



UBC DEPARTMENT OF PSYCHIATRY

2020 VIRTUAL RESEARCH DAY

ABSTRACT BOOKLET

Thursday October 15, 2020



THE UNIVERSITY OF BRITISH COLUMBIA

Department of Psychiatry
Faculty of Medicine

Welcome to the 2020 UBC Psychiatry Virtual Research Day

Attendee Registration

Register at https://ubc.ca/1.qualtrics.com/jfe/form/SV_0CUmr3RXK8HsQhT to get to Zoom Webinar ID and Passcode.

Presenter Q&As

Go to <https://www.sli.do/> and enter Event Code #80995:

- Click on the “Q&A” icon and submit your questions during the talk
- The moderator will deliver submitted questions to the presenter following the talk, as time permits
- During the Lightning Talks, please identify the speaker to whom your question is addressed

ePoster Gallery

Go to <https://psychiatry.ubc.ca/research/2020-ubc-psychiatry-virtual-research-day/eposter-gallery/> to view the ePoster Gallery (open for viewing on Tuesday October 13).

Lightning Talk and Poster Awards

Go to <https://www.sli.do/> and enter Event Code #80995:

- Click on the “Polls” icon and submit your vote for the Lightning Talk and Poster Awards
- Award winners will be announced during the Closing Remarks

Event Program

- 8.30am - 9.00am** **Attendee Sign-In on Zoom**
- 9.00am - 9.15am** **Introduction to Research Day**
Dr. Lakshmi Yatham, Dr. Sophia Frangou, Dr. Tim Murphy, Dr. Trisha Chakrabarty
- 9.15am - 9.45am** **Dr. Erin Michalak, Professor** (Moderator: Dr. Sophia Frangou)
Patient engagement in mental health research: turning tides or sea change?
- 9.45am - 10.30am** **Lightning Talks: First Set** (Moderator: Dr. Trisha Chakrabarty)
- Marya Aman**
Prevalence of Pediatric Acute-Onset Neuropsychiatric Syndrome in Child and Adolescent Eating Disorders
 - Catriona Hippman**
How do women decide whether to take antidepressants in pregnancy? A woman-centered, constructivist grounded theory of decision making
 - Emma Morton:**
Impacts on Quality of Life with Escitalopram Monotherapy and Aripiprazole Augmentation in Patients with Major Depressive Disorder: A CAN-BIND Study Report
 - John-Jose Nunez:**
Replication of Machine-Learning Analyses to Predict Treatment Outcome with Antidepressant Medications in Patients with Major Depressive Disorder
 - Melissa Woodward:**
Medial Temporal Lobe Cortical Changes In Response To Exercise Interventions In Women With Early Psychosis: A Randomized Controlled Trial
- 10.30am - 10.45am** **15-Minute Break**
- 10.45am - 11.30am** **Lightning Talks: Second Set** (Moderator: Dr. Tim Murphy)
- Elizabeth Gregory:**
Can repetitive transcranial magnetic stimulation reduce cognitive dysfunction in treatment-resistant depression?
 - Laura Labonté:**
A role for overdose-prevention mobile application use in individuals with a previous history of opioid overdose
 - Shawna Narayan:**
Ethnic Minorities' Recommendations For E-Mental Resources
 - Katerina Rnic:**
Discrepancies between objective and subjective cognition in Major Depressive Disorder: A CAN-BIND-1 clinical trial report
 - Robert Stowe:**
Metabolic and Genetic Explorations in Refractory Schizophrenia Project – findings from whole genome and RNA sequencing in the first 10 participants
 - Brittany Zhang:**
Chronic intermittent theta burst stimulation (iTBS) effects on adult hippocampal neurogenesis in males and females

Event Program (continued)

- 11.30am - 12.00pm** **Dr. Will Panenka, Associate Professor** (Moderator: Dr. Tim Murphy)
The burden of TBI - common & yet underestimated in vulnerable populations
- 12.00pm - 1.00pm** **Poster Gallery Viewing & Voting Session**
- 1.00pm - 1.30pm** **Dr. Trisha Chakrabarty, Assistant Professor** (Moderator: Dr. Sophia Frangou)
Exploring the potential of virtual reality in mental health care
- 1.30pm - 2.30pm** **Special COVID-19 Session:** (Moderator: Dr. Sophia Frangou)
- Dr. Steven Taylor, Professor**
 The Psychology of COVID-19
- Dr. Daniel Vigo, Assistant Professor**
 Mental health on campus: COVID-19 and beyond
- Dr. Julia Raudzus, Clinical Assistant Professor &**
 Dr. Grant Millar, Clinical Instructor
 Meeting the mental health needs of COVID-19 survivors
- 2.30pm - 3.00pm** **Poster & Lightning Talk Awards / Closing Remarks**
 Dr. Lakshmi Yatham

Table of Contents

BASIC SCIENCE ABSTRACTS

1. Judy Cheng, Todd Woodward, <i>FMRI ANALYSIS OF FUNCTIONAL CONNECTIVITY INVOLVED IN EVIDENCE INTEGRATION AND DELUSIONAL IDEATION</i>	11
2. Sara Harvey, Miguel Jose, Edwln Chow, Donna Monbourquette, Kawkab Mahmud, Trisha Chakrabarty, <i>VIRTUAL REALITY COGNITIVE ASSESSMENT TOOLS IN MAJOR PSYCHIATRIC DISORDERS: A NARRATIVE SYSTEMATIC REVIEW</i>	12
3. Jessica Khangura, Linda Chen, Sofia Elckhoff, Nicole Sanford, Todd S. Woodward, <i>ANALYSIS OF BRAIN NETWORKS EVOKED DURING AN EXECUTIVE FUNCTION TASK IN SCHIZOPHRENIA PATIENTS</i>	13
4. Ellen T. Koch, Marja Sepers, Lynn A. Raymond, <i>IN VIVO STRIATAL NEURAL ACTIVITY DURING MOTOR SKILL LEARNING IN HUNTINGTON'S DISEASE MICE</i>	14
5. T. J. Philippe, J. Toews, L. Bao, M. Dordevic, G. L. Hammond, V. Vlau, <i>SEX DIFFERENCES IN BASAL AND RESTRAINT STRESS RELATED CORE BODY TEMPERATURE IN THE LONG EVANS AND SPRAGUE DAWLEY RAT</i>	15
6. Nicole Sanford, Todd S. Woodward, <i>FUNCTIONAL DELINEATION OF PREFRONTAL NETWORKS UNDERLYING WORKING MEMORY IN SCHIZOPHRENIA: A CROSS-DATASET EXAMINATION</i>	16
7. Jessica M. Sevick, Naznin Virji-Babul, William J. Panenka, <i>ALTERATIONS IN RESTING STATE FUNCTIONAL CONNECTIVITY IN PATIENTS WITH CHRONIC TRAUMATIC BRAIN INJURY FOLLOWING A 3-MONTH PILOT COGNITIVE INTERVENTION PROGRAM</i>	17
8. Ahmed Shaaban, Todd S. Woodward, Chantal Percival, <i>CANONICAL CORRELATIONS WITHIN AND BETWEEN FUNCTIONAL BRAIN NETWORKS</i>	18
9. Sadlq Vall, Donna Monbourquette, Sara Harvey, Kawkab Mahmud, Miguel Jose, Trisha Chakrabarty, <i>VIRTUAL REALITY INTERVENTIONS TO IMPROVE COGNITIVE FUNCTIONING IN MAJOR PSYCHIATRIC DISORDERS: A NARRATIVE SYSTEMATIC REVIEW</i>	19
10. Dongsheng Xlao, Pankaj Gupta, Brandon Forsys, Timothy H. Murphy, <i>REAL-TIME FOREPAW MOVEMENT CODED AUDITORY FEEDBACK PROMOTES MOTOR SKILL LEARNING IN MICE</i>	20
11. Yuhao Yan, Dongsheng Xlao, Tim Murphy, <i>MAPPING FUNCTIONAL CONNECTIVITY BETWEEN MOUSE DORSAL CORTEX AND CEREBELLUM</i>	21
12. Tian Rui Zhang, Baran Askari, Aydan Kesici, Evelyn Guilherme, Fidel Vila-Rodriguez, Jason Snyder, <i>CHRONIC INTERMITTENT THETA BURST STIMULATION (ITBS) EFFECTS ON ADULT HIPPOCAMPAL NEUROGENESIS IN MALES AND FEMALES ...</i>	22

TRANSLATIONAL RESEARCH ABSTRACTS

13. Haroon Ahmad, Jonathan Ramirez, Richard Munthali, Brian Rush, Daniel Vigo, <i>COMORBIDITY ADJUSTMENTS FOR MENTAL HEALTH AND SUBSTANCE USE NEEDS BASED PLANNING</i>	23
14. Saman Fouladirad, Linda Chen, Chantal Percival, Jessica Khangura, Steffen Moritz, Mahesh Menon, Todd S. Woodward, <i>FUNCTIONAL BRAIN NETWORKS INVOLVED IN HYPERSALIENCE OF EVIDENCE-HYPOTHESIS MATCHES IN PATIENTS WITH DELUSIONS AND SCHIZOPHRENIA</i>	24
15. Karanvir Gill, Walter Sena, Chantal Percival, Abhijit Chinchani, Nicole Sanford, Susan Rossell, Irls Sommer, Todd Woodward, <i>BRAIN NETWORKS UNDERLYING HALLUCINATIONS IN SCHIZOPHRENIA: A MULTISITE HALLUCINATIONS EXPERIENCE STUDY</i>	25
16. Catherine Hsu, Li Shao, Clare L. Beasley, <i>DIFFERING LEVELS OF UBIQUITINATED PROTEINS AND GENE EXPRESSION IN THE PREFRONTAL CORTEX IN SCHIZOPHRENIA AND BIPOLAR DISORDER</i>	26
17. Tristan J. Hynes, Kelly M. Hrelja, Chloe S. Chernoff, Lucas X. Calderhead, Sukhbir Kaur, & Catharine A. Winstanley, <i>CHEMOGENETIC STIMULATION OF VTA DOPAMINE NEURONS CAUSES CUMULATIVE DEFICITS IN DECISION MAKING AND ENHANCES ADDICTION VULNERABILITY</i>	27
18. Laura Jones, Daniel Vigo, <i>THE IMPACT OF THE COVID-19 PANDEMIC ON STUDENT MENTAL HEALTH: INFORMING TARGETED OUTREACH</i>	28
19. Laura Lapadat, Anusha Balram, Joanna Cheek, Eugenia Canas, Andrea Paquette, Anna Graham, Jeanne-Michelle Lavigne, Alan Cundall, Julia Wilkes, Cara Moore, Kelsey Johansen, Erin E. Michalak, <i>THE BIPOLAR YOUTH ACTION PROJECT: CONDUCTING COMMUNITY-BASED PARTICIPATORY RESEARCH WITH YOUTH WITH BIPOLAR DISORDER</i>	29
20. David Long, Daniel Blumberger, Zafiris J. Daskalakis, Jonathan Downar, Fidel Vila-Rodriguez, <i>LEFT-HANDED INDIVIDUALS WITH TREATMENT-RESISTANT DEPRESSION SIMILAR IN RESPONSE TO INTERMITTENT THETA-BURST AND 10 HZ REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION</i>	30
21. Jill K. Murphy, Erin E. Michalak, Hannah Burton, Heather Colquhoun, Jing Liu, Xiaorui Yang, Tao Yang, Xing Wang, Yifeng Xu, Ping Zhang, Yousong Su, Jia Huang, Leping Huang, Yue Fei, Lu Yang, Tianli Liu, Raymond W. Lam, Jun Chen, <i>BARRIERS AND FACILITATORS TO IMPLEMENTING MEASUREMENT-BASED CARE FOR DEPRESSION IN SHANGHAI, CHINA: A SITUATIONAL ANALYSIS</i>	31
22. Robert Stowe, Guillaume Poirier-Morency, Sanja Rogic, Adrienne Elbert, Kennedy Borle, Ashley DeGraaf, Clare Beasley, Prescilla Carrion, Pedram Laghael, Jessica Jun, Michelle Lisonek, Natasha Verzosa, Olga Leonova, Clara Westwell-Roper, Mahesh Menon, Ivan Torres, Jennifer Li, Harish Neelekant, Veerle Willaeyts, Randall White, Eric Wong, Joerg Gsponer, William Honer, Andrew J. Mungall, Monica Hrynychak, Agata Minor, Christine Tyson, Patrick Sullivan, Paul Pavlidis, <i>METABOLIC AND GENETIC EXPLORATIONS IN REFRACTORY SCHIZOPHRENIA PROJECT – FINDINGS FROM WHOLE GENOME AND RNA SEQUENCING IN THE FIRST 10 PARTICIPANTS</i>	32

CLINICAL RESEARCH ABSTRACTS

23. Kelsey Alexander, Tonia Nicholls, <i>THE IMPORTANCE OF TRAUMA INFORMED PRACTICE IN A FORENSIC PSYCHIATRIC INPATIENT POPULATION: EXPLORING ADVERSE CHILDHOOD EXPERIENCES AND TRAUMA</i>	33
24. Marya Aman, Jennifer Coelho, Boyee Lin, Cynthia Lu, Shannon Zaltsoff, John Best, S. Evelyn Stewart, <i>PREVALENCE OF PEDIATRIC ACUTE-ONSET NEUROPSYCHIATRIC SYNDROME IN CHILD AND ADOLESCENT EATING DISORDERS</i>	34
25. Gabrielle B. Chartier, Leona Adams, David Kealy, <i>EXPLORING THERAPEUTIC FACTORS IN EMERGENCY CONSULTATION FOR SUICIDALITY – A QUALITATIVE INQUIRY</i>	35
26. Julla Blake, John Best, Fern Jaspers-Fayer, Janet Mah, S. Evelyn Stewart, <i>AN EXPLORATORY STUDY OF PHYSICAL ACTIVITY IN PEDIATRIC OCD AND HEALTHY CONTROLS</i>	36
27. Arlana Cahn, Trisha Chakrabarty, Kam Keramatlan, Lakshmi Yatham, <i>LONGITUDINAL GREY MATTER CHANGES FOLLOWING FIRST EPISODE MANIA: A SYSTEMATIC REVIEW</i>	37
28. Brian Y Cho, Todd S. Woodward, <i>NEUROSTIMULATION TECHNIQUES INCLUDING RTMS, TDCS, AND TACS FOR TREATING AUDITORY HALLUCINATION IN SCHIZOPHRENIA: A SYSTEMATIC REVIEW</i>	38
29. Lianne Cho, William Honer, <i>PSYCHOMETRIC PROPERTIES AND CORRELATES OF THE BECK DEPRESSION INVENTORY IN A PRECARIOUSLY-HOUSED SAMPLE</i>	39
30. Charles Chol, Olga Leonova, Miriam Cohen, Ivan Torres, William G. Honer, Randall F. White, <i>BC PSYCHOSIS PROGRAM: OUTCOMES DURING FIVE YEARS OF CLINICAL SERVICE</i>	40
31. Cameron Geddes, Karen Petersen, Tonia Nicholls, <i>PHYSICAL HEALTH PROFILES OF WESTERN CANADIAN FORENSIC PSYCHIATRIC INPATIENTS</i>	41
32. Elizabeth C. Gregory, Ivan J. Torres, Fidel Vila-Rodriguez, <i>CAN REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION REDUCE COGNITIVE DYSFUNCTION IN TREATMENT-RESISTANT DEPRESSION?</i>	42
33. Connor Hawkins, Joan Ng, Verena Langhelmer, <i>PRIAPISM AS A POSSIBLE SIDE EFFECT OF RISPERIDONE: CASE REPORT AND LITERATURE REVIEW</i>	43
34. Catriona Hippman, Lynda G. Balneaves, Deirdre Ryan, Jehannine Austin, <i>HOW DO WOMEN DECIDE WHETHER TO TAKE ANTIDEPRESSANTS IN PREGNANCY? A WOMAN-CENTERED, CONSTRUCTIVIST GROUNDED THEORY OF DECISION MAKING</i>	44
35. Catriona Hippman, Caitlin Slomp, Emily Morris, Rolan Batallones, Angela Inglis, Prescilla Carrion, Ursula Brain, Michelle Higginson, Galen Wright, Lynda G. Balneaves, Deirdre Ryan, Corey Nislow, Collin Ross, Andrea Gaedigk, Tim Oberlander, Jehannine Austin, <i>PHARMACOGENETIC TESTING FOR CYP2D6 AND CYP2C19: CAN IT OFFER GUIDANCE FOR PREGNANT WOMEN TAKING SSRIS?</i>	45

CLINICAL RESEARCH ABSTRACTS

36. Afifa Humaira, Sihaoyu Gao, Nicholas Ainsworth, Lisa Ridgway, Lang Wu, Jonathan Downar, Daniel Blumberger, Zafiris J Daskalakis, Fidel Vila-Rodriguez, <i>PAIN SIDE EFFECT ANALYSIS IN RTMS TREATMENT FOR DEPRESSION: A THREE-D STUDY</i>	46
37. Kamyar Keramatlan, Jalro Vlnícius Pinto, Lakshmi N Yatham, <i>FACTORS ASSOCIATED WITH A DELAY IN THE DIAGNOSIS OF BIPOLAR DISORDER</i>	47
38. Jennifer R. Krentz, Karen L. Petersen, Tonla L. Nicholls, <i>ASSESSING THE NEEDS OF FORENSIC PSYCHIATRIC INPATIENTS USING THE CANFOR</i>	48
39. Labonté, L., Zhang, M., Krausz, M., Schütz, C.G., <i>A ROLE FOR OVERDOSE-PREVENTION MOBILE APPLICATION USE IN INDIVIDUALS WITH A PREVIOUS HISTORY OF OPIOID OVERDOSE</i>	49
40. Stephen Lee-Cheong, Sara Vazirian, Grace Nie, Michelle Zhang, Jane Sun, Vijay Seethapathy, Christian Schütz, <i>DEVELOPMENT OF AN INTEGRATED MULTIDISCIPLINARY INPATIENT TREATMENT PROGRAM FOR PATIENTS WITH SEVERE CONCURRENT DISORDERS: THE BURNABY CENTRE FOR MENTAL HEALTH AND ADDICTION</i>	50
41. Stephen Lee-Cheong, Reza Rafizadeh, Vijay Seethapathy, <i>AUDIT OF ANTIPSYCHOTIC PRESCRIBING PRACTICES AT THE BURNABY CENTRE FOR MENTAL HEALTH AND ADDICTION</i>	51
42. Julie Leising, Alasdair M Barr, Ric M Procyshyn, Nicholas J Ainsworth, Randall F White, William Honer, Fidel Vila-Rodriguez <i>HIGH DOSE FLUVOXAMINE AUGMENTATION TO CLOZAPINE IN TREATMENT-RESISTANT PSYCHOSIS</i>	52
43. Callista Leung, Alexander Terpstra, Trisha Chakrabarty, <i>SEX DIFFERENCES IN FACIAL EMOTION LABELLING IN DEPRESSED AND HEALTHY INDIVIDUALS</i>	53
44. Sacha Ludgate, Christian Schütz, <i>THE EFFECTIVENESS OF OXYTOCIN IN THE TREATMENT OF STIMULANT USE DISORDERS: A SYSTEMATIC REVIEW</i>	54
45. Stefanle Montgomery, Karen Dahrl, Kaveh Rayani, Jacqueline Kwok, Dr. Peter Chan, <i>THE USE OF ANTICONVULSANT ADJUNCTS TO TREAT ALCOHOL WITHDRAWAL SYNDROME IN HOSPITALIZED OLDER ADULTS</i>	55
46. Emma Morton, Venkat Bhat, Peter Giacobbe, Wendy Lou, Erin Michalak, Trisha Chakrabarty, Benicio N. Frey, Roumen V. Milev, Daniel J. Müller, Sidney H. Kennedy, Sagar V. Parikh, Susan Rotzinger, Raymond W. Lam, <i>IMPACTS ON QUALITY OF LIFE WITH ESCITALOPRAM MONOTHERAPY AND ARIPIRAZOLE AUGMENTATION IN PATIENTS WITH MAJOR DEPRESSIVE DISORDER: A CAN-BIND STUDY REPORT</i>	56
47. Shawna Narayan, Sharan Sandhu, Hiram Mok, Kendall Ho, David Kealy, <i>ETHNIC MINORITIES' RECOMMENDATIONS FOR E-MENTAL HEALTH RESOURCES</i>	57

CLINICAL RESEARCH ABSTRACTS

48. John-Jose Nunez, Yihan Zhou, Teyden T. Nguyen, Raymond T. Ng, Raymond W.Lam, <i>REPLICATION OF MACHINE-LEARNING ANALYSES TO PREDICT TREATMENT OUTCOME WITH ANTIDEPRESSANT MEDICATIONS IN PATIENTS WITH MAJOR DEPRESSIVE DISORDER</i>	58
49. John-Jose Nunez, Raymond Ng, Alan Bates, <i>PREDICTING THE PSYCHOSOCIAL NEEDS OF CANCER PATIENTS BY USING NATURAL LANGUAGE PROCESSING WITH PHYSICIAN DOCUMENTS</i>	59
50. Chantal Percival, Todd Woodward, <i>CHARACTERIZATION OF A NOVEL TASK-BASED FMRI FUNCTIONAL BRAIN NETWORK: FOCUS ON VISUAL FEATURES</i>	60
51. Katerina Rnlc, Young-Eun Jung, Ivan Torres, Trisha Chakrabarty, Joelle LeMoult, Raymond W. Lam, <i>DISCREPANCIES BETWEEN OBJECTIVE AND SUBJECTIVE COGNITION IN MAJOR DEPRESSIVE DISORDER: A CAN-BIND-1 CLINICAL TRIAL REPORT</i>	61
52. Jillian Rodger, John Best, Zalnab Naqqash, Naomi Roome, S. Evelyn Stewart, <i>PATTERNS OF OCD DIAGNOSIS, ACCOMMODATION AND IMPAIRMENT AMONG FIRST-DEGREE RELATIVES OF CHILDREN WITH OCD</i>	62
53. Naomi Roome, John Best, Zainab Naqqash, Jillian Rodger, S. Evelyn Stewart, <i>SIBLING PERSPECTIVES OF FAMILY FUNCTIONING IN PEDIATRIC OCD</i>	63
54. Omran K. Safi, Andrew C. Li, Anastasia F. Cheng, Christian G. Schuetz, <i>ASSESSING CUE-INDUCED CRAVING IN INDIVIDUALS WITH METHAMPHETAMINE ADDICTION THROUGH PORTABLE EEG TECHNOLOGY</i>	64
55. Gayatri Saraf, Jairo Vinícius Pinto, Arlana Cahn, Adam George White, Elham Shahinfard, Nasim Vafal, Vesna Sossil, Lakshmi N Yatham, <i>DOPAMINE RELEASE DURING PSYCHOLOGICAL STRESS IN EUTHYMIC BIPOLAR I DISORDER: A POSITRON EMISSION TOMOGRAPHY STUDY WITH [11C]-RACLOPRIDE</i>	65
56. Robert R. Selles, Zalnab Naqqash, S. Evelyn Stewart, <i>INTENSIVE COGNITIVE BEHAVIORAL TREATMENT FOR YOUTH WITH OBSESSION COMPULSIVE DISORDER: IDENTIFYING OPTIMAL SETTING AND DOSE</i>	66
57. Robert R. Selles, John R. Best, S. Evelyn Stewart, <i>PROFILES OF FAMILIES AFFECTED BY PEDIATRIC OBSESSIVE - COMPULSIVE DISORDER</i>	67
58. S.J. Stochmanski, E. Gregory, F. Vila-Rodriguez, and V. Hirsch-Reinshagen, <i>POST-MORTEM EVALUATION OF OLDER ADULTS WITH SCHIZOPHRENIA</i>	68
59. Jacob L. Stubbs, Mikaela Correa, Tasha Chan, Kristina Gicas, A. Tallia Vertinsky, Manraj K. Heran, Allen E. Thornton, Wayne Su, Alasdair M. Barr, William G. Honer, William J. Panenka, <i>INCREASED BRAIN ATROPHY IN HOMELESS AND PRECARIOUSLY HOUSED INDIVIDUALS COMPARED TO THE GENERAL POPULATION</i>	69

CLINICAL RESEARCH ABSTRACTS

60. Katarina Tabi, Manreet Bhullar, Barbara Shulman, Jake Locke, Brad Locke, Deidre Ryan, Evelyn Stewart, <i>MINDFULNESS-BASED STRESS REDUCTION (MBSR) FOR FATHERS IN FAMILIES AFFECTED BY POSTPARTUM DEPRESSION AND ANXIETY</i>	70
61. Andy Tal, Allreza Kazemi, Jean Westenberg, Amanda Slaunwhite, Michael Krausz, <i>A PREDICTIVE MODEL FOR OVERDOSE</i>	71
62. Alex R. Terpstra, Rebecca M. Todd, Fidel Villa-Rodriguez, Trisha Chakrabarty, Joelle LeMoult, <i>REWARD SENSITIVITY AND COGNITIVE BIASES DURING ACUTE MAJOR DEPRESSIVE EPISODE WITHIN MAJOR DEPRESSIVE AND BIPOLAR SPECTRUM DISORDERS</i>	72
63. Jean Nicolas Westenberg, Sindi Addorisio, Mostafa Mamdouh Kamel, Amber Hyed, Tala Maragha, Mohammad Abusamak, Cameron Wild, Reinhard Michael Krausz, <i>PERCEIVED UNMET NEEDS AND BARRIERS TO CARE AMONG INDIVIDUALS EXPERIENCING ABSOLUTE HOMELESSNESS IN EDMONTON, CANADA</i>	73
64. Clara Westwell-Roper, Sharon To, Lianne Soller, Edmond S. Chan, S. Evelyn Stewart, <i>THE IMPACT OF COVID-19 ON FOOD-ALLERGY-SPECIFIC ANXIETY: A CROSS-SECTIONAL SURVEY OF PARENTS OF CHILDREN WITH FOOD ALLERGIES</i>	74
65. Clara Westwell-Roper, John Best, Zainab Naqqash, Kourosh Afshar, Andrew MacNeily, S. Evelyn Stewart, <i>BOWEL AND BLADDER DYSFUNCTION IN CHILDREN AND YOUTH WITH OBSESSIVE COMPULSIVE DISORDER</i>	75
66. Clara Westwell-Roper, Zainab Naqqash, Antony Au, Boyee Lin, Cynthia Lu, Li Shao, Clare L. Beasley, S. Evelyn Stewart, <i>SALIVARY BIOMARKERS IN CHILDHOOD-ONSET OBSESSIVE COMPULSIVE DISORDER: PRELIMINARY ANALYSES OF PRO-INFLAMMATORY CYTOKINES</i>	76
67. Melissa L Woodward, Jingxia Lin, Kristina M Gicas, Wayne Su, Christy LM Hul, William G Honer, Eric YH Chen, Donna J Lang, <i>MEDIAL TEMPORAL LOBE CORTICAL CHANGES IN RESPONSE TO EXERCISE INTERVENTIONS IN WOMEN WITH EARLY PSYCHOSIS: A RANDOMIZED CONTROLLED TRIAL</i>	77
68. Evelyn Zastepa, Jennifer Clune, Jane C. Sun, Nickle Mathew, <i>ADAPTATION OF CONTINGENCY MANAGEMENT FOR STIMULANT USE DISORDER DURING THE COVID-19 PANDEMIC</i>	78
69. Michelle Zhang, Jannie Ko, Jennifer Multani, Christian G. Schütz, <i>PROFILE OF FENTANYL USERS AMONG INDIVIDUALS WITH SEVERE CONCURRENT DISORDERS</i>	79
70. Kimla Ziafat, Sindi Addorisio, Fiona Chol, Julia Pel, Jean Nicolas Westenberg, Amber Hyed, Cameron Wild, Michael Krausz, <i>GENDER DIFFERENCES IN USING HARM REDUCTION SERVICES AMONG INDIVIDUALS EXPERIENCING ABSOLUTE HOMELESSNESS IN EDMONTON, CANADA</i>	80
71. Danlah Zumrawi, Brianne Glazier, Olga Leonova, Mahesh Menon, Ric Procyshyn, Randall White, William Honer, Ivan Torres, <i>SUBJECTIVE COGNITIVE FUNCTIONING IN TREATMENT RESISTANT SCHIZOPHRENIA</i>	81

POSTER PRESENTATION

**Judy Cheng¹, Katie M. Lavigne^{1,2}, Chantal M. Percival^{1,2},
Todd Woodward^{1,2}**

¹Department of Psychiatry, Faculty of Medicine, UBC

² BC Mental Health & Addictions Research Institute, PHSA

UNDERGRADUATE
STUDENT

BASIC SCIENCE

ABSTRACT #1

FMRI ANALYSIS OF FUNCTIONAL CONNECTIVITY INVOLVED IN EVIDENCE INTEGRATION AND DELUSIONAL IDEATION

The ability to integrate evidence or alter one's beliefs is a critical cognitive process in response to changing information. A bias against disconfirmatory belief (BADE) is associated with delusions and delusional ideation, and may be linked to delusion maintenance (Woodward et al., 2007; Eisenacher & Zink, 2017; McLean et al., 2017). In previously published work, constrained principal component analysis for fMRI (fMRI-CPCA) was performed on the scans of 41 healthy individuals during an evidence integration task. It was determined that delusional ideation was associated with decreased activity in the cognitive evaluation network (CEN) during the processing of disconfirmatory evidence and increased visual attention network activity during the processing of confirmatory evidence (Lavigne et al., 2020). The current study builds on these findings by classifying the previously extracted components into brain network exemplars and applying canonical correlation analysis (CCA) to observe any relationships between networks. Voxel-based classification methods revealed the recruitment of the traditional default mode (TDMN), external attention/CEN (EXT/CEN) and EXT/one-handed response (EXT/IRESP) networks during the evidence integration task. By comparing hemodynamic response (HDR) plots through CCA, it was determined that the TDMN shares a negative relationship with the EXT/CEN network as well as the EXT/IRESP network. These patterns of activation and deactivation during evidence integration may underlie delusional ideation and further studies are needed to compare these findings to brain network connectivity in the schizophrenia population.

References:

Eisenacher, S. & Zink, M. (2017). Holding on to false beliefs: The bias against disconfirmatory evidence over the course of psychosis. *Journal of Behavior Therapy and Experimental Psychiatry*, 56, 79-89. doi:10.1016/j.jbtep.2016.08.015

Lavigne, K. M., Menon, M., Moritz, S., & Woodward, T. S. (2020). Functional brain networks underlying evidence integration and delusional ideation. *Schizophrenia Research*, 216, 302-309. doi:10.1016/j.schres.2019.11.038

McLean, B. F., Mattiske, J. K., & Balzan, R. P. (2017). Association of the jumping to conclusions and evidence integration biases with delusions in psychosis: A detailed meta-analysis. *Schizophrenia Bulletin*, 43(2), 344-354. doi:10.1093/schbul/sbw056

Woodward, T. S., Buchy, L., Moritz, S., & Liotti, M. (2007). A bias against disconfirmatory evidence is associated with delusion proneness in a nonclinical sample. *Schizophrenia Bulletin*, 33(4), 1023-1028. doi:10.1093/schbul/sbm013

POSTER PRESENTATION

**Sara Harvey¹, Miguel Jose¹, Edwin Chow¹,
Donna Monbourquette¹, Kawkab Mahmud¹,
Trisha Chakrabarty¹**

¹University of British Columbia

GRADUATE
STUDENT

BASIC SCIENCE

ABSTRACT #2

VIRTUAL REALITY COGNITIVE ASSESSMENT TOOLS IN MAJOR PSYCHIATRIC DISORDERS: A NARRATIVE SYSTEMATIC REVIEW

Cognitive dysfunction is associated with major psychiatric disorders. Identifying and assessing cognitive deficits is an important component of treatment and recovery. Traditional paper-and-pencil cognitive tests have generally been used to assess cognition in individuals with major psychiatric disorders; however, the ecological validity of such tests has been questioned as these objective measures often do not reflect patients' real-world functional outcomes. To address the mismatch, virtual reality (VR) mediums have become increasingly prevalent in assessing cognition. We conducted a narrative systematic review to explore construct validity (correlation with performance on traditional cognitive tests), ecological validity (correlation with measures of real-world functioning), and sensitivity (ability to detect cognitive dysfunction) of VR cognitive assessments in adults with major psychiatric disorders. Using PRISMA guidelines, we searched four online databases for related peer-reviewed studies. Titles and abstracts were reviewed twice independently as per the registered protocol inclusion criteria. Finally, 61 papers remained for full text review. Preliminary results suggest that most studies using VR cognitive assessments in major psychiatric disorders evaluate sensitivity, while few report on the ecological and construct validity. Both non-immersive and immersive VR cognitive assessment programs are seemingly effective at detecting differences in cognition between patients and healthy controls. Additionally, VR cognitive assessments have been shown to align with real-world functional outcomes and previously validated cognitive measures. Early findings of this systematic review suggest that VR cognitive assessments can be a sensitive assessment tool in those with psychiatric disorders, and can address the ecological validity concerns of traditional paper-and-pencil tests.

POSTER PRESENTATION

**Jessica Khangura^{1,4}, Linda Chen^{2,4}, Sofia Eickhoff^{3,4},
Nicole Sanford¹, Todd Woodward^{1,4}**

RESEARCH
STAFF

BASIC SCIENCE

ABSTRACT #3

¹Department of Psychiatry, Faculty of Medicine, UBC

² Department of Integrated Sciences, Faculty of Science, UBC

³ Department of Psychiatry & Psychotherapy, Faculty of Natural Sciences, University of Lübeck (Germany)

⁴ BC Mental Health & Addictions Research Institute, PHSA

ANALYSIS OF BRAIN NETWORKS EVOKED DURING AN EXECUTIVE FUNCTION TASK IN SCHIZOPHRENIA PATIENTS

Research Objectives:

Schizophrenia is characterized by extensive cognitive dysfunction. The functional brain networks underlying the task-switching inertia (TSI) task are examined. Furthermore, the brain activity generated by this task is compared between schizophrenia patients (n=23) and healthy controls (n=27).

Methods:

During the TSI, participants were asked to name the font color of the text or read the word presented (i.e. blue, green, red, yellow) during neutral or incongruent task conditions. Functional brain networks were extracted using Constrained Principal Component Analysis for fMRI (fMRI-CPCA). Component loadings were classified by correlating positive and negative loadings in select brain slices with previously established prototype brain networks. Analysis of estimated hemodynamic response (HDR) was performed using mixed model analysis of variance (ANOVA).

Results:

Functional brain networks retrieved include the response network, focus on visual features network, default-mode network, cognitive evaluation network and primary auditory network. No significant differences were observed between healthy controls and schizophrenia patients in the focus on visual features, cognitive evaluation and primary auditory networks. However, significant differences were observed in the response and default-mode network. Specifically, patients did not exhibit suppression of the response network during the word-reading conditions as displayed by healthy controls. Additionally, patients displayed less suppression of the default-mode network than healthy controls across all task conditions.

Conclusions:

Results suggest that in healthy controls the greater suppression of both the response and default-mode network contribute to normal executive function. The lack of this in schizophrenia patients may contribute to some of the impairments in executive function in schizophrenia.

ABSTRACT

Ellen T. Koch¹, Marja Sepers¹, Lynn Raymond¹

¹Neuroscience Program, Department of Psychiatry, Faculty of Medicine, UBC

GRADUATE
STUDENT

BASIC SCIENCE

ABSTRACT #4

IN VIVO STRIATAL NEURAL ACTIVITY DURING MOTOR SKILL LEARNING IN HUNTINGTON'S DISEASE MICE

Huntington's disease (HD) is a genetic neurodegenerative disorder characterized by motor, cognitive and psychiatric deficits. The dorsal striatum is the major site of neurodegeneration in HD, particularly the spiny projection neurons, along with atrophy of other areas including the cortex. HD patients and animal models display deficits in striatum-dependent learning, such as motor skill learning, that worsen with disease progression. The YAC128 mouse model of HD shows progressive deficits in the accelerating rotarod motor learning task as well as anxiety-like behaviours and changes to locomotor activity. These mice also display aberrant cortico-striatal signalling, including changes to glutamate release and deficits in cortico-striatal plasticity. The contribution of these changes in cortico-striatal signalling to motor skill learning deficits in vivo has never been tested. Here, we have combined the accelerating rotarod task with GCaMP7f imaging using fiber photometry to correlate activity in striatal neurons with task performance and motor learning. We also measured GCaMP7f activity of mice freely moving in an open field to assess anxiety-like behaviour and locomotor activity and the corresponding neural activity in striatum. We have found that YAC128 HD mice show changes to GCaMP7f Ca²⁺ events including peak frequency, amplitude, and width during open field and rotarod, and that the correlation between GCaMP7f activity and performance on the rotarod was altered in HD mice. This research contributes to our understanding of the changes to striatal signalling that may contribute to motor, cognitive and psychiatric symptoms in HD.

Funding provided by the Canadian Institutes of Health Research Foundation grant to L.A.R. (Fdn-143210) and a University of British Columbia Four-Year Fellowship award to E.K.

POSTER PRESENTATION

**T. J. Philippe^{1,2}, J. Toews², L. Bao², M. Dordevic²,
G. L. Hammond², V. Viau²**

GRADUATE
STUDENT

BASIC SCIENCE

ABSTRACT #5

¹Department of Psychiatry, Faculty of Medicine, UBC

² Department of Cellular and Physiological Sciences, Faculty of Medicine, UBC

SEX DIFFERENCES IN BASAL AND RESTRAINT STRESS RELATED CORE BODY TEMPERATURE IN THE LONG EVANS AND SPRAGUE DAWLEY RAT.

Rationale:

Studies on core body temperature to stress focus primarily on male subjects; even though females show markedly different core body temperatures, greater sensitivity to stress, and modulations of key neurotransmitter systems (e.g. serotonin (5-HT)). Acute or chronic stress act via the sympathetic nervous system (SNS) to cause hyperthermia. In contrast, repeated exposure to a mild predictable restraint via the hypothalamic-pituitary adrenal axis (HPA) leads to a decline in stress hormones in both males and females. However, our previous findings show that declines in stress hormones correlate to higher hypothermia in response to 8-OH DPAT (5-HT 1A agonist) in male, but not female rats.

Objectives:

We therefore hypothesized that male but not female rats would show lower hyperthermia following repeat restraint, indicative of declines in sympathetic nervous system activity and correlated to higher sensitivity to 8-OH DPAT hypothermia.

Results:

Male rats showed significant declines in hyperthermia and stress hormone levels during repeated restraint exposure in contrast to the first restraint exposure, which correlate to higher sensitivity to 8-OH DPAT hypothermia. Whereas female rats failed to show any thermal habituation. Core body temperature in female rats rose in anticipation of restraint, this anticipatory hyperthermia lasted up to 72hrs after the termination of restraint whereas no anticipatory hyperthermia was observed in male rats.

Conclusion:

These findings demonstrate that males show declines in SNS and HPA in response to a predictable mild stressor. Instead females fail to show SNS habituation, which may be indicative of greater susceptibility to stress.

POSTER PRESENTATION

Nicole Sanford¹, Todd S. Woodward^{1,2}

¹Department of Psychiatry, Faculty of Medicine, UBC

² BC Mental Health and Substance Use Services Research Institute, PHSA

POSTDOCTORAL
FELLOW

BASIC SCIENCE

ABSTRACT #6

FUNCTIONAL DELINEATION OF PREFRONTAL NETWORKS UNDERLYING WORKING MEMORY IN SCHIZOPHRENIA: A CROSS-DATASET EXAMINATION

Research objectives:

Working memory (WM) impairment in schizophrenia substantially impacts functional outcome. Although the dorsolateral prefrontal cortex (dlPFC) has been implicated in such impairment, a more comprehensive examination of brain networks comprising PFC is warranted. The present research used a whole-brain, multi-experiment analysis to delineate task-related networks comprising PFC. Activity was examined in schizophrenia patients across a variety of cognitive demands.

Methods:

100 schizophrenia patients and 102 healthy controls completed one of four fMRI tasks: a verbal WM task, a visuospatial WM task, a set-switching task, and a thought generation task. Task-related networks were identified using multi-experiment constrained principal component analysis for fMRI (fMRI-CPCA). Effects of task conditions and group differences were examined using mixed-model analysis of variance on the task-related activity. Correlations between task performance and brain activity were also examined.

Results:

Four spatially and temporally distinct networks with PFC activation emerged, and were postulated to subserve: (1) internal attention, (2) auditory-motor attention, (3) motor responses, and (4) task energizing. The “energizing” network – engaged during WM encoding, and diminished in patients – was correlated with accuracy in the verbal and visuospatial WM tasks, and with WM capacity measured out-of-scanner. The dlPFC-dominated “internal attention” network exhibited hypoactivity in patients, but was not correlated with WM performance.

Conclusions:

Multi-experiment analysis allowed delineation of PFC-anchored networks across different cognitive constructs. The results suggest that WM deficits in schizophrenia arise from disruption in early task-energization processes. While there was some evidence for disruption in the dlPFC network, such dysfunction may not underlie WM capacity.

POSTER PRESENTATION

Jessica M. Sevick^{1,2}, Naznin Virji-Babul^{3,4}, William J. Panenka^{1,2,5}

¹Department of Psychiatry, Faculty of Medicine, UBC

² British Columbia Mental Health and Substance Use Services Research Institute, PHSA

³Djavad Mowafaghian Centre for Brain Health, UBC

⁴Department of Physical Therapy, Faculty of Medicine, UBC

⁵British Columbia Neuropsychiatry Program

GRADUATE
STUDENT

BASIC SCIENCE

ABSTRACT #7

ALTERATIONS IN RESTING STATE FUNCTIONAL CONNECTIVITY IN PATIENTS WITH CHRONIC TRAUMATIC BRAIN INJURY FOLLOWING A 3-MONTH PILOT COGNITIVE INTERVENTION PROGRAM

Research Objectives:

The objectives of the study were to assess the alterations in resting-state (rs) functional connectivity in patients with TBI compared to controls and to assess the recovery in functional connectivity following an intensive three month cognitive intervention program in patients with TBI.

Methods:

Volunteers with chronic TBI were recruited for the cognitive intervention program (n=9) and healthy controls were recruited based on age and gender (n=9). MRI scans were collected on a 3T scanner. Rs-fMRI data pre-processing and analyses was completed using the FSL's MELODIC tool. Probabilistic independent component analysis (ICA) was used to decompose the data sets into brain networks with temporally correlated resting activity to investigate voxel-wise differences between groups. Group level analyses were completed using FSL's dual regression and randomise tools.

Results:

Group ICA demonstrated significant differences in voxel-wise connectivity between the TBI patients and controls. Decreases in functional connectivity were observed in the regions of the sensory motor (SMN) and dorsal attention (DAN) networks, where-as the enhancements were observed in the visual and default mode networks. Secondary analyses indicated that functional connectivity was significantly increased in the SMN and DAN following the intervention.

Discussion:

There were both positive and negative functional connectivity disturbances in the patients with TBI. This indicates that while there are deficits associated with TBI, there are possible compensatory mechanisms occurring. Following the cognitive program, increases in functional connectivity in networks that had shown reduced connectivity suggests the cognitive rehabilitation induces functional network reorganization in patients with chronic TBI.

Limitations:

Given the small sample size of this pilot study, larger studies are warranted to validate the findings outlined above.

References: 1. Porter, S., Torres, I.J., Panenka, W., Rajwani, Z., Fawcett, D., Hyder, A., and Virji-Babul, N., 2017. Changes in brain-behavior relationships following a 3-month pilot cognitive intervention program for adults with traumatic brain injury. *Heliyon* 3 (2017) e00373. doi: 10.1016/j.heliyon.2017. e00373

ABSTRACT

Ahmed Shaaban, Todd S. Woodward¹, Chantal Percival¹

¹Department of Psychiatry, Faculty of Medicine, UBC

UNDERGRADUATE
STUDENT

BASIC SCIENCE

ABSTRACT #8

CANONICAL CORRELATIONS WITHIN AND BETWEEN FUNCTIONAL BRAIN NETWORKS

Abbreviations:

fMRI functional Magnetic Resonance Imaging
HDR Hemodynamic Response
BOLD Blood Oxygen Level-Dependent
CNoS Cognitive Neuroscience of Schizophrenia
CPCA Constrained Principal Component Analysis
CCA Canonical Correlation Analysis
CV Canonical Variate
PCA Principal Component Analysis
ITP Increase to Peak
RTB Return to Base

Keywords:

Functional magnetic resonance imaging
Functional brain networks
Canonical Correlation Analysis
Multivariate statistics
Working memory
Thought Generation
Lexical Decision

Task-state functional magnetic resonance imaging (fMRI) has long been used to study the human brain. This process yields hemodynamic response (HDR) shapes, which provide insight on the cognitive functions of the various parts of the functional brain. However, relationships within and between the different brain networks remain unexplored. The Cognitive Neuroscience of Schizophrenia lab seeks to survey these relationships by utilizing canonical correlation (a multivariate correlation) to explore how functional brain networks are correlated within different task paradigms. Methods used include Constrained Principal Component Analysis (CPCA), Network Classification, Increase to Peak (ITP)/Return to Base (RTB) analysis, and Canonical Correlation analysis (CCA). We provide insight about relationships within and between active brain networks in previously published work exploring task paradigms including – but not limited to – a working memory task, a thought generating task, and a lexical decision task. The relationships found give us preliminary evidence of the interconnectedness of the brain, and act as a starting point in conducting further analyses about how functional brain networks operate in daily tasks. Correlations between different brain networks in healthy patients will aid in the exploration of how unhealthy brain networks differ from their healthy counterparts, expanding our understanding about the preconceived operationalization of the brain. This may prove useful in the diagnosis, understanding, and treatment of mental illnesses such as schizophrenia and bipolar disorder.

POSTER PRESENTATION

**Sadiq Vali¹, Donna Monbourquette¹, Sara Harvey¹,
Kawkab Mahmud¹, Miguel Jose¹, Trisha Chakrabarty¹**

¹University of British Columbia

UNDERGRADUATE
STUDENT

BASIC SCIENCE

ABSTRACT #9

VIRTUAL REALITY INTERVENTIONS TO IMPROVE COGNITIVE FUNCTIONING IN MAJOR PSYCHIATRIC DISORDERS: A NARRATIVE SYSTEMATIC REVIEW

Cognitive impairment is increasingly recognized as a potential contributor to psychosocial dysfunction in major psychiatric illnesses. However, there are few treatments with proven efficacy for cognitive dysfunction, especially as it translates to improvements in real-world functioning. Virtual Reality (VR) cognitive training, which has shown promise in stroke and traumatic brain injury (TBI), could be one such method. This systematic review aims to assess the efficacy of VR cognitive or functional training in adults between 18 and 65 years old diagnosed with major psychiatric disorders (including mood disorders, schizophrenia /psychotic disorders, anxiety disorders, or substance use disorders). This narrative systematic review was conducted as per PRISMA guidelines. A keyword search of MEDLINE, EMBASE, PsychINFO, and Web of Science was conducted. Papers were selected via a two-step review process (abstracts followed by full text) conducted independently by two co-authors.

The search yielded 13 papers. Disorders examined included schizophrenia (9), substance use (1), anxiety (2) and depression (2). The most commonly targeted cognitive domains were social cognition (6), executive functioning (5), and attention (2). VR cognitive training resulted in cognitive improvements in all but 1 paper. 6 out of 8 papers that compared VR with traditional methods of cognitive/functional training showed greater cognitive improvements in VR versus traditionally delivered training. Our review suggests that there is preliminary evidence supporting the efficacy of VR training in improving cognitive functioning in psychiatric disorders. Future research should investigate long terms effects and measure improvement in real world functionality.

POSTER PRESENTATION

**Dongsheng Xiao¹, Pankaj Gupta¹, Brandon Forys¹,
Timothy H. Murphy¹**

POSTDOCTORAL
FELLOW

BASIC SCIENCE

ABSTRACT #10

¹Kinsmen Laboratory of Neurological Research, Department of Psychiatry, Faculty of Medicine, UBC

REAL-TIME FOREPAW MOVEMENT CODED AUDITORY FEEDBACK PROMOTES MOTOR SKILL LEARNING IN MICE

Operant conditioning-based, closed-loop neuromodulation for regulation of brain activity has shown promise in producing positive behavioral changes associated with functional and structural connectivity. An important question is whether and how augmented sensory feedback can be designed to improve the learning of motor skills. We hypothesize that auditory information coded by learners' actions can enhance learning of a complex motor skills. The ability to track and categorize the movement of specific body parts in real-time opens the possibility of manipulating motor feedback, allowing detailed explorations of the neural basis for behavioral control. We developed a software and hardware system built on DeepLabCut—a robust movement-tracking deep neural network framework—which enables real-time estimation of paw and digit movements of mice at high frame rates and with a high level of accuracy. Using this approach, we demonstrate movement-generated feedback is feasible by triggering visual or auditory stimulation when a user-defined body part movement selectively exceeds a pre-set threshold. This system can autonomously conduct behavior-based learning tasks such as reinforcing the movement of specific body parts selectively with water reward. We then encoded the forepaw movement with different frequencies of sound and trained the mice to learn a more complex motor skill, such as reaching for water. Primary results show that continuous auditory feedback group mice learn the task with significantly fewer trials compared to non-auditory feedback group mice. With the help of advanced learning algorithms and movement-coded auditory feedback, our closed-loop feedback system is effective in improving motor skill learning in mice and helps us explore previously underappreciated avenues of brain disorder therapeutics.

Yuhao Yan¹, Dongsheng Xiao¹, Tim Murphy¹

¹Kinsmen Laboratory of Neurological Research, Department of Psychiatry, Faculty of Medicine, UBC

MAPPING FUNCTIONAL CONNECTIVITY BETWEEN MOUSE DORSAL CORTEX AND CEREBELLUM

Cerebellum has been traditionally considered to mostly contribute to motor coordination and motor learning. However, accumulating evidence from human and animal studies has suggested that cerebellum also plays an important role in cognitive processes such as reward, addiction and social behavior. Conversely, cerebellar injury or abnormal cerebellum development has been linked to several cognitive and neurodevelopmental disorders such as autisms. Despite its emerging role in nonmotor functioning, how the cerebellum integrates the cognitive information from the rest of the brain and more importantly, how it feeds back the processed information to other brain regions remains little understood. Here, we propose to systematically map out the functional connectivity between cerebellar neurons and distinct regions of the cortex by combining wide-field Ca²⁺ imaging and in vivo electrophysiology techniques. To date, we have generated functional maps that revealed cortical regions that are preferentially linked to each cerebellar neuron recorded. We have identified consistent connectivity patterns across neurons in different cerebellar lobules, and categorized these maps using a Gaussian Mixture Model (GMM). We have also characterized how groups of neurons are functionally connected to the cortex by extracting population dynamics of cerebellar neurons from local field potential (LFP). We expect that this line of studies will inform us the underlying rules of neuronal wiring between the cortex and the cerebellum, and shed light on novel roles of cerebellum in cognitive processing and diseases.

LIGHTNING TALK PRESENTATION

Brittany (Tian Rui) Zhang¹, Baran Askari², Aydan Kesici², Evelyn Guilherme¹, Fidel Vila-Rodriguez², Jason Snyder¹

¹Snyder Lab, Department of Psychology, Faculty of Arts, UBC

² NINET Lab, Department of Psychiatry, Faculty of Medicine, UBC

GRADUATE
STUDENT

BASIC SCIENCE

ABSTRACT #12

CHRONIC INTERMITTENT THETA BURST STIMULATION (iTBS) EFFECTS ON ADULT HIPPOCAMPAL NEUROGENESIS IN MALES AND FEMALES

Intermittent theta burst stimulation (iTBS) is a promising form of non-invasive stimulation therapy for a variety of psychiatric illnesses. Currently iTBS is administered similarly across males and females, but it is not known whether iTBS's mechanism of action is affected by patient sex. As hippocampal neurogenesis plays a critical role in stress adaptation and antidepressant course of action, we examined adult hippocampal neurogenesis in male and female mice following a chronic iTBS protocol similar to those used in the clinics. We found that male hippocampal neurogenesis is more responsive to iTBS while female neurogenesis does not vary with stimulation. Male mice had enhanced new neuron survival and a greater population of maturing neurons after iTBS. Female mice had no change or even a slight decrease in neurogenesis markers following iTBS. The difference cannot be accounted for with brain region or age of animal at stimulation. We also examined the morphology of newborn neurons and found that new neurons generated in either sex have a normal morphology, similar to non-stimulated control animals, with the exception of females overall have lower total dendritic length compared to males. Our findings show that iTBS may not affect the neurobiology of male and female individuals similarly and iTBS may need to be optimized to account for these sex differences.

POSTER PRESENTATION

RESIDENT

TRANSLATIONAL
RESEARCH

ABSTRACT #13

**Haroon Ahmad¹, Jonathan Ramirez², Richard Munthali³,
Brian Rush^{2,4}, Daniel Vigo¹**

¹Department of Psychiatry, Faculty of Medicine, UBC

²The Centre for Addiction and Mental Health (CAMH), Toronto, Ontario

³Division of Respiratory Medicine, Faculty of Medicine, UBC

⁴Institute for Mental Health Policy Research, CAMH, Toronto, Ontario

COMORBIDITY ADJUSTMENTS FOR MENTAL HEALTH AND SUBSTANCE USE NEEDS BASED PLANNING

Objective:

Needs Based Planning is a population health approach to resource and service allocation decisions. Disorder prevalence from the literature can be used to ground the estimation of need. However, to obtain an overall estimate of need for a given population, prevalence of mental and substance use disorders (MHSU) cannot be summed, as that would lead to double counting. Overall cases need to be adjusted for comorbidity. This can be done by obtaining disorder specific prevalence and odds ratios of disorder pairings, or by using individual-level survey data by disorder and overall to obtain adjustment factors, among other methods. We determined the total prevalence of MHSU adjusted for comorbidity in British Columbia and compared adjustment factors across several sources.

Method:

Data from the following surveys were accessed: Canadian Community Health Survey (CCHS), the National Institute on Alcohol Abuse and Alcoholism, and the Collaborative Psychiatric Epidemiology Surveys. Odds ratios from CCHS and prevalence from the literature were used to calculate total prevalence of MHSU adjusted for comorbidity. We also established the percentage of co-occurrence across substance use disorders (SUDs), across mental disorders (MDs) and across MHSU combined and compared these across surveys.

Results:

Total MHSU adjusted for comorbidity represents 22.6% of the population. Adjustment factors were concordant across surveys: adjustment factor for comorbid SUDs ranged 0.84-0.85; for comorbid MDs ranged 0.78-0.79; and for any MHSU was 0.93.

Conclusions:

We suggest an approach to calculate total prevalence of MHSU adjusted for comorbidity where adjustment factors obtained were concordant across surveys.

POSTER PRESENTATION

**Linda Chen^{1,2}, Saman Fouladirad^{1,2}, Chantal Percival^{1,4},
Jessica Khangura^{1,4}, Steffen Moritz⁵, Mahesh Menon⁴,
Todd Woodward^{1,4}**

¹BC Mental Health and Substance Use Services Research Institute, PHSA

² Faculty of Science, UBC

³ Faculty of Medicine, UBC

⁴ Department of Psychiatry, Faculty of Medicine, UBC

⁵ Department of Psychiatry and Psychotherapy, University Medical Center Hamburg-Eppendorf, Hamburg, Germany

UNDERGRADUATE
STUDENT

TRANSLATIONAL
RESEARCH

ABSTRACT #14

FUNCTIONAL BRAIN NETWORKS INVOLVED IN HYPERSALIENCE OF EVIDENCE-HYPOTHESIS MATCHES IN PATIENTS WITH DELUSIONS AND SCHIZOPHRENIA

Schizophrenia patients with delusions make decisions based on less evidence than patients without delusions and healthy controls, an effect referred to as the “jumping to conclusions” (JTC) bias. The JTC bias is explained by the hypersalience of evidence-hypothesis matches (EVH matches) account of delusions, which is a tendency to give too much credence to evidence matching currently held ideas. In this study, consisting of healthy controls (n=41), non-delusional (n=41) and delusional (n=29) patients with schizophrenia, the functional brain networks involved in EVH matches were measured through a probabilistic reasoning task. The task involved presentation of two lakes containing different proportions of black and white fish with a central fish in between, pointing to one of the lakes. Participants determined whether the central fish originated from the lake to which it pointed, and an EVH match condition is when there is a match between the colour of the central fish and the colour of the majority of the fish in the indicated lake. A functional brain network involved in visual attention revealed stronger activation for the weak relative to the strong match condition for healthy controls and non-delusional patients, but for the delusional patients, there was no difference between the weak and strong conditions. This suggests that weak match condition showed hypersalience for the delusional patients as it required the same attentional demands as the strong match condition. Understanding the decision-making biases underlying delusions is important for self-awareness and insight, and provides a possible neuromodulation target for treatment of delusions.

POSTER PRESENTATION

**Karanvir Gill, Walter Sena, Chantal Percival², Abhijit Chinchani²,
Nicole Sanford^{1,2}, Susan Rossell^{3,4}, Iris Sommer⁵,
Todd Woodward^{1,2}**

OTHER

TRANSLATIONAL
RESEARCH

ABSTRACT #15

¹BC Mental Health and Addictions Research Institute, PHSA

²Department of Psychiatry, Faculty of Medicine, UBC

³Centre for Mental Health, Faculty of Health, Arts and Design, Swinburne University, Melbourne, Australia

⁴St Vincent's Mental Health, St Vincent's Hospital, Melbourne, Australia

⁵Department of Neuroscience, University Medical Center Groningen, Groningen, The Netherlands

BRAIN NETWORKS UNDERLYING HALLUCINATIONS IN SCHIZOPHRENIA: A MULTISITE HALLUCINATIONS EXPERIENCE STUDY

There is continuing debate regarding the brain networks underlying hallucinations in psychosis. Although there have been a number of reviews and meta-analyses carried out, it has not been demonstrated that the network of activations attributed to the hallucinating brain were not those involved in responding to indicate the start/end of the hallucination. In the current study, we analyzed data from two sites (Melbourne and Groningen) that had collected data as patients were hallucinating in the fMRI scanner, using constrained principal component analysis for fMRI (fMRI-CPCA). The start and end of the hallucinating events were indicated by button press (Melbourne, with listening to sound files as a control) and ball squeeze (Groningen). The principal that we used to separate hallucination-event signal from noise was the requirement for a duration-dependent fMRI signal, by comparing network activation for hallucinating with short duration with those with longer duration. In the first dataset, we retrieved duration-dependent signal for hearing sounds files, but not for hearing voices (Melbourne). In the second dataset, we retrieved duration-dependent signal, but that network matched the response network (Groningen). We concluded that fMRI cannot distinguish between ongoing healthy internal dialogue, and those associated with hallucinations, but instead retrieved the brain network for generating responses indicating the start and end of an experienced hallucination.

POSTER PRESENTATION

Catherine Hsu^{1,2}, Li Shao¹, Clare L. Beasley¹

¹ Department of Psychiatry, Faculty of Medicine, UBC

² Division of Biosciences, University College London

UNDERGRADUATE
STUDENT

TRANSLATIONAL
RESEARCH

ABSTRACT #16

DIFFERING LEVELS OF UBIQUITINATED PROTEINS AND GENE EXPRESSION IN THE PREFRONTAL CORTEX IN SCHIZOPHRENIA AND BIPOLAR DISORDER

Introduction:

The etiology and pathophysiology of schizophrenia (SCZ) and bipolar disorder (BD) are not yet understood. The ubiquitin-proteasome system (UPS) is the principal mechanism for targeted degradation of cellular proteins and influences a diverse array of cellular processes; dysfunction of the UPS may link the disparate abnormalities previously reported in SCZ and BD. Evidence for the involvement of the UPS in these disorders comes primarily from transcriptomic studies, as such, targeted investigation at the protein level may help elucidate the role of the UPS in these disorders. In this study, we quantified levels of free ubiquitin and K48 and K63 ubiquitination in post-mortem brain tissue from SCZ, BD and controls subjects, as well as mRNA expression of ubiquitin genes.

Methods:

Post-mortem dorsolateral prefrontal cortex from 104 subjects (35 control, 35 SCZ, 34 BD) was obtained from the Stanley Medical Research Institute. Levels of free ubiquitin molecules, and K48 and K63-linked ubiquitin chains were quantified by immunoblotting. Expression of the ubiquitin genes UBA, UBB and UBC were quantified by qPCR.

Results:

UBC gene expression was lower in both SCZ and BD relative to controls. Levels of two specific K48 bands were lower in the BD group. Psychotropic medications did not significantly impact UPS measures.

Conclusions:

UBC contributes to the maintenance of cellular ubiquitin levels under stress conditions. Our findings may suggest that protein ubiquitination is dysregulated in SCZ and BD. Further investigation of mechanisms underlying dysregulation of the UPS in SCZ and BD may inform future therapeutic interventions in these disorders.

LIGHTNING TALK PRESENTATION

**Tristan J. Hynes¹, Kelly M. Hrelja¹, Chloe S. Chernoff¹,
Lucas X. Calderhead¹, Sukhbir Kaur¹, Catharine A. Winstanley¹**

¹ Neurosciences, Department of Psychology, Djavad Mowafaghian Centre for Brain Health, UBC

GRADUATE
STUDENT

TRANSLATIONAL
RESEARCH

ABSTRACT #17

CHEMOGENETIC STIMULATION OF VTA DOPAMINE NEURONS CAUSES CUMULATIVE DEFICITS IN DECISION MAKING AND ENHANCES ADDICTION VULNERABILITY

Addiction is a complex affliction, characterized not only by the use of drugs, but also by deficits in cost/benefit decision making. A critical biological factor in the development of addiction is aberrant dopamine (DA) neurotransmission. Biological sex is also an important consideration. Investigating such phenomena is difficult in humans, because of the profound influence the socio-political construct of gender has on behaviour. We therefore sought to longitudinally probe the complex intersection of addiction, decision making, sex, DA neurotransmission by combining our cued rat gambling task (crGT; a rodent assay of cost/benefit decision making) with operant intravenous cocaine self-administration and chemogenetic manipulations of DA neurons.

We infected the VTA DA neurons of female and male rats with an excitatory designer receptor, before training them in our crGT. Prior to daily crGT training sessions, we administered clozapine-N-oxide to activate the receptor and increase the excitability of VTA DA neurons during task performance. Once rats achieved stable crGT performance, we allowed to self-administer intravenous cocaine. We also quantified the psychomotor reactivity to cocaine in a group of otherwise cocaine-naïve rats.

Chemogenetic stimulation of VTA DA neurons caused deficits in decision making and increased the propensity of both sexes to self-administer cocaine. Moreover, this manipulation resulted in a phenotype which was hyperactive at baseline and which exhibited a heightened psychomotor response to cocaine.

These findings suggest that the VTA DA neurons are a critical node in decision making and that repeated stimulation of VTA DA neurons pre-sensitizes the DA system, rendering female and male rats more vulnerable to addiction-like behaviour.

ABSTRACT

Laura Jones¹, Daniel Vigo^{1,2}

¹ Department of Psychiatry, Faculty of Medicine, UBC

² Department of Global Health & Social Medicine, Harvard University

UNDERGRADUATE
STUDENT

TRANSLATIONAL
RESEARCH

ABSTRACT #18

THE IMPACT OF THE COVID-19 PANDEMIC ON STUDENT MENTAL HEALTH: INFORMING TARGETED OUTREACH

Research Objectives:

To explore the impact of the COVID-19 pandemic on university students' emotional wellbeing and describe those who reported feeling overwhelmed and unable to access help.

Methods:

Descriptive analysis was performed with interim data from an ongoing, repeated cross-sectional student mental health survey administered weekly at the University of British Columbia. 2448 responses to the question "Has the COVID-19 pandemic affected your emotional wellbeing?" were analyzed in the context of the following demographic variables: housing type, ethnicity, gender, student type, and migrant status. Associations were evaluated using Fisher's exact test.

Results:

20% of students reported that the COVID-19 pandemic had not impacted their emotional wellbeing, 51% reported that it had but they were able to manage, 19% reported feeling overwhelmed but able to access help, and 10% reported feeling overwhelmed and unable to access help. Belonging to the "overwhelmed and unable to access help" group was associated with ethnicity, gender, and migrant status.

Conclusions:

The vast majority of university students were emotionally resilient to the first phase of the COVID-19 pandemic. However, a small subset were overwhelmed and unable to access help. Individuals belonging to overrepresented demographic groups should be prioritized for outreach as we face subsequent waves of the COVID-19 pandemic.

POSTER PRESENTATION

**Laura Lapadat¹, Anusha Balram¹, Joanna Cheek¹,
Eugenia Canas², Andrea Paquette³,
Bipolar Youth Action Group¹ (Anna Graham,
Jeanne-Michelle Lavigne, Alan Cundall, Julia Wilkes,
Cara Moore, Kelsey Johansen), Erin E. Michalak¹**

¹ Department of Psychiatry, Faculty of Medicine, UBC

² Faculty of Information and Media Studies, Western University

³ Stigma-Free Society, Vancouver, BC

RESEARCH
STAFF

TRANSLATIONAL
RESEARCH

ABSTRACT #19

THE BIPOLAR YOUTH ACTION PROJECT: CONDUCTING COMMUNITY-BASED PARTICIPATORY RESEARCH WITH YOUTH WITH BIPOLAR DISORDER

Research Objectives:

The Bipolar Youth Action Project (BYAP) aimed to expand the scant literature on effective self-management strategies utilized by youth with bipolar disorder, and investigate which means of knowledge translation youth with bipolar disorder are receptive towards. A secondary aim was to expand the knowledge base on conducting participatory research with youth populations living with bipolar disorder. It is this secondary aim that this poster will address.

Methods:

The BYAP was a community-based participatory research project conducted in partnership between CREST.BD and the Bipolar Disorder Society of British Columbia. The 24-month project moved through four distinct phases, each directly involving youth with bipolar disorder. These were: (1) grant-writing; (2) recruiting and training 12 youth peer researchers with bipolar disorder; (3) Research Forum I, which recruited additional youth to consult on self-management strategies; and (4) Research Forum II, which recruited additional youth to consult on knowledge translation methods.

Results:

7 of the initial 12 peer researchers remained on the BYAP from recruitment to project end. Peer researchers built capacity in multiple domains, including public speaking (N=7), event planning (N=7), and qualitative data analysis (N=1), and designed and delivered presentations of Forum I findings. Youth engagement peaked near Forums and was enhanced by email check-ins, collectively chosen deadlines, and support from the academic team.

Conclusions:

Meaningfully involving youth with bipolar disorder as peer researchers requires consistent communication, flexibility to meet their needs, and support from academic researchers. Partnering with youth with bipolar disorder holds potential to increase relevance of clinical findings.

POSTER PRESENTATION

**David Long^{1,2}, Daniel Blumberger^{3,4}, Zafiris J. Daskalakis^{3,4},
Jonathan Downar^{3,5}, Fidel Vila-Rodriguez^{1,2}**

¹ Department of Psychiatry, Faculty of Medicine, UBC

² Non-Invasive Neurostimulation Therapies (NINET), UBC

³ Department of Psychiatry and Institute of Medical Science, University of Toronto

⁴ Temerty Centre for Therapeutic Brain Intervention at the Centre for Addiction and Mental Health, Toronto

⁵ Centre for Mental Health, University Health Network, Toronto

RESIDENT

TRANSLATIONAL
RESEARCH

ABSTRACT #20

LEFT-HANDEDNESS AND RESPONSE TO HIGH FREQUENCY LEFT AND INTERMITTENT THETA BURST REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION IN TREATMENT RESISTANT DEPRESSION

Keywords: Brain stimulation; theta-burst; treatment resistance; handedness

Research Objectives:

Recent work by Fitzgerald and colleagues (Fitzgerald et al., 2020), explored whether handedness affects the clinical effects of rTMS in depression. They found that left-handed subjects experienced greater symptom reduction and higher response for high-frequency left-sided rTMS (HFL) but not low-frequency right-sided rTMS (LFR). We conducted secondary analyses of the THREE-D trial, as there are no available data on the effect of handedness on response to intermittent theta burst stimulation (iTBS).

Methods:

In the THREE-D trial, treatment resistant depression patients (TRD) were randomized to either left-sided iTBS or HFL (Blumberger et al., 2018). 381 non-ambidextrous, treatment-completing individuals with TRD were analyzed. Change in the Hamilton Rating Scale for Depression (HRSD) (Hamilton, 1967) was compared by handedness using t-tests. To test covariate effects, an ANOVA model for change in HRSD with clinical-demographic covariates was used. Fisher's exact test was used for effects of handedness on response.

Results:

Change in HRSD did not differ by handedness ($p=0.25$). Results were similar analyzing separately for iTBS ($p=0.30$) and HFL ($p=0.60$). In a model including covariates, the overall model was non-significant ($p=0.20$), as was handedness ($p=0.35$). The proportion of responders did not differ by handedness, neither in the total sample ($p=0.19$), nor in the iTBS ($p=0.19$) or HFL ($p=0.80$) subgroups.

Conclusions:

Left- and right-handed individuals with TRD had a similar clinical response to both iTBS and HFL. These findings inform clinical practice, providing evidence that laterality of treatment should not be modified in left-handed individuals regardless of rTMS stimulation type.

References:

Blumberger, D. M., Vila-Rodriguez, F., Thorpe, K. E., Feffer, K., Noda, Y., Giacobbe, P., Knyahnytska, Y., Kennedy, S. H., Lam, R. W., Daskalakis, Z. J., & Downar, J. (2018). Effectiveness of theta burst versus high-frequency repetitive transcranial magnetic stimulation in patients with depression (THREE-D): A randomised non-inferiority trial. *The Lancet*, 391(10131), 1683–1692. [https://doi.org/10.1016/S0140-6736\(18\)30295-2](https://doi.org/10.1016/S0140-6736(18)30295-2)

Fitzgerald, P. B., Hoy, K. E., & Daskalakis, Z. J. (2020). Left Handedness And Response To Repetitive Transcranial Magnetic Stimulation In Major Depressive Disorder. *The World Journal of Biological Psychiatry*, 1–12. <https://doi.org/10.1080/15622975.2020.1795255>

Hamilton, M. (1967). Development of a Rating Scale for Primary Depressive Illness. *British Journal of Social and Clinical Psychology*, 6(4), 278–296. <https://doi.org/10.1111/j.2044-8260.1967.tb00530.x>

Correspondence to: Dr. Fidel Vila-Rodriguez, Non-Invasive Neurostimulation Therapies (NINET), fidel.vilarodriguez@ubc.ca

**Jill K. Murphy¹, Erin E. Michalak¹, Hannah Burton¹,
Heather Colquhoun², Jing Liu¹, Xiaorui Yang³, Tao Yang³,
Xing Wang³, Yifeng Xu³, Ping Zhang⁴, Yousong Su³, Jia Huang³,
Leping Huang⁵, Yue Fei⁵, Lu Yang³, TianLi Liu⁶, Raymond W. Lam¹, Jun Chen³**

¹ Department of Psychiatry, Faculty of Medicine, UBC

² Department of Occupational Science and Occupational Therapy, University of Toronto

³ Shanghai Mental Health Center, Shanghai Jiao Tong University School of Medicine, Shanghai, China

⁴ Fengxian District Mental Health Center, Shanghai, China

⁵ Hongkou District Mental Health Center, Shanghai, China

⁶ Peking University, Institute of Population Research, Beijing, China

BARRIERS AND FACILITATORS TO IMPLEMENTING MEASUREMENT-BASED CARE FOR DEPRESSION IN SHANGHAI, CHINA: A SITUATIONAL ANALYSIS

Research Objectives:

Measurement-based care (MBC) is an evidence-based practice for depression, but its use by clinicians remains low. Enhanced measurement-based care (eMBC), which uses digital technologies, can help to facilitate the use of MBC by both clinicians and patients. The objective of this situational analysis is to identify barriers and facilitators to the implementation of standard and eMBC in Shanghai, China.

Methods:

We used mixed methods to develop a comprehensive understanding of the factors influencing MBC and eMBC implementation in Shanghai. This study took place across three mental health centres. We used situational analysis tools to collect contextual information about the three centres, conducted surveys with n=116 clinicians and n=301 patients and conducted semi-structured interviews with n=30 clinicians and six focus groups with a total of n=19 patients. Surveys were analysed using descriptive statistics and semi-structured interviews and focus groups were analysed using framework analysis.

Results:

Several potential barriers and facilitators were identified at the system level and from the perspective of clinicians and patients. Infrastructure, cost, attitudes and beliefs, and perceptions about feasibility and efficacy emerged as both challenges and drivers to MBC and eMBC implementation in Shanghai.

Conclusions:

The results of this study will directly inform the design of an implementation strategy for MBC and eMBC in Shanghai, that will be tested via a randomized controlled trial. This study contributes to the emerging body of literature on MBC implementation and identifies several factors that are relevant to the equitable delivery of MBC.

LIGHTNING TALK & POSTER PRESENTATION

CLINICAL
FACULTY

TRANSLATIONAL
RESEARCH

ABSTRACT #22

**Robert Stowe^{1,2,3}, Guillaume Poirier-Morency^{1,4}, Sanja Rogic^{1,4},
Adrienne Elbert⁵, Kennedy Borle¹, Ashley DeGraaf, Prescilla Carrion¹,
Pedram Laghaei⁶, Jessica Jun⁶, Michelle Lisonek¹, Natasha Verzosa,
Olga Leonova¹, Clara Westwell-Roper¹, Clare Beasley^{1,2}, Mahesh Menon¹,
Ivan Torres¹, Jennifer Li¹, Harish Neelekant¹, Veerle Willaeyts, Randall White MD¹,
Eric Wong⁴, Joerg Gsponer^{4,7}, William Honer^{1,3}, Andrew J. Mungall⁸, Monica Hrynchak⁹,
Agata Minor⁹, Christine Tyson¹⁰, Patrick Sullivan^{11,12}, Paul Pavlidis^{3,4}**

¹ Department of Psychiatry, Faculty of Medicine, UBC ² Department of Neurology, Faculty of Medicine, UBC

³ Djavad Mowafaghian Centre for Brain Health, UBC ⁴ Michael Smith Labs, UBC ⁵ Residency Training Program, Department of Medical Genetics, Faculty of Medicine, UBC ⁶ MD Undergraduate Program, UBC ⁷ Department of Biochemistry and Molecular Biology, Faculty of Medicine, UBC ⁸ Canada's Michael Smith Genome Sciences Centre, BC Cancer ⁹ Molecular Cytogenetics Laboratory, Royal Columbian Hospital ¹⁰ Department of Pathology and Laboratory Medicine, UBC ¹¹ Center for Psychiatric Genomics and Departments of Genetics, Psychiatry, and Epidemiology, University of North Carolina ¹² Karolinska Institutet, Stockholm

METABOLIC AND GENETIC EXPLORATIONS IN REFRACTORY SCHIZOPHRENIA PROJECT - FINDINGS FROM WHOLE GENOME AND RNA SEQUENCING IN THE FIRST 10 PARTICIPANTS

Research Objectives: To identify candidate genetic drivers of highly treatment-resistant psychosis using whole genome and RNA sequencing and intensive genotype-phenotype correlation.

Methods: Genomic DNA (gDNA) and whole blood RNA from 32 deeply phenotyped participants with treatment-resistant psychosis was sequenced at BC's Genome Sciences Centre. Variants were filtered and prioritized using a custom pipeline developed at the Michael Smith Laboratories (UBC). After QC, variants were prioritized by pathogenicity prediction, allele frequency and conservation, then reviewed in the IGV in association with RNA-Seq data, and manually curated using databases (e.g. SCHEMA, Varsome, SZGR2, OMIM, UniProt) and literature review. CNVs and small deletions were called from linked-read WGS sequencing data. RNA-seq data and phasing from linked-read WGS sequencing enabled identification of allelic expression imbalances. Missense mutations mapping to intrinsically disordered protein regions were analyzed for predicted binding to functional domains of their known interaction partners.

Results: Extensive variant annotation and review has been completed for the first 10 participants. Participants harbored between 12 and 42 prioritized sequence variants (mean ~19.5).

15 loss-of-function (LoF) mutations impacted genes including SETD1A (the schizophrenia risk gene most significantly enriched in LoF variants to date), the neurodevelopmental risk gene FOXP1, and ATP7B (heterozygous; biallelic ATP7B mutations cause Wilson's disease). Protein-altering variants were found in many mutation-intolerant genes relevant to the neurobiology of schizophrenia, including MDGA1, GGA1, GRK2, and NCDN.

Conclusion: While individually rare, as a class, potent single gene mutations may not be uncommon in treatment-resistant psychosis, and can potentially identify precision medicine treatment targets for further study.

POSTER PRESENTATION

Kelsey Alexander¹, Karen Petersen^{2,3}, Tonia Nicholls^{1,2,3}

¹ Simon Fraser University

² BC Mental Health & Substance Use Services, PHSA

³ Department of Psychiatry, Faculty of Medicine, UBC

UNDERGRADUATE
STUDENT

CLINICAL
RESEARCH

ABSTRACT #23

THE IMPORTANCE OF TRAUMA INFORMED PRACTICE IN A FORENSIC PSYCHIATRIC INPATIENT POPULATION: EXPLORING ADVERSE CHILDHOOD EXPERIENCES AND TRAUMA

Background:

Research documents high lifetime trauma rates amongst psychiatric patients. Adverse Childhood Experiences (ACE) contribute to poor mental health outcomes across the life course, with research finding brain region abnormalities, attributed to psychiatric illnesses, resulting from ACE (Teicher & Samson, 2013; Clark et al., 2010). Trauma-informed care is suggested to mitigate trauma symptoms and improve therapeutic relationships (Chandler, 2008).

Research Objectives:

This project sought to investigate and outline rates of life course trauma, experiences of current trauma symptoms, and availability of programs to address trauma within a forensic psychiatric hospital (FPH).

Method:

Data was collected by research assistants from the files of 100 patients within FPH as part of a larger Patient Needs Assessment project to inform hospital programming. This included data on risk, need and responsivity factors, adverse events, and therapeutic programming. For this presentation, rates of life course trauma, current trauma symptoms, and availability of trauma-informed programs were analyzed.

Results:

Results indicate that 76% of the sample experienced some form of trauma across the lifespan, with 70% experiencing at least one ACE and 19% experiencing four or more. Further, 15% currently experienced trauma-related symptoms. A variety of trauma-informed programs are offered to the patients at FPH, including emotional regulation therapy, art therapy, and 'seeking safety'.

Conclusion:

These findings demonstrate a high prevalence of trauma and ACEs amongst forensic psychiatric patients, however, given data was obtained from files only, the prevalence is likely higher. The hospital has taken steps to emphasize trauma-informed care through programs, which were explored.

References:

- Chandler, G. (2008). From Traditional Inpatient to Trauma-Informed Treatment: Transferring Control From Staff to Patient. *Journal of the American Psychiatric Nurses Association*, 14(5), 363-371. doi:10.1177/1078390308326625
- Clark, C., Caldwell, T., Power, C., & Stansfeld, S. A. (2010). Does the influence of childhood adversity on psychopathology persist across the lifecourse? A 45-year prospective epidemiologic study. *Annals of Epidemiology*, 20(5), 385-394. <https://doi.org/10.1016/j.annepidem.2010.02.008>
- Teicher, M. H., & Samson, J. A. (2013). Childhood maltreatment and psychopathology: A case for ecophenotypic variants as clinically and neurobiologically distinct subtypes. *The American Journal of Psychiatry*, 170(10), 1114-1133. <https://doi.org/10.1176/appi.ajp.2013.12070957>

LIGHTNING TALK & POSTER PRESENTATION

Marya Aman, Jennifer Coelho, Boyee Lin, Cynthia Lu, Shannon Zaitsoff, John Best, S. Evelyn Stewart

Department of Psychiatry, Faculty of Medicine, UBC
BC Children's Hospital Research Institute, University of British Columbia

RESIDENT

CLINICAL
RESEARCH

ABSTRACT #24

PREVALENCE OF PEDIATRIC ACUTE-ONSET NEUROPSYCHIATRIC SYNDROME IN CHILD AND ADOLESCENT EATING DISORDERS

Objectives:

To identify the lifetime prevalence and clinical correlates of those meeting strict PANS and/or PANDAS criteria within a pediatric eating disorder cohort.

Methods:

Consecutive youth presenting to an interdisciplinary pediatric eating disorder subspecialty program were included for study. Rigorously collected clinical assessment and parent-report data were examined for the presence of diagnostic PANS and PANDAS criteria. Comparative analyses were performed between PANS and non-PANS groups.

Results:

Among 100 youth aged 8-18 years old with a confirmed eating disorder, 52% (n=52) met PANS criteria and none met PANDAS criteria. Within the PANS group, 75% (n=39) had abrupt onset OC symptoms while 88.5% (n=46) had abrupt onset eating restriction. Those in the PANS group were more likely to be female, be prescribed an SSRI, and have parent-reported abrupt OC symptom onset, abrupt food refusal, relapsing and remitting course, and concurrent anxiety, depression, irritability or aggression, behavioural regression, school deterioration, and sleep problems, enuresis, and/or frequent urination. There were no differences with respect to age at symptom onset, BMI, comorbid psychiatric illness or medical/autoimmune illness.

Conclusion:

Lifetime PANS rates within pediatric ED were higher than that previously reported for OCD populations. However, the large majority had abrupt onset OC symptoms as well as abrupt food restriction. This appears to be a distinct subgroup that requires further characterization with respect to functional impacts and management approaches.

POSTER PRESENTATION

RESIDENT

CLINICAL
RESEARCH

ABSTRACT #25

**Gabrielle B. Chartier¹, Frederick Lam¹, Yvonne Bergmans⁵,
Leona Adams^{1,2}, Jody Lofchy^{3,5}, Juveria Zaheer^{4,5},
David Kealy**

¹Department of Psychiatry, Faculty of Medicine, UBC

²Psychiatric Assessment and Stabilization Unit, St. Paul's Hospital, Providence Health Care

³ St. Joseph's Unity Health Toronto, Department of Psychiatry, Toronto

⁴ Centre for Addiction and Mental Health, Toronto

⁵ Department of Psychiatry, University of Toronto

EXPLORING THERAPEUTIC FACTORS IN EMERGENCY CONSULTATION FOR SUICIDALITY – A QUALITATIVE INQUIRY

Background:

Clinicians assessing for suicidality in the Emergency Department (ED) are aiming to manage risk while providing a therapeutic experience for the patient. The assessment itself may contain psychotherapeutic properties that may contribute to positive outcomes such as reduced psychological distress and hospitalization and increased engagement in further care. No studies to date have focused on the specific processes at play during these critical clinical encounters.

Method:

A qualitative inquiry into nine emergency psychiatrists' perspectives regarding the psychotherapeutic properties of ED suicide assessment. Interpretative phenomenological analysis is used, and preliminary results will be presented.

Results:

The qualitative inquiry provided important preliminary insight regarding this high-stake application of psychotherapy principles. Early results suggest an approach that includes empathy and kindness focused on responsiveness to the unique individual needs at the time of presentation. Themes reflected psychiatrists' use of different therapeutic stances that are carefully chosen with the objective to meet the patient where they are, and to respond to their immediate needs.

Conclusion:

A therapeutic consultation remains one of the psychiatrist's most invaluable tools with suicidal patients in the ED. The clinician's empathy and responsiveness may be primary therapeutic skills for reducing a patient's distress, instilling hope, and fostering engagement in care. Further research is needed to develop better understanding of the mechanisms by which psychotherapeutic skills and processes are integrated in acute care.

POSTER PRESENTATION

RESIDENT

CLINICAL
RESEARCH

ABSTRACT #26

**Julia Blake¹, John Best^{1,2}, Fern Jaspers-Fayer^{1,2}, Janet Mah^{1,2},
S Evelyn Stewart^{1,2}**

¹Department of Psychiatry, Faculty of Medicine, UBC

²BC Children's Hospital Research Institute, PHSA

AN EXPLORATORY STUDY OF PHYSICAL ACTIVITY IN PEDIATRIC OCD AND HEALTHY CONTROLS

Exercise has been shown to be an effective intervention for adult OCD. Previous research on college athletes showed OCD may be as common as 5.2%, more than doubled expected rates. However, it is unknown whether daily physical activity levels in pediatric OCD differ from that expected.

Objectives:

To investigate physical activity markers and related parental attitudes in OCD-affected children compared to matched healthy controls.

Methods:

30 OCD-affected youth and 28 age- and gender-matched controls participated. Parents of both groups completed the Anxiety Disorders Interview Schedule for DSM-IV which was administered by trained research staff. OCD patients received a diagnostic assessment by a child and adolescent psychiatrist and their parents completed the Children's Yale-Brown Obsessive Compulsive Scale (C-YBOCS), a clinician-rated measure of OCD Severity. (Jaspers-Fayer, 2018).

Physical activity levels were measured by a Fitbit Flex. Participants wore the Fitbit for seven consecutive days and were included if they had at least four days of data (Jaspers-Fern, 2018). Parents completed a Physical Activity Attitudes and Beliefs Scale (PAABS), adapted from Hamilton et al 2014.

Results:

No significant differences between the two groups were identified with respect to daily mean number of steps taken [$t(55)=0.98$, $p=0.33$], sedentary minutes or PAABS scores. Average number of steps did not significantly differ by OCD severity. The mean BMI-for-Age Percentile of the OCD group was 49.22(SD=28.12) and the mean of the controls was 44.98(SD=33.80).

Conclusions:

OCD-affected children do not appear to differ with respect to physical activity level, BMI or related parental attitudes when compared to controls.

POSTER PRESENTATION

**Ariana Cahn¹, Trisha Chakrabarty¹, Kam Keramatian¹,
Lakshmi Yatham¹**

¹Department of Psychiatry, Faculty of Medicine, UBC

GRADUATE
STUDENT

CLINICAL
RESEARCH

ABSTRACT #27

LONGITUDINAL GREY MATTER CHANGES FOLLOWING FIRST EPISODE MANIA: A SYSTEMATIC REVIEW

Research objectives:

Few longitudinal magnetic resonance imaging (MRI) studies exist which follow Bipolar I Disorder (BDI) patients, starting at their first episode of mania and performing brain scans again after a predetermined time interval. Those that do exist present conflicting results, highlighting different areas, and have different follow-up times. To better understand potential neuroprogressive processes early in the disease course, we have conducted an in-depth systematic review of studies that have used MRI to investigate the presence or absence of longitudinal grey-matter changes in BDI patients following FEM.

Methods:

A systematic review following PRISMA guidelines was conducted. MEDLINE, Embase, and the Web of Science were searched for relevant studies. Only original research studies using structural MRI in BDI patients following FEM with a minimum one-year follow up were included in our analysis.

Results:

Of 912 publications, 15 studies met our inclusion criteria and were selected for analysis. Results of baseline and longitudinal grey-matter change were largely inconsistent and specific regions studied varied greatly. However, frontal lobe structures, such as the anterior cingulate cortex, appeared as significant in a number of the studies reviewed.

Conclusions:

This review provides a foundation upon which further research in this field can be conducted, as we continue to search for a specific neural marker of early-stage BDI that can be a target of early intervention strategies.

NEUROSTIMULATION TECHNIQUES INCLUDING RTMS, TDCS, AND TACS FOR TREATING AUDITORY HALLUCINATION IN SCHIZOPHRENIA: A SYSTEMATIC REVIEW

Objectives:

Some 25-30% of patients with schizophrenia are refractory to medication treatment. Recently, neurostimulation has emerged as an alternative biological treatment for these patients. In this systematic review, we summarize the evidence of treating auditory hallucinations in adults with schizophrenia with three specific neurostimulation modalities.

Methods:

We searched PsycINFO from inception to March 2020 for randomized controlled trials that used rTMS (repetitive transcranial magnetic stimulation), tDCS (transcranial direct current stimulation), or tACS (transcranial alternating current stimulation) to treat auditory hallucinations.

Results:

A total of 128 records were identified, of which 8 met the inclusion criteria, comprising 5 rTMS studies, 3 tDCS studies, and no tACS studies. Regarding rTMS, two of the smaller trials demonstrated significant effect on reducing hallucinations as measured by the AHRS (Auditory Hallucination Rating Scale), but three larger trials found a negative result. Two of the tDCS papers investigating tDCS to treat hallucinations found robust effect sizes of 1.58 and 1.98, but only had sample sizes of 25-30 and short follow-up periods, whereas a larger trial had a negative result.

Conclusions:

rTMS showed initial promise for treating hallucinations, but recent large-scale studies indicate no difference with sham. tDCS has only a few small studies, and larger sample sizes are needed to more reliably draw conclusions on its effect for reducing hallucinations. tACS has the least evidence; in fact, no studies met criteria for this review. Before undertaking more experiments, it would be important to research the underlying brain network to determine the optimal brain structures to stimulate.

POSTER PRESENTATION

Lianne Cho¹, William Honer¹

¹Department of Psychiatry, Faculty of Medicine, UBC

GRADUATE
STUDENT

CLINICAL
RESEARCH

ABSTRACT #29

PSYCHOMETRIC PROPERTIES AND CORRELATES OF THE BECK DEPRESSION INVENTORY IN A PRECARIOUSLY-HOUSED SAMPLE

Research Objectives:

The present study aims to determine the psychometric properties and correlates of the Beck Depression Inventory (BDI) in a precariously-housed sample, which informs how it may be interpreted and used in a community-based setting.

Methods:

475 participants recruited from Vancouver's impoverished Downtown Eastside neighbourhood completed the BDI, as well as a variety of other health and functioning assessments. Validity and reliability of the BDI were assessed, and a receiver operating characteristic (ROC) curve was used to determine a threshold score that may indicate clinical depression. Relationships between BDI scores and psychiatric diagnoses, gender, age, suicidal ideation, and functional outcomes were described.

Results:

The BDI demonstrates convergent validity with Maudsley Addiction Profile mental health scores ($r=.67, p<.01$) and discriminant validity with Positive and Negative Symptom Syndrome Scale scores relevant to schizophrenia ($r=.12, p<.05$). Test-retest reliability is excellent (intraclass correlation $=.92, p<.01$), as is internal consistency (Cronbach's $\alpha=.91$). The ROC curve indicates a threshold of 19 for depression, which generates moderate sensitivity (70%) and specificity (78%). A wide range of BDI scores is found in those with major depression (0-58), schizoaffective disorder (4-50), and schizophrenia (0-46). Higher BDI scores are associated with being a woman ($U=17338, p<.05$), younger age ($r=-0.1, p<.05$), suicidal ideation ($U=3540, p<.01$), and poorer functioning ($r=-0.18, p<.01$).

Conclusions:

The BDI effectively assesses depressive symptom severity in a precariously-housed sample, and may be used to screen for clinical depression in the community. More research is needed to better understand the relationships between mood, social factors, and other comorbidities.

POSTER PRESENTATION

**Charles Choi¹, Olga Leonova^{2,3}, Miriam Cohen³, Ivan Torres^{2,3,4},
William G. Honer^{2,4,5}, Randall F. White^{2,3,6}**

UNDERGRADUATE
STUDENT

CLINICAL
RESEARCH

ABSTRACT #30

¹ Faculty of Medicine, UBC

² Department of Psychiatry, Faculty of Medicine, UBC

³ BC Psychosis Program

⁴ BC Mental Health & Addictions Research Institute

⁵ UBC Institute of Mental Health

⁶ Vancouver Community Mental Health and Substance Use Services

BC PSYCHOSIS PROGRAM: OUTCOMES DURING FIVE YEARS OF CLINICAL SERVICE

Objective:

To examine the demographic and clinical characteristics of patients treated at the British Columbia Psychosis Program (BCPP), and to compare clinical outcomes, when available, at admission, discharge, and follow-up at 26-50 weeks post-discharge.

Methods:

We conducted a retrospective chart review examining 125 patients with follow-up data of the total 266 patients discharged from BCPP between January 2015 to November 2019. Clinical ratings obtained on each patient included CGI-S and GAPS. Medication data included number of antipsychotics, the ratio of prescribed to defined daily dose (P/DDD), and prevalence of clozapine use.

Results:

Male (72.80%) Caucasian (60.80%) patients in their mid-30s with high school education or less (80.80%) represented most of the patients seen at BCPP. Schizophrenia (62.40%) and schizoaffective disorders (23.20%) were the most common diagnoses, with an average illness duration of 12.21 years prior to admission. At follow-up, the median GAPS score improved by 42% and the median CGI-S improved by 33% compared to admission. Over the same time period, the mean number of antipsychotics decreased from 1.72 to 1.51 and the P/DDD decreased from 1.65 to 1.33, while the number of patients taking clozapine increased from 57 to 85.

Conclusions:

The improvement in clinical outcomes and medication use from admission to follow-up suggests the efficacy of the program in managing complex psychosis patients. Clinical improvement is attributed to individualized, multidisciplinary treatment addressing the patients' medical, psychiatric, and social problems.

CGI-S: Clinical Global Impression of Severity

GAPS: Global Assessment of Psychopathology Scale

POSTER PRESENTATION

Cameron Geddes¹, Karen Petersen¹, Tonia Nicholls¹

¹Department of Psychiatry, Faculty of Medicine, UBC

UNDERGRADUATE
STUDENT

CLINICAL
RESEARCH

ABSTRACT #31

PHYSICAL HEALTH PROFILES OF WESTERN CANADIAN FORENSIC PSYCHIATRIC INPATIENTS

Research Objectives:

Patients with severe mental illnesses often have significant primary care needs. A high burden of disease – especially cardiovascular, metabolic, and respiratory conditions – contributes to substantial reduction in life expectancy for these individuals (Haddad et al., 2016). This disparity likely reflects lifestyle factors (Osborn et al. 2007), antipsychotic medication (De Hert et al. 2012), and broader societal factors (Evans-Lacko et al. 2012). This presentation describes the primary care needs of a Canadian forensic psychiatric sample identified through a larger Patient Needs Assessment.

Methods:

Priorities were identified through prior research and consultations with forensic GPs. File reviews were conducted for 100 patients within a secure Canadian forensic facility. Specifically, information about medical diagnoses, body metrics, and lifestyle factors was collected. The CANFOR (Camberwell Assessment of Need, Forensic Version) was also used.

Results:

The CANFOR demonstrated 46% of patients had physical health needs. One-third of patients had multiple medical diagnoses. Half of patients with documented weight/height had a BMI over 30; however, despite obesity prevalence, body metrics were documented sub-optimally. Lifestyle risks, including tobacco use (43% of patients smoked within study period), were common.

Conclusions:

These findings highlight substantial physical health challenges among forensic inpatients. The diverse range and severity of patients' primary care needs should be considered due to the increasing age of individuals in forensic settings (Di Lorito, 2018). Implications for hospital policies, including the continuing challenges of prescribing antipsychotic medications, treating secondary symptoms of schizophrenia, and maintaining psychiatric hospitals as smoke-free settings will be discussed.

LIGHTNING TALK PRESENTATION

Elizabeth C. Gregory^{1,2}, Ivan J. Torres¹, Fidel Vila-Rodriguez¹

¹Department of Psychiatry, Faculty of Medicine, UBC

²Experimental Medicine Graduate Program, Faculty of Medicine, UBC

GRADUATE
STUDENT

CLINICAL
RESEARCH

ABSTRACT #32

CAN REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION REDUCE COGNITIVE DYSFUNCTION IN TREATMENT-RESISTANT DEPRESSION?

Research Objectives:

Cognitive dysfunction is a core symptom of major depressive disorder (MDD) and is etymologically distinct from low mood. Patients with treatment-resistant depression (TRD) experience disproportionate rates of cognitive dysfunction, which may account for worse treatment outcomes and greater disease chronicity. Repetitive transcranial magnetic stimulation (rTMS) is an effective treatment for patients with TRD and preliminary evidence shows that it has short-term cognitive enhancing effects, although longitudinal effects on cognition are unclear. This project aims to assess whether an adequate course of rTMS can induce persistent improvements in the cognitive performance of patients with TRD.

Methods

A sample of 47 patients with TRD received 6 weeks of daily repetitive transcranial magnetic stimulation (rTMS) to the left dorsolateral prefrontal cortex (IDL PFC). A neurocognitive assessment was performed at baseline and 3 months post-treatment. 22 healthy controls (HC) were tested at similar time intervals. A repeated measures ANOVA was conducted to determine whether TRD showed greater improvements at the 3-month follow-up relative to the HC group.

Results

Cognitive performance of both TRD and HC improved at the 3-month follow-up, but these improvements were not significantly different. In other words, improvements seen in the TRD group were attributable to practice effects, rather than due to rTMS.

Conclusions

6 weeks of rTMS to the IDL PFC is not associated with persistent changes in cognitive function in TRD patients. Future research could explore combining rTMS with a behavioural intervention that increases neural plasticity to consolidate & extend cognitive benefits.

POSTER PRESENTATION

Connor Hawkins¹, Joan Ng¹, Verena Langheimer¹

¹Department of Psychiatry, Faculty of Medicine, UBC

RESIDENT

CLINICAL
RESEARCH

ABSTRACT #33

PRIAPISM AS A POSSIBLE SIDE EFFECT OF RISPERIDONE: CASE REPORT AND LITERATURE REVIEW

Priapism is a medical emergency that consists of a persistent penile erection that continues hours beyond, or is unrelated to, sexual stimulation. It is a relatively rare entity, with reported incidences between 0.3 and 1.5 per 100,000 men per year reported in the literature. Severe manifestations can lead to ischemia and potential permanent damage to the penis. There are a large number of potential causes of priapism, yet the classically cited psychopharmacological agent associated with priapism is trazodone, whereas reports of priapism caused by antipsychotics are much more limited.

We describe the case of a man in his mid-20s who presented to hospital after a serious suicide attempt, with no previous psychiatric or medical history. He was initially admitted to ICU and then transferred to an inpatient psychiatric unit at an academic hospital. At the time of transfer, he exhibited profound neurovegetative symptoms and was diagnosed with major depressive disorder, severe. He was started on escitalopram and titrated up to 20 mg daily, to which he showed a partial response. He was not formally diagnosed as having psychotic features; however, he had significant residual depressive symptoms, so the decision was made to start him on risperidone 1 mg as an adjunct. The next day, he experienced priapism; treatment and future medication considerations from a psychiatric perspective will be presented.

In addition to the case study, which is presented for contextual learning, we will present a comprehensive systematic review on priapism in the context of risperidone.

LIGHTNING TALK & POSTER PRESENTATION

**Catriona Hippman¹, Lynda G. Balneaves², Deirdre Ryan¹,
Jehannine Austin¹**

¹Department of Psychiatry, Faculty of Medicine, UBC

²College of Nursing, Faculty of Health Sciences, University of Manitoba

CLINICAL FACULTY/
POSTDOC FELLOW

CLINICAL
RESEARCH

ABSTRACT #34

HOW DO WOMEN DECIDE WHETHER TO TAKE ANTIDEPRESSANTS IN PREGNANCY? A WOMAN-CENTERED, CONSTRUCTIVIST GROUNDED THEORY OF DECISION MAKING

Research Objectives:

Depression during pregnancy affects upwards of 10-15% of women. Practice guidelines recommend that clinicians support women to make informed treatment decisions in light of risks of untreated depression and antidepressant use during pregnancy. However, there is minimal evidence regarding how women make these decisions or how clinicians can best support their decision making. This study aimed to develop a constructivist grounded theory, within a feminist theoretical framework, of women's decision making regarding depression treatment during pregnancy.

Methods:

Semi-structured interviews were conducted with purposively-sampled, pregnant or preconception women from the community or specialty clinics in Vancouver, Canada. (N=31). Iterative data collection and analysis, along with theoretical sampling and member checking, were used to determine saturation in the theory.

Results:

Participants were highly conscious of societal stigma towards mental illness and medication use during pregnancy. As a result, they faced fear, anxiety, and guilt while decision making. Participants navigated, in a non-linear manner, between three clusters of decisionmaking activities: seeking information, making sense of information, and self-soothing. 'Seeking information' included internal processes (e.g., reviewing past experiences), and external processes (e.g., seeking healthcare providers' expertise). In 'making sense of information', participants appraised available evidence (e.g., based on their beliefs and values). In 'selfsoothing', participants engaged in coping strategies, such as developing mantras or normalizing, to try to alleviate the painful emotions they encountered.

Conclusions:

This grounded theory can be used by clinicians and patients to support patient-oriented decision making regarding how best to care for maternal mental health during pregnancy.

POSTER PRESENTATION

**Catriona Hippman¹, Caitlin Slomp¹, Emily Morris¹,
Rolan Batallones¹, Angela Inglis¹, Prescilla Carrion¹,
Ursula Brain², Michelle Higginson³, Galen Wright¹,
Lynda G. Balneaves⁴, Deirdre Ryan¹, Corey Nislow³, Colin Ross³,
Andrea Gaedigk⁵, Tim Oberlander², Jehannine Austin¹**

¹ Department of Psychiatry, Faculty of Medicine, UBC

² BC Children's Hospital Research Institute, PHSA

³ Faculty of Pharmaceutical Sciences, UBC

⁴ College of Nursing, Faculty of Health Sciences, University of Manitoba

⁵ Children's Mercy Kansas City, Missouri

CLINICAL FACULTY/
POSTDOC FELLOW

CLINICAL
RESEARCH

ABSTRACT #35

PHARMACOGENETIC TESTING FOR *CYP2D6* AND *CYP2C19*: CAN IT OFFER GUIDANCE FOR PREGNANT WOMEN TAKING SSRIS?

Research Objectives:

Depression during pregnancy affects 10-15% of women, and 5% of women take antidepressants during pregnancy. Clinical practice guidelines from the Clinical Pharmacogenetics Implementation Consortium provide recommendations for selective serotonin reuptake inhibitor (SSRI) drug choice and dose based on *CYP2D6* and *CYP2C19* genotype; guidelines are, however, based on evidence from non-pregnant cohorts. The aim of this study was to test the hypothesis that women with deleterious variants in these pharmacogenes taking SSRIs prenatally, would have more depression symptoms than women whose pharmacogenetic variants have been associated with normal SSRI metabolism.

Methods:

Comprehensive *CYP2D6* and *CYP2C19* genotyping utilized a range of methods, including gene copy number analysis, and was performed as secondary analyses on two longitudinal cohorts of pregnant women ($N=83$) taking SSRIs. The Kruskal-Wallis Test compared mean depression scores across four predicted metabolizer groups: poor ($n=5$), intermediate ($n=10$), normal ($n=53$), and ultrarapid ($n=15$).

Results:

There were no significant differences between mean depression scores across the four metabolizer groups ($H(3)=.73$, $p=.87$).

Conclusions:

Findings from this first, exploratory study of *CYP2D6* and *CYP2C19* pharmacogenetic variations in relation to depression symptoms and citalopram, escitalopram, and sertraline use in pregnancy do not support the clinical use of pharmacogenetic testing for antidepressant use during pregnancy, although these findings should be confirmed in larger cohorts. There is an urgent need for further research to clarify the utility of pharmacogenetic testing for pregnant women, as companies offering direct-to-consumer genetic testing continue to become more prominent and active in their marketing efforts.

POSTER PRESENTATION

**Afifa Humaira¹, Sihaoyu Gao¹, Nicholas Ainsworth¹,
Lisa Ridgway¹, Lang Wu², Jonathan Downar³,
Daniel Blumberger⁴, Zafiris J Daskalakis⁴, Fidel Vila-Rodriguez¹**

RESEARCH
STAFF

CLINICAL
RESEARCH

ABSTRACT #36

¹Non-Invasive Neurostimulation Therapies (NINET) Laboratory, Department of Psychiatry, Faculty of Medicine, UBC

²Department of Statistics, Faculty of Science, UBC

³University Health Network, Toronto Western Hospital

⁴Department of Psychiatry, Centre for Addiction and Mental Health, University of Toronto

PAIN SIDE EFFECT ANALYSIS IN RTMS TREATMENT FOR DEPRESSION: A THREE-D STUDY

Research Objectives:

We aimed to characterize the most prevalent side effect of rTMS (i.e. pain on the site of stimulation) in two different protocols: High Frequency Left (HFL) and iTBS.

Methods:

Methods: 414 patients were randomized to either HFL or iTBS in a multicenter study across three sites in Canada. Each side effect was systematically assessed after every treatment using a Likert scale. Linear mixed-effects (LME) modelling and General Estimating Equation (GEE) were used to test several variables that might be significantly associated to pain and its trajectory during rTMS, and whether there were any differences between the two treatment protocols.

Results:

The most prevalent side effect for both protocols was confirmed to be pain on the site of stimulation (97%). The severity of pain decreased over the treatment course ($p=0.00$), but at a slower rate over time ($p=0.00$). Additionally, pain severity scores were higher in patients who received iTBS ($p=0.0006$), patients who were less responsive to the treatment ($p=0.0274$), patients with higher baseline anxiety score ($p=0.0007$), older patients ($p=0.037$), female patients ($p=0.0207$), and those with higher dose ($p=0.00$).

Conclusions:

Both of the rTMS protocols were well tolerated with low dropout rates. The most common side effect (i.e. pain on the site of stimulation) showed a clear decreasing trajectory over time, and that we also saw differences in the reported pain severity scores according to several factors as outlined above.

Clinical Relevance:

The results of this study are very relevant for both patients and clinicians since they can be used as a reference in future studies and clinical application of rTMS, especially when deciding which protocol to administer, and during the informed consent process.

FACTORS ASSOCIATED WITH A DELAY IN THE DIAGNOSIS OF BIPOLAR DISORDER

Research Objectives:

Bipolar Disorder (BD) is a lifelong condition that typically emerges during adolescence and early adulthood and is the 4th leading cause of disability worldwide among the 10–24 year age group. There is usually a significant delay between the onset of the illness and the accurate diagnosis of BD which can lead to inappropriate treatment and poor clinical outcomes. In this study, we aimed to examine the clinical and demographic factors associated with delayed diagnosis of BD using data from a Canadian multicentre naturalistic study.

Methods:

The sample included 192 patients with Bipolar I disorder (BD-I) and 127 Bipolar II disorder (BP-II). Sociodemographic characteristics and clinical features that had been previously associated with delayed diagnosis of BD were included in this analysis.

Results:

The median delay in diagnosis was 5.0 years in BD-I and 11.0 years in BD-II. Paediatric-onset BD was associated with a significantly longer delay compared to adult-onset BD. Clinical factors such as lifetime suicide attempts and comorbid anxiety disorders were associated with a longer delay, whereas the presence of lifetime psychotic symptoms and psychiatric hospitalisations were associated with shorter delay. Quantile regression analyses showed older age of first professional help and younger age of onset as predictors of increased delay in diagnosis of BD-I and BDII. Depression as first episode was a predictor of longer delay in diagnosis of BD-I but not BD-II.

Conclusion:

Our findings highlight the need for implementation of strategies for early identification and interventions in BD.

POSTER PRESENTATION

Jennifer R. Krentz¹, Karen L. Petersen^{1,2}, Tonia L. Nicholls^{1,2}

¹Simon Fraser University

²Department of Psychiatry, Faculty of Medicine, UBC

³BC Mental Health and Substance Use Services, PHSA

UNDERGRADUATE
STUDENT

CLINICAL
RESEARCH

ABSTRACT #38

ASSESSING THE NEEDS OF FORENSIC PSYCHIATRIC INPATIENTS USING THE CANFOR

Introduction:

Criminogenic needs dominate the research surrounding forensic psychiatric patients, despite the importance of also assessing non-criminogenic needs (Keulen-de Vos & Schepers, 2016). Nevertheless, some measures, including the CANFOR-S (Thomas et al., 2003), assess forensic patients' criminogenic and non-criminogenic needs. Research suggests higher-security patients have more CANFOR needs than lower-security patients (Adams et al., 2018; Long et al., 2008). However, the CANFOR has been minimally researched in Canada, making it difficult to draw firm conclusions.

Research Objectives:

- Assess Canadian forensic patients' needs using the CANFOR-S.
- Examine the relationship between security level and needs.

Methods:

Research assistants coded the CANFOR-S, a measure with good reliability and validity (Thomas et al., 2008), using file information from a one-month period for 68 Canadian forensic psychiatric inpatients.

Results:

On average, patients had 3.37/25 needs ($SD = 2.16$, range = 0-9). Most common needs included: physical health ($n = 31$, 46%); psychotic symptoms ($n = 30$; 44%); and company/friendship ($n = 24$; 35%). Although needs increased as security level increased from low ($M = 2.58$, $SD = 2.39$) to medium ($M = 3.09$, $SD = 2.09$) to high ($M = 3.85$, $SD = 2.06$), this finding was not statistically significant ($[F(2, 65) = 1.854, p = 0.165]$).

Conclusions:

Patients had few needs compared to other studies (Adams et al., 2018). Moreover, there was no significant difference between security level and number of needs, likely because of the small sample. Nevertheless, patients' most common needs were non-criminogenic, highlighting the necessity of assessing forensic patients' non-criminogenic needs.

LIGHTNING TALK PRESENTATION

Labonté, L.; Zhang, M.; Krausz, M.; Schütz, C.G.

Department of Psychiatry, Faculty of Medicine, UBC
Burnaby Centre for Mental Health and Addiction, PHSA

RESIDENT

CLINICAL
RESEARCH

ABSTRACT #39

A ROLE FOR OVERDOSE-PREVENTION MOBILE APPLICATION USE IN INDIVIDUALS WITH A PREVIOUS HISTORY OF OPIOID OVERDOSE

Research objectives:

As the overdose crisis continues to be one of the most significant and devastating public health challenges, there is ongoing interest in identifying novel harm reduction strategies to minimize the negative outcomes associated with substance use and to prevent accidental overdose-related deaths. Mobile interventions in mental health have yielded positive results by being both clinically and cost effective, in addition to widely accessible. Recently, there has been growing interest in developing overdoseprevention mobile applications as a harm reduction tool. One of the aims of this study is to better understand the relevance of implementing overdose-prevention mobile applications by determining whether there are differences in concern over use of mobile applications amongst individuals with a prior history of opioid-related overdose compared to those with no previous overdose.

Methods:

Data were analyzed from a cross-sectional study on mobile health technology use conducted at the Burnaby Centre for Mental Health and Addiction. Survey data was collected from 194 participants; including 123 with a previous history of opioid-related overdose, and 72 without. Participants were assessed with a standardized questionnaire about mobile technology use, including whether they have any concerns with using smartphones/computer devices in the management of their health.

Results:

The majority of our participants had access to technology at home (63.7%). Amongst participants with a previous overdose, 22% voiced concern about device use in their health management compared to 78% who did not. Amongst participants with no previous overdose, 19.4% voiced concern about device use, compared to 80.6% who did not. We saw no major differences among those with an overdose history to those with no reported overdose. We will further analyze sociodemographic, substance use, and diagnoses to probe for predictors of smartphone utilization.

Conclusions:

There is some limitations in availability and acceptance of smartphones in populations with concurrent disorders who are at high risk of overdose. Our study indicates that the limitations are independent from previous history of overdose. Ongoing work will aim to characterize predictors of mobile technology use and allow us to better understand how to target individuals most at risk of overdosing and expand the provision of harm reduction strategies.

POSTER PRESENTATION

**Stephen Lee-Cheong¹, Sara Vazirian², Grace Nie²,
Michelle Zhang², Jane Sun³, Vijay Seethapathy^{1,3}
Christian Schütz^{1,3}**

¹King's College London

²Department of Psychiatry, Faculty of Medicine, UBC

³Burnaby Centre for Mental Health and Addiction, PHSA

GRADUATE
STUDENT

CLINICAL
RESEARCH

ABSTRACT #40

DEVELOPMENT OF AN INTEGRATED MULTIDISCIPLINARY INPATIENT TREATMENT PROGRAM FOR PATIENTS WITH SEVERE CONCURRENT DISORDERS: THE BURNABY CENTRE FOR MENTAL HEALTH AND ADDICTION

Research Objectives:

The Burnaby Centre for Mental Health and Addiction (BCMHA) is a long-term inpatient recovery and treatment centre for concurrent disorders patients. The concept of concurrent disorders, also known as, "dual disorders" is defined as the co-occurring need for treatment of a substance use disorder and a nonsubstance use mental health disorder. The objective of the project is to describe the changes seen in the population treated at the centre and the resulting adaptations to service provision.

Methods:

A cross-sectional assessment of substance use, mental health, health care service utilization history, and quality of life was carried out at BCMHA. Data was collected from January 2018 to March 2020 through a self-administered survey on an electronic tablet.

Results:

There were 235 (31.1% female) participants. The mean age was 36.0 years and 25.2% identified as Aboriginal. The most frequently used substances are crystal methamphetamine (63.7%), alcohol (59.4%), cannabis (53.3%), heroin (48.2%), and crack or powder cocaine (46.7%). 26.9% reported using fentanyl. 61.7% reported having at least one overdose in their lifetime.

Conclusions:

There are obvious gaps in the way concurrent disorder patients are managed in Canada. Utilizing an integrated model of care, such as is done at BCMHA is what is found to provide the best outcomes and therefore recommended. There have been major changes to the intake procedure at BCMHA, which have resultantly changed the observed population demographics. The most popular substances used have changed, with the largest increase being in crystal meth, whilst fentanyl has started to replace heroin as the primary opioid.

POSTER PRESENTATION

Stephen Lee-Cheong¹, Reza Rafizadeh^{2,3,4}, Vijay Seethapathy^{3,4}

¹King's College London

²Faculty of Pharmaceutical Sciences, UBC

³Department of Psychiatry, Faculty of Medicine, UBC

⁴Burnaby Centre for Mental Health and Addiction, PHSA

GRADUATE
STUDENT

CLINICAL
RESEARCH

ABSTRACT #41

AUDIT OF ANTIPSYCHOTIC PRESCRIBING PRACTICES AT THE BURNABY CENTRE FOR MENTAL HEALTH AND ADDICTION

Research Objectives:

The purpose of the project is to investigate the incidence and rational for high dose antipsychotic and polypharmacy prescribing at the Burnaby Centre for Mental Health and Addiction (BCMHA). Given the significant side effect profile of these practices, the project also aims to determine if clients were made aware of these practices.

Methods:

Canadian Ready Reckoner version 1.1 was used to determine the total daily prescribed percentage of antipsychotic(s) as a % of the maximum recommended dose (MRD), including all regular medications and PRNs taken during a random 24-hour period. Data was collected from the client's chart, medication administration record, pharmacy note, and the unit kardex, in order to compare regimens from admission to audit day. Psychiatrists were interviewed to record the rational for their prescribing practices.

Results:

On the audit day, 28 clients (n = 87) were >100% MRD and 40 clients were on multiple antipsychotics, not including PRNs. The average antipsychotic daily dose was 96.1% MRD. The most common rational for a client being >100% MRD was that they arrived on that regimen (14). The most common rational for antipsychotic polypharmacy was prescribing aripiprazole to treat hyperprolactinemia (6).

Conclusion:

Many clients admitted to BCMHA were already on >100% MRD or polypharmacy. On the audit day most of those clients remained on similar regimens. Unfortunately, due to the nature of the clients (extremely complex, combined with chronic, severe substance use) it is difficult to understand the efficacy of these practices. Further study will be needed in order to determine best practice.

POSTER PRESENTATION

**Julie Leising^{1,2}, Alasdair M. Barr^{3,4}, Ric M. Procyshyn^{2,4},
Nicholas J. Ainsworth^{1,2}, Randall F. White^{2,4}, William Honer^{2,4},
Fidel Vila-Rodriguez^{1,2}**

RESIDENT

CLINICAL
RESEARCH

ABSTRACT #42

¹Non-invasive Neurostimulation Therapies (NINET) Laboratory, Department of Psychiatry, UBC

²Department of Psychiatry, Faculty of Medicine, UBC

³Department of Anesthesiology, Pharmacology & Therapeutics, Faculty of Medicine, UBC

⁴BC Psychosis Program, BCMHSUS/VCH

HIGH DOSE FLUVOXAMINE AUGMENTATION TO CLOZAPINE IN TREATMENT-RESISTANT PSYCHOSIS

Research Objectives:

Although clozapine is the gold standard for treatment-resistant schizophrenia, more than 30% of patients remain unresponsive to clozapine monotherapy and may benefit from augmentation strategies. Fluvoxamine augmentation of clozapine may be beneficial in treatment resistance due to pharmacokinetic interactions, allowing for lower clozapine dosages with higher clozapine serum levels; and an increased clozapine to norclozapine ratio, which can modify adverse effects. This case series aims to examine the effects of clozapine augmentation with higher fluvoxamine doses on persistent negative, anxiety, and obsessive-compulsive symptoms through fluvoxamine's serotonergic activity.

Methods:

Four cases of patients with treatment-resistant psychosis were identified who underwent high dose fluvoxamine augmentation of clozapine to target residual negative symptoms, refractory psychosis, anxiety, and obsessive-compulsive symptoms.

Results:

This augmentation strategy continued in two patients after discharge who showed clinical improvement without significant adverse effects. Two patients experienced adverse effects leading to fluvoxamine discontinuation. Despite the fact that fluvoxamine augmentation led to improvement in only 2 patients, all patients achieved high serum clozapine levels. Haematologic parameters were monitored in all patients and no abnormalities were observed. No severe adverse effects of clozapine were experienced.

Conclusion:

Though high variability of responses and adverse effects were observed during fluvoxamine augmentation to clozapine, this strategy was successfully increased clozapine serum levels. Through fluvoxamine's serotonergic effects, this strategy may confer benefit to residual negative, obsessive and anxiety symptoms. Limitations of this case series include the retrospective nature, absence of controls, diversity of diagnoses, multiple interventions in each patient, and lack of masked raters.

POSTER PRESENTATION

**Calista Leung¹, Alexander Terpstra¹,
Trisha Chakrabarty²**

¹Department of Psychology, Faculty of Arts, UBC

²Department of Psychiatry, Faculty of Medicine, UBC

SEX DIFFERENCES IN FACIAL EMOTION LABELLING IN DEPRESSED AND HEALTHY INDIVIDUALS

Research Objectives:

It is well-established that individuals with Major Depressive Disorder (MDD) exhibit negative biases in processing and interpreting emotional information. Sex differences in facial emotion labelling biases have been reported in studies of healthy individuals, but sex differences among MDD patients have not been adequately explored. We compared male and female participants diagnosed with MDD in their tendency to judge facial expressions to address this. Findings of this study can help inform whether sex should be considered when examining biased emotional processing in MDD. We examined whether sex moderates facial emotion labelling bias and sensitivity to sad versus happy faces in depressed patients and healthy controls.

Methods:

Participants recruited from outpatient psychiatric clinics and community completed a computer-based task to rate a continuum of morphed facial expressions as happy or sad. A 2x2 ANOVA comparison and regression were performed to examine patterns of bias and sensitivity across groups. Bias was defined as a shift point where the most probable label shifted from "sad" to "happy". Sensitivity was operationalized as the intensity of expression needed to elicit a correct response.

Results:

There were no significant differences between sexes in labelling bias ($p = .60$) or sensitivity ($p = .80$) to sad versus happy faces in both depressed and healthy subsets. However, preliminary evidence suggests there is a trend towards significance for increased symptom severity and greater sensitivity in depressed females.

Conclusions:

While no significant differences were identified, this study serves as a foundation for further inquiries into sex differences in facial emotion labelling ability within mood disorders.

POSTER PRESENTATION

Sacha Ludgate¹, Christian Schütz¹

¹Department of Psychiatry, Faculty of Medicine, UBC

RESIDENT

CLINICAL
RESEARCH

ABSTRACT #44

THE EFFECTIVENESS OF OXYTOCIN IN THE TREATMENT OF STIMULANT USE DISORDERS: A SYSTEMATIC REVIEW

Objectives:

Despite stimulant use being a major public health concern, there are no widely accepted treatment interventions to address stimulant use disorders (SUD). In light of evidence suggesting that oxytocin may be a useful treatment for SUD in animal models, the evidence pertaining to its effectiveness in humans was reviewed.

Methods:

A literature search using Medline, Embase, and PsychInfo was undertaken. Search results were subsequently imported into Covidence, an internet based systematic review program, for identification of relevant studies.

Results:

Six studies of small size were included in this review, two of which were pilot studies. One study suggested that oxytocin increased the desire to use cocaine; however, this was in a population of participants who were abstinent of all drug use for an average of 28 months in the context of incarceration. Although oxytocin was well tolerated across studies, no study showed a statistically significant reduction in reported cocaine use or cravings. One study showed a trend towards reduced self-reported cocaine use and a significant reduction in the construct of 'self-association' with drugs. Another study found that oxytocin resulted in higher rates of group therapy attendance.

Conclusions:

Available research suggests that oxytocin does not have significant benefit in the treatment of SUD; however, included studies are small in sample size and limited in number. In light of the limited data available at this time, in addition to the positive results seen in animal models, further studies are required. Currently, there is not enough evidence to support the use of oxytocin for the treatment of SUD.

Clinical Relevance:

Currently, there are no widely accepted medication or therapeutic interventions for the treatment of stimulant use disorders. There is increasing evidence in animals to suggest that oxytocin minimizes the re-warding effects of many illicit substances, including stimulants. Oxytocin is presenting as a potentially safe pharmacotherapeutic treatment of stimulant use disorders.

POSTER PRESENTATION

**Stefanie Montgomery¹, Karen Dahri^{2,3}, Kaveh Rayani⁴,
Jacqueline Kwok³, Peter Chan^{1,2}**

¹Department of Psychiatry, Faculty of Medicine, UBC

²Vancouver General Hospital, Vancouver Coastal Health

³UBC Faculty of Pharmaceutical Sciences

⁴MD Undergraduate Program, Faculty of Medicine, UBC

RESIDENT

CLINICAL
RESEARCH

ABSTRACT #45

THE USE OF ANTICONVULSANT ADJUNCTS TO TREAT ALCOHOL WITHDRAWAL SYNDROME IN HOSPITALIZED OLDER ADULTS

Objectives:

To evaluate the prescribing practices of anticonvulsant (AC) adjuncts to benzodiazepines in managing Alcohol Withdrawal Syndrome (AWS). Secondary objectives include the prescription of relapse prevention agents (disulfiram, acamprosate, and naltrexone) for Alcohol Use Disorder (AUD), a quality assessment of the AWS order set, and adverse events related to treatment.

Method:

Retrospective medical record review of adults aged 60 and above with AWS and admitted to medicine or hospitalist units between June 2013–June 2018. Duration and dosing of benzodiazepine, dosing and type of AC and AUD agent, adverse events and quality control measures collected. A multivariable regression model was employed.

Results:

Eighty-three encounters were included in the study; 28 were prescribed an AC. The amount and duration of benzodiazepine administered were not statistically different between the benzodiazepine only and the AC adjunct groups. Five new prescriptions of AUD agents were provided on discharge. No AC adverse events occurred and 57% of individuals were administered the appropriate benzodiazepine dose.

Conclusions:

AC adjuncts for AWS did not decrease the amount of benzodiazepine administered, nor shorten the duration of treatment. Their routine use is not supported by our findings. Our study highlights a missed opportunity for AUD agents to be prescribed during hospitalization.

LIGHTNING TALK PRESENTATION

Emma Morton¹, Venkat Bhat², Peter Giacobbe², Wendy Lou, Erin E. Michalak¹, Trisha Chakrabarty¹, Benicio N. Frey^{3,5}, Roumen V. Milev³, Daniel J. Müller^{2,6}, Sidney H. Kennedy², Sagar V. Parikh⁴, Susan Rotzinger², Raymond W. Lam¹ on behalf of the CAN-BIND Investigator Team

¹Department of Psychiatry, Faculty of Medicine, UBC

²Department of Psychiatry, University of Toronto

³Department of Psychiatry and Psychology, Queen's University

⁴Department of Psychiatry, University of Michigan

⁵Mood Disorders Program and Women's Health Concerns Clinic, St. Joseph's Healthcare Hamilton, ON

⁶Campbell Family Mental Health Research Institute, Centre for Addiction and Mental Health, Toronto, ON

IMPACTS ON QUALITY OF LIFE WITH ESCITALOPRAM MONOTHERAPY AND ARIPIPRAZOLE AUGMENTATION IN PATIENTS WITH MAJOR DEPRESSIVE DISORDER: A CAN-BIND STUDY REPORT

Research Objectives:

Up to one third of individuals with major depressive disorder (MDD) will not respond to an initial course of antidepressant monotherapy. Aripiprazole is increasingly recommended as an adjunctive treatment in cases of inadequate antidepressant response, however its impacts on quality of life (QoL) have received considerably less attention.

Methods:

We evaluated secondary QoL outcomes from a Canadian Biomarker Integration Network in Depression (CAN-BIND) study in patients with MDD ($n = 179$). After 8 weeks of escitalopram, non-responders (<50% decrease in clinician-rated depression) were treated with adjunctive aripiprazole for a further 8 weeks ($n = 95$), while responders continued escitalopram ($n = 84$). Overall QoL was assessed using the Quality of Life Enjoyment and Satisfaction Short Form (Q-LES-Q-SF). A repeated measures ANOVA evaluated change in Q-LES-Q-SF scores. QoL relative to normative benchmarks was described for each timepoint.

Results:

QoL improved over both sequential treatment phases for those who were maintained on escitalopram and those who received adjunctive aripiprazole. 46% of patients achieving symptomatic remission at endpoint had impaired QoL relative to normative benchmarks.

Conclusion:

The present study found that adjunctive aripiprazole increases QoL for individuals who do not experience clinical response to an initial course of escitalopram monotherapy. Despite improvements in depressive symptoms, a substantial degree of QoL impairment persisted. Given QoL deficits may predict MDD recurrence, further attention to ways to support this patient-valued outcome are required.

LIGHTNING TALK PRESENTATION

**Shawna Narayan^{1,2}, Sharan Sandhu³, Hiram Mok²,
Kendall Ho⁴, David Kealy²**

¹Experimental Medicine Graduate Program, Faculty of Medicine, UBC

²Department of Psychiatry, Faculty of Medicine, UBC

³Surrey Mental Health and Substance Use, Fraser Health Authority

⁴Department of Emergency Medicine, Faculty of Medicine, UBC

GRADUATE
STUDENT

CLINICAL
RESEARCH

ABSTRACT #47

ETHNIC MINORITIES' RECOMMENDATIONS FOR E-MENTAL HEALTH RESOURCES

Ethnic minorities experience difficulties such as language barriers, difficulty navigating the healthcare system, and lack of culturally tailored resources, compared to the general population when accessing mental health services. Technology can improve quality and access to this underserved population through e-mental health which involves services and information delivered through the Internet and related technologies. Such services must be culturally tailored for peak effectiveness. This cross-sectional mixed-method study aims to investigate the use of e-mental health among ethnic minorities for anxiety and depressive disorders in an urban area.

Our objectives are: (1) To explore the experience of digital mental health services and assess its efficacy with ethnic minorities, (2) To identify correlations between ethnicity, digital health literacy, and experiences of mental health difficulties, and (3) To make recommendations for the development of e-mental health services for ethnic minorities. Participants (N=263) submitted a multi-item online questionnaire involving questions around e-mental health use, the severity of their depression and anxiety symptoms, and sociodemographic characteristics. Participants provided recommendations for future e-mental health services through open-ended questions. Many of the suggestions focused around the inclusion of culturally tailored content, graphics and phrases, and lived experiences of ethnic minorities.

E-mental health has vast potential in supporting ethnic minorities' health with proper development. These findings will benefit ethnic minorities by providing health care professionals with a greater understanding of treatment needs in cultural groups and supporting the development of culturally relevant e-mental health resources and services for ethnic minorities.

LIGHTNING TALK & POSTER PRESENTATION

**John-Jose Nunez^{1,2}, Yihan Zhou², Teyden T. Nguyen^{2,3}
Raymond T. Ng², Raymond W.Lam¹**

¹Department of Psychiatry, Faculty of Medicine, UBC

²Department of Computer Science, Faculty of Science, UBC

³Department of Statistics, Faculty of Science, UBC

RESIDENT

CLINICAL
RESEARCH

ABSTRACT #48

REPLICATION OF MACHINE-LEARNING ANALYSES TO PREDICT TREATMENT OUTCOME WITH ANTIDEPRESSANT MEDICATIONS IN PATIENTS WITH MAJOR DEPRESSIVE DISORDER

Background:

Antidepressant monotherapy remains the first-line treatment for major depressive disorder (Kennedy et al., 2016). However, 40-60% of patients will not initially respond (Hieronymus et al., 2016). Predicting a patient's treatment outcome based on clinical symptoms and episode features represents an exciting application of modern machine learning. We sought to independently replicate recent work predicting antidepressant outcomes using the STAR*D dataset, and then externally validate these models on new data from CAN-BIND-1 (Lam et al., 2016).

Methods:

We replicated and adopted Nie et al's methodology to predict initial antidepressant response, and externally validated these models using the CAN-BIND-1 clinical features database (Nie, Vairavan, Narayan, Ye, & Li, 2018). We then evaluated additional models to investigate the how different parameters affect prediction performance.

Results:

Our replicated models predicted treatment outcomes using STAR*D data with similar performance to Nie et al's results. Our external validation's results varied depend on what outcome was predicted, with antidepressant response ($\geq 50\%$ reduction in severity) performing worse than predicting remission. Using a smaller set of features in both datasets does not seem to impact performance, and we find evidence that predicting antidepressant response may perform better with a greater number of subjects.

Conclusion:

We successfully replicate prior working predicting antidepressant treatment outcomes using clinical data. We then externally validate these models on a new dataset, finding similar performance when predicting if a patient will achieve remission, but reduced performance if predicting antidepressant response.

Clinical Relevance:

Though in its early stages, machine-learning approaches will likely eventually be used in clinical psychiatric practice, as they have promise to improve clinical care. It is important to replicate and externally validate such approaches to establish their robustness before clinical application.

POSTER PRESENTATION

John-Jose Nunez^{1,2}, Raymond Ng², Alan Bates^{1,3}

¹Department of Psychiatry, Faculty of Medicine, UBC

²Department of Computer Science, Faculty of Science, UBC

³BC Cancer Agency

RESIDENT

CLINICAL
RESEARCH

ABSTRACT #49

PREDICTING THE PSYCHOSOCIAL NEEDS OF CANCER PATIENTS BY USING NATURAL LANGUAGE PROCESSING WITH PHYSICIAN DOCUMENTS

Background:

Our project aims to use natural language processing to automatically predict the psychosocial needs of cancer patients from physician documents. This will allow cancer agency psychiatrists and other physicians to better help cancer patients, and potentially improve outcomes in both physical and mental health.

Research Objectives:

It is known that cancer patients showing psychosocial risk factors (e.g. social isolation, depression, anxiety) are at increased risk for not only worsened quality of life, but also poorer survival (1-3). Psychosocial oncology psychiatrists aim to address these needs, but these needs often go undetected, leading to underutilization (4-5). We aim to produce a natural language processing (NLP) model to automatically predict psychosocial needs from physician documents, such as the initial consultations dictated by medical oncologists, so that these needs can be detected and addressed earlier.

We are unaware of previous work addressing this question, though predictive models have been used on cancer data (6) and using NLP methods on clinical documents in other areas of psychiatry (7).

Methods:

We are using the documents of patients who completed the Psychosocial Screen for Cancer (PSSCAN) questionnaire at the start of their cancer care, which records anxiety, depression, suicidality, and social isolation symptoms. We are training NLP models on these data to predict PSSCAN scores. This will train the NLP artificial intelligence to “read” physician documents and predict the psychological needs. Once trained, the model can be used on patients who have not completed the questionnaire, or at time points throughout their cancer care.

Interim Results:

Our project is currently in progress. Our dataset has over 1,250,000 documents, from 59,800 BC Cancer patients. We have obtained and cleaned the data and are now starting to build and train the models.

POSTER PRESENTATION

Chantal Percival^{1,2}, Todd Woodward^{1,2}

¹Department of Psychiatry, Faculty of Medicine, UBC

²BC Mental Health and Substance Use Services, PHSA

RESEARCH
STAFF

CLINICAL
RESEARCH

ABSTRACT #50

CHARACTERIZATION OF A NOVEL TASK-BASED FMRI FUNCTIONAL BRAIN NETWORK: FOCUS ON VISUAL FEATURES

Research Objective:

The novel focus on visual features (FVF) functional brain network has emerged in several task-based fMRI studies. FVF displays activation in the medial occipital and parietal cortex, with reciprocal suppression in the lateral occipital cortex (Sanford et al., 2020). However, the influence of task demands and conditions on activity remains ambiguous. Estimated hemodynamic responses (HDRs) may help contextualize FVF function.

Methods:

Previous works extracted functional brain networks with constrained principal component analysis for fMRI (fMRI-CPCA). FVF networks were identified by characteristic activation and suppression patterns, and a voxel-wise region-specific correlation with previously identified FVF networks. Corresponding estimated HDRs were examined for condition effects and interactions.

Results:

Sanford and Woodward (2020), and Sanford et al. (2020) displayed FVF activation when studying pictures, and suppression when remembering previously viewed letters. Brotchie (2020) also demonstrated increased FVF activation on presentation of a picture. Finally, FVF displayed suppression when the visual features of presented stimuli had to be ignored in order for the task to be completed successfully (Sanford, 2019).

Conclusions:

Results suggest that FVF activation occurs in the presence of an image irrespective of task relevance. FVF appears to be suppressed when removing focus from presented visual features in order to perform task demands, such as focusing on semantic meaning of presented word, or encoding and maintaining in working memory. Suppression may also occur upon trial termination when visual focus is no longer required.

Brotchie, J. (2020). The Effect of Alcohol on the Functional Brain Networks Underlying Working Memory. [Unpublished]. University of British Columbia.

Sanford, N. (2019). Functional Brain Networks Underlying Working Memory Performance in Schizophrenia: A Multi-Experiment Approach. [Unpublished doctoral dissertation]. University of British Columbia.

Sanford, N., Whitman, J. C., & Woodward, T. S. (2020). Task-merging for finer separation of functional brain networks in working memory. *Cortex*, 125, 246-271. doi:10.1016/j.cortex.2019.12.014

Sanford, N., & Woodward, T.S. (2020). Functional Delineation of Prefrontal Networks Underlying Working Memory in Schizophrenia: A Cross-Dataset Examination. [Manuscript submitted for publication]. Department of Psychiatry, University of British Columbia.

LIGHTNING TALK PRESENTATION

**Katerina Rnic¹, Young-Eun Jung², Ivan Torres¹,
Trisha Chakrabarty¹, Joelle LeMoult³, Raymond W. Lam¹**

¹Department of Psychiatry, Faculty of Medicine, UBC

²Jeju National University, Jeju City, South Korea

³Department of Psychology, Faculty of Arts, UBC

POSTDOCTORAL
FELLOW

CLINICAL
RESEARCH

ABSTRACT #51

DISCREPANCIES BETWEEN OBJECTIVE AND SUBJECTIVE COGNITION IN MAJOR DEPRESSIVE DISORDER: A CAN-BIND-1 CLINICAL TRIAL REPORT

Research Objectives:

Major Depressive Disorder (MDD) is characterized by both objective and subjective cognitive problems, which are frequently accompanied by impairment and reduced quality of life. Discrepancies between objective and subjective cognition reflect self-appraisals of cognitive abilities and range from under-appraisals to accurate and over-appraisals. The objectives of this study were to assess how cognitive self-appraisals change following treatment and to investigate the association of self-appraisals with depressive symptoms, treatment response, and functional outcomes.

Methods:

As part of the Canadian Biomarker Integration Network in Depression trial 1 (CAN-BIND-1) clinical trial, 154 patients with MDD completed a neuropsychological battery and measures of subjective cognition, depressive symptoms, occupational productivity, global disability, and quality of life at baseline and post-treatment. Self-appraisal scores were computed by subtracting objective cognition z-scores from subjective cognition z-scores. Thus, lower scores indicated under-appraisals and higher scores indicated over-appraisals.

Results:

Self-appraisals were sensitive to treatment and increased from pre- to post-treatment. Baseline self-appraisals were associated with depressive symptoms, but did not predict pre-post treatment changes in depression. Moreover, baseline self-appraisals did not predict whether patients were classified as treatment responders or remitters. However, pre-post treatment increases in self-appraisals were associated with decreases in depressive symptoms and improvements in functional outcomes. Greater increases in self-appraisals were also evident among treatment responders.

Conclusions:

The current findings indicate that cognitive self-appraisals increase alongside treatment-related improvements in depressive symptoms and functioning and, are a compelling construct for better understanding MDD-related impairment and recovery.

POSTER PRESENTATION

**Jillian Rodger^{1,2}, John Best², Zainab Naqqash¹,
Naomi Roome^{1,2,3}, S. Evelyn Stewart^{1,2,3}**

¹ Faculty of Medicine, UBC

² BC Children's Hospital Research Institute, PHSA

³ Mental Health and Substance Use Services Research Institute, PHSA

MEDICAL
STUDENT

CLINICAL
RESEARCH

ABSTRACT #52

PATTERNS OF OCD DIAGNOSIS, ACCOMMODATION AND IMPAIRMENT AMONG FIRST-DEGREE RELATIVES OF CHILDREN WITH OCD

Research Objectives:

To assess the cumulative impact of multiple OCD diagnoses on family accommodation and perceived family functioning in families of children with OCD.

Methods:

The sample comprises 311 OCD-affected children and their first-degree relatives. Proband OCD diagnoses were determined according to DSM-IV/DSM-5 criteria as confirmed by consensus between a child and adolescent psychiatrist and psychologist. OCD symptoms were captured via the Florida OCD Inventory (FOCI), family functioning impairment via the OCD Family Functioning (OFF) scale, and accommodation via the Family Accommodation Scale for Obsessive-Compulsive Disorder (FAS). All three measures are psychometrically sound and validated on pediatric OCD populations. Pearson bivariate correlations (r) and t-tests were used to evaluate statistical associations in the data.

Results:

Among probands, 37.6% ($n=117$) had at least 1 first-degree family member with diagnosed OCD. Specifically, 27.3% ($n=85$) had a parent and 14.5% ($n=45$) had a sibling with diagnosed OCD. OCD-diagnosis in a first-degree relative was not associated with family accommodation or impairment. However, modest correlations of mean family FOCI scores were identified with family impairment ($r=0.30$, $p<0.001$) and accommodation ($r=0.20$, $p=0.002$). Looking at siblings specifically, family impairment ($r=0.27$, $p=0.001$) but not accommodation ($r=0.12$, $p=0.17$) was significantly associated with sibling FOCI. In contrast, parent FOCI was significantly associated with accommodation ($r=0.17$, $p=0.024$) but not impairment ($r=0.13$, $p=0.08$).

Conclusions:

Findings of this clinical pediatric OCD sample align with those of past family studies, reflecting high rates of OCD in first degree relatives. Both family accommodation and functioning were modestly associated with mean family OCD symptom severity.

POSTER PRESENTATION

**Naomi Roome¹, John Best¹, Zainab Naqqash², Jillian Rodger³,
S. Evelyn Stewart^{1,2}**

¹Department of Psychiatry, Faculty of Medicine, UBC

²BC Children's Hospital Research Institute, PHSA

³Faculty of Medicine, UBC

RESIDENT

CLINICAL
RESEARCH

ABSTRACT #53

SIBLING PERSPECTIVES OF FAMILY FUNCTIONING IN PEDIATRIC OCD

Research Aims:

Sibling perspectives have been largely overlooked in the literature. This study sought to examine sibling perspectives of family functioning in pediatric OCD.

Methods:

The sample included 234 families containing relevant data from youth affected with a confirmed DSM-IV diagnosis of OCD, their siblings and their parents. Validated measures of family functioning were completed by all family members using the OCD Family Functioning (OFF) scale. Analysis using t-tests, correlations and multiple linear regression were used.

Results:

There was a significant difference in sibling reported OFF scores and parent reported OFF scores ($t(233)=3.99$, $p<0.001$), with siblings reporting lower overall scores of family impairment (mean = 22.1, SD = 12.4) compared to their parents (mean = 25.1, SD = 12.2). The difference between sibling reported OFF scores and OCD affected youth reported OFF scores was more modest ($t(191)=2.35$, $p=0.02$) but suggested siblings reported slightly lower OFF scores than OCD affected youth (mean = 23.5, SD = 11.7). Together, the 17 predictors explained 52% of the variance in sibling OFF scores. Among the strongest predictors were greater family accommodation ($\beta = 0.39$), absence of symmetry presentation ($\beta = -0.25$), OCD severity ($\beta = 0.22$), fewer number of siblings ($\beta = -0.21$), and younger age of the OCD affected child ($\beta = -0.20$).

Conclusions:

Siblings appear to report lower levels of family impairment compared to their parents and similar levels of family impairment when compared to the OCD affected child in the family. Potential predictors of sibling reported family functioning impairment were noted.

POSTER PRESENTATION

**Omran K. Safi¹, Andrew C. Li¹, Anastasia F. Cheng¹,
Christian G. Schuetz¹**

¹Department of Psychiatry, Faculty of Medicine, UBC

OTHER

CLINICAL
RESEARCH

ABSTRACT #54

ASSESSING CUE-INDUCED CRAVING IN INDIVIDUALS WITH METHAMPHETAMINE ADDICTION THROUGH PORTABLE EEG TECHNOLOGY

Incubation of drug craving has been observed in humans and animals across numerous abusive substances. The current study aims to determine the trajectory of cue-induced craving in individuals addicted to methamphetamine using a portable EEG device called the Muse. Our study will employ an established cognitive task alongside a novel EEG method. We will ask participants who are currently receiving treatment for methamphetamine dependence to complete a computer task in which they are shown a series of images followed by prompts designed to measure desire and craving of the item presented. We will be using a portable EEG headset called the Muse to record EEG data while participants complete the task. The transition of established and validated cognitive tasks to the Muse is feasible and we therefore expect valid results. This project represents a major step for feasibility and accessibility of EEG data collection in clinical and hard-to-access populations

POSTER PRESENTATION

**Gayatri Saraf¹, Jairo Vinícius Pinto^{1,2}, Ariana Cahn¹,
Adam George White¹, Elham Shahinfard³, Nasim Vafai³,
Vesna Sossi⁴, Lakshmi N Yatham¹**

CLINICAL
FELLOW

CLINICAL
RESEARCH

ABSTRACT #55

¹Department of Psychiatry, Faculty of Medicine, UBC

²Department of Psychiatry, Federal University of Rio Grande do Sul, Porto Alegre, RS, Brazil

³Djavad Mowafaghian Centre for Brain Health, Pacific Parkinson's Research Centre, UBC

⁴Department of Physics and Astronomy, Faculty of Science, UBC

DOPAMINE RELEASE DURING PSYCHOLOGICAL STRESS IN EUTHYMIC BIPOLAR I DISORDER: A POSITRON EMISSION TOMOGRAPHY STUDY WITH [11C]-RACLOPRIDE

Research Objectives:

Few studies have attempted to provide direct evidence for the role of dopamine release in response to stress in Bipolar Disorder (BD). The purpose of this study was to investigate whether euthymic BD patients have a greater dopamine release during stress using Positron Emission Tomography (PET) scanning with the radiotracer [11C] raclopride, in response to a stress task known as the Montreal Imaging Stress Test (MIST).

Methods:

10 euthymic DSM-V BD patients and 10 healthy controls underwent [11C]raclopride PET scan on a "stress" and a "no stress" condition separated by at least 24 hours. Participants received an injection of the radiotracer over 1 minute followed by PET scan for 60 minutes. Participants were assessed for mood symptom severity at baseline, and before and after each scan. The reduction in [11C]raclopride binding in stress condition compared with non-stress rest condition for each subject provided an estimate of dopamine release due to stress.

Results:

The mean age of the participants in the study was 35 (± 12) years. Six (30%) of the participants were females. Salivary cortisol increased during stress for all participants. The scores on Montgomery-Åsberg Depression Rating Scale increased during stress condition for BD patients. There was no effect of condition or group on [11C]raclopride binding in any of the brain regions of interest, except for ventral striatum, where stress led to dopamine release for all participants.

Conclusion:

The magnitude of dopamine release during a stress task does not seem to vary significantly between euthymic bipolar patients and healthy controls.

POSTER PRESENTATION

Robert R. Selles^{1,2}, Zainab Naqqash^{1,2}, S. Evelyn Stewart^{1,2}

¹Provincial OCD Program, BC Children's Hospital

²Department of Psychiatry, Faculty of Medicine, UBC

POSTDOCTORAL
FELLOW

CLINICAL
RESEARCH

ABSTRACT #56

INTENSIVE COGNITIVE BEHAVIORAL TREATMENT FOR YOUTH WITH OBSESSIVE COMPULSIVE DISORDER: IDENTIFYING OPTIMAL SETTING AND DOSE

Research Objectives:

This pilot study investigated the feasibility and efficacy of implementing a flexible-dose intensive model of CBT to pediatric OCD patients while comparing outcomes when providing treatment at the hospital or in family's homes.

Methods:

23-OCD affected youth received treatment, with 11 randomly assigned to the hospital condition and 12 assigned to the home condition. Following screening, all youth received 3x3 hour treatment sessions, following which youth had the option to receive as many as four additional 3-hour sessions. All youth were evaluated 1-month following completion of their last session. Primary outcomes include session utilization and measures of OCD-severity and impairment.

Results:

At follow-up, 70% of youth ($n = 16$) were considered treatment responders ($> 35\%$ reduction in symptoms), with 35% ($n = 8$) in remission ($> 55\%$ reduction in symptoms). Families utilized an average of 5 sessions, with 22% of families ($n = 5$) utilizing the minimal dose and 39% ($n = 9$) using all 7 sessions. Session utilization was comparable across setting. The home condition demonstrated small advantages in reducing symptom severity ($d = 0.25$) and moderate advantages in reducing impairment ($d = 0.48$).

Conclusions:

Intensive CBT is a feasible and efficacious treatment format and incorporating flexibility in treatment dosing optimizes the level of care to individual families while conserving resources. Incorporating home-based sessions into treatment appears to offer additional benefits.

POSTER PRESENTATION

**Robert R. Selles^{1,2}, John R. Best^{1,2}, Cynthia Lu^{1,2},
S. Evelyn Stewart^{1,2}**

¹Provincial OCD Program, BC Children's Hospital

²Department of Psychiatry, Faculty of Medicine, UBC

POSTDOCTORAL
FELLOW

CLINICAL
RESEARCH

ABSTRACT #57

PROFILES OF FAMILIES AFFECTED BY PEDIATRIC OBSESSIVE-COMPULSIVE DISORDER

Research Objectives:

Parental reactions to, involvement with, and impairment from, pediatric OCD are highly relevant to the disorder's manifestation and treatment.

Methods:

Examining a host of family OCD-specific (e.g., severity, accommodation, functioning) and non-OCD-specific (e.g., family dynamics, parent capacity, parent psychopathology) variables in a sample of 243 family triads (youth, mothers, fathers) of OCD-affected youth (5-19 years old; 57% female), dependent mixture modeling was utilized to identify latent family presentation profiles. Relationship between profiles and response to group family-based cognitive behavioral therapy (CBT) was explored in a sub-sample ($n = 123$).

Results:

Results supported a four-profile solution: A) Low Impact ($n = 28$; 12%) characterized by low OCD-specific and non-specific impacts; B) Relational Impact ($n = 68$; 28%) characterized by notable disruptions in family dynamics; C) OCD Impact ($n = 65$; 27%) characterized by high OCD-specific impacts; and D) Dual Impact ($n = 82$; 34%) characterized by high OCD-specific impacts and disruptions in family dynamics. All four profiles demonstrated improvement with family-based CBT and response did not significantly differ across groups.

Conclusions:

Four distinct profiles of OCD-affected families were identified. These profiles highlight differential OCD impact, family responses, and disruption. In the future, they may prove useful in informing treatment direction.

POSTER PRESENTATION

**S.J. Stochmanski¹, E. Gregory², F. Vila-Rodriguez¹,
V. Hirsch-Reinshagen³**

¹Department of Psychiatry, Faculty of Medicine, UBC

²Experimental Medicine Graduate Program, Faculty of Medicine, UBC

³Department of Pathology and Laboratory Medicine, Faculty of Medicine, UBC

RESIDENT

CLINICAL
RESEARCH

ABSTRACT #58

POST-MORTEM EVALUATION OF OLDER ADULTS WITH SCHIZOPHRENIA

Research Objectives:

Cognitive impairment is a recognized trait in patients with schizophrenia, defined by noticeable deficits in attention, learning and memory, working memory, and executive function. These may manifest prior to the emergence of fully-developed schizophrenia, show relative stability over the course of illness, and accelerate during aging. This age-related cognitive decline is not associated with neurodegenerative pathology, considering elderly patients with schizophrenia have a similar incidence of neurodegenerative conditions as the general population, and remains poorly understood. We therefore sought to perform clinicopathological correlations in a well-defined cohort of older adults with chronic schizophrenia and brain autopsy to identify possible causative and/or contributing factors to age-related cognitive decline in schizophrenia.

Methods:

55 cases of older adults with schizophrenia were evaluated. All cases had extensive clinical assessment and neurocognitive testing, focusing on attention, memory, and executive function, and detailed post-mortem neuropathological evaluation. Cases were grouped based on the degree and type of neuropathological findings into age-appropriate, mild, moderate, or severe neuropathology. Demographic and clinical variables, including degree and type of cognitive impairment, will be evaluated for each group.

Results:

Demographic variables were not statistically different between groups. Average age of onset ranged from 20.85 to 27.06, and average disease duration was 50.44 to 59.23 years. The majority of cases per group were male (92% to 100%), and most patients within each group smoked (69% to 92%). Number of patients on antipsychotics was inversely correlated with neuropathological burden. Clinical variables are currently under investigation; however, preliminary evidence indicates that there is no significant differences based on neurodegenerative pathology.

Conclusions:

These results suggest that age-related cognitive decline observed in schizophrenia occurs independent of neurodegenerative pathology. Future studies will aim to provide further insights into the factors responsible for this neurodegeneration-independent cognitive decline opening potential avenues for intervention.

POSTER PRESENTATION

**Jacob L. Stubbs^{1,2}, Mikaela Correa^{1,2}, Tasha Chan^{1,2},
Kristina Gicas³, A. Talia Vertinsky⁴, Manraj K. Heran⁴,
Allen E. Thornton^{2,5}, Wayne Su^{1,2}, Alasdair M. Barr^{2,6},
William G. Honer^{1,2}, William J. Panenka^{1,2}**

¹Department of Psychiatry, Faculty of Medicine, UBC

²BC Mental Health and Substance Use Services Research Institute, PHSA

³Department of Psychology, York University, Toronto

⁴Department of Radiology, Faculty of Medicine, UBC

⁵Department of Psychology, Simon Fraser University

⁶Department of Anesthesiology, Pharmacology, and Therapeutics, Faculty of Medicine, UBC

GRADUATE
STUDENT

CLINICAL
RESEARCH

ABSTRACT #59

INCREASED BRAIN ATROPHY IN HOMELESS AND PRECARIOUSLY HOUSED INDIVIDUALS COMPARED TO THE GENERAL POPULATION

Research Objectives:

(1) To evaluate how brain atrophy in homeless and precariously housed individuals compares to the general population. (2) To evaluate whether traumatic brain injury or substance dependence were associated with greater brain atrophy. (3) To evaluate how greater brain atrophy is associated with functioning.

Methods:

Neuroimaging data from the general population was acquired from the open-access Cambridge Centre for Ageing and Neuroscience database. All other data was obtained as part of "The Hotel Study", a longitudinal observational study of individuals who are homeless or precariously housed in an impoverished neighbourhood in Vancouver, BC. All T1-weighted MRI images were processed using FreeSurfer version 6.0. Tissue-to-intracranial volume ratio was used as the MRI measure of brain atrophy. We used multiple linear regression to evaluate predictors of brain atrophy as well as associations between baseline atrophy and baseline functioning.

Results:

Preliminary analyses indicate that homeless and precariously housed individuals have more rapid brain atrophy than individuals in the general population ($p < 0.0001$). Among homeless and precariously housed individuals, alcohol dependence ($p = 0.027$) and evidence of traumatic brain injury ($p = 0.00076$) were associated with greater atrophy, adjusting for age and sex. Greater atrophy was associated with poorer cognitive functioning test scores ($p = 0.015$) and lower scores on a measure of independent living ($p = 0.043$).

Conclusions:

There may be greater brain atrophy in homeless and precariously housed individuals compared to the general population. Greater atrophy is associated with poorer functioning, and traumatic brain injury and alcohol dependence may be important contributors to brain health in this population.

POSTER PRESENTATION

**Katarina Tabi^{1,2,3}, Manreet Bhullar¹, Barbara Shulman^{2,3},
Jake Locke^{1,2}, Brad Locke², Deirdre Ryan^{2,3}, Evelyn Stewart^{1,2}**

¹ Centre for Mindfulness, BC Children's Hospital, PHSA

² Department of Psychiatry, Faculty of Medicine, UBC

³ Reproductive Mental Health Program, BC Children's Hospital, PHSA

POSTDOCTORAL
FELLOW

CLINICAL
RESEARCH

ABSTRACT #60

MINDFULNESS-BASED STRESS REDUCTION (MBSR) FOR FATHERS IN FAMILIES AFFECTED BY POSTPARTUM DEPRESSION AND ANXIETY

1 in 5 mothers are diagnosed with postpartum depression or anxiety (PPDA). In these families, fathers are also often distressed which can lead to couple conflict. Relationship conflicts are a major predictor of postpartum depression. By increasing the awareness, resilience, and emotional presence of fathers through Mindfulness-Based Interventions (MBI), we expect that the couple's relationship, and subsequently the mother's mental health, will improve. Given the time constraints and competing demands during the postpartum period, fathers may find it challenging to commit to a regular group. This pilot study aimed to investigate the feasibility and acceptability of mindfulness groups for new fathers.

Participants were recruited from a tertiary mental health clinic. Eligible fathers included those in a relationship with a woman diagnosed with PPDA. The intervention offered was an 8-week adapted Mindfulness-Based Stress Reduction (MBSR) program. Measures used were CSQ (Client Satisfaction Questionnaire) and CPQ (Communication Pattern Questionnaire), GAD-7 (anxiety) and PHQ-9 (depression). Results suggest improvements in couples' communication and mutual understanding. Both fathers (N=10; mean age=36.3) and mothers reported high satisfaction with the program. The dropout rate was 33%, predominantly due to scheduling conflicts. This study demonstrates the feasibility of MBI for new fathers and identifies the need for flexibility to accommodate their schedules. Further study will explore the effects of MBI on the parents' relationship, as well as on the mental health outcomes in the mother.

ABSTRACT

**Andy Tai, Alireza Kazemi, Jean Westenburg,
Amanda Slaunwhite, Michael Krausz**

Department of Psychiatry, Faculty of Medicine, UBC

GRADUATE
STUDENT

CLINICAL
RESEARCH

ABSTRACT #61

A PREDICTIVE MODEL FOR OVERDOSE

Keywords: Psychiatry, Overdose, Risk Assessment, Predictive Modeling

In an E-Mental Health project funded through Health Canada called the Risk Assessment and Management Platform (RAMP), we are applying machine learning methods to identify the risk factors that contribute to opioid overdose. The goal of RAMP is to be a part of the solution to the opioid crisis by utilizing the data from the BCCDC overdose cohort. RAMP includes a variety of different components such as a landing page, screening and assessment, prevention and lifestyle monitoring, general tools, overdose specific material and a common backend. These modules are aimed at providing the necessary continuum of care required for individuals who use drugs. continuum of care necessary for the vulnerable drug using population.

The artificial intelligence/machine learning risk predictive model in RAMP will be used on an individual level by people who use drugs (PWUD) to identify areas of potential risk for overdose and harm. At a health care level, the system can provide evidence to address risk factors that contribute to overdose. At a policy level, the results would support evidence-based decision making by advising protocols/strategies/treatment options that would reduce the harms identified by this predictive model.

Our objectives are to: 1) Identify risk factors of fatal and non-fatal overdose; 2) Create and validate a model to predict the likelihood of fatal overdose.

Contact: andymytai@alumni.ubc.ca

POSTER PRESENTATION

**Alex R. Terpstra¹, Rebecca M. Todd¹, Fidel Vila-Rodriguez²,
Trisha Chakrabarty², Joelle LeMoult¹**

¹ Department of Psychology, Faculty of Arts, UBC

² Department of Psychiatry, Faculty of Medicine, UBC

GRADUATE
STUDENT

CLINICAL
RESEARCH

ABSTRACT #62

REWARD SENSITIVITY AND COGNITIVE BIASES DURING ACUTE MAJOR DEPRESSIVE EPISODE WITHIN MAJOR DEPRESSIVE AND BIPOLAR SPECTRUM DISORDERS

Research objectives:

Altered reward sensitivity and cognitive biases are present in major depressive disorder (MDD; periodic depressive mood states) and bipolar spectrum disorder (BSD; depressive *and* elevated mood states). However, it is unknown whether a laboratory task measuring reward anticipation distinguishes depressed vs. non-depressed individuals or how the content and pattern of cognitive biases may differ in MDD versus BSD.

Methods:

MDD (n=51; 77% female; mean age=44), BSD (n=11; 55% female; mean age=34) and healthy control (HC; n=30; 52% female; mean age=34) participants completed (1) a novel incentive delay task measuring sensitivity to anticipated and obtained reward, (2) a facial emotion recognition task measuring bias and sensitivity towards emotional facial expressions and (3) a self-referential processing task measuring self-attribution and memory of positive and negative traits.

Results:

The HC group was more sensitive to anticipated reward than the MDD, $p=.001$, $d=1.00$, but not BSD, $p=.848$, $d=0.23$, group. The HC group endorsed fewer negative traits than the MDD, $p<.001$, $d=2.68$, and BSD, $p<.001$, $d=3.41$, groups. The MDD group endorsed fewer positive traits than the BSD, $p=.008$, $d=-1.04$, and HC, $p<.001$, $d=-1.95$, groups. The BSD group endorsed fewer positive traits than the HC group, $p=.044$, $d=-1.00$. The HC group recalled a smaller proportion of negative traits than the MDD, $p=.026$, $d=0.58$, but not BSD, $p=.171$, $d=0.63$, group.

Conclusions:

These findings provide evidence for common and dissociable aspects of reward sensitivity and cognitive biases in MDD and BSD with potential diagnostic and clinical relevance.

POSTER PRESENTATION

**Jean Nicolas Westenberg¹, Sindi Addorisio^{1,2},
Mostafa Mamdouh Kamel^{1,3}, Amber Hyed², Tala Maragha¹,
Mohammad Abusamak⁴, Cameron Wild²,
Reinhard Michael Krausz¹**

¹Department of Psychiatry, Faculty of Medicine, UBC

²School of Public Health, University of Alberta

³Department of Psychiatry, Tanta University, Egypt

⁴ Faculty of Dentistry, McGill University, Montreal

GRADUATE
STUDENT

CLINICAL
RESEARCH

ABSTRACT #63

PERCEIVED UNMET NEEDS AND BARRIERS TO CARE AMONG INDIVIDUALS EXPERIENCING ABSOLUTE HOMELESSNESS IN EDMONTON, CANADA

Research Objectives:

Individuals experiencing absolute homelessness, defined as living in places not intended for human habitation, have limited access to services which contributes to high rates of morbidity and mortality. The aim of this presentation is to describe the perceived unmet service needs among such a marginalized group and examine the factors associated with specific perceived unmet service needs.

Methods:

Using a cross-sectional survey, 150 individuals experiencing absolute homelessness were recruited from Edmonton's inner city and adjoining areas. The majority of participants were male (71.3%) and self-identified as Indigenous (74.0%). An adapted version of the Perceived Need for Care Questionnaire was used to measure past-year unmet needs for 4 types of services: hospital care, counselling, skills training, and harm reduction.

Results:

Overall, 89.3% of participants perceived a need for care for one or more general health and social services during the past year regarding their substance use and/or mental health problems; participants reported the highest levels of unmet need for counselling (42.9%) and skills training (39.2%). Though 73.3% of participants reported receiving any service, only 8.0% of participants reported having their perceived needs fully met.

Conclusions:

In this study, individuals reported a high percentage of unmet needs. High psychological distress was found to increase the perceived need of all services, while other factors such as stimulant use, opioid use, housing instability, and physical health were associated with specific perceived needs. Better patient-centred care, housing and supports for this neglected and underserved population is needed to serve these difficult to reach patients.

POSTER PRESENTATION

**Clara Westwell-Roper^{1,2}, Sharon To³, Lianne Soller³,
Edmond S. Chan^{1,3}, S. Evelyn Stewart^{1,2,4}**

¹Provincial OCD Program, BC Children's Hospital Research Institute, PHSA

²Department of Psychiatry, Faculty of Medicine, UBC

³Division of Allergy and Immunology, Faculty of Medicine, UBC

⁴BC Mental Health and Substance Use Research Institute, PHSA

RESIDENT

CLINICAL
RESEARCH

ABSTRACT #64

THE IMPACT OF COVID-19 ON FOOD-ALLERGY-SPECIFIC ANXIETY: A CROSS-SECTIONAL SURVEY OF PARENTS OF CHILDREN WITH FOOD ALLERGIES

Background:

Parenting a child with food allergy (FA) is associated with reduced health-related quality of life (HRQOL), including FA-specific anxiety (FAA). We characterized the effects of the Canadian COVID-19 pandemic on parental FAA and general anxiety symptoms.

Methods:

A survey link was distributed by FA advocacy groups in May-June 2020. The survey included medical/demographic information, anxiety and HRQOL measures, a 28-item FAA questionnaire undergoing validation (querying current/pre-COVID-19 symptoms), and COVID-19 impact rating scales. Groups were compared by two-tailed t-test, one-way ANOVA, or chi-squared test. Predictors of FAA change were assessed with ordinal regression analysis. Thematic analysis was applied to open-ended responses.

Results:

293 participants completed the FAA questionnaire. 67% reported increased overall anxiety due to COVID-19. Only 28% reported increased FAA ($p < 0.0005$), which was unchanged (29.5%) or decreased (42.3%) among remaining respondents. FAA on a visual analogue scale correlated weakly with general anxiety measures (GAD-7, $p = 0.273$; STAI-S, $p = 0.371$) and moderately with FA-specific HRQOL (FAQL-PB, $p = 0.688$) and our FAA questionnaire ($p = 0.707$, all $p < 0.0005$). Predictors of FAA change with COVID-19 included increased overall anxiety, prior emergency visits, FA multiplicity, and non-nut allergies. Participants reported that COVID-19 was associated with a decrease in all FAA dimensions queried. Qualitative themes included decreased worry about out-of-home allergen exposures, lack of "safe" food availability, concern about health care system capacity, and risks of infection associated with emergency care.

Conclusions:

Despite increased overall anxiety, most parents reported unchanged or decreased FAA associated with COVID-19-related restrictions. Further studies are required to evaluate the effects of systemic inequities in this population and to assess methods for identifying families requiring mental health support, particularly as public health guidance and perceived allergen exposure risk change over the course of the pandemic.

POSTER PRESENTATION

**Clara Westwell-Roper^{1,2}, Zainab Naqqash¹, Antony Au¹,
Boyee Lin¹, Cynthia Lu¹, Li Shao⁴, Clare L. Beasley^{2,3,4},
S. Evelyn Stewart^{1,2,3}**

¹Provincial OCD Program, BC Children's Hospital Research Institute, PHSA

²Department of Psychiatry, Faculty of Medicine, UBC

³BC Mental Health and Substance Use Research Institute, PHSA

⁴Djavad Mowafaghian Centre for Brain Health, UBC

RESIDENT

CLINICAL
RESEARCH

ABSTRACT #65

SALIVARY BIOMARKERS IN CHILDHOOD-ONSET OBSESSIVE COMPULSIVE DISORDER: PRELIMINARY ANALYSES OF PRO-INFLAMMATORY CYTOKINES

Background/Objectives:

Previous studies suggest an association between obsessive-compulsive disorder (OCD) and immune dysregulation. Saliva may provide a minimally-invasive tool for assessing mucosal immunity and neuroendocrine-immune interactions in psychiatric disorders. This study will compare inflammatory mediators in saliva from participants with childhood-onset OCD and healthy controls and evaluate their associations with OCD phenotype.

Methods:

Saliva was collected from 42 children and youth attending the BCCH Provincial OCD Program and 52 controls. All participants completed an oral health survey and medical questionnaire. Clinician-rated OCD severity was assessed with the Child Yale-Brown Obsessive Compulsive Scale. C-reactive protein (CRP) and selected pro-inflammatory cytokines were measured by multiplex immunoassay in the first 20 patient samples and age-matched controls.

Results:

Tumour necrosis factor- α (TNF- α), interleukin-1 β (IL-1 β), IL-6, IL-8, and CRP were detectable in saliva. There were significant bivariate correlations among all cytokines ($r_s=0.671-0.748$, $p<0.0005$ for all). Analyte concentrations were higher in participants who were younger and female. Fewer participants with OCD flossed daily compared to controls (41% versus 90%; $n=61$, $p<0.0005$). Linear regression models including age, gender, oral health measures, and OCD severity explained a large proportion of the variance in IL-6 (63%, $p=0.002$), IL-1 β (46%, $p=0.059$), and TNF- α (37%, $p=0.015$). Use of braces or a retainer and presence of severe OCD were significant predictors for levels of all three salivary cytokines.

Conclusions:

These data point to the feasibility of analyzing immune components in the saliva of children and youth with OCD. Disease- or stress-associated salivary changes may ultimately aid in identifying subgroups for prognostic or treatment purposes. Because this fluid reflects both systemic and local mucosal factors, evaluation of oral health is essential. Additional proteomic profiling is ongoing.

POSTER PRESENTATION

**Clara Westwell-Roper^{1,2}, John Best¹, Zainab Naqqash¹,
Kourosh Afshar^{3,4}, Andrew MacNeily^{3,4}, S. Evelyn Stewart^{1,2,5}**

¹ Provincial OCD Program, BC Children's Hospital Research Institute, PHSA

² Department of Psychiatry, Faculty of Medicine, UBC

³ Department of Urologic Sciences, Faculty of Medicine, UBC

⁴ Pediatric Urology, BC Children's Hospital, PHSA

⁵ BC Mental Health and Substance Use Research Institute, PHSA

RESIDENT

CLINICAL
RESEARCH

ABSTRACT #66

BOWEL AND BLADDER DYSFUNCTION IN CHILDREN AND YOUTH WITH OBSESSIVE COMPULSIVE DISORDER

Background/Objectives:

Neuropsychiatric disorders are common in children with bowel and bladder dysfunction (BBD), a syndrome associated with incomplete relaxation of pelvic floor muscles during voiding or stooling. Common BBD symptoms include incontinence, urinary frequency, urgency, and holding. We evaluated BBD symptom severity in children and youth with OCD attending a tertiary care OCD clinic.

Methods:

112 consecutive patients attending the BCCH Provincial OCD Program between 2016 and 2020 were invited to participate. Diagnosis of OCD and comorbidities (DSM-IV) was established by structured clinical interview. OCD severity and impact were assessed with the Children's Yale-Brown Obsessive-Compulsive Scale (CY-BOCS) and the Child Obsessive Compulsive Impact Scale (COIS-R; self-report), respectively. BBD symptoms were evaluated with the Vancouver Symptom Score (VSS), a previously validated self-report measure.

Results:

112 consenting participants completed the VSS. Based on a cut-off score of 11 corresponding to pediatric urologist-diagnosed BBD, 30.4% of participants screened positive, including more females than males (39.3% versus 21.4%; $p=0.04$). The mean score (9.0 ± 5.4) was greater than that of previously described control samples. Daytime urinary incontinence was present in a greater proportion of participants with OCD forbidden thoughts (34.8% versus 8.2%, $p=0.002$), major depressive disorder (38.5% vs. 6.8%, $p=0.001$), and somatization disorder (60% versus 9%, $p=0.001$) compared to those without. A regression model including CY-BOCS, COIS-R, psychiatric comorbidities, medications, age, and gender explained 52.2% of the variance in VSS; COIS-R and tic disorder were significant predictors.

Conclusions:

BBD symptoms are common and associated with high OCD-related impairment and psychiatric comorbidities. Standardized assessment may facilitate identification of BBD symptoms in this population and is critical to mitigating long-term physical and mental health impacts. Further studies are required to assess BBD treatment outcomes.

LIGHTNING TALK PRESENTATION

**Melissa L Woodward¹, Jingxia Lin², Kristina M Gicas³,
Wayne Su¹, Christy LM Hui⁴, William G Honer¹,
Eric YH Chen⁴, Donna J Lang⁵**

POSTDOCTORAL
FELLOW

CLINICAL
RESEARCH

ABSTRACT #67

¹Department of Psychiatry, Faculty of Medicine, UBC

²School of Nursing, The University of Hong Kong

³Department of Psychology, York University

⁴Department of Psychiatry, The University of Hong Kong

⁵Department of Radiology, Faculty of Medicine, UBC

MEDIAL TEMPORAL LOBE CORTICAL CHANGES IN RESPONSE TO EXERCISE INTERVENTIONS IN WOMEN WITH EARLY PSYCHOSIS: A RANDOMIZED CONTROLLED TRIAL

Research Objectives:

Exercise has been shown to induce changes in hippocampal volume in individuals with psychosis, but its ability to impact cortical regions remains equivocal. Psychosis patients are observed to have neuroanatomical deficits in the prefrontal-limbic network, associated with greater positive symptom severity and cognitive impairment. Despite the fact that women have greater potential to benefit from exercise interventions due to greater exercise-induced upregulation of brain growth factors, women with psychosis have been under-represented in exercise intervention studies. We hypothesized that women with early psychosis who complete an aerobic exercise intervention would demonstrate significant increases in prefrontal-limbic cortical regions and these neuroplastic changes would be associated with reduced symptom severity.

Methods:

In a cohort of 51 women with early psychosis from Hong Kong, we investigated the effects of a twelve-week exercise intervention (yoga, aerobic or waitlist group) on cortical grey matter. Clinical assessments and structural MRI were completed at the beginning and end of the intervention.

Results:

Increases in cortical volume and thickness were observed in the medial temporal cortical regions, primarily in the entorhinal and fusiform temporal gyrus for participants who completed the aerobic intervention. For the aerobic group only, increases in the entorhinal and fusiform temporal gyri were associated with decreasing psychosis symptom severity, particularly for the general psychopathology subscale.

Conclusions:

Neuroplastic increases in cortical grey matter were observed in women with early psychosis and these exercise-induced changes were associated with improvements in psychosis symptom severity. Psychosis patients may benefit from aerobic exercise interventions as a safe, adjunct treatment.

POSTER PRESENTATION

**Evelyn Zastepa¹, Jennifer Clune¹, Jane C. Sun²,
Nickie Mathew^{1,3}**

¹Department of Psychiatry, Faculty of Medicine, UBC

²British Columbia Mental Health and Substance Use Services, PHSA

³Burnaby Centre for Mental Health and Addictlon, PHSA

RESIDENT

CLINICAL
RESEARCH

ABSTRACT #68

ADAPTATION OF CONTINGENCY MANAGEMENT FOR STIMULANT USE DISORDER DURING THE COVID-19 PANDEMIC

The current coronavirus disease (COVID-19) pandemic has rapidly spread across the world. Individuals with stimulant use disorder (SUD) are a vulnerable population, who are particularly at risk of negative outcomes in this pandemic due to several risk factors including mental and physical comorbidities, weakened immune responses, high-risk behaviours, and barriers to health care access. Engaging patients with SUD in regular treatment has become even more difficult during this worldwide pandemic, which has resulted in many cuts to addiction treatment programs. The most effective treatment options for SUD are psychosocial interventions, which rely heavily on in-person interactions, posing an added challenge during physical distancing. In particular, contingency management (CM) is a behavioural therapy that utilizes tangible reinforcements to incentivize targeted behaviour changes, and is an effective treatment intervention used for SUD. Based on our experience during the pandemic with CM groups at our concurrent disorders facilities, we present practical adaptations to CM to help treat this vulnerable population. We will highlight the treatment challenges for individuals with SUD and the importance of adapting CM programs during COVID-19 physical distancing. We present strategies for how CM can be adapted and its role expanded in a safe way during the COVID-19 pandemic in order to help prevent infection spread, stimulant use relapse, and worsened psychosocial consequences. With the expected worsening in the substance use crisis, we hope this will serve as a preliminary guide to help utilize CM for SUD during this pandemic, and future pandemics.

POSTER PRESENTATION

**Michelle Zhang¹, Jannie Ko¹, Jennifer Multani²,
Anastasia Frank Cheng¹, Christian G.Schütz¹**

¹Department of Psychiatry, Faculty of Medicine, UBC

²Simon Fraser University

OTHER

CLINICAL
RESEARCH

ABSTRACT #69

PROFILE OF FENTANYL USERS AMONG INDIVIDUALS WITH SEVERE CONCURRENT DISORDERS

The aim of this study was to gain an understanding of the attitudes toward fentanyl use among those with severe concurrent disorders, which has not been explored before. Specifically, we were interested in the differences between three subgroups: opioid users with reported fentanyl use, opioid users with no reported fentanyl use, and non-opioid users. 211 clients at the Burnaby Centre for Mental Health and Addiction (BCMHA) completed the self-report, cross-sectional survey and consented to a review of their medical charts. Measures included the Maudsley Addiction Profile (MAP), an overdose questionnaire, Service Utilization, and demographic information. Descriptive analyses were used for all sociodemographic and clinical variables. Bivariate analyses were used to compare the three categories for each variable. Nearly half the participants (45.23%) reported no use of opioids based on the MAP data. Among those 54.77% with a history of opioid use 31.42% reported use of opioids but no use of fentanyl, and 23.33% reported use of fentanyl. We found little differences between our three subgroups. Research indicated fentanyl use to be less pronounced in the aboriginal population. Fentanyl users were more likely to report overdoses, more recent emergency room visits, and were more likely to be in substitution treatment. They were less likely to be certified and less likely to have a psychotic disorder. The differences though generally did not reach significance. Surprisingly, we found little difference in the attitudes between these three subgroups of participants towards the safety of fentanyl use. It appears that people who use fentanyl are not more likely to think that fentanyl is safer or less concerned about its use. It seems that differences between fentanyl users and non-users seem to be quite limited. Non measured factors such as local availability may play a bigger role than specific characteristics or attitudes.

POSTER PRESENTATION

**Kimia Ziafat^{1,2}, Sindi Addorisio^{1,3}, Fiona Choi¹, Julia Pei¹,
Jean Nicolas Westenberg¹, Amber Hyed³, Cameron Wild³,
Michael Krausz¹**

¹Department of Psychiatry, Faculty of Medicine, UBC

²School of Population and Public Health, Faculty of Medicine, UBC

³School of Public Health, University of Alberta

GRADUATE
STUDENT

CLINICAL
RESEARCH

ABSTRACT #70

GENDER DIFFERENCES IN USING HARM REDUCTION SERVICES AMONG INDIVIDUALS EXPERIENCING ABSOLUTE HOMELESSNESS IN EDMONTON, CANADA

Harm reduction programs are at the core of Canada's response to the overdose crisis. Past literature has shown gender differences in accessing and using available services. To better understand the impact of gender on taking harm reduction measures and accessing services among homeless populations, this study analyzes the utilization of naloxone kits and harm reduction services, namely clean needle exchange, within a sample of 107 males and 43 females experiencing absolute homelessness in Edmonton, Canada. Using Fisher's Exact Test, significantly more females owned a naloxone kit ($p=0.012$), had used a kit in the past 6 months ($p=0.002$), and had used harm reduction services ($p=0.044$) than did males. The majority of females were living with a partner or immediate family member compared to males, who were mostly living alone ($p=0.001$). Amongst females, unstable housing was significantly associated with owning a naloxone kit ($p=0.016$) and living with a partner was significantly associated with using a naloxone kit ($p=0.007$). Amongst males, living alone was significantly associated with owning ($p=0.007$) and using ($p=0.002$) a naloxone kit, and living in parklands as opposed to shelters ($p=0.002$) was significantly associated with owning a naloxone kit. Similarly, males who lived in the streets, as opposed to shelters, were significantly more likely to receive harm reduction services ($p=0.014$). Differences in naloxone kit ownership and use of harm reduction services may be a consequence of this population's living situations. Further analysis on the drug use patterns among this population and how it relates to their use of services is underway. Understanding such differences among individuals experiencing absolute homelessness is necessary to better cater services to specific individual needs.

POSTER PRESENTATION

Daniah Zumrawi¹, Brianne Glazier¹, Olga Leonova², Mahesh Menon², Ric Procyshyn^{2,3}, Randall White², William Honer^{2,3}, Ivan Torres^{2,3}

¹Department of Psychology, Faculty of Arts, UBC

²Department of Psychiatry, Faculty of Medicine, UBC

³British Columbia Mental Health and Substance Use Services, PHSA

OTHER

CLINICAL
RESEARCH

ABSTRACT #71

SUBJECTIVE COGNITIVE FUNCTIONING IN TREATMENT RESISTANT SCHIZOPHRENIA

Introduction:

Although previously studied in schizophrenia, little is known about the relationships between subjective cognitive functioning (SCF), objective cognitive functioning (OCF), and depression in treatment-resistant psychosis (TRP). This study aims to: 1) assess and compare SCF in TRP using positively and negatively worded scales, 2) assess accuracy of these two methods, and 3) explore the association between these subjective rating scales and depression. We hypothesize that both SCF approaches would be highly correlated, would be minimally associated with OCF, and would be similarly associated with depression.

Method:

A retrospective chart review was conducted using clinical data from 54 inpatients treated within the BC Psychosis Program, presenting with treatment resistant psychosis. An OCF composite score was derived from a broad neuropsychological battery. SCF was assessed with the PROMIS 2.0 Cognitive Function (negatively worded) and Abilities (positively worded) subscales. A depression scale score was generated by summing relevant items from the PANSS.

Results:

Relative to population norms, SCF ratings were higher in patients than OCF. There was a small but significant correlation between the PROMIS subscales ($r=.29$), but neither PROMIS subscale was associated with OCF ($r=-.13$, $r=.02$). There was a significant correlation between depression and the positively worded PROMIS subscale ($r=-.310$) but not the negatively worded scale ($r=-.13$).

Conclusions:

This study provides evidence that individuals with TRP inaccurately rate their cognitive functioning regardless of SCF methodology, and that SCF associates variably with depression. Poor awareness of cognitive functioning can lead to functional and social difficulties and should therefore be studied and addressed.

**Thank you to all the volunteers, students,
staff, fellows, staff, residents and faculty
who participated in our 2020 UBC Psychiatry
Virtual Research Day!**