

DEPARTMENT OF PSYCHIATRY, RESEARCH DAY 2014
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**DEPARTMENT OF PSYCHIATRY RESEARCH DAY 2014
ABSTRACTS**

**ORAL PRESENTATIONS - BASIC NEUROSCIENCE AND TRANSLATIONAL
RESEARCH**

- 1) Understanding how information is encoded in the frontal cortex

Oral	Presenter:	Barak Caracheo Graduate Student
	Authors:	Barak Caracheo
	Faculty Sponsor:	Dr. Jeremy Seamans

The prefrontal cortex (PFC) is a brain structure whose activity has been correlated with a wide variety of psychological functions, from basic reinforcement learning to more complex forms of decision making and emotional processes. However, how the neural code implements these processes to modify behaviour still remains largely unknown. What are some of the general properties of PFC neural encoding and how does its activity modify behaviour? In our lab, we use arrays of tetrodes implanted into the anterior cingulate region of the rodent prefrontal cortex to study how electrophysiological activity of neural ensembles represent information during a variety of decision making tasks. Neural activity is characterized in multidimensional state patterns and interpreted probabilistically using Hidden Markov Models. In addition, Entropy is used as a measure of the stability of the dynamic system. The talk will discuss how the PFC encodes behavioural events relevant to tasks being solved and how feedback (i.e. error and reward) can modify neural representations and influence the stability of the system. Such changes could be the underlying mechanism that affect behaviour in order to guide action selection in complex dynamic environments.

2) A novel Presenilin 1 mutation causes Alzheimer's Disease

Oral	Presenter:	Fang Cai Fellow
	Authors:	Fang Cai, Shuting Zhang, Weihong Song
	Faculty Sponsor:	Weihong Song

Alzheimer's disease (AD) is the most common neurodegenerative disorder leading to dementia. A majority of AD cases are sporadic with late onset. Missense mutations in Presenilin 1 (PS1), Presenilin 2 (PS2) and Amyloid β Precursor Protein (APP) cause early onset familial AD (FAD). PS1 mutations account for the majority of early-onset FAD. PS1 is the catalytic core of γ -secretase complex to process APP to generate amyloid β protein ($A\beta$), the central component of neuritic plaques in AD brain. Pathogenic mutations in PS1 gene has been shown to contribute to AD pathogenesis via impaired processing of APP. A novel PS1 mutation has been identified in the AD patients with early onset in a Chinese family. We extensively characterized the function of the PS1 mutation in mammalian cells and established a transgenic mouse strain carrying the mutation. We found that this PS1 mutation altered γ -cleavage of APP to produce $A\beta$ and promoted AD pathogenesis in PS1/APP double transgenic mouse model. Supported by Canadian Institute of Health Research.

3) Overexpression of UCHL1 delays Alzheimer progression in vivo

Oral	Presenter:	Mingming Zhang Graduate Student
	Authors:	Mingming Zhang
	Faculty Sponsor	Weihong Song

Introduction: Amyloid β ($A\beta$) plaque deposition in the brain is one of the pathological features of Alzheimer's disease (AD). $A\beta$ is cleaved from amyloid β precursor protein (APP) by β -secretase BACE1 and γ -secretase complex. The abnormal accumulation of $A\beta$ plays an important role in AD pathogenesis. Ubiquitin carboxyl-terminal hydrolase L1 (UCHL1) is a de-ubiquitinating enzyme. Dysfunction of UCHL1 has been reported in AD. Overexpression of UCHL1 could rescue learning and memory deficits in AD mouse model. However, whether UCHL1 affects $A\beta$ production and AD progression remains unknown. Methods: Intracranial injection of UCHL1-expressing AAV; Morris Watermaze; Immunohistochemistry; Cell transfection; Western blot; Co-immunoprecipitation. Results: We demonstrated that intracranial injection of UCHL1-expressing AAV reduced $A\beta$ production, inhibited amyloid plaque formation and rescued memory deficits in APP23/PS45 double transgenic mice. Moreover, UCHL1 regulated $A\beta$ production in vivo mainly by reducing APP protein level. We further revealed in multiple cell lines that UCHL1 accelerated the lysosomal degradation of APP by promoting its ubiquitination. Conclusions: UCHL1 delays AD-like pathology and rescues memory deficits in AD mouse model by regulating APP degradation. Relevance/Implications: Our research suggested that AAV-delivered UCHL1 may be a safe and effective approach to treat AD.

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- 4) Activation of neuronal NMDA receptors triggers transient ATP-mediated microglial process outgrowth
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Oral	Presenter:	Lasse Dissing-Olesen, PhD
	Authors:	Lasse Dissing-Olesen, PhD
	Faculty Sponsor:	Dr. Brian MacVicar

Microglia are morphologically dynamic cells that rapidly extend their processes in response to various stimuli including extracellular ATP. In this study, we tested the hypothesis that stimulation of neuronal NMDA receptors (NMDAR) trigger ATP release leading to communication with microglia. We used acute mouse hippocampal brain slices and two-photon laser scanning microscopy to study microglial dynamics and developed a novel protocol for fixation and immunolabeling of microglia processes. Similar to direct topical ATP application *in vivo*, short multiple applications of NMDA triggered transient microglia process outgrowth that was reversible and repeatable indicating that this was not due to excitotoxic damage. Stimulation of NMDAR was required as NMDAR antagonists, but not blockers of AMPA/kainate receptors or voltage gated sodium channels, prevented microglial outgrowth. We report that ATP released, secondary to NMDAR activation, was the key mediator of this neuron-microglia communication as both blocking purinergic receptors and inhibiting hydrolysis of ATP to prevent locally generated gradients abolished outgrowth. Pharmacological and genetic analyses showed that the NMDA triggered microglia process extension was independent of Pannexin 1, the ATP releasing channels, ATP release from astrocytes via connexins and nitric oxide generation. Finally, utilizing whole cell patch clamping we demonstrate that activation of dendritic NMDAR on single neurons is sufficient to trigger microglia process outgrowth. Our results suggest that dendritic neuronal NMDAR activation triggers ATP release via a Pannexin 1 independent manner that induces outgrowth of microglia processes. This represents a novel uncharacterized form of neuron-microglial communication mediated by ATP.

ORAL PRESENTATIONS - TRANSLATIONAL AND CLINICAL RESEARCH

1) Exploring E-Mental Health Preferences of Generation Y

Oral	Presenter:	Marissa Y. Mar Graduate Student and Research Staff
	Authors:	Marissa Y. Mar; Erika K. Neilson; Iris Torchalla; Allison Laing; Michael Krause
	Faculty Sponsor:	Michael Krausz

APOE ϵ 4 is a genetic risk factor for schizophrenia, and is the main genetic risk factor for late onset Alzheimer's disease. Cognitive impairment in a wide array of cognitive domains is one of the most robust findings in schizophrenia, and these are present even at first clinical presentation of the disorder. Little is known about what are the genetic determinants of these cognitive deficits. Methods: A community based sample of FES (n=98), and Controls (Ctrl; n=76), was recruited for this study. Demographic, clinical, APOE genotype, and a neuropsychological battery were administered. Neuropsychological tests were grouped following MATRICS profile. Mixed multivariate models were used to test between- and within-effects for cognitive executive function, working memory, and verbal memory domains. Results: Patients performed worse on all MATRICS neuropsychological domains. While patient's executive function improved at follow up in both FES APOE ϵ 4 and non- APOE ϵ 4 FES-carriers, working memory remained unchanged, and, unexpectedly, verbal memory improved only in FES APOE ϵ 4 carriers. Conclusion: FES patients showed worse cognitive performance than controls on, and FES APOE ϵ 4 carriers show an improvement in verbal memory. APOE ϵ 4 may have an antagonistic pleiotropic effect on verbal memory in FES.

- 2) Factors predicting referral acceptance of patients from adult to geriatric psychiatry services - retrospective chart review

Oral	Presenter:	Paul Blackburn, MD
		PGY4 Psychiatry Resident
	Authors:	Michael Wilkins-Ho, MD FRCPC; Paul Blackburn, MD; Mario McKenna, MHA Msc; Jennifer Barley, MD MPH FRCPC; Christopher Foley, BSN RN BC NE; Heather D'Oyley, MD FRCPC
	Faculty Sponsor:	Michael Wilkins-Ho

INTRODUCTION: There is little evidence on indication for transfer from adult to geriatric mental health services for patients with chronic adult-onset mental illnesses. The study's aim was to determine what factors predicted acceptance of this population by Vancouver's older adult mental health teams (OAMHT). **METHODS** A data form was used to abstract clinical and demographic information from records of eighty-one patients referred to OAMHTs to determine which factors contributed to acceptance into the program. **RESULTS** Sixty patients were accepted into an OAMHT; nineteen were not. Chi-square revealed that rejected patients were less likely to have confirmed cognitive impairment, more likely to have been assessed by an OAMHT physician and had longer wait times to final decision. Accepted patients were less likely to have delirium, to have an unconfirmed but suspected diagnosis of cognitive impairment or to have facility placement transition issues. They had more geriatric physical issues, approaching significance ($p=0.06$). Binary logistic regression analysis showed aggression/agitation, facility placement transition issues, and absence of delirium were the strongest predictors of acceptance. **CONCLUSIONS** Advanced age and chronic mental illness alone are insufficient to warrant transfer to OAMHTs. **IMPLICATIONS** An aging population and limited geriatric resources necessitate judicious use of OAMHTs.

3) Course and outcome of first episode mania

Oral	Presenter:	Andréanne Gignac, MD Fellow
	Authors:	Alexander McGirr, MD MSc ³ ; Raymond W Lam, MD ^{1,3} , & Lakshmi N Yatham, MBBS MBA ^{1,2*}
	Faculty Sponsor:	Lakshmi N. Yatham

Introduction: Most information about the natural history of bipolar disorder comes from cohort studies with patients at different stages of illness. The estimates of recovery and relapse rates from such cohorts are of limited utility in estimating probabilities early in bipolar disorder. **Method.** Syndromal recovery, symptomatic recovery, and recurrence rates were determined at 6 month, 1 year, 2 years and 4 years after a first episode (FE) of mania. **Results.** Syndromal recovery rate was 83% at 6 months and 87.5% at 1 year. Only 62.1% of patients had achieved a period of symptomatic recovery within 1 year. Recurrence rate was 25.7% within 6 months, 41.0% by 1 year and 59.7% by 4 years. Younger age at FE was associated with risk of recurrence after 1 year. **Conclusion.** While the majority of patients with FE mania exhibit syndromal recovery within the first year, and to a lesser extent symptomatic recovery, they are also at a high risk of recurrence, with greater risk of recurrence associated with younger age of onset. **Relevance\Implications.** As the recurrence rates coming from FE cohorts are lower than that reported from unselected cohorts, there may be a window of opportunity early in the course of bipolar disorder to provide optimal treatment and alter disease progression.

4) Clozapine funding and its predictors

Oral Presenter: Michael Mak

Authors: Rudnick A, Mak M, Pallaveshi L

Faculty Sponsor: Dr. Abraham (Rami) Rudnick

Introduction: Clozapine is funded publicly in Ontario based on regional coordinators' decisions. We described the diagnostic distribution of clozapine funding requests and approvals in Southwestern Ontario and tested for predictors of approval. Methods: We conducted a retrospective chart review on all 1,268 clozapine funding requests to the Southwestern Ontario clozapine regional funding coordinator during 1992-2011. The primary outcome was clozapine funding approval or not. Demographic and clinical parameters were described. Bivariate and multivariate analysis was conducted. Results: Of the 1,268 clozapine applications reviewed, 1224 (96.5%) were approved and 44 (3.5%) were not. A significant direct correlation was found between clozapine approval and: year of application ($p < 0.01$), number of current antipsychotic medications ($p < 0.01$), and length of cumulative psychiatric hospitalization ($p < 0.05$). A significant inverse correlation was found between clozapine approval and: primary diagnosis ($p < 0.05$), number of past antipsychotic medications ($p < 0.01$), history of agranulocytosis/neutropenia ($p < 0.01$), and parkinsonism ($p < 0.05$). In logistic regression, number of past antipsychotic medications ($p < 0.01$) and severity of positive symptoms ($p < 0.01$) were the strongest predictors of clozapine approval events. Conclusion: Some findings were counter-intuitive, such as more past antipsychotic medications predicting less clozapine funding approval.

POSTERS - BASIC NEUROSCIENCE AND TRANSLATIONAL RESEARCH

Adolescent exposure to methylphenidate attenuates negative contrast and evoked dopamine efflux in the rat

1)

Presenter:	Soyon Ahn, PhD
Authors:	Soyon Ahn, PhD
Faculty Sponsor:	Anthony G. Philips

Repeated exposure to and subsequent withdrawal from methylphenidate (MPH) may mimic psychological symptoms of depression, including decreased interest in normally rewarding stimuli. However, to date, there is sparse evidence of mood disorders or increased incidents of addictive behavior in individuals treated previously with MPH. The present study examined the effects of adolescent exposure to MPH on successive negative contrast in rats trained to lick for sucrose reward. Methods: Adolescent rats were treated with daily MPH (2 mg/kg, ip) from postnatal day (PND) 36-42. They were also trained daily to drink either a 4% or 32% sucrose solution from PND 36-61. For a period of 5-days, starting at 3 days and then at 2 weeks post-treatment, we compared consumption of 4% sucrose in rats trained to drink 4% with those that experienced a downshift from 32% to 4% sucrose. Results: Negative contrast was significantly attenuated in MPH-treated rats compared to controls during both periods of downshift. Microdialysis experiments conducted 10 days later revealed a significant attenuation of dopamine (DA) efflux in the nucleus accumbens evoked by MPH (2 mg/kg, ip) in MPH-treated rats compared to saline controls. Conclusion/Implications: These results suggest a long-lasting change in activation of the mesolimbic DA system that may influence motivational and neurochemical responses to natural and drug rewards.

- 2) Screening for SNARE inhibitors with potential therapeutic action in schizophrenia treatment
Presenter: Ramos-Miguel, Alfred
Authors: Ramos-Miguel, Alfred
Faculty Sponsor: William G. Honer
-

Introduction: Converging data from postmortem brain, genetic and animal studies associated schizophrenia with increased activity of the SNARE complex, the molecular neurotransmitter release engine. The present study screened for compounds able to inhibit SNARE complex formation. Methods: Screening of the Canadian Chemical Biology Network library (25,989 compounds) was performed with an immunoassay-derived method in rat brain lysates. Western blotting (WB) and "Far-WB" were used in confirmation experiments. Inhibition of SNARE complex formation was tested in the postmortem prefrontal cortex (PFC) of 20 schizophrenia subjects and 13 controls. Results: Compounds showing over 20% inhibition of SNARE complex assembly (n=167) were initially selected. Twenty-seven hits met the concentration response requirement. Four compounds strongly reduced SNARE interactions in WB and Far-WB secondary tests. BTB13508 was selected for postmortem brain evaluations. Basal SNARE interaction was higher in schizophrenia PFC. BTB13508 (10 and 100 μ M) significantly reduced the amount of overall SNARE interactions and, interestingly, schizophrenia samples showed more resistance to SNARE disruption.

3) A Novel SNP in Tmp21 in the Patients with Alzheimer's disease

Presenter: Xiaojie Zhang

Authors: Xiaojie Zhang, Kun Xia, Yili Wu, Kelley Bromley-Brits, Fang Cai, and Weihong Song

Faculty Sponsor: Weihong Song

TMP21, a type I transmembrane protein of the p24 protein family is a trafficking protein. Recent studies suggest that TMP21 is a selective modulator of γ -secretase and its dysregulation may play a pivotal role in Alzheimer's disease (AD) pathogenesis by altering γ -secretase activity and APP trafficking, leading to the increase of $A\beta$ generation and neuritic plaque formation, a unique pathological feature of AD. Moreover, Tmp21 is located on Chr14q24.3, the region highlighted by AD linkage studies. However, the genetic association between Tmp21 and AD remains elusive. In this study, we first identified that rs12435391(IVS4-28T>C) located in intron 4 of Tmp21 was an AD-associated Single-Nucleotide Polymorphism (SNP) by screening 261 AD patients and 236 controls. Although rs12435391(IVS4-28T>C) did not affect the splicing site recognition, it significantly increased TMP21 expression at both mRNA and protein levels. Furthermore, we found that this SNP significantly increased the splicing efficiency of Tmp21 pre-mRNA, leading to the elevation of mature mRNA. However, the stability of Tmp21 pre-mRNA and transcription activity of Tmp21 was not affected. Taken together, our study not only identified an AD-associated Tmp21 SNP, but also indicated that dysregulation of TMP21 may contribute to AD pathogenesis and that TMP21 may be a potential target for AD treatment.

4) TMP21 facilitates APP amyloidogenic processing by affecting BACE1 trafficking and maturation

Presenter: Xiaojie Zhang
Authors: Xiaojie Zhang, Zhe Wang, Kelley Bromley-Brits, Fang Cai, Weihong Song
Faculty Sponsor: Weihong Song

Neuritic plaque in the brain is a major neuropathological hallmark of Alzheimer's disease. It is formed by the deposition and aggregation of extracellular A β , which is derived from the sequential cleavage of APP by BACE1 at Asp-1 site and γ -secretase. In addition to Asp-1 site, BACE1 mainly cleaves APP within A β region at Glu-11 to generate truncated A β species¹. Preferentially cleavage of APP by BACE1 at Asp-1 or Glu-11 site is strongly dependent on BACE1 subcellular localization. Retaining BACE1 in the ER leads to the β -cleavage of APP is preferentially at Asp-1 site. TMP21, a vesicular trafficking protein, mediates proteins ER/Golgi transport. Downregulated TMP21 increases Ab generation by modulating γ -secretase activity and APP trafficking. Our previous study identified a novel AD-linked SNP; this SNP significantly increases the expression of TMP21 in both mRNA and protein levels. Here, we emphasize that the upregulation of TMP21 facilitated APP amyloidogenic processing by preferentially increasing C99 production and thus A β production; TMP21 accumulated immature BACE1 and delayed the maturation of BACE1 by affecting its ER/Golgi trafficking. Knockdown of TMP21 or p24 α also increased immBACE1 and preferentially generated more C99. In an in vivo model of AD, the deficit in TMP21 generated more C99 and increased A β level thus plaques formation. Thus, we conclude that the proper expression level of TMP21 is essential in BACE1 maturation and APP processing.

5) Selective Neurodegeneration in Alzheimer's Disease (AD) and Parkinson's Disease (PD)

Presenter: Juelu Wang
Authors: Juelue Wang
Faculty Sponsor: Weihong Song

Introduction: Neuritic plaques, a hallmark of AD, are extracellular deposits of amyloid β protein ($A\beta$) cleaved from $A\beta$ precursor protein (APP). Intracellular Lewy bodies, characteristic of PD, primarily consist of aggregated α -synuclein protein (α Syn). A prominent feature of AD is cholinergic dystrophy, while the dopaminergic neurodegeneration is characteristic in PD. Previous studies suggested that AD-associated Swedish APP mutation promoted $A\beta$ generation and neuronal loss, whereas PD-associated SNCA A53T mutation increased α Syn aggregation. Methods: Cholinergic SN56 cells and dopaminergic MN9D cells were used to stably overexpress wildtype/ mutant APP or wildtype/ mutant SNCA gene, followed by whole-genome expression profiling in eight stable and two background cell lines. Results: 213 probes were identified as having an interaction between APP mutation's effect and cell line's effect, while 1422 probes had an interaction between SNCA mutation's effect and cell line's effect. The difference of overexpressing Swedish APP gene in SN56 and MN9D cell lines has the strongest effect on ECM-receptor gene expression, while the difference of overexpressing SNCA A53T gene in two cell lines majorly affect spliceosome gene expression. Conclusion and Implication: Our data supports the hypothesis that APP and SNCA mutations change gene expression in a cell type-dependent way, which may contributes to selective neurodegeneration in AD and PD.

6) Gene coexpression analysis in the frontal cortex of bipolar patients and controls

Presenter: Lilah Toker
Authors: Lilah Toker
Faculty Sponsor: Paul Pavlidis

Introduction: Several large-scale gene expression analyses have addressed the question of genes differentially expressed in bipolar-disorder, however, the reproducibility of the results at the gene level, is relatively low. More systemic approach analysing expression data based on enrichment analyses, appears to provide more robust results, but, is limited to our current biological knowledge. As such, it is biased towards more studied processes and genes and might neglect important but less examined connections. Coexpression analyses possess the potential to uncover previously unknown functional connections between proteins. **Methods:** We performed coexpression analyses of eight gene-expression datasets of bipolar-patients and controls. We concentrated on a subset of genes, each of which exhibited an extreme expression value in at least several diseased individuals. **Results:** Our results show that the studied genes while not consistently showing differential expression among subjects are highly coexpressed in the human brain. **Conclusions:** Our results suggest existence of yet unknown functional relationships between the genes.

RCAN1 overexpression exacerbates calcium overloading-induced neuronal apoptosis

7)

Presenter: Bruno Herculano

Authors: Xiulian Sun, Yili Wu, Bruno Herculano and Weihong Song

Down Syndrome (DS) patients develop characteristic Alzheimer's Disease (AD) neuropathology after their middle age. Prominent neuronal loss has been observed in the cortical regions of AD brains. However, the underlying mechanism leading to this neuronal loss in both DS and AD remains to be elucidated. Calcium overloading and oxidative stress have been implicated in AD pathogenesis. Two major isoforms of regulator of calcineurin 1 (RCAN1), RCAN1.1 and RCAN1.4, are detected in human brains. In this report we defined the transcriptional regulation of RCAN1.1 and RCAN1.4 by two alternative promoters. Calcium overloading upregulated RCAN1.4 expression by activating RCAN1.4 promoter through calcineurin-NFAT signaling pathway, thus forming a negative feedback loop in isoform 4 regulation. Furthermore, RCAN1.4 overexpression exacerbated calcium overloading-induced neuronal apoptosis, which was mediated by caspase-3 apoptotic pathway. Our results suggest that downregulating RCAN1.4 expression in neurons could be beneficial to AD patients.

POSTERS - TRANSLATIONAL AND CLINICAL RESEARCH

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- 1) Executive Dysfunction in OCD-Affected Youth and Their Siblings: Searching for a Cognitive Marker

Presenter:	Juliana Negreiros, MA
Authors:	Negreiros, J
Faculty Sponsor:	Evelyn Stewart

OCD is a neuropsychiatric illness that often begins in childhood and has significant impact on individuals' functioning. There is increasing interest in determining intermediate markers of brain dysfunction (endophenotypes) that are associated with vulnerability for OCD via neurocognitive assessment. This study examined neurocognition in OCD-affected youth in comparison to their siblings and healthy controls. Participants included 29 OCD-identified youth, 18 at-risk siblings, and 31 healthy controls, who were assessed in the areas of executive function, attention, and memory. Significant group differences were determined through analysis of covariance (ANCOVA) and mixed model ANCOVA with family membership as a random factor. OCD-identified youth presented with significant deficits in planning in comparison to healthy controls. Siblings demonstrated poorer decision-making when compared to OCD and healthy control participants. OCD probands exhibited significant executive dysfunction on daily behaviour when compared to the other two groups. Similar to previous adult studies, impaired planning was found to be a potential endophenotype in OCD. This study contributes to the limited research on neurocognitive functioning of OCD-affected youth and their siblings, increases awareness about neurocognitive deficits in OCD, and provides information for the advancement in school and clinical interventions and early identification of those at risk for developing OCD.

2) The Effects of Mood Symptoms on Cognition and Quality of Life in Bipolar Disorder

Presenter: Sylvia Mackala
Authors: Mackala, SA, Kozicky, J, Michalak, EE, Yatham, LN, & Torres, IJ.
Faculty Sponsor: Ivan Torres

Introduction: Mood symptoms and cognition are important determinants of quality of life (QoL) in Bipolar Disorder (BD); however, the causal relationship is unclear. The purpose of this study was to determine whether the relationship between cognition and self-reported QoL is mediated by mood. Method: At baseline, recently diagnosed BD-I patients completed a clinical assessment and a neuropsychological battery. QoL was assessed 6 months later using the Quality of Life Enjoyment and Satisfaction Questionnaire. Statistical mediation analyses were conducted using bootstrapping procedures. Individual cognitive domains (verbal memory, nonverbal memory, working memory, and executive functioning) were included in the analyses to determine the mediating effects of mood on the association between cognition and QoL. Results: Individual cognitive domains showed significant direct effects on QoL with no mediating effects of mood symptoms, except for nonverbal and working memory. For nonverbal memory, depression and mania showed mediating effects ($\alpha\beta=2.19$, {.11, 7.89}; $\alpha\beta=3.83$, {.55, 11.15}, respectively); and for working memory, only mania showed mediating effects ($\alpha\beta=1.89$, {.08, 5.28}). Conclusion: Whereas nonverbal memory and working memory are associated with QoL through the mediating effects of mood symptoms, most cognitive domains influence QoL directly.

3)	Response inhibition and interference control in euthymic bipolar I patients and their first degree relatives
Presenter:	Ceren Hıdıroğlu, MSc
Authors:	Hıdıroğlu, C., Er A., Işık G., Yalın N., Torres, I.J., Yatham, L.N., & Özerdem A.
Faculty Sponsor:	Ivan Torres

Introduction: Two types of response inhibition (RI) include: 1) inhibition of a pre-potent response or ability to stop an ongoing response, and 2) interference control (IC). Studies show IC deficits in bipolar disorder (BD) but RI in BD is still unclear. This study aims to further understand inhibitory processes in BD. Methods: BD patients (BD-P; n=35), their relatives (BD-R; n=30), and healthy controls (HC; n=33) completed the Stop signal task (SST) and Stroop test to assess RI and IC, respectively. ANOVA was used to examine the means for: no signal respond reaction time (nSRT), stop signal delay (SSD), stop-signal reaction time (SSRT), and Stroop interference score (S-interference) and number of error for color-word naming (S-error). Results: BD-P and BD-R had similar and significantly lower nSRT and SSD scores, and higher SSRT scores than HC. Only BD-P had significantly worse S-interference scores than HC. In general, there were no significant correlations between Stroop and SST scores within each group. Conclusion: Significant impairments on the SST for BD-P and BD-R compared to HC may be indicative of deficits in RI representing a strong candidate endophenotype for BD.

4) Setting up a Non-Invasive Neurostimulation Lab at UBC

Presenter: Christine Dobek, MSc

Authors: Dipinto, Annie Kuan, Adelen Leon, & Fidel Vila-Rodriguez

Faculty Sponsor: Fidel Vila-Rodriguez

Non-invasive neurostimulation therapies (NINET) are becoming mainstream therapeutic options for depression, and are under investigation for other psychiatric disorders. Four of the neurostimulation treatment modalities include electroconvulsive therapy (ECT), magnetic seizure therapy (MST), transcranial magnetic stimulation (TMS), and transcranial direct current stimulation (tDCS). Despite the growing body of evidence, research that outlines the most effective course of treatment for each modality in depression is still needed. A variety of factors such as length of treatment, frequency of stimulation, anatomical targets, maintenance therapy, and augmentation strategies have yet to be fully described and demonstrated in the literature. In addition, investigation into the indication of NINET's for other psychiatric disorders is needed; including post-traumatic stress disorder (PTSD), obsessive-compulsive disorder (OCD), anorexia, traumatic brain injury and particularly psychosis. Lead by Dr. Fidel Vila-Rodriguez, the Department of Psychiatry/Institute of Mental Health supported the creation of the Non-Invasive Neurostimulation Lab (NINET). The NINET lab strives to increase efficacies of current ECT, MST, TMS, and tDCS practices, as well as introduce neurostimulation treatment to other psychiatric disciplines. This presentation outlines the current treatment course for each therapy, as well as introduces NINET's current research projects.

5) Title Web 2.0 for research recruitment: lessons learned from CREST.BD

Presenter: Nusha Balram Elliott, MA

Authors: Nusha Balram Elliott, MA

Faculty Sponsor: Erin Michalak

The CREST.BD network has been generating research findings on self-management in bipolar disorder (BD) for several years. Funded by CIHR as a knowledge translation (KT) network, CREST.BD specializes in the use of the novel forms of Web 2.0 engagement to enhance both research process and outputs. With support from Coast Capital Savings, we recently conducted a Delhi Consensus Consultation¹ study to build knowledge about BD self-management strategies (SMSs) from two groups: people who live with BD and healthcare providers who work with people with BD. Panels from these groups completed two rounds of online surveys where they rated SMSs on effectiveness for a) stopping progression into hypo/mania and b) maintaining balance in mood. 51 healthcare providers and 101 people with BD completed both rounds of our survey. We adopted innovative Web 2.0 methods of recruitment, which will be described in this poster presentation. Round 2 retention rates were remarkably high (91% for healthcare providers and 81% for community members).

6) WalkAlong.ca: Developing an Empowering Site for Youth with Emotional Challenges

Presenter: Nicole Gehring

Authors: Nicole Gehring

Faculty Sponsor: Michael Krausz

Introduction: Mood and anxiety disorders are widely prevalent among young people; however, an alarming portion of this population remains untreated. Therefore, in November of 2013, the Centre for Health Evaluation and Outcome Sciences (CHEOS) supported by the Bell Let's Talk Initiative launched the beta version of WalkAlong.ca—providing tools, information and a community to help youth manage their well-being. **Methods:** To ensure that WalkAlong.ca is driven by, and caters to our target demographic, young people ages 16 to 24 were recruited through Facebook, Twitter and flyers to take part in a beta tester survey which provided direct feedback on content, style and appeal. **Results:** Overall, responses from the 76 participants were encouraging and 80% of respondents reported that they would access the website again. Favorite web content included; the LifeChart—a tool to track mood, sleep and other measures; Experiences—a gallery of lived experiences; and Assessments—questionnaires to assess depression and anxiety. In addition, many areas requiring improvement were identified. **Conclusion:** Using this information we have now begun phase 2 of our website development. **Implications:** Being able to recognize early signs and empower youth to deal with them increases the chances of better long-term outcomes and positive mental health.

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- 7) Somatic anxiety and comorbid anxiety disorders in postpartum women with Bipolar II Disorder
Presenter: Jasmin Abizadeh
Authors: Jasmin Abizadeh
Faculty Sponsor: Shaila Misri
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Introduction: Anxiety can present as an inherent component of postpartum Bipolar II Disorder (BD II) which needs to be skillfully managed to achieve remission and endorse full functionality. This aids in maternal wellbeing and healthy mother-baby attachment. Quetiapine XR has not been evaluated in this population. Methods: 15 non-lactating women completed a 14-week open-label trial with Quetiapine XR (50 mg starting dose titrated up to 300 mg daily based on response). Screening tools used: Mini-International Neuropsychiatric Interview, Montgomery-Asberg Depression Rating Scale (MADRS), Hamilton Depression Rating Scale (HAM-D), Clinician Global International Severity Scale (CGI-S), Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q). Results: Change was monitored from baseline to study end, biweekly. MADRS: from 28.67 (3.45) to 4.15 (3.51), $p < 0.01$. HAM-D: from 23.5 (3.18) to 4.50 (2.32), $p < 0.01$. Psychic Anxiety (HAM-D 10); from 2.29 (0.62) to 0.72 (0.65), $p = 0.003$. Somatic Anxiety (HAM-D 11); from 2.08 (0.65) to 0.55 (0.52), $p = 0.003$. CGI-S: 4.22 (0.43) to 1.23 (0.83), $p = 0.001$. Q-LES-Q: from 2.42 (0.69) to 4 (0.91), $p = 0.001$. 86.7% no longer met criteria for psychiatric illness ($p = 0.001$) at the end of the study. Conclusion and relevance/implications: Our findings show that Quetiapine XR has an anxiolytic effect in addition to its antidepressant properties in postpartum BD II and enhances functioning.

8) Impact of Comorbid Depression and Anxiety on Functionality: A Study of Postpartum

Presenter: Jasmin Abizadeh
Authors: Jasmin Abizadeh
Faculty Sponsor: Shaila Misri

Introduction:Anxiety Disorders that accompany Postpartum Depression (PPD) often do not get sufficient attention, resulting in partial remission of comorbid anxiety episodes with persistent residual symptoms even if depression remits. This can be disabling and negatively impact maternal-child wellbeing. Although preliminary clinical data of Desvenlafaxine, an antidepressant, has found an anxiolytic effect, it has not been evaluated in this population.

Methods: 15 women completed a 12-week open-label trial with Desvenlafaxine (50 mg starting dose titrated up to 100 mg daily based on response). Screening tools used: Mini International Neuropsychiatric Interview, Montgomery-Asberg Depression Rating Scale (MADRS), Hamilton Anxiety Scale (HAM-A), Penn-State Worry Questionnaire (PSWQ), and Sheehan Disability Scale (SDS).

Results: Change was monitored from baseline to study end, biweekly. MADRS: from 30.53(6.30) to 4.40(4.67), $p=0.00$. HAM-A: from 23.4(8.69) to 4.60(4.87), $p=0.00$. PSWQ: 60.67(10.87) to 42(11.29), $p=0.00$. SDS: 6.87(2.26) to 2.93(0.63), $p=0.00$. Worry scores on the PSWQ, indicative of Generalized Anxiety Disorder (GAD), significantly decreased from a mean of 60.67 (10.87) to 42 (11.29), a score nearly consistent with that of non-anxious subjects (defined as ≤ 40).

Conclusion and Relevance/Implications: Our findings support the efficacy of Desvenlafaxine in mitigating symptoms of GAD to nearly complete remission in PPD and improving their quality of life.

9)	A trauma-informed training curriculum for ‘SHEWAY’ – a Vancouver community service providing support for pregnant women and new mothers with addiction and complex concurrent disorders
Presenter:	Verena Strehlau
Authors:	Verena Strehlau
Faculty Sponsor:	Iris Torchalla

Introduction: Sheway is a program that is located in Vancouver's Downtown Eastside, and offers a broad range of social and medical services as well as other supportive services for expecting and new mothers with substance use issues, and their children. In a previous study, we found high prevalence rates of trauma experiences, psychological distress and PTSD among women accessing Sheway.. Trauma-informed services which address both trauma and substance abuse simultaneously and in an integrated manner appear to improve clinical outcome compared to standard care in patients with complex concurrent disorders. However, while services at Sheway include substance abuse counseling, trauma-informed practices have not been integrated in the service delivery model of their services. Objectives: We received funding through a Canadian Institutes of Health Research (CIHR)dissemination and knowledge translation grant to partner with Sheway staff and management and to design a longitudinal knowledge translation and knowledge dissemination workshop. The objective of this project is to collaboratively expand Sheway staff's knowledge regarding trauma, trauma-related symptoms and PTSD in order to strengthen their clinical capacity to effectively support their clients affected by traumatic experiences. Methods & Knowledge Translation Activities: Over the past year we delivered eight 2-hour workshops on a variety of trauma- and PTSD-related topics relevant for the practical, everyday work at Sheway, to provide Sheway staff members with the theoretical knowledge and practical skills to respond to trauma in the context of addiction services to expecting women, new mothers and their children. Sheway has a transdisciplinary, non-hierarchical team with different levels of training, and we created one modular and interactive curriculum for all levels of experience to be beneficial for all staff members. We evaluated training satisfaction overall and related to specific training objectives. Results: Each of the training sessions was attended by all staff members, fluctuating between 20 and 25 individuals. 80% of the staff was satisfied/very satisfied with the training they received. Many staff members also provided qualitative feedback, outlining the importance of trauma-informed care as well as the need to share experiences with their coworkers. One Sheway staff e.g. stated '...It really made me think about our approach to our clients. To look at the 'WHY?'. I enjoyed listening to coworkers share their experiences.' The poster will provide an overview as well as details of the workshop handbook which was recently completed, including examples and learning objectives for each session. Discussion: In the long term, we anticipate that the workshop will support positive outcomes for the mothers as well as their children who are accessing Sheway. Based on the feedback by Sheway staff, the workshop handbook was modified and tailored to be used by other clinicians who interact with women with substance use disorders and traumatic experiences in different clinical settings.

10) Violence and trauma in the experience of addiction in pregnant and postpartum women from Vancouver's Downtown Eastside

Presenter: Iris Torchalla

Authors: Torchalla, Iris

Faculty Sponsor: Michael Krausz

Introduction: Women living in vulnerable neighborhoods like Vancouver's Downtown Eastside (DTES) experience high rates of poverty, homelessness, violence and crime. Involvement in sex work and the drug trade are common, and many struggle with substance use, mental illness, and medical diseases. Such evidence suggests that they face multiple burdens related to social determinants of health, and that psychological trauma is also a common experience. Methods: This qualitative study explored themes and perceptions of trauma and gender-based violence in women who struggled with substance use during pregnancy and early motherhood. We interviewed 31 individuals accessing Sheway, a harm-reduction service for pregnant and postpartum women in the DTES. Results: Key themes that emerged from the narratives highlighted the ubiquity of multiple and continuing forms of adversities and trauma from childhood to adulthood, in a variety of contexts, and through a variety of offenders. Both personal and environmental conditions mutually intensified each other, interfering with a natural resolution of trauma-related symptoms and substance use. Women were also concerned that trauma can be passed on from one generation to the next, but expressed hesitation when asked about their interest in trauma-specific counselling. Discussion: The results of this study prompted the development and implementation of a training workshop on trauma-informed care at Sheway, which is the topic of another poster submitted to the 2014 UBC Psychiatry Research Day by Strehlau et al.

11) e-Mental Health experiences and expectations: A survey of youth in Canada

Presenter: Marissa Y. Mar

Authors: F. Wetterlin; M. Mar; E. Neilson; G. R. Werker; & M. Krausz

Faculty Sponsor: Michael Krausz

Introduction: There is a high prevalence of psychological disorders in Canada, and a growing number of young adults seeking health resources online. Exploration of youths' experiences with traditional and online mental health resources, and of youth's expectations for mental health websites is imperative to develop more accessible services. **Methods:** An online survey was delivered to determine use and expectations of online mental health resources among youth aged 17-24. **Results:** 521 complete cases were included in the analysis. If in a difficult time in their life, most participants were likely to use an information-based website with mainly text, unlikely to visit social media websites. Descriptions of interventions and treatments were the most desired feature in a mental health website, and the majority of participants rated their online privacy as "very important". Very few participants had accessed currently available Canadian mental health websites. **Conclusions:** The findings suggest youth would be likely to use e-mental health tools, but that current e-Mental Health resources available either do not meet the needs of or are not accessible to youth with mental health problems.

12) Cross-Cultural Adaptation Of The QoL.BD Scale For French-Canadians

Presenter: Laurent Coque, PhD
Authors: Laurent Coque, PhD
Faculty Sponsor: Erin Michalak, CREST.BD

Bipolar disorder (BD) causes approximately half a million Canadians to experience debilitating mood states and profound impairments in quality of life (QoL). To bring a QoL aspect to management of BD, Drs. Michalak and Murray pioneered the creation of a scale measuring Quality of Life in Bipolar Disorder (QoL.BD). The QoL.BD has gained traction globally, demonstrated by its translation in numerous languages and inclusion in clinical trials. Following a cross-cultural adaptation process based on the work of Guillemin et al, professional translators first produced two versions of QoL.BD in French Canadian that were then back translated into English. With these translations, a bilingual review committee created a French Canadian version of QoL.BD. Our research shows that it is critical to include Canadian French persons living with BD in the cross-cultural adaptation process of a psychometric scale. Translated scale items must match the cultural background of a Canadian French audience. The Canadian French version of QoL.BD will be further tested with groups of French-Canadian persons living with BD to validate its psychometric properties.

13) Reducing Mental Illness-related Stigma in High School Students: Comparing the Effects of a Workshop on Two Age Groups of Students

Presenter: Skye Crawford, Lucy Jiang, Diana Lam, Carmen Li

Authors: Skye Crawford, Lucy Jiang, Diana Lam, Carmen Li

Faculty Sponsor: Jehannine Austin

Introduction: UBC medical students previously showed that an interactive workshop they led could reduce mental illness stigma among high school students, but when to best administer this intervention has yet to be elucidated. Methods: We delivered an interactive workshop (that provided information on common psychiatric illnesses and guidance regarding how to seek help, and challenged stereotypes) to grade 8 and 10 students at schools across Vancouver. A 25-item Likert scale based measure of mental illness related stigma was administered immediately before (T1), immediately after (T2), and 1 month after the workshop (T3). Results: 209 grade 8 and 179 grade 10 students participated in the workshop and completed both T1 and T2. There was a significant reduction in stigmatizing attitudes towards mental illness among students in both grades ($p=0.000$) between T1 and T2. However, the difference in the degree to which scores changed between grades was not significant ($p=0.120$). Due to a low response rate at T3 (only 53 surveys were returned), this data was not analyzed. Conclusion: The intervention was equally effective in both age groups. This suggests intervening at the earliest age where a significant effect is observed, so that with additional intervention, effects can be built upon over time.

14) Intellectual Functioning in first-episode schizophrenia, schizoaffective disorder, and bipolar disorder

Presenter: Golnoush Alamian
Authors: H Baitz, LN Yatham, WG Honer, IJ Torres
Faculty Sponsor: William G. Honer

Introduction: Intellectual functioning (IQ) prior to the onset of illness (premorbid IQ) and the pattern of its trajectory across illness onset can inform us of the early developmental pathology of mental disorders. The goal of this study was to investigate the pattern of intellectual functioning in first-episode psychiatric patients with overlapping symptoms including schizophrenia (SZ), schizoaffective disorder (SA) and bipolar disorder (BD). Method SZ, SA, BD-I, and healthy controls, were pooled from two early-interventions programs. The North American Adult Reading Test was used to estimate premorbid IQ, while the Kaufman Brief Intelligence Test was used to measure current IQ. Group differences in premorbid IQ and IQ trajectories were evaluated with ANOVA and repeated measure ANOVA. Results Both controls and BD patients had significantly higher premorbid IQ compared to SZ patients. Regarding IQ change, only subjects with SA and SZ experienced significant IQ deterioration through illness onset. Conclusion These findings suggest that neurodevelopmental pathology, which most likely directly affects intellectual functioning, may be highest in individuals with SZ, lowest in BD, and intermediate in SA.

15) Social Desirability in Bipolar Outpatients Compared to Healthy Volunteers in a Research Setting

Presenter: Sharon So-Hyun Ahn
Authors: Ahn, S, Mackala, SA, Hıdıroğlu, C, Michalak, EE, Yatham, LN, & Torres, IJ
Faculty Sponsor: Ivan Torres

Introduction: Social desirability (SD) refers to the inclination of individuals to present themselves in a socially favourable manner, and thus increased SD can potentially threaten the validity of responses on self-report questionnaires. The purpose of this study is to assess whether SD differs among patients with Bipolar Disorder (BD) and healthy volunteers participating in a clinical research study. Method: Forty-five euthymic BD outpatients and 40 healthy volunteers completed the Marlowe-Crowne Social Desirability Scale (SDS) as part of a cognitive research study. Distributions of responses were determined using histograms and between group differences on SDS were assessed using t-test statistics. Results: Healthy volunteers reported higher SD (M=19.7, SD=5.2) than BD patients (M=16.2, SD=5.9). The between group difference was significant $t(83)=-2.9$ ($p<.01$) with a medium-sized effect ($r=.30$). Conclusion: Healthy volunteers tended to self-report higher levels of SD than BD patients. However, BD patients reported SDS scores similar to mean scores of healthy subjects found in previous studies. Therefore, healthy volunteers appear to show a greater desire to convey a positive self-image in a research setting.

16) Depressive and Anxiety Symptoms in Academic Medical Faculty

Presenter:	Patricia C. Nolan, MD
Authors:	Patricia C. Nolan, MD
Faculty Sponsor:	Raymond W. Lam

Introduction: Little is known about the mental health of Faculty of Medicine (FoM) employees, particularly non-physician faculty. This study aims to examine depressive and anxiety symptoms and related work impairment in a sample of physician and non-physician academic faculty within a large Canadian FoM. **Methods:** As part of a workplace mental health initiative sponsored by the FoM at the University of British Columbia, all full-time FoM employees (701 academic faculty and ~1500 administrative/support staff) were invited by email to complete an anonymous web-based mental health screening survey, including the PHQ-9 and the GAD-7, two widely used screening instruments for depression and anxiety, respectively, and the Lam Employment Absence and Productivity Scale (LEAPS), a validated measure of work impairment. **Results:** A total of 1127 unique responses were recorded, including 290 from self-identified academic faculty, representing a response rate of 41%. Eighteen percent (46/262) of academic faculty met PHQ-9 criteria for depression while 16% (41/256) met GAD-7 criteria for anxiety; 20% (37/188) had significant work impairment according to the LEAPS. Compared to physician faculty (n=117), non-physician faculty (n=147) were significantly more likely to report anxiety and work impairment, and had higher mean scores on the PHQ-9, GAD-7, and LEAPS. **Conclusions:** Academic medical faculty responding to an anonymous online survey reported high rates of clinically significant depressive and anxiety symptoms and work impairment. **Implications/Relevance:** Our results suggest that non-physician academic faculty may be at higher risk for developing mental health symptoms than their academic physician colleagues. More research is needed.

17) Understanding the role of Readiness and Motivation for Change in an Adult Inpatient Eating Disorder Setting

Presenter: Joanna Zelichowska, BA

Authors: Joanna Zelichowska, Megumi Iyar, Suja Srikameswaran, Josie Geller

Faculty Sponsor: Josie Geller

Introduction: Readiness and motivation for change has been shown to be a strong predictor of outcome in outpatient eating disorder (ED) settings. Little is known about the role of readiness in patients who are critically ill and require inpatient treatment. **Methods:** Sixty female patients at the St. Paul's Eating Disorders Program completed measures of readiness and motivation for change, psychiatric distress, eating disorder symptom severity, quality of life and self-compassion. Participants also indicated their reasons for admission and medical and nutritional variables were recorded at 3 time-points. **Results/Conclusions:** Lower readiness was associated with higher psychiatric distress, more eating disorder symptom severity, lower self-compassion, and lower quality of life. Patients with low readiness were also less likely to adhere to their assigned meal plan. This research demonstrates that baseline patient characteristics are predictive of clinical outcomes and suggests that matching patient characteristics with inpatient treatment goals can better inform treatment planning. Data collection is ongoing and the relation between readiness and post treatment outcomes will be determined. **Relevance/Implications:** Specialized inpatient treatment for EDs is costly and treatment drop out is a pervasive problem. Findings from this research demonstrate that readiness for change is an important variable to consider in treatment planning for individuals with severe EDs.

18) Effectiveness of an Educational Handbook in Improving Psychiatry Resident Knowledge of Second-Generation Antipsychotics

Presenter: Julia Gibson

Authors: Julia Gibson, MD; Duc Nguyen, MD, PhD; Jana Davidson, MD, FRCPC; Constadina Panagiotopoulos, MD, FRCPC

Faculty Sponsor: Constadina Panagiotopoul

Introduction: The presenter seeks to share findings from a pilot evaluation of an educational handbook designed to increase resident knowledge of second-generation antipsychotic (SGA) use in the pediatric population, with an emphasis on metabolic monitoring. These findings have been submitted for publication, complete list of authors above. **Methods:** An educational handbook focusing on SGA use in children and adolescents was introduced to psychiatry residents undergoing a child psychiatry rotation. Baseline and post intervention questionnaires were administered to determine whether SGA knowledge increased. **Results:** Baseline and post-intervention questionnaires were completed by 32 residents. At baseline, most residents (92.9%) had interacted with an adult patient requiring an SGA, and had prescribed SGAs at least five times (70.9%) in the previous month. Baseline SGA knowledge was limited such that only 5.4% of participants scored greater than 80%, and 28.6% scored below 60%. Mean total score improved significantly from pre-test (18.4 ± 4.23) to post-test (21.2 ± 3.28 , $p=0.001$). Stratified analysis suggested a significant improvement of scores (post-test versus pre-test, respectively) in females (21.8 ± 3.11 versus 18.0 ± 4.94 , $p=0.003$) and junior residents (21.3 ± 3.34 versus 18.1 ± 4.37 , $p=0.001$). While significant improvements were documented in questions related to Health Canada-approved and other off-label evidence-based indications, and the appropriate physical examination components and laboratory tests to perform at SGA-initiation and follow-up, no improvements were documented regarding the distinguishing properties, side effects, and appropriate history taking prior to SGA-initiation. **Conclusion and implications:** Implementation of an educational handbook can improve resident knowledge related to SGA-use in children over the short-term. However, future research should be directed at the effectiveness of more interactive web-based formats in optimizing learning for male residents, and ensuring more comprehensive knowledge uptake. While the introduction of an education handbook is the first step in addressing some of the barriers to metabolic monitoring, prospective longitudinal studies are required to determine whether such an intervention will ultimately improve prescriber adherence over the long-term.

19) Mindfulness-based Skills Training in Augmentation of Group Family Cognitive-Behaviour Therapy in Pediatric OCD: A Pilot Feasibility Study

Presenter: Kourosh Edalati, MD
Authors: Kourosh Edalati MD, Rhonda Ellwyn BA, Elaine Chan BSc, Katherine McKenney PhD, Andrea Boyle PhD, Annie Simpson PhD, Daniel Lafleur MD, FRCPC, Evelyn Stewart MD FRCPC
Faculty Sponsor: Evelyn Stewart, MD

Background: While the efficacy of mindfulness-based therapies have been demonstrated in treatment of anxiety disorders and have shown some benefit in adult OCD, no such studies to date have examined the outcomes for OCD-affected youth when using these approaches. This open label feasibility study examines the use of mindfulness skill sessions as augmentation for group-based family cognitive behavioral therapy (GF-CBT), with a goal to qualitatively examine acceptability and enthusiasm for this approach among youth and their families. It also aims to examine potential impacts on OCD severity, individual and family functioning and family accommodation using Children's Yale-Brown Obsessive Compulsive Scale (CY-BOCS), Child Obsessive-Compulsive Impact Scale (COIS-R), and Coercive Disruptive Behaviour Scale for Paediatric OCD (CD-POC) and the Daily Mindfulness Practice Measure (DMPM). Methods: Participants in the optional pre-GF-CBT mindfulness module were provided with three 45 minutes sessions of basic mindfulness skills over a one-month period, within 3 months of GF-CBT treatment initiation. These skills included but were not limited to: observation of the breath, 3-minute breathing space, basic body scanning, walking meditation and attitudes (self-compassion and non-judgmental observation of passing sensations, feelings and thoughts, and practicing new habits). Participants in the pre-GF-CBT mindfulness skills module completed CY-BOCS, COIS-R, and CD-POC measures at the first mindfulness session in addition to the DMPM on week 12. Results: Of potential ten subjects, seven participated in the 3 session mindfulness-based module prior to GF-CBT initiation. Based on parent responses provided in the DMPM measure, 6 of 7 participants requested that mindfulness skills be included as a standard add-on to CBT and feedback on the mindfulness module was extremely enthusiastic. Although a direct change in measure scores (CY-BOCS, COIS-R and CDC-POC) between the start of the mindfulness module and week one of GF-CBT was not observed, overall improvement was noted by week 12 of GF-CBT in OCD severity, behaviours and general functioning. Changes in outcome scores were not statistically different between participants and non-participants in MBCT. Conclusions: The acceptability of mindfulness-based cognitive therapy (MBCT) among families being treated with GF-CBT in our novel pilot study implies that further study is warranted.

20) Integrated biological markers for the prediction of treatment response in depression

Presenter:	Tanya Poitras
Authors:	Tanya Poitras
Faculty Sponsor:	Dr. Raymond Lam

Background: Unlike many neurological, mental, and substance use disorders, there is currently no mechanism to confirm a diagnosis of depression with an objective measure (i.e., using brain scans or blood), nor is there a method to predict treatment outcome based on an individual's unique physiological and environmental circumstances. This project aims to address this gap through the systematic collection and integrated analysis of clinical, physiological, and brain imaging data from depressed patients before, during, and after standardized treatment to identify treatment response characteristics for individual patients. **Introduction:** This open-label treatment trial investigates biological markers ("biomarkers") that may predict treatment outcomes in people who are depressed and who are taking antidepressant medication. The study includes assessments of mood, cognitive functioning, and personal history, along with blood tests and neuroimaging (MRI and EEG) over 16 weeks. Subjects take an antidepressant medication, escitalopram (Cipralax) and, if mood symptoms do not improve after 8 weeks, aripiprazole (Abilify) is added. **Methods:** Study visits consist of assessments of symptoms, behavioural and personality dimensions, and environmental factors. Data from these assessments will be integrated with functional and structural neuroimaging data and proteomic and genomic profiles from blood samples using high-dimensional mathematical modeling approaches. A total of 240 patients and 90 controls will enroll across 6 Canadian sites.

21) Somatic Treatments for Somatic Symptom and Related Disorders using ECT: A case series

Presenter: KaWai Leong
Authors: KaWai Leong
Faculty Sponsor: Fidel Vila-Rodriguez

Introduction: Medically unexplained somatic complaints are highly prevalent and lead to significant impairment and disability. The number of effective treatment modalities for somatic symptom and related disorders (SSD) or somatoform disorders (SD) remained limited. To date, there is no formal indication for electroconvulsive therapy (ECT) in SSD or SD. We are reporting the largest case series to date on the effectiveness of ECT in SSD and SD. **Methods:** A retrospective chart review of all patients treated with an index course of ECT at the UBCH Neuropsychiatric Program from 2000-2010 was conducted. The primary outcomes consisted of changes in pseudoneurologic symptoms, in pain symptoms, in cardiopulmonary symptoms, and in gastrointestinal symptoms; and were examined pre- and post- ECT. **Results:** Twenty-eight participants were included in this case series. Twenty-one participants received right unilateral ECT. Six received bifrontal ECT. One received bitemporal ECT. Twenty-one participants reported improvement in pseudoneurologic symptoms; thirteen participants reported improvement in pain symptoms; one participants reported improvement in cardiopulmonary symptoms; and two participants reported improvement in gastrointestinal symptoms. **Conclusion:** The mechanism of action of ECT underlying the improvement in SSD and SD remains largely unknown. In this study, ECT has been shown to be effective in the treatment of SSD and SD.

22)	Forensic psychiatric service use among mentally ill homeless adults in British Columbia, Canada
Presenter:	Alicia Nijdam-Jones, MA
Authors:	Nijdam-Jones, A., (graduate student), Nicholls, T. L., Crocker, A. G., Roy, L., Frankish, J., Krausz, M., Somers, J., & Farrell, C.
Faculty Sponsor:	C. Tonia L. Nicholls, PhD

Introduction: Homeless mentally ill individuals are at higher risk than their non-mentally ill peers of coming into contact with the criminal justice system. This study examines the nature and extent of contact with forensic psychiatric services among homeless mentally ill adults living in British Columbia, Canada. **Methods:** This study uses self-report data from the At Home/Chez Soi project and administrative data from the BC Forensic Psychiatric Services Commission to explore the nature and frequency of forensic psychiatric service use among a sample of homeless mentally ill individuals (N=435) in Vancouver. **Results:** Almost half of the participants had contact with forensic services in the community and nearly one in five (20%) had been admitted to the forensic hospital over their lifetime. The nature of contacts ranged from inpatient assessment and treatment to providing community triage services, fitness and pre-sentence assessments, as well as community treatment and supervision. Common charges included assault, theft under \$5000, uttering threats, and failure to comply with probation. **Conclusion:** A large number of homeless mentally ill adults come into contact with forensic psychiatric services, often for minor offences.

23) Dimenhydrinate use disorder and treatment-resistant psychosis: case report and literature review

Presenter:	Randall F. White, MD, FRCPC (faculty member)
Authors:	Randall F. White, MD, FRCPC, Fidel Vila-Rodriguez, MD, FRCPC

Introduction: Dimenhydrinate (diphenhydramine and 8-chlorotheophylline) is a non-prescription remedy for nausea seldom recognized as a substance of abuse. This report describes a patient with dimenhydrinate addiction, recurrent delirium, and psychosis misdiagnosed as treatment-resistant schizophrenia; reviews relevant literature; and discusses possible mechanisms.

Methods: The patient underwent a multidisciplinary diagnostic evaluation at the BC Psychosis Program by means of clinical observations, complete psychiatric history, and relevant physical and laboratory investigations. Literature search for the past 20 years employed Medline, PsycINFO and Embase databases for psychosis or schizophrenia associated with or exacerbated by dimenhydrinate, diphenhydramine, or theophylline. **Results:** A 38 year-old woman was referred for treatment-resistant schizophrenia; onset of psychosis coincided with abuse of dimenhydrinate. She used 1 to 1.5 grams daily the year before index admission and was receiving ineffective antipsychotic polypharmacy. At admission, she exhibited visual hallucinations and disorientation which resolved with abstinence from dimenhydrinate even as antipsychotics were reduced. Auditory hallucinations became very intermittent. The patient's disorder is understood in context of prior case reports of dimenhydrinate abuse, dependence, and delirium; and effects of both diphenhydramine and 8-chlorotheophylline. **Conclusions:** Abuse of dimenhydrinate, which contains two psychoactive molecules, is associated with delirium, dependence, withdrawal, and exacerbation of psychosis.

24) Postpartum psychosis in mothers with a history of major depressive disorder

Presenter: Chloe Mighton
Authors: Chloe Mighton
Faculty Sponsor: Dr. Jehannine Austin

Introduction: While women with a history of major depressive disorder (MDD) have higher chances for mood episodes in the postpartum, little is known about the chance for postpartum psychosis (PPP). Data regarding whether sex of the baby affects risk for PPP are inconsistent. **Objectives:** Among women with a history of MDD, to determine a) the frequency of PPP, and b) whether the sex of the baby affects the chance of PPP. **Methods:** Primiparous women with a history of only MDD completed the Positive and Negative Syndrome Scale (PANSS) during pregnancy and at 1 week, 1 month, and 3 months postpartum. Presence of psychosis was defined by a score above threshold in one of five key symptoms on the PANSS. To determine the impact of sex of baby on frequency of PPP, we used Fisher's exact test. **Results:** Eleven of 60 participants (18.3%) experienced PPP, with postpartum onset for 6/11. Sex of the baby had no significant impact on the frequency of PPP ($p = 0.073$). **Conclusions:** PPP is common among women with MDD, but sex of the baby did not significantly influence risk. **Relevance/Implications:** Monitoring women with a history of MDD for psychosis during the perinatal period may be indicated.

25) Parental causal attributions and adaptation to a child's diagnosis of obsessive compulsive disorder

Presenter: Heather Andrighetti, MSc
Authors: Heather Andrighetti, MSc
Faculty Sponsor: Dr. Jehannine Austin

Introduction: Though it is established that, in general, causal attributions affect adaptation to illness, little is known about this in the context of obsessive--- compulsive disorder (OCD). Given the unique impacts of OCD on family functioning, understanding how parents' causal attributions for their child's OCD affect their process of adaptation to the condition may inform the development of therapeutic interventions. Methods: Parents of children with OCD were recruited from a BC Children's Hospital specialty clinic. Semi---structured telephone interviews were audio--- recorded, transcribed, and analyzed using qualitative content analysis and elements of grounded theory. Participants were recruited until additional interviews revealed no new themes (saturation). Results: Saturation was achieved after interviews with 13 parents of 13 children with OCD. Data analysis revealed that key components of the process through which parents adapt to their child's OCD include conceptualizing the meaning of OCD, navigating its impact on family dynamics, and developing effective illness management strategies. This occurred against a backdrop of stigma, and was shaped by contextual elements including family history of mental illness and the child's specific manifestations of OCD. Conclusion: These data provide insight into the process of parental adaptation to paediatric OCD, and offer an enriched understanding of this population's needs.

26) Ethics in relation to recovery from mental illness: A systematic review

Presenter: Dr. Abraham (Rami) Rudnick
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Introduction: Recovery-oriented mental health services may face ethical challenges. We reviewed the literature describing recovery-oriented mental health services to determine what ethical challenges are currently addressed, as well as proposed solutions and outcomes. **Methods:** We searched thirteen databases with peer-reviewed journals and the grey literature for articles published in related subject areas from the earliest available to 2013 (inclusive). Two reviewers screened articles for inclusion/exclusion. Included articles contained an explicit focus on, or discussion of, ethical concepts and related challenges in the context of recovery from mental illness (distinct from substance use). **Results:** The initial search resulted in a total of 1,744 records, with 61 found and reviewed for thematic analysis. Autonomy and self-determination were the ethical concepts most frequently discussed, often contrasted with notions of coercion, forced treatment, and paternalism. Salient ethical challenges were related to involuntary admissions, risk assessment, and impaired decision-making capacity of service users. Potential solutions included shared decision-making, assertive community treatment (ACT), and psychiatric advance directives (PADs). **Conclusion:** There is a lack of evidence regarding outcomes associated with potential solutions to ethical challenges associated with recovery-oriented services.

27) Reporting of standard research ethics procedures in general psychiatry peer-reviewed empirical publications

Presenter: Dr. Abraham (Rami) Rudnick

Authors: Dr. Rudnick A, Pallaveshi L, and Subramanian P.

Introduction: Ensuring use of research ethics procedures is important. We examined the reporting (and its predictors) of standard research ethics procedures in general psychiatry journals. Methods: We reviewed all primary (human) research articles published from 2000 to 2012 in four general psychiatry journals: American Journal of Psychiatry, Archives of General Psychiatry, British Journal of Psychiatry, and Canadian Journal of Psychiatry. Regression was used to predict reporting of research ethics procedures by journal, year of publication, number of authors, country of first author's affiliation, study design and evaluation methods. Results: Of 5,894 articles found and reviewed, 71.3% of the studies reported informed consent and 56.6% reported ethics approval. 8.2% reported assessment of capacity to consent to (or decline) research participation and 2.7% reported a waiver of informed consent. Number of authors ($p < 0.001$), journal ($p < 0.001$), and study design ($p < 0.001$), were significant predictors of reporting informed consent and ethics approval. Country of affiliation of first author ($p < 0.001$) was a significant predictor of reporting informed consent, and year of publication ($p < 0.001$) was a significant predictor of reporting ethics approval. Conclusion: Research ethics procedures were under-reported in these journals.

28) Lifetime Victimization History in a Sample of Forensic Inpatients and Community Clients

Presenter: Ilvy Goossens, M.Sc.

Authors: Ilvy Goossens, M.Sc.

Faculty Sponsor: Dr. Tonia L. Nicholls and Dr. Johann Brink

Introduction: Studies in prisoners indicate that offenders are disproportionately affected by traumatic events and posttraumatic stress disorder (PTSD). Research on forensic samples is scant; however, the few existing studies indicate that the forensic population is heavily burdened by victimization and resulting health deficits. Additionally, research indicates potentially traumatic events are rarely documented as explicitly traumatic, infrequently tied to current symptoms, and seldom integrated into treatment planning. Method: Survey-based interviews were used to assess the prevalence, nature and frequency of adverse childhood experiences and potentially traumatic events in forensic patients (N = 40). File reviews were conducted to record demographic and forensic-psychiatric history and treatment concerns. Results: 72.5% of our sample had ≥ 3 adverse life events before the age of 18; neglect and household dysfunction being the primary domains of adversity. This pattern of polyvictimization persisted into adulthood, with 60% experiencing ≥ 4 potentially traumatic life events. Although posttraumatic distress was not reflected on file, 55% reported subsyndromal PTSD, 7.5% reported full PTSD. Conclusion: The majority of this forensic sample was characterized by cumulative exposure to adversity throughout their lives. Implication: Our findings suggest the relevance of trauma-informed practice in forensic psychiatric settings.