits to increase the risk of antisocial behaviour by disrupting aspects of social cognition that have been implicated in prosocial behaviours. Participants will complete a series of measures to assess psychopathy, autism, state aggression and anxiety, and videogame usage before being randomly assigned to play a violent, nonviolent, or prosocial videogame. Periodically, participants will engage in tests of social cognition, including measures of emotion recognition and emotional and cognitive empathy. We predict that violent gaming will selectively disrupt emotional empathy, and fear recognition. Preliminary data will be discussed. Findings from this study will assist in discussions of public policy surrounding videogame regulations and provide a novel line of research for work on disorders featuring empathy deficits including conduct disorder and psychopathy.

Board #7

The Effects of Induced Anxiety on Low Level Visual Processing

Stephen R. Pierzchajlo, & Derek G.V. Mitchell

Anxiety is a defensive response system that is activated by unpredictable sustained threats. Previous studies indicate that induced anxiety can improve some cognitive functions (e.g., increased response inhibition, faster emotion detection for threatening faces), but also hinder others (e.g., short-term memory impairment, increased interference on the Stroop task) for reasons that are poorly understood. Here we tested the hypothesis that induced anxiety would enhance perception of low level visual features. Participants were instructed to detect Gabor patch (sinusoidal gratings with a Gaussian filter) presentations (33ms; at 1% to 10% visual contrast) as quickly and accurately as they could under two conditions: a condition where they might receive a random electrical shock at any time, and a condition where they would receive no electrical shock. Participant anxiety levels were assessed behaviourally with a self-report anxiety scale, and physiologically through skin conductance level measurements. We predict that participants will show more accurate and rapid Gabor patch detection under threat of shock. We will also assess the impact of induced anxiety on Gabor patch detection and reaction time as a function of participants' trait anxiety. Data collection is ongoing, and preliminary results will be discussed ($n = 40$) with references to the impact of anxiety on fundamental aspects of cognitive function.

Board #8

An Examination of the Influence of Trait Empathy on the Association Between Violent Media Exposure and Impaired Social Cognition

Mary B. Ritchie, Stephen Pierzchajlo, Shannon Compton, Richard W. J. Neufeld, & Derek G. V. Mitchell

Never before has violent media (film/TV, gaming) been so realistic and accessible to the public. Studies associate violent media exposure with increased aggression (Anderson et al., 2010), however, whether a causal influence exists remains hotly debated. Using an experimental approach, we examined the impact of violent horror film exposure on indices of social cognition implicated in prosocial behaviours. As differences in trait empathy (e.g., callous traits) have been identified as a strong predictor of antisocial outcomes (Blair, 2001), we also examined whether the putative impact of violent film on social cognition varied as function of trait empathy. We predicted that acute exposure to violent film would selectively impact affective empathy and fear recognition, while sparing cognitive empathy; further, those with low trait empathy would be most impaired. Preliminary analyses include a sample of 26 adults randomly assigned to watch violent ($n = 15$) or nonviolent films ($n = 11$); data collection is ongoing. Preliminary results indicate that violent film exposure reduced levels of empathic concern ($d = 0.54$) and impaired recognition of fear cues ($d = .38$) relative to nonviolent film exposure. As expected, the effect of violent media was largest among those with low trait empathy for both empathic concern ($d = 1.91$) and fear recognition ($d = .69$). No differences were noted in cognitive empathy. Results will be discussed with reference to the potential for individual differences in susceptibility to the effects of violent media exposure.

Board #9

Ventricular Volume in Frontotemporal Dementia and Genetically At-Risk Family Members: Results from the GENFI Study

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Frontotemporal Dementia (FTD) is a highly heritable neurodegenerative disorder characterized by drastic changes in behaviour and language abilities. As clinical trials of potential disease modifying treatments are underway, it is pertinent to identify biomarkers that can help detect at-risk individuals and that can be used as surrogate outcome measures to track and assess the effectiveness of treatments. Current research in Alzheimer's disease has recognized the brain's ventricular volume as a possible biomarker to identify individuals at-risk for developing the disorder and to index disease progression; however, no study has assessed ventricular volume expansion in presymptomatic mutation carriers in FTD. The current study addresses this knowledge gap by delineating the progression of ventricular expansion in symptomatic mutation carriers ($n=21$), presymptomatic mutation carriers ($n=46$) and mutation non-carriers ($n=56$) from the Genetic Frontotemporal Dementia Initiative (GENFI) cohort. Importantly, we noted differences between presymptomatic mutation carriers and non-carriers in total ventricular volume four years prior to expected symptom onset. Ultimately, these results will help understand the utility of ventricular volume as a biomarker to (1) detect at-risk individuals and (2) track and assess the effectiveness of future disease modifying treatments.

Board #10

Exploring the Role of the Brain's Defensive System in Personal Space Regulation

Joana B. Vieira, Stephen R. Pierzchajlo, & Derek G.V. Mitchell

In social interactions, humans regulate interpersonal distance to preserve personal space boundaries and avoid the discomfort that arises when they are breached. This suggests defensive mechanisms are likely implicated in personal space maintenance. Here, we characterized for the first time the involvement of the brain's defensive system in the response to personal space intrusions by social and non-social stimuli. Thirty volunteers underwent fMRI scanning while viewing approaching or withdrawing faces (Social condition) and insects/arachnids (Non-social condition). Faces were either neutral (Low threat) or angry (High threat), and insects/arachnids were colourful beetles (Low threat) or tarantulas/scorpions (High threat). Preferred distance to the stimuli was assessed in a computerized task, wherein participants adjusted the size of the stimuli on a computer screen, and in real-life, by asking participants to adjust the distance to an experimenter and to a taxidermized tarantula. Results showed that, irrespective of threat level, approaching social and non-social stimuli both elicited enhanced activation in the midbrain periaqueductal gray (PAG), a region that is critically involved in active defensive responses. However, functional connectivity analysis revealed midbrain activation was more strongly coupled with activity in the premotor and primary motor cortices, intraparietal sulcus, and dorsal and ventral medial prefrontal cortex in response to approaching social versus non-social stimuli. Importantly, connectivity strength between the midbrain, and the premotor and primary motor cortices was significantly associated with computerized and real-life interpersonal distance. These findings suggest defensive regions may be critical to enable appropriate motor responses during personal space regulation, particularly in social contexts.

Board #11

Dissociable Impact of Fear on Executive Functioning Versus Reinforcement Learning

Minha Yoon, Joana B. Vieira, & Derek G.V. Mitchell

Introduction: Fear and anxiety, while both common responses to threats, are dissociable at a neurocognitive level. Fear is evoked by predictable, imminent threat, and is processed through the central nucleus of the amygdala. Anxiety is caused by unpredictable and sustained threat, and depends on the bed nucleus of the stria terminalis. Previous research has examined the impact of anxiety on cognition; however, the impact of fear on cognition is largely unexplored. We used a novel variant of the threat of shock paradigm to model the impact of fear on executive attention (mediated by the dorsolateral prefrontal cortex) versus reinforcement learning (mediated by the medial prefrontal cortex). We predicted that fear induced by unpredictable electrical shocks would disrupt sustained attention but improve reinforcement learning. **Methods:** Twenty healthy adults completed computerized tasks assessing sustained attention (continuous performance task; CPT) and reinforcement learning (passive avoidance; PA) under Safe (no shocks) and Shock (risk of predictable shocks) conditions. **Results & Conclusions:** Induced-fear disrupted CPT accuracy, but had no effect on PA. The dissociable impact of fear on neurocognitive processes is discussed with reference to contexts in which human error can be extremely costly. A deeper understanding of the dissociable effects of fear is critical for developing strategies to achieve the best outcome in a threatening situation.

Board #12

The Dissociative Freezing Response Onset Scale following Traumatic stress (D-FROST): Assessing post-traumatic tonic immobility

Chantelle S. Lloyd, Ruth A. Lanius, Matthew F. Brown, Richard J. Neufeld, Paul A. Frewen, & Margaret C. McKinnon

Rationale: Peri-traumatic tonic immobility (TI) is an important predictor of the development and course of PTSD (Kalaf et al., 2015). Despite serving as an adaptive defensive response, TI is a debilitating state that has the capacity to disrupt functioning across domains. At present, are no validated measures that assess specifically post-traumatic TI. **Purpose:** The primary objective of this study was to evaluate the *Dissociative Freezing Response Onset Scale following Traumatic stress (D-FROST)*, a measure developed to assess the presence and severity of post-traumatic TI across trauma-exposed populations. TI is reconceptualised as a *dissociative freezing response* – a trauma-related dissociative state involving alterations across four dimensions of consciousness (body, thought, time-memory, and emotion). **Methods:** Participants ($N = 462$) with a history of TI completed the D-FROST, and measures of post-traumatic symptoms, dissociation, depression and anxiety. **Results:** The D-FROST assessed four latent constructs, which were interpreted following the 4-D model of Trauma and Dissociation. Together, these factors capture precursors and dissociative experiences associated with TI as a trauma-related altered state, as well as residual effects and the experience of sense of self. Notably, the residual effects of TI included feelings of shame, guilt, and embarrassment. D-FROST scores demonstrated excellent reliability, as well as good construct and convergent validity with other measures of dissociation and PTSD. **Conclusion:** The D-FROST is the first comprehensive measure of post-traumatic TI conceptualized within a dissociative framework as a *dissociative freezing response*. This measure demonstrates excellent psychometric properties and may be useful for researchers and clinicians wishing to assess chronic forms of TI.

Board #13

Resting-State Rewiring: Pulvinar Resting-State Functional Connectivity in PTSD and its Dissociative Subtype

Braeden Terpou, & Ruth Lanius

Introduction: Posttraumatic stress disorder (PTSD) involves the altered neurocircuitry of large-scale networks. The pulvinar is a thalamic region displaying reciprocal connectivity with the cortex and the ability to modulate alpha synchrony to facilitate network communication. Features of the pulvinar render it an integral region for the functioning of large-scale networks. The posterior parietal cortex (PPC) is a heteromodal network of brain regions involved in sensory integration and the mediation of socioaffective functions known to be altered in PTSD. This region is active during rest and may display altered pulvinar connectivity in PTSD. **Hypothesis:** PTSD and PTSD + DS will show reduced pulvinar resting-state functional connectivity (rsFC) with the cortex, namely the PPC. **Methods:** A whole-brain rsFC analysis of the pulvinar was conducted across groups of patients with PTSD, PTSD + DS, and controls. **Results:** Controls displayed greater pulvinar rsFC with PPC regions as compared to PTSD and PTSD + DS. PTSD groups did not display stronger connectivity with any region as compared to controls. Lastly, PTSD had greater rsFC in the supramarginal gyrus relative to PTSD + DS. **Discussion:** Given the role of the pulvinar in mediating transcortical communication and alpha coherence, this could assist to explain deficits in PTSD. Many regions displaying reduced rsFC in PTSD were PPC regions. Critically, this study indicates alterations in large-scale networks even at 'rest' in PTSD. Moreover, reduced connectivity between the pulvinar and PPC may assist to explain impairments to autobiographical memory, self-referential processing, and perspective-taking – all functions underpinned in this region.

Board #14

Ultra-High Field Morphometry in Drug-Naïve First Episode Psychosis

Tushar Das, Kara Dempster, Michael Mackinley, Peter Jeon, Joe Gati, Jean Theberge, Ali Khan, & Lena Palaniyappan

Background: Structural neuroimaging studies report distributed grey matter volume (GMV) deficits in drug-naïve first episode psychosis (FEP), though their relevance to symptom burden and cognitive deficits is currently unclear. Here, we report the initial findings from the voxel-based morphometry (VBM) of GMV. To our knowledge, this is the first VBM report from drug-naïve FEP subjects obtained using ultra-high field 7Tesla MRI acquisition. **Methods:** Differences in the grey matter were evaluated in 28 patients with FEP (criterion A of DSM-5 schizophrenia) and 18 healthy controls. FEP and controls were matched for demographic status. Patients were recruited from an prevention and early intervention clinical unit and had active psychotic symptoms at the time of scanning. We also obtained abbreviated PANSS scores to index the severity of psychosis. Analysis was done using SPM12, after DARTEL based registration and segmentation but without spatial smoothing. **Results:** Patients had a significant reduction in GMV in left fusiform gyrus (Hedge's $g = 1.98$, $T = 6.7$), and increased GMV in the right precuneus (Hedge's $g = 1.63$, $T = 5.5$) and lingual cortex (Hedge's $g = 1.19$, $T = 4.0$). We did not find any other areas of significant GMV change. Of these 3 circumscribed GMV changes, reduced fusiform GMV was found among FEP patients with lower processing speed ($\beta = 0.45$, $p = 0.04$), higher severity of delusions ($\beta = -0.43$, $p = 0.049$) and unusual thought content ($\beta = -0.59$, $p = 0.01$). Increased precuneus GMV was found among FEP patients with higher severity of delusions ($\beta = 0.62$, $p = 0.008$) and unusual thought content ($\beta = 0.50$, $p = 0.03$). Right lingual changes were not related to the severity of delusions or processing speed scores. **Discussion:** Our findings suggest that (1) GMV deficits are minimal in drug-naïve FEP subjects, with large effect-size changes concentrated around face processing (fusiform) region (2) GMV increases co-occur with GMV reduction especially in those with most severe delusions and cognitive deficits indicating a role for compensatory plasticity. Subtle early brain structural changes appear to predict symptom burden and cognitive deficits at the time of first clinical presentation with psychosis.

Board #15

Parietal Connectivity in Schizophrenia and Psychotic Bipolar disorder: A Combined Structural and Dynamic Functional Connectivity Study

Tushar Das, Peter Liddle, & Lena Palaniyappan

Background: The parietal lobe role in psychotic disorders is poorly understood. Studies have observed that (1) the severity of disorganization is associated with reduced cerebral blood flow to bilateral parietal angular gyrus in patients with schizophrenia (SCZ) (2) disorganization is more pronounced in patients who have morphological abnormalities in left parietal supramarginal gyrus (3) the global connectivity of right parietal supramarginal region is reduced in SCZ compared to bipolar disorder (BPD) with psychosis. We aimed to delineate the nature of parietal dysconnectivity in these disorders and to study the relationship between the syndrome of disorganization and structural and functional connectivity of the parietal lobe with rest of the brain. **Methods:** We recruited 16 subjects with BPD, 34 subjects with SCZ and 32 healthy controls (HC). Diffusion Tensor Imaging (DTI) and resting state fMRI data were obtained using a 3T MRI. Using 90 regions as defined in the AAL atlas, deterministic tractography was performed. Using ANOVA, we compared the degree of parietal connectivity among the 3 groups. **Results:** The 3 groups differed significantly on the degree of left parietal structural connectivity ($F = 6.5$, $p = 0.002$, $HC > BIP = SCZ$) and on the degree of left ($F = 6.4$, $p = 0.003$; $BIP = HC > SCZ$) as well as right parietal ($F = 5.2$, $p = 0.008$; $BIP = SCZ > HC$) dynamic functional connectivity. Parietal dysconnectivity predicted the severity of disorganization (model $F = 4.1$, $p = 0.01$) in SCZ. Disorganization was particularly associated with reduced left parietal structural ($\beta = -0.45$, $p = 0.02$) and dynamic connectivity ($\beta = 0.40$, $p = 0.04$) but not with the right parietal dysconnectivity. DSST scores were associated with reduced left parietal structural connectivity ($\beta = 0.44$, $p = 0.04$). GAF was increased in patients with higher right parietal dynamic functional connectivity ($\beta = 0.38$, $p = 0.04$). **Discussion:** Both structural and dynamic functional parietal dysconnectivity were seen in the 2 patient groups. Left-right asymmetry in parietal dysconnectivity is notable, especially among patients with schizophrenia. Parietal dysconnectivity plays a role in the processing speed as well as global functioning deficits in SCZ. Taken together, these findings suggest that the degree of connectivity of parietal lobe could be an important determinant of symptom burden, specific cognitive deficits as well as functional capacity in psychotic disorders.

Board #16

Searching for a Stratification Marker for Antioxidant Use in Schizophrenia and Bipolar disorder: A Meta-Analysis of MRS Studies of Anterior Cingulate Glutathione

Avyarthana Dey, Alborz Javadzadeh, Priyadharshini Sabesan, Joaquim Radua, Jean Theberge, & Lena Palaniyappan

Background: Glutathione [GSH] is a major intracellular antioxidant that disposes peroxides and protects neurons and glial cells from oxidative stress. In both schizophrenia (SCZ) and bipolar disorder (BPD), atypical levels of GSH has been demonstrated, in the anterior cingulate cortex (ACC), though no consistent results have emerged due to limitations in sample size. Examining the state of GSH deficit in SCZ is a critical step when attempting to correct putative redox imbalance in this illness using agents such as N-Acetyl Cysteine (NAC). We conducted a meta-analysis to investigate the aberrations in GSH levels in the ACC of patients using proton magnetic resonance spectroscopy (1H-MRS). **Methods:** Medline, Google Scholar, Ovid Online and EMBASE databases were searched for studies published until 2017. We included all 1H-MRS studies reporting GSH values for patients with SCZ or BPD in comparison to healthy controls (HC). We excluded studies that reported only on comorbid illnesses, did not compare patients and HCs, or failed to report data required to construct effect size metrics. After initial screening, a total of 261 patients and 185 HC were considered for the meta-analysis for the SCZ group; 464 patients and 245 HC were considered for the meta-analysis from the BPD group. **Results:** Contrary to our expectations, in SCZ, there were no significant differences in ACC GSH compared to HC (RFX $p = 0.74$; 95% CI, -0.24 to 0.17; FFX $p = 0.71$; heterogeneity $p = 0.58$). In BPD, there were highly significant differences in the ACC GSH, with patients having higher GSH concentrations than HC (RFX: $p = 0.0003$; 95% CI, 0.14 to 0.5; heterogeneity $p = 0.70$). In the BPD group, the mean effect size (SMD) was $d = 0.32$, indicating a small to medium sized difference. A network meta-analysis revealed significantly higher GSH levels in BPAD compared to SCZ (RFX $p = 0.01$; 95% CI, 0.08 to 0.63; SMD=0.36; heterogeneity $p = 0.71$). **Discussion:** There are no major differences in concentration of ACC glutathione in the anterior cingulate cortex in patients with SCZ, though in BPD, GSH levels appear elevated. Given that GSH is the most readily accessible cortical redox marker in vivo, current status of MRS literature is insufficient to prepare for stratified therapeutics with antioxidants among patients with SCZ. Nevertheless, abnormalities in the redox system may be more pronounced in BPD compared to SCZ, and could serve to guide stratification in samples lacking diagnostic clarity (e.g. in First Episode Psychosis clinics).

Board #17

Structural Covariance in Drug-Naïve First Episode Psychosis. An Ultra-High Field MRI Study

Tushar Das, Kara Dempster, Michael Mackinley, Peter Jeon, Joe Gati, Jean Theberge, Ali Khan, & Lena Palaniyappan

Background Structural neuroimaging studies report disrupted morphological relationship in the grey matter volume (structural covariance) in patients with schizophrenia, indicating an impairment in functional and/or developmental plasticity. To our knowledge, no studies have examined the alterations in structural covariance across the entire brain in drug-naïve first episode psychosis (FEP). TOPSY (Tracking Outcomes of Psychosis) is one of the first studies intending to track the neurobiological trajectory using ultra-high field (7 Tesla) imaging starting from a drug-naïve first episode state. Here, we report the initial findings from the structural covariance of grey matter volume. **Methods** We completed MRI's on 28 patients and 18 controls, to estimate grey matter volume in a voxelwise manner. Participants were matched for age, sex and parental socioeconomic status. Patients had active psychotic symptoms at the time of scanning. Morphometric analysis was done using SPM12, after DARTEL based registration and segmentation but without spatial smoothing on 160 brain regions (6mm spheres) obtained using Dosenbach's atlas. Correlation matrix for each group was constructed from 160*160 Pearson correlation coefficients, followed by estimation of a bias matrix for each subject using jack-knife bias estimation. Bias values for each pair of nodes in an individual subject quantified the contribution of that subject to the overall within-group covariance. Higher positive values meant greater covariance between the two given nodes in that subject, relative to the rest of the group. Structural covariance across all possible regional pairwise connections was tested using 2-tailed voxelwise T-test with FDR correction. **Results** Patients had a significant reduction in structural covariance affecting between right posterior insula and right precentral gyrus (within sensorimotor network, $t = 3.86$, Hedge's $g = 1.15$); between right posterior insula and left ventral prefrontal cortex (between sensorimotor and salience network, $t = 3.71$, Hedge's $g = 1.10$); and between right anterior cingulate cortex and right dorsal prefrontal cortex (between sensorimotor and default-mode network, $t = 3.10$, Hedge's $g = 0.92$). There were no pairwise connections with increased structural covariance among FEP subjects compared to healthy controls. **Discussion** Our findings suggest that (1) structural covariance is disrupted even by the time of first-episode of psychosis; thus, the disruptions in morphological relationships reported in schizophrenia are not explicable by antipsychotic usage or illness duration (2) sensorimotor network regions show a predominant disruption in structural covariance, affecting morphological relationships with both salience and default mode regions. The functional and developmental plasticity of sensorimotor networks may be crucial for the early trajectory of psychosis.

Board #18

Brain-Wide Functional Dysconnectivity in Schizophrenia: Parsing diathesis, Resilience and the Effects of Clinical Expression

Shuixia Guo, Wei Zhao, Haojuan Tao, Liu Zhening, & Lena Palaniyappan

Background: The functional dysconnectivity observed from resting-state functional (fMRI) studies in schizophrenia (SCZ) is also seen in unaffected siblings indicating its association with the genetic diathesis of the illness. Nevertheless, when compared to patients, the extent of dysconnectivity appears to be limited both in spatial distribution and magnitude in siblings, suggesting that some of the abnormalities could be exclusively linked to the clinical expression or treatment effect rather than genetic diathesis. We investigated brain-wide functional connectivity using a graph theory approach to apportion resting-state dysconnectivity into components that represent genetic diathesis, clinical expression or treatment effect and resilience. **Methods:** fMRI data was acquired from 28 patients, 28 unaffected siblings and 60 healthy controls (HC). Based on Dosenbach's atlas applied to 6 minutes (180-time points with TR=2 s) of eyes-open resting fMRI scan, we extracted time series of 160 functional network nodes. **Results:** Using ANOVA [FDR corrected $p < 0.05$], we found 88 out of 12720 pairs of functional links to be significantly different among the three groups. 48.8% of these 88 links included nodes from the Default Mode Network (DMN), with the largest portion of these involving Salience Network/DMN connectivity (14.8%). Post-hoc t tests revealed that 62.5% of these disconnected links were associated with genetic diathesis of schizophrenia (SCZ and siblings showed same direction of significant post-hoc difference compared to HC) and 21.6% were associated with clinical expression or treatment effect (SCZ differed from siblings and HC, but no difference between HC and siblings). Topologically, we observed increased degree, clustering coefficient and global efficiency but reduced local efficiency in the sibling group compared to both SCZ and HC, indicating a resilience effect. Support vector machine analysis revealed a high degree of accuracy when classifying the genetically predisposed (SCZ and siblings) vs. HC (Area Under the Curve - AUC 0.97) or the SCZ group vs. healthy controls (AUC 0.97) but not when discriminating SCZ vs. siblings (AUC 0.58). **Discussion:** A large portion of the resting-state functional dysconnectivity seen in patients represent a genetic diathesis effect. The most prominent network level disruption in this context is the dysconnectivity among nodes of the default-mode and salience networks. Despite their predisposition, unaffected siblings show a pattern of resilience in the emergent connectomic topology.

Board #19

Functional Glutamate Measurements in First-Episode Schizophrenia Using 7-Tesla Magnetic Resonance spectroscopy

Peter Jeon, Michael MacKinley, Kara Dempster, Lena Palaniyappan, & Jean Théberge

Recent findings that glutamate N-methyl-D-Aspartate receptor antagonists are able to replicate the full range of schizophrenia symptoms show promise of glutamate research explaining the mechanisms behind schizophrenia symptoms. This research proposes dynamic glutamate measurements may be a more sensitive early marker in schizophrenia treatment outcome and aims to show abnormal glutamate dynamics in individuals with first-episode schizophrenia compared to healthy controls. Glutamate dynamics were measured using a 7-Tesla proton functional magnetic resonance spectroscopy (fMRS) semi-LASER pulse sequence in the dorsal anterior cingulate cortex for 14 first-episode schizophrenia and 16 healthy control participants. The Stroop task performed during the fMRS data acquisition consisted of rest, active, and recovery periods. The mean Cramer-Rao Lower Bounds of glutamate level quantifications were $3.23 \pm 0.99\%$ for healthy controls and $3.41 \pm 0.81\%$ for first-episode subjects. Although significance was not observed between activation and rest, or during activation and recovery periods, a strong trend was seen toward increasing glutamate levels upon activation and decrease of glutamate levels upon removal of Stroop stimulus. We also noted that first-episode subjects had more reduced levels of glutamate during recovery periods. Increasing sample size will help reduce variation within each period and is expected to contribute to seeing significance between each period of the fMRS paradigm. Results from this work will help develop approaches to identify patients who will experience poor outcome and/or treatment resistance early in the course of their illness so that alternative to standard treatment algorithms can be considered. Stratification of patients entering a drug trial is another foreseeable application.

Board #20

Aberrant Myelination of the Cingulum Bundle in Patients with Schizophrenia: A 7T MTI/DTI Study

Lena Palaniyappan, Ali Radaideh, Olivier Mouglin, Penny Gowland, & Peter Liddle

Background: Structural integrity of the anterior cingulum has been repeatedly observed to be abnormal in patients with schizophrenia. Findings to date have been obtained using diffusion tensor imaging (DTI), abnormal tract-specific changes in myelin content can be more directly inferred by combining multiple modalities of imaging such as (DTI) and magnetization transfer imaging (MTI) in parallel. **Methods:** We used ultra-high resolution (7 Tesla) MTI in 17 patients with schizophrenia and 20 controls, to evaluate the macromolecular content of the brain. Immediately after, we also obtained a 3 Tesla (DTI) and undertook probabilistic tractography using FSL software to delineate anterior cingulum bilaterally. Unpaired t tests were used for group comparisons along with estimates of Cohen's d or Hedge's g for effect sizes. **Results:** Patients had a significant reduction in magnetization transfer ratio (MTR) in right (Cohen's $d = 0.91$, $p = 0.007$) but not left ($d = 0.03$, $p = 0.92$) cingulum bundle. There was a trend level reduction in fractional anisotropy of right ($d = 0.60$, $p = 0.07$) but not left ($d = 0.47$, $p = 0.17$) cingulum bundle. We did not find any significant relationship between the 3 major symptom dimensions of schizophrenia (Reality Distortion, Disorganization, Psychomotor Poverty) and Cingulum MTR. Patients with Schneiderian delusions showed a significantly reduced MTR of left cingulum compared to 12 patients with no Schneiderian delusions (Hedges' $g = 1.36$, $p = 0.02$). **Discussion:** Findings suggest that MTR changes in anterior cingulum, resulting from either dysmyelination or neuroinflammation, is present in clinically stable patients with schizophrenia despite their medicated status. We lacked sufficient power to detect association between MTR changes of cingulum and symptom dimensions. Nevertheless, our results suggest that MTR changes are of higher magnitude than changes in fractional anisotropy, indicating the sensitivity of measuring myelination as a biological marker of white matter aberrations in schizophrenia.

Board #21

Deviant Cortical Sulcation Related to Schizophrenia, but Not Cognitive deficits, Likely Predate Brain Development in the Second Trimester

Lena Palaniyappan

Background: Gestational disruptions are linked to the risk of schizophrenia; but in most cases, there is a lack of a clear history or observable anomaly indicating that the disruptions are likely to be subtle (Murray et al., 2017). The time-locked development of cortical sulci in a human embryo is highly sensitive to developmental disruptions (Chi et al., 1977). We can retrospectively infer the likely timing of embryonic/fetal disruption in schizophrenia by studying the structure of major cortical sulci that represent lobar development in adults with schizophrenia. **Methods:** Anatomical T1 MRI scans from a publicly available dataset (COBRE) of 68 patients with schizophrenia and 72 controls were used to evaluate the sulcal depth. 5 major primary sulci that are invariable, representing lobar development (calcarine sulcus, superior temporal sulcus, superior frontal sulcus, interparietal sulcus and inferior frontal sulcus) with formation representing distinct developmental periods (16, 23, 25, 26 and 28 weeks respectively) were chosen. Sulcal depth was measured using Morphologist interface of BrainVISA 4.5 (<http://brainvisa.info/>). **Results:** A repeated measure ANOVA with 5 sulci and 2 hemispheres as within-subject factors and gender, age and intracranial volume as covariates revealed a significant between-subjects effect for diagnosis ($F[1,134]=14.8$, $p=0.0002$). Gender ($F[1,134]=7.4$, $p=0.007$) and age ($F[1,134]=4.5$, $p=0.035$) also had significant effect in the model. Parameter estimates revealed a significant effect of diagnosis (Controls>Patients) for left superior temporal ($t=3.2$, $p=0.002$), right superior temporal ($t=2.8$, $p=0.006$), right inferior frontal ($t=2.7$, $p=0.007$) and left calcarine ($t=2.2$, $p=0.03$) sulci. The depth of the superior frontal sulcus was the only predictor of the variation in the cognitive score ($F[1,54]=8.7$, $p=0.005$). **Discussion:** The above findings suggest that the gestational cortical disruption underlying schizophrenia is likely to predate, if not, coincide with the appearance of calcarine sulcus (early second trimester) and affects frontal, temporal and occipital lobes. Nevertheless, the burden of cognitive deficits may relate specifically to aberrant superior frontal development occurring in late second trimester.

Board #22

Progressive Post-Onset Reorganisation of MRI-Derived Cortical Thickness in Adolescents with Schizophrenia

Lena Palaniyappan, & Anthony James

Background: Cortical thickness changes continuously throughout healthy adolescence reflecting ongoing maturation. In schizophrenia, distributed abnormalities in cortical maturation are suspected. To study if these distributed changes are a result of a co-ordinated process, we investigated the structural covariance among the longitudinal post-onset thickness changes that occur across various brain regions in adolescent-onset schizophrenia. **Methods:** 19 healthy adolescents and 18 age-matched patients with early-onset schizophrenia were scanned twice (~2 years' interval). The rate of change in cortical thickness was estimated both at lobar and sulcogyral level. Group level structural covariance was studied using a graph theoretical framework. **Results:** At baseline, patients had distributed reduction in cortical thickness compared to controls, though this deviation was abolished over the next 2 years. Occipital cortex had a significantly deviant rate of change in patients (0.8% increase per year) compared to controls (2.5% thinning/year). Patients had a significant increase in covariance of right anterior insula and calcarine sulcus with rest of the brain. **Discussion:** Post-onset structural changes in EOS are not a result of random, mutually independent processes. A spatially interconnected reorganization process, distinct from normal maturational events may underlie these distributed changes.

Board #23

Not a Nuisance Any More: Global fMRI Signal at Rest, Processing Speed and Symptom Severity in Schizophrenia

Annabel Umeh, Peter Liddle, Susan Francis, & Lena Palaniyappan

Background: Before data from resting-state functional magnetic resonance imaging (rs-fMRI) is analyzed, the global signal (GS) - average blood-oxygen level dependent (BOLD) signal across all voxels in the brain is normally removed through global signal regression (GSR). This convention arose in order to control for changes in brain activity that are usually of no interest but may be caused by non-neuronal factors, including changes in respiratory rate, arterial CO₂ levels or cardiac pulsation. However, recent studies have indicated that GS may systematically vary between patients with schizophrenia (SCZ) and healthy controls (HC). **Methods:** 3 Tesla rs-fMRI data was collected from 39 patients, and 34 HC over a 10-minute period of eyes-open rest at TR=2.5s. Scores were obtained from the Signs and Symptoms of Psychotic Illness (SSPI) scale and the Digit Symbol Substitution Test (DSST). Rs-fMRI time-series data were motion-corrected, slice-time corrected, reoriented with structural images, band-pass filtered (0.01-0.1 Hz), scrubbed using ArtRepair for framewise displacement and transformed to MNI space. The variance of GS across time was computed from the entire 10-minutes of acquisition (240-time points). **Results:** Independent-sample t-tests used to compare the temporal variance of GS between HC and the SCZ group yielded no significant differences (mean[sd] = 118.02[57.93]) [$t(71) = -0.36$, $p = .72$]. In the SCZ group there was significant correlation between the total SSPI score reflecting overall illness severity ($\square = -.322$, $p < 0.05$) and the mean GS. This relationship was especially pronounced for the syndrome of Reality Distortion ($\rho = -.344$, $p < 0.05$) and Disorganization ($\rho = -.303$, $p = 0.065$), where higher symptom severity was seen in patients with lower mean GS. Dynamic variance in GS was higher in HC with lower mean DSST ($r = -.364$, $p = 0.04$), but no such relationship was seen in the SCZ group. Notably, when compared to HC (mean[sd] = 57.4[9.40]), patients (mean[sd]=42.4[9.97]) had significantly lower DSST scores [$t(69) = 6.47$, $p < 0.001$]. **Discussion:** The strength of global signal obtained from resting fMRI is related to severity of persisting symptoms of SCZ, whereas the dynamic variance of this signal relates to the speed of processing ability assessed outside the scanner in HC subjects. With emerging evidence relating global signal to cognitive vigilance and overall brain connectivity, our results indicate that global signal is a parameter of interest that should not be automatically discarded in resting fMRI studies of schizophrenia.

Board #24

Off-Label Use of Second Generation Antipsychotics in Primary Care

Nima Gheisarzadeh, Kelly K. Anderson, & Daniel Lizotte

In the past two decades, use of antipsychotics has been increased tremendously worldwide and Second-generation antipsychotics (SGA) have been the main driver of this trend. The extensive use of SGAs in off-label prescriptions raised concerns on SGA's role in clinical practice, especially when post-marketing and other studies revealed serious metabolic and cardiovascular side effects. Using electronic medical record (EMR) data from 18 practices in southwestern Ontario, we investigated the pattern of off-label use of antipsychotic drugs and potential predictors of off-label use in primary care. **Methods:** Our data analysis was mainly descriptive and exploratory. We analyzed those who were on SGAs for unapproved indications and the results were stratified based on age groups and sex. A logistic regression model was constructed to identify predictors of off-label use of antipsychotics. **Results and Discussion:** Findings from preliminary analysis indicates that SGAs are prescribed remarkably more frequently for off-label indications rather than on-label ones in primary care. This will raise the concern that in the lack of robust evidence, off-label prescribing would potentially put a broader patient population at risk of adverse events while the benefit may not be realized. While our further analysis reveals more on the patterns of SGAs off-label prescribing, our current findings shows a need for promoting evidence-based prescribing of SGAs as well as providing more evidence on use of SGAs in off-label indications. Results will be finalized and presented at the London Joint Mental Health Research Day.

Board #25

Examining the Relationship between Internal Drivers of Motivation and Functional Outcomes in a Cross-Section of Individuals with Psychotic Disorders

Sahana Kukan, Ross M.G. Norman, Arlene G. MacDougall, & Kelly K. Anderson

Introduction: Impaired functional capacity is recognized as a major barrier to recovery among people with primary psychotic disorders. Functional capacity is often impaired in both acute and non-acute phases of psychotic illness, with functional remission being achieved by a minority of people. Research on the role of negative symptomatology on functioning has been growing, with avolition (lack of motivation) being identified as highly correlated with functional outcomes. There is a need for more nuanced research on the drivers of motivation and their relationship to functional outcome to inform the observed relationship between avolition and impaired functioning. **Study Objective:** To examine the relationship between drivers of motivation and functional outcomes among people with primary psychotic disorders. **Methods:** This cross-sectional study uses data obtained from the Prevention and Early Intervention Program for Psychoses (PEPP) in London, Ontario. 105 current and former clients of PEPP were assessed using validated measures of drivers of motivation. We estimated the relationship between these indicators of motivation and functional capacity, measured using a global index score of functioning and specific functioning sub-domains, adjusting for various demographic, social, and clinical variables using a series of multivariable linear regression model. **Results:** Multivariate analyses of the relationship between the indicators of motivation and functional outcomes are currently in progress and will be available for presentation. **Conclusions:** Given that functional impairments are common and persistent across the psychosis spectrum, these findings may result in the identification of potential treatment targets for functional recovery, improving both patient outcomes and quality of life.

Board #26

The Burden of Mood and Anxiety Disorders Among Immigrant and Refugee Populations in Canada: A Systematic Review

Jordan Edwards, Malini Hu, Amardeep Thind, Saverio Stranges, Maria Chiu, & Kelly K. Anderson

Introduction: Compared to long-term residents, rates of mood and anxiety disorders are highly variable among migrant populations, as they are influenced by the socio-political context. While this topic has been explored in various Canadian settings, a comprehensive synthesis of the literature does not exist. We aim to fill this gap by conducting a systematic review to synthesize and contextualize available Canadian research on this topic. **Materials and Methods:** We will search all relevant databases to gather a Canadian perspective including Pubmed, EMBASE, PsychINFO, in addition to performing citation, reference, and grey literature searches. Searches will be conducted using controlled vocabulary and keyword variations of the concepts: Mood, Anxiety, Immigrant, Refugee, and Canada. We will include studies that investigate either or both mood and anxiety disorders in immigrant and refugee populations in a Canadian setting. We will include all quantitative and population based analyses that include either a prevalence or incidence estimate, as well as research that explores risk factors for either a mood or anxiety disorder in these populations. Critical appraisal will be conducted using the Downs and Black critical appraisal tool. **Results:** Data analysis and results will be completed prior to LJMHRD. **Discussion and Conclusions:** Improving the mental health services and outcomes for Canada's diverse population is a strategic direction in the national mental health strategy from the Mental Health Commission of Canada. This systematic review will be the first to explore mood and anxiety disorders in migrant populations in Canadian settings and will provide a basis for future research on this topic.

Board #27

'Such a Scary Place for a Kid': The Impact of Adolescent Hospitalization on Adult Psychiatric Units

Samantha McRae, Kathy Speechley, G. Y. Zou, & Kelly K. Anderson

Introduction/Objectives: Psychiatric hospitalizations are increasing among adolescents. This growing demand places a burden on hospitals, which may lead to accommodating youth in an adult inpatient psychiatry unit (AIPU). Provincial organizations have recommended against this practice due to risks to patients and the potential to exacerbate symptoms. However, there is currently a lack of information on the prevalence of adolescents admitted onto AIPUs and associated impacts. The purpose of this study is to explore the prevalence, determinants, and outcomes related to the hospitalization of adolescents aged 12 to 17 years on AIPUs in Ontario. **Methods:** A cohort of adolescents (ages 12-17) who have experienced an inpatient psychiatric admission in Ontario between 2007 and 2011 was compiled using two health administrative databases. The cohort was further divided into two groups for comparison: (i) adolescents admitted onto a pediatric psychiatry unit or other non-psychiatry unit and (ii) adolescents admitted onto a AIPUs. Statistical methods will include prevalence ratios, linear regression models and Modified Poisson regression models. **Results:** There were 29,410 adolescent inpatient admissions over the study period. Of these admissions, 30.3% occurred in AIPUs. Data analysis is currently in progress and the complete results will be available for the conference. **Discussion/Conclusions:** Determining the extent to which adolescents are hospitalized in AIPUs in Ontario and associated impacts will help fill a critical gap in the literature. Youth mental health is a strategic target area, and this information can be used to assist in resource allocation to provide appropriate access to care for adolescents.

Board #28

Igniting the MINDS (Mental Health INcubator for Disruptive Solutions) of London-Middlesex

Arlene MacDougall, Abe Oudshoorn, Ross Norman, Eugenia Canas, Richard Booth, Kelly K. Anderson, Dan Lizotte, Kaitlin Saxton, Andre Vashist, Jill Lynch, Alec Cook, Scarlett Davidson, Jessie House, Lisa Bitacola, Jay Macdonald, Chris Babcock, & Lina Bowden

Background: Mental health and addiction issues among Transitional Age Youth (TAY) are increasing and alarming. Efforts to address this problem are often frustrated because the complex set of health care and broader community influences have not been integrated into the strategies and processes for change. We propose to establish and evaluate MINDS of London-Middlesex - a social innovation lab (SIL) that combines social (diverse stakeholders acting collaboratively using a Collective Impact (CI) framework), experimental and systemic (address root causes) elements with design and systems thinking tools. MINDS involve an iterative process of sense-making, ideation, prototyping, field testing and evaluation to develop effective solutions that can be scaled to achieve widespread impact for the mental health of TAY within our community. **Objectives:** These are organized into 2 clusters of activities: 1) MINDS social innovation lab/collective impact processes including mapping out the complex system drivers and determinants, development of meaningful metrics and prototyping and field testing novel solutions, and 2) evaluating these processes including understanding the necessary components and impacts of the SIL and CI approaches and determining the ways to most effectively engage and empower TAY throughout the process of MINDS to advance systems integration. **Methods:** For Cluster 1, methods will follow best practices in social innovation research, such as journey mapping and services blueprinting. Cluster 2 objectives will be addressed through a Youth Participatory Action Research methodology. **Results:** Forthcoming. **Implications:** To the best of our knowledge, this is the first SIL focused on mental health to be established in Canada.

Board #29

Recovery Through Creative Arts Program: A Program Evaluation

Arlene G. MacDougall, Rahel Eynan, Catherine McInnes, Andrea Halwa, Elizabeth Price, Kaitlin Saxton, Emily Lu, & Jennifer Speziale

Background: Creative arts has been recognized as an important component in the recovery from serious mental illness. The new Recovery Through Creative Arts program provides four creative arts drop-in sessions per week for people admitted to an inpatient unit at Parkwood Institute Mental Health Care: music (Belong to Song), drama, visual arts and creative writing/spoken word. All sessions are facilitated by community artists from the London Artist in Residence program. Music is co-facilitated by a peer facilitator. **Objectives:** 1) To understand the process of implementation of the Recovery Through Creative Arts program including program reach, resources used, acceptability, and facilitators and barriers. 2) To explore the potential effects on patient participants, hospital staff and hospital management, and artist facilitators. **Methods:** Focus groups and semi-structured interviews with patient participants, program facilitators, core clinical support staff, program leaders and others will be used to evaluate program acceptability (satisfaction, perceived fit, appropriateness), perceived implementation facilitators and barriers, and potential effects of program. Patients will also complete the CSQ-8 to evaluate satisfaction. Groups will be re-assessed at 6 months to capture change over time and further clarify program outcomes and effects. At follow-up, the perspectives from hospital management, and the Patient and Family Advisory Council will also be sought. Thematic analyses of interview data will be conducted. Program reach will be evaluated by collecting attendance on an ongoing weekly basis. **Results:** Forthcoming. **Implications:** Data from this research will inform plans for subsequent phases focusing on developing a sustainable model including demonstration of effectiveness and impact.

Board #30

Extending the CREATE Psychosocial Rehabilitation Toolkit to Kenyan Mental Healthcare Settings: A Feasibility Study

Regina Casey, Elizabeth Price, Mitchell Canes, Terry Krupa, Rosemary Lysaght, Ruth Ruhara, Richelle Bird, Marlene Janzen Le Ber, Victoria Mutiso, Sean Kidd, David Ndeti, & Arlene MacDougall

Background: There is a lack of training, expertise and uptake of psychosocial rehabilitation (PSR) approaches in Kenya. To address these gaps, CREATE developed a low-cost, culturally sensitive, evidence-based Psychosocial Rehabilitation (PSR) Toolkit that includes psychoeducation and self-management strategies. The Toolkit is a manualized group intervention delivered by a trained health care professional and peer co-facilitator. This study is evaluating the implementation of the PSR Toolkit in the formal mental health care setting in Kenya. **Objectives:** (1) Assess the feasibility of delivering the PSR Toolkit in the formal mental healthcare setting in Kenya. (2) Evaluate the effect of the PSR Toolkit group intervention on patients' and their family members' attitudes towards recovery, patients' illness management and recovery, quality of life, and the degree to which patients and their families perceive their hospital setting is delivering recovery-oriented care. **Methods:** A total of 24 PWSMI and their family members will participate in three separate PSR Toolkit groups at the Machakos District Hospital or the affiliated outreach clinic. Pre-post intervention tests and follow-up focus groups with patients, families and facilitators will be used to assess patient-related outcomes and perceived impacts of the Toolkit, as well as its implementation. Qualitative analysis will involve a constructivism–interpretivism approach. **Results:** Post-assessment is currently being collected from the third and final PSR Toolkit group. Quantitative and qualitative data will be analyzed and presented. **Implications:** The PSR Toolkit aims to build capacity with Kenyan mental healthcare providers and PWSMI in recovery-oriented PSR practices where little such capacity currently exists.

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