DEPARTMENT OF PSYCHIATRY AND BEHAVIOURAL NEUROSCIENCES
30TH ANNUAL RESEARCH DAY

Wednesday, May 2nd, 2018
8:00am - 3:00pm
Mohawk College, Fennell Campus, McIntyre Performing Arts Theatre

RISK AND RESILIENCE
IN CHILD & YOUTH MENTAL HEALTH

FULL PROGRAM
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We are delighted to welcome you to what promises to be an exciting and stimulating Research Day hosted by Drs. Stelios Georgiades and Ellen Lipman, both from the Offord Centre for Child Studies. Ellen and Stelios have assembled an impressive group of speakers who will each be discussing topics that tackle important questions about risk and resilience. The focus is on child and youth mental health, but it is increasingly clear that what happens during the earlier years has major implications for mental health across the lifespan.

For this year’s Research Day, we have a record number of posters – a reflection of the enthusiasm for both the Day and Research in the Department!

We are grateful to Stelios and Ellen, as well as to Alison Kerkhof and Nicole Sloss from the Department Research Office, who have all set the stage for a wonderful day to hear about research, to network and to catch up with colleagues. We hope you enjoy our 30th Annual Research Day!
Are risk and resilience opposing poles of the same dimension? Or are they intersecting constructs from distinct domains? Are risk and resilience located at the individual-level (e.g., within the child’s genome and/or temperament)? Or can they also be found in our context (e.g., family, school, community)? Can risk and resilience be modified or changed? If so, should prevention and intervention programs target one or the other?

And whatever the answers to these questions might be, are they set in stone? Or do they change as individuals and contexts develop and evolve over time?

This year’s Research Day focuses on risk and resilience in child and youth mental health. It is our hope that the complexities of the issues discussed here today won’t be seen as a risk of failure. Rather, they will serve as triggers of resilience (especially for the young trainees) that can lead to innovative research and improved clinical care for child and youth mental health.

Welcome on board and enjoy the day!
8:00 - 8:45 REGISTRATION/LIGHT BREAKFAST

8:45 - 9:00 OPENING REMARKS
Dr. Nick Kates
Department Chair

WELCOME AND AGENDA OVERVIEW
Drs. Ellen Lipman & Stelios Georgiades
Research Day Co-hosts

9:00 - 10:00 KEYNOTE SPEAKER
Risk, Resilience, and Child Population Health
Dr. William Gardner
Professor, Epidemiology, University of Ottawa
Senior Research Scientist, CHEO Research Institute

10:00 - 11:00 DEPARTMENT TALKS
Addiction and Youth: Focus on Opioid Use and Management
Behavioural and Neuro-Economic Perspectives on Decision-Making in Addiction
Dr. Zena Samaan
Associate Professor, Psychiatry and Behavioural Neurosciences, McMaster University
Dr. Michael Amlung
Assistant Professor, Psychiatry and Behavioural Neurosciences, McMaster University

11:00 - 12:30 REFRESHMENT BREAK

12:30 - 1:30 LUNCHEON

1:30 - 2:30 KEYNOTE SPEAKER
Emotion Dysregulation, Family Interaction and the Prevention of Child Psychopathology
Dr. Jennifer Jenkins
Professor, Applied Psychology and Human Development, University of Toronto OISE

2:30 - 2:45 AWARDS PRESENTATION

2:45 - 3:00 CLOSING REMARKS
Drs. Harriet MacMillan & Margaret McKinnon
Associate Co-chairs, Research
SPEAKER BIO

Dr. William Gardner
Professor, Epidemiology, University of Ottawa
Senior Research Scientist, CHEO Research Institute

William Gardner is a child psychologist, statistician, and mental health services researcher. He studies children’s mental health interventions, statistical methods, psychiatric measurement, and health system change. He is a professor of epidemiology at the University of Ottawa and the CHEO RI and University of Ottawa Chair in Child and Adolescent Psychiatry Research. He is a senior research scientist at the Children’s Hospital of Eastern Ontario Research Institute (CHEO RI, Ottawa, ON), where he directs the Centre for Pediatric Mental Health Services and Policy Research.

Dr. Gardner’s presentation will be on Risk, Resilience, and Child Population Health.
Dr. Jennifer Jenkins is the Atkinson Chair of Early Child Development and Education at the University of Toronto. Her training is in developmental and clinical psychology and she received her PhD in 1987 from the University of London. Her research focuses on the influence of marital, sibling and parent-child relationships on young children’s social understanding, early cognitive development and mental health. She studies why some children are more resilient than others when exposed to risky environments and is particularly interested in within family influences in development. She is the director of Kids, Families, Places, a birth-cohort, longitudinal study of 500 children and their older siblings followed into middle childhood, the goal of which is to understand the interaction of biological, family and broader contextual risk in children’s socioemotional trajectories. She is a co-author, with Keith Oatley and Dacher Keltner of Understanding Emotions.

Dr. Jenkins’ presentation will be on Emotion Dysregulation, Family Interaction and the Prevention of Child Psychopathology.
Dr. Michael Amlung is an Assistant Professor in the Department of Psychiatry and Behavioral Neurosciences at McMaster University, joining the Department in July 2015. Dr. Amlung is a core faculty member of the Peter Boris Centre for Addictions Research (PBCAR) and a faculty affiliate of the Michael G. DeGroote Centre for Medicinal Cannabis Research. He received a BS in Cognitive Science from Indiana University and a MS and PhD in Experimental Psychology from the University of Georgia. Before coming to McMaster, he completed a postdoctoral fellowship in addictions research at the University of Missouri. The main focus of Dr. Amlung’s research is to better understand decision-making and motivation, particularly in the context of substance use disorders. His work examines the cognitive and neural bases of choice behavior and drug use motivation in addiction. Dr. Amlung has published numerous peer-reviewed articles in leading journals in the areas of substance abuse, neuroscience and psychiatry. His work has been recognized by a Junior Investigator Award from the Research Society on Alcoholism, an Early Career Investigator Award from NIAAA, and the Constantine Douketis New Researcher Award from the Research Institute at St. Joseph’s Healthcare Hamilton.

Dr. Amlung’s presentation will be on **Behavioural and Neuro-Economic Perspectives on Decision-Making in Addiction.**
Dr. Samaan is an Associate Professor, Department of Psychiatry and Behavioural Neurosciences, Associate Member, Department of Clinical Epidemiology and Biostatistics and core faculty at the Population Genomics Program and Peter Boris Centre for Addiction Research, McMaster University. Dr. Samaan completed psychiatry and research training in Ireland and UK. In addition to her medical degree, she holds a Masters in Science from Trinity College Dublin, Ireland and a PhD in psychiatric genetics from the Institute of Psychiatry and Kings College London, UK.

Dr. Samaan’s presentation will be on **Addiction and Youth: Focus on Opioid Use and Management.**
1. Child neglect, risk factors, and impact on school-aged children and adolescents (work in progress)
   Takhliq Amir, Ashwini Tiwari & Andrea Gonzalez

2. Sex-related changes in animal models of autism spectrum disorders
   Melika Babadi & Florence Roullet

3. Expression of IGF-1 receptor in human idiopathic autism
   Milena Cioana, Bernadeta Michalski & Margaret Fahnestock

4. Predicting sexual preference of normal subjects using gaze patterns and fixations in virtual reality simulations
   Nardin Hanna, Gary Chaimowitz & Sébastien Prat

5. The association between developmental health at school entry and unmet dental needs (a study in progress)
   Catherine S. Lee, Caroline Reid-Westoby & Magdalena Janus

6. Investigating the role of CDNF, MANF as therapeutic targets for schizophrenia (a study in progress)
   Dima Malkawi, Khaled Nawar & Ram Mishra

7. Olfactory function assessment in animal models of autism spectrum disorders - a review
   Hasti Namvarhaghighi & Florence Roullet

8. Psychological factors affecting back pain (a review in progress)
   Fatima Nazir & Eleni Hapidou

9. Social performance predicts likeability in an initial interaction task
   Thipiga Sivayoganathan, Karen Rowa, Cathy Hoang, Irena Milosevic, David Moscovitch & Randi McCabe

10. Speech and language impairments in kindergarten: Prevalence and association with developmental outcomes (a study in progress)
    Megan Yim, Caroline Reid-Westoby & Magdalena Janus
Child Neglect, Risk Factors, and Impact on School-Aged Children and Adolescents
(Work-in progress)

Takhliq Amir¹, Ashwini Tiwari, PhD², Andrea Gonzalez, PhD²

¹B.H.Sc. Student, Health Sciences (Global Health Specialization); ²Department of Psychiatry & Behavioural Neurosciences, McMaster University

Rationale: Despite being the most prevalent form of child maltreatment, neglect, defined as the omission of care-taking behaviour necessary for a child’s healthy development, is greatly understudied (Stoltenborgh et al., 2013). To date, only one comprehensive review is published on the impact of child neglect on development and functioning (Hildyard & Wolfe, 2002). This is problematic because the consequences of child neglect are far-reaching, with many risk factors exacerbating its multitude of effects on the development of children and adolescents.

Purpose: To review empirical studies regarding the social determinants of child neglect, and the impact of child neglect on the development of school-aged children and adolescents.

Methods: This literature review utilized Hildyard & Wolfe (2002) as an initial source to find post-2002 studies on child neglect. A search was conducted on Google Scholar and OVID MEDLINE using the terms child and adolescent in combination with development, neglect, emotional neglect, physical neglect, externalizing behaviour, and internalizing symptoms. The references of all papers used were consulted to ensure search comprehensiveness. Any publications outside of the age range specified for school-aged children (ages 5-11) or adolescents (12-17), or those focussed on co-occurring forms of child maltreatment, were excluded.

Results: Risk factors of child neglect were identified, including chronic poverty, mother-child affective communication, and parental history of maltreatment. The effects of child neglect on internalizing and externalizing behaviours were explored at the developmental stages of school-aged children and adolescents. Regarding internalizing behaviours, school-aged children were at increased risk for depressive symptoms and shame-proneness. Existing research on internalizing behavioural symptomatology in adolescents was scarce, with conflicting findings regarding the relationship between emotional neglect and depressive symptoms or anxiety. Findings from studies among school-aged children also indicated a positive relationship between severity of child neglect and externalizing behavioural problems, including childhood aggression. Research on the effects of child neglect subtypes among adolescents was equivocal, suggesting heightened risk of juvenile delinquency and substance abuse.

Conclusion: With such widespread and long-term effects of child neglect, spanning from early childhood to adolescence and beyond, researchers, health practitioners, and policymakers must consider both the social determinants and the developmental outcomes of child neglect in designing preventative and intervention initiatives. Through a combination of early detection of risk factors and the use of interventions that promote healthy development, the lifelong effects of child neglect could potentially be avoided for many young children worldwide.

References
Sex-related Changes in Animal Models of Autism Spectrum Disorders

Melika Babadi¹; Florence Roulet²

¹B.Sc Student, Life Sciences Program, McMaster University; ²PhD, Psychiatry and Behavioural Neurosciences, McMaster University

Rationale: The rate of males that get diagnosed with Autism Spectrum Disorder (ASD) is four times higher than females (Kokras & Dalla, 2014). Although some may argue that this sex difference is due to the misdiagnosis of females (Kirkovski, Enticott & Fitzgerald, 2013), many have proposed theories such as “the extreme male brain” (Baron-Cohen, 2002) and “female protective effect” (Robinson, Lichtenstein, Anckarsäter, Happé & Ronald, 2013). However, the reason for this higher male incidence remains unknown.

Purpose: To determine if animal models could be used to study the sex-related differences observed in ASD.

Method: This literature review was undertaken using the Pubmed, Web of Science, and Google Scholar database. Keywords used during the search phase include: sex-differences, Autism Spectrum Disorder, animal model. The primary measures include differences in results of behavioral tests between sexes. The behavioral tests were categorized into four groups including: communication, anxiety, social and repetitive/locomotor. The secondary outcome measures are biochemical differences between sexes. We quantified the percentage of tests reporting a sex-related difference per category.

Result: Currently, a total of 11 studies and 11 different animal models, induced by environmental factors or genetic modifications, were included. Among these 11 studies, a total of 31 behavioural tests were performed. 48% of all behavioral tests observed differences in the phenotypes between the two sexes: communication 33%, number of tests (n)=6, number of studies (N)=5; social 45%, n=11, N=8; repetitive/locomotor 55%, n=11, N=9; anxiety 67%, n=3, N=3. 65% of all biochemical tests (n=20, N=5) also observed a significant difference between the males and females.

Conclusion: The preliminary results suggest that the sex-related differences in the human condition can also be observed in animal models. Therefore, animal models could be used to study the underlying mechanism for the sex differences in ASD. Further studying sex differences through animal models would provide an important insight into understanding the neurobiological underpinnings of sex-related differences in the human condition.

References
Expression of IGF-1 Receptor in Human Idiopathic Autism

Milena Cioana¹; Bernadeta Michalski²; Margaret Fahnestock²

¹B.H.Sc. Student, Faculty of Health Sciences, McMaster University; ²Department of Psychiatry and Behavioural Neurosciences, McMaster University

Rationale: Autism is a lifelong neurodevelopmental disorder characterized by social impairments, restrictive interests and repetitive behaviors. It is believed that defects in the establishment and maintenance of functional neuronal networks due to synaptic/spine dysfunction underlie the clinical symptomatology of autism. The potent effects of IGF-1 on synaptic function, maintenance and plasticity make it a potentially attractive target for the treatment of autism. In fact, this polypeptide hormone has proven to have beneficial effects in treating developmental disorders like Rett Syndrome and Phelan-McDermid Syndrome, and currently a pilot treatment study is testing its efficacy in Autism Spectrum Disorder. IGF-1 binds to its receptor (IGF-1R) in neurons and activates mitogen-activated protein kinase (MAPK) and PI3K/Akt signaling to produce biological effects such as neuronal survival (Li et al., 2013). The PI3K/AKT pathway is downregulated in idiopathic autism and is hence believed to play a role in the disorder (Nicolini et al., 2015). Human idiopathic autism is characterized by an imbalance in TrkB protein isoforms, which also activate the PI3K/Akt pathway, and IGF-1 has also been shown to regulate the expression of distinct Trk receptors in neurons through the PI3K/Akt signaling pathway. Therefore, whether IGF-1R is dysregulated in human idiopathic autism is an important question.

Purpose: To determine the level of IGF-1R mRNA expression in human post-mortem idiopathic autism brain tissue compared to control tissue.

Methods: Human fusiform gyrus tissue from normal controls and from subjects with idiopathic autism (6 control, 6 autism) was obtained from Autism BrainNet. Samples were matched for age, gender and post-mortem interval, and no significant difference for these variables was found between the two groups. RNA was isolated from frozen tissue. qRT-PCR was performed for IGF-1R, and mRNA levels were normalized to mRNA levels of the housekeeping gene β-actin.

Results: There was no significant difference between levels of IGF-1R in human idiopathic autism compared to controls.

Conclusion: The data suggest that IGF-1R is not transcriptionally downregulated in human idiopathic autism. Protein levels of IGF-1R will be investigated to further examine the role of the receptor in the disorder.

References
Predicting Sexual Preference of Normal Subjects using Gaze Patterns and Fixations in Virtual Reality Simulations

Nardin Hanna\textsuperscript{1}, Gary Chaimowitz \textsuperscript{2,3}, Sébastien Prat \textsuperscript{2,3}

1. Bachelor of Health Sciences, Faculty of Health Sciences, McMaster University
2. Department of Psychiatry and Behavioural Neurosciences, McMaster University
3. Forensic Psychiatry Program, St. Joseph’s Healthcare Hamilton

Introduction: A sexual interest in children is one of the most significant predictors of recidivism for sexual offenders. Phallometric testing is one of the current diagnostic assessments to test for a sexual interest for children, however, has been criticized for its internal and external validity. Virtual reality headsets with eye-tracking capabilities have the potential to address some of the challenges facing the existing assessments. Although the long-term goal is to develop a reliable tool to assess deviant sexual behaviour, it appears important to reliably assess normal sexual preferences. The purpose of this pilot study will be to determine the accuracy with which we can use virtual reality to predict sexual preference in normal participants to deduce if this technology may later be applied to make a diagnosis of pedophilia.

Materials and Methods: Adult participants will view a virtual reality simulation, which will present a naked male adult avatar, a naked female adult avatar, and a neutral sphere. A multilayer perceptron will track the most significant patterns of gaze within the participants. Groups of participants with shared gaze patterns will then be analyzed to determine if they all indicated the same sexual preference in the initial survey. Gaze concentration on the following points of interest will also be measured; the genitals, the breasts (female avatar), and the face. The duration of time spent viewing the points of interest will also be recorded. Predictions will be compared to the subjects’ own indicated sexual preference to determine the accuracy of virtual reality as a tool to assess sexual interests. Each participant will undergo additional trials in which they will be asked to conceal their sexual preference and, afterwards, to feign a sexual interest in their non-preferred sex. We will analyse this data to determine if this assessment is susceptible to falsification.

Results: Based on the literature, we predict that there will be common gaze patterns between subjects who have the same sexual preference. We also predict that participants will concentrate their gaze on the points of interest for longer durations in the avatars of their sexual preference. By extrapolating the results from previous studies of gaze behaviour, we can also presuppose that subjects, when asked to falsify their sexual preference, will have distinct and tell-tale eye movements, which will be different from those that have no interest in the other sex.

Discussion: Research data collected from this study can provide evidence for the use of virtual reality as an objective and accurate assessment to identify sexual interests. This can have many applications within a forensic setting once this technique is validated for deviant sexual preferences; for instance, this technology can be used to identify sexual offenders with a sexual interest in children.

References

The Association Between Developmental Health at School Entry and Unmet Dental Needs
(A study in progress)

Catherine S. Lee¹; Caroline Reid-Westoby²; Magdalena Janus²,³

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Rationale: Dental problems are the most prevalent chronic disease worldwide, with up to half of all children entering kindergarten having tooth decay (Canadian Dental Association, 2017). Although recent literature suggests possible associations between dental health and academic performance, there is still a general lack of evidence of whether dental health is associated with children’s developmental health at school entry.

Purpose: To compare the developmental outcomes of kindergarten children with unaddressed dental needs (UDN) with that of children without such needs.

Methods: This retrospective observational study used responses on the Early Development Instrument (EDI) collected between the 2009/2010 and 2014/2015 school years (Janus & Offord, 2007). In Phase 1, ANOVAs and Chi-square analyses were used to determine whether there were significant associations (p < .05) between UDN and other EDI variables known to be associated with child development (i.e. age, sex, province, Aboriginal status, E/FSL status, special needs, socio-economic status). In Phase 2, MANOVAs were conducted to determine the association between UDN and the mean scores of the five EDI developmental domains (i.e. physical health and well-being, social competence, emotional maturity, language and cognitive development, and communication skills and general knowledge). All statistical tests were performed using IBM SPSS Statistics version 23.

Results: A total of 576,264 children were included in the study. Of those, 2,465 (0.43%) children were identified as having UDN. In Phase 1, there were significant differences between children with and without UDN on all variables analyzed (p < .001), and they were controlled for in subsequent analyses. In Phase 2, children without UDN showed significantly higher mean scores in all five EDI domains (p < .001, partial µ² = .003-.008) than children with UDN.

Conclusion: Results suggest that there is an association between UDN and poorer developmental outcomes in kindergarten children. Given the limitations of the study (e.g. small effect sizes, lack of prior research studies on the topic, teacher-reported data), further research on the association between UDN and children’s development is necessary.

References
Investigating the Role of CDNF, MANF as Therapeutic Targets for Schizophrenia (A study in progress)

Dima Malkawi¹, Khaled Nawar², Ram Mishra³

¹H.B.HSc. Student, Dept. of Biomedical Discovery and Commercialization, McMaster University
²H.B.Sc. Student, Dept. of Biology, McMaster University
³Dept. of Psychiatry and Behavioural Neurosciences, McMaster University

Rationale: Primary theories on the pathophysiology of schizophrenia (SZ) around an imbalance of neurotransmitters, with the most enduring theory being the “dopamine hypothesis.” More specifically, increased occupancy of the dopamine receptor 2 (D2R) by dopamine due to dopamine over-activity or hypersensitivity is a hallmark in the aetiology of SZ. D2R is the primary site of action for the antipsychotics, including lurasidone. Lurasidone is a powerful D2R antagonist, which means it prevents that action of dopamine by blocking D2R binding sites without activating them. However, the full mechanism behind how lurasidone alleviates symptoms of SZ remains incomplete. Neurotrophic factors (NTFs) are naturally occurring proteins that have been implicated in the maintenance, differentiation, and survival of neurons. Cerebral dopamine NTF (CDNF) and Mesencephalic astrocyte-derived neurotrophic factor (MANF) belong to a novel class of NTFs specific to dopaminergic neurons. This study will examine the role of CDNF and MANF as therapeutic targets for SZ by examining the effect of lurasidone on their level of expression.

Purpose: In this research project, we will use a human neuroblastoma cell line and Sprague-Dawley rats to investigate the effects of lurasidone on the expression of two NTFs: cerebral dopamine neurotrophic factor (CDNF) and mesencephalic astrocyte-derived neurotrophic factor (MANF).

Methods: Differentiated SH-SY5Y cells will be treated for 24 hours with 1, 10, 100 or 1000 mg/mL of lurasidone. Adult male Sprague-Dawley rats will be treated with 2mg/kg of lurasidone every 24 hours for 7 days. Rats will be sacrificed 6 hours after the last injection on day 7, and the substantia nigra, striatum, prefrontal cortex, cortex and hippocampus will be collected. For in vitro and in vivo work the mRNA expression of CDNF and MANF will be quantified using RT-qPCR. Statistical analysis will use a one-way ANOVA with a Tukey's post-hoc test.

Expected Results: We expect the administration of lurasidone to significantly increase the mRNA expression of CDNF and MANF upon the differentiation of SH-SY5Y cells and in the tissue samples collected from the rat models.

Conclusion: These results would suggest that lurasidone may attenuate the symptoms of schizophrenia through the upregulation of CDNF and MANF. The results from this study can aid in determining the potential role of NTFs in schizophrenia and other neuropsychiatric disorders such as bipolar disorder. Future research involves analyzing the expression of NTFs in patients with schizophrenia and elucidating how these drugs upregulate CDNF and MANF. Understanding the pathways of these medications will allow us to further explain the pathophysiology of the disease and guide us in providing more efficacious treatment.

References:
Olfactory Function Assessment in Animal Models of Autism Spectrum Disorders - A Review

Hasti Namvarhaghighi, B.Sc Student, Life Sciences Program, McMaster University; Florence Roullet, PhD, Psychiatry and Behavioural Neurosciences, McMaster University

Rationale: Olfactory dysfunction has been utilized as a biomarker of many neurodegenerative disorders including Alzheimer's and Parkinson's Diseases, and Schizophrenia. According to the Centers for Disease Control and Prevention, autism affects every 1 in 68 children in the United States. Sensory functions/modalities including vision, audition, and touch in patients with autism have been well studied, whereas olfaction remains under-investigated (Galle et al., 2013). In 2017, Tonacci et al. published a systematic review on olfactory assessment in the Autism Spectrum Disorders (ASD) population and described the different olfactory tests used so far and their relevance to the condition. The current work aims at comparing their results with the pre-clinical work performed to evaluate the olfactory function in animal models to study autism.

Purpose: To review the current state of the literature describing the olfactory function assessment in animal models for autism and compare it with the studies performed in the human.

Methods: PubMed, Scholars Portal Journals, and Google Scholar were the primary electronic databases used to retrieve reviews and original articles. The keywords used for the search included a combination of the following: “autism”, “ASD”, “olfaction”, and “animal model”. Search included papers published between 2003 and present.

Results: Currently, 23 papers were retrieved and a quantitative and qualitative analysis is being conducted.

Conclusion: Based on preliminary research, olfaction is an effective method to assess the progression of ASD. Further research needs to be conducted to explore the olfactory function in autism using animal models.

References:

Abstract

Psychological Factors Affecting Back Pain (A Review In Progress)

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²PhD, C. Psych, Michael G DeGroote Pain Institute, Health Sciences, McMaster University;

Rationale: Despite considerable research on the topic, chronic back pain remains one of the most prevalent concerns in medicine with a considerable societal cost. Addressing patients’ beliefs, cognitions, and behaviours has become critical in pain management as a psychological perspective has been recognized as fundamental in both assessment and treatment (Bard, A. & Sheffield, D., 2016).

Purpose: The purpose of the review is to address a variety of psychological factors from relevant and recent research such as; catastrophizing, pain beliefs, fear avoidance beliefs, psychological distress, and self-efficacy to better understand their role in pain management for better future treatment and assessment.

Methods: There were a variety of methods and measures used: Roland-Morris Disability Questionnaire (RMDQ), Patient Generated Index (PGI), Patient Reported Outcomes (PRO), Pain Belief Questionnaire (PBQ), Hospital Anxiety and Depression Scales (HADS), Fear Avoidance Belief Questionnaire (FABQ); Systematic reviews and Meta-analysis.

Results: The results from literature shows that certain psychological factors can magnify chronic low back pain. Pain beliefs can heighten depressive and anxiety symptoms and distress and affect self-efficacy in determining one’s belief to be able to cope through pain.

Conclusion: Psychological factors in back pain are important to understand as they provide guidelines for Interventions for pain management for back pain, which can be addressed through Mindfulness and CBT which have had significant positive results in patients already (Cherkin et al., 2016). Addressing them and understanding the underlying issues can also better help patient-physician care and relationship to receive effective and optimal care (Sari et al., 2015).

References:


Social performance predicts likeability in an initial interaction task

Thipiga Sivayoganathan¹, Karen Rowa²,³, Cathy Hoang², Irena Milosevic²,³, David Moscovitch⁴, and Randi McCabe²,³

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Rationale: Individuals with social anxiety disorder (SAD) often avoid social interactions for fear of negative evaluation from others (Voncken & Dijk, 2013). Indeed, individuals with SAD are more negatively evaluated in social interactions than individuals without SAD (Voncken & Dijk, 2013). Currently, a prominent area of research in SAD is the investigation of behaviours that contribute to and detract from positive social interactions (Voncken & Dijk, 2013).

Purpose: This study seeks to identify predictors of likeability in a social interaction for individuals with a range of social anxiety symptoms.

Methods: Participants were female undergraduate students from McMaster University who interacted with a female confederate in a videotaped getting acquainted task. Participants completed the Social Phobia Inventory (SPIN) to assess symptoms of social anxiety while the confederate completed the Desire for Future Interaction scale (DFI) to assess the likeability of the participant. Using the video recordings of the interaction, two raters independently coded participants’ performance and propensity for self-disclosure using the Performance Questionnaire (PQ; Rapee & Lim, 1992) and a Self-Disclosure scale (SD) designed for the purpose of the current study respectively. The PQ included both specific items (e.g. stuttered) and global items (e.g. appeared confident) while the SD assessed frequency, depth, and reciprocity of self-disclosure. Total talking time was also measured for each participant.

Results: Data were collected from 62 participants (M age = 18.31) who reported a range of social anxiety symptoms (M = 24.11 indicating mild severity on average). There was moderate to strong agreement between coders on the variables of interest, PQ (ICC = 0.69) and SD (ICC = 0.79), so scores were averaged across raters. We conducted a regression analysis with likeability as the dependent variable and social anxiety, coded performance, talking time, and degree of self-disclosure as predictor variables. A significant regression equation was found (F(4, 57) = 6.9, p < .000), with an R² of 0.326. Results indicated that the only significant predictor of likeability was performance (p < .05).

Conclusion: Results suggest a significant association between social performance and likeability in an initial interaction task. Individuals who performed better (according to ratings by coders) in the social interaction task were more liked by the confederate, irrespective of their level of social anxiety. Further research is necessary to examine these and other predictors of likeability to inform interventions for individuals with social anxiety.

References
Speech and Language Impairments in Kindergarten: Prevalence and Association with Developmental Outcomes (A study in progress)

Megan Yim¹; Caroline Reid-Westoby²; Magdalena Janus²

¹B.Sc. Student, Psychology, Neuroscience & Behaviour, McMaster University; ²Offord Centre for Child Studies, Psychiatry and Behavioural Neurosciences, McMaster University

Rationale: Speech and language impairments (SLIs) have been associated with poorer language and motor skills, as well as socio-emotional/behavioural development. SLIs are one of the most common childhood disabilities, affecting approximately 1 in 12 children (Prelock et al., 2008). However, data on prevalence rates in specific regions (such as Canadian provinces) are extremely limited.

Purpose: The goal of the study is to examine the prevalence of SLIs in kindergarten children in Ontario, Manitoba, and British Columbia, and the associations between SLIs and children’s developmental outcomes.

Methods: This study examined data collected from the Early Development Instrument (EDI) – a population-based, teacher-completed questionnaire that measures developmental health in kindergarten children across 5 domains: Physical Health and Well-Being, Social Competence, Emotional Maturity, Language and Cognitive Development, and Communication Skills and General Knowledge. Data from 736,846 children across Ontario, Manitoba, and British Columbia were included in the statistical analyses using SPSS. SLI prevalence was determined using frequency tables and cross tabulations. Multivariate analyses of variance (MANOVA) were used to examine the associations between EDI domain scores and SLIs.

Results: SLI prevalence rates were found to be 4.99%, 6.47%, and 6.32% for Ontario, Manitoba, and British Columbia, respectively. After controlling for gender, age, and English/French-as-a-second-language (E/FSL) status, EDI scores were significantly lower in children with SLIs compared to children without SLIs across all 5 domains. The largest difference was observed in the Communication and General Knowledge domain (mean [no SLI] = 7.77, mean [SLI] = 3.84 partial η² = .111), while the smallest difference was observed in the Emotional Maturity domain (mean [no SLI] = 8.00, mean [SLI] = 6.77, partial η² = .030).

Conclusion: These findings indicate that there is an association between SLIs and poorer developmental outcomes in kindergarten. This emphasizes the importance of ensuring that SLI services are accessible to children, so that they can receive the additional support they need. To continue this research, next steps include: examining differences in effect sizes across the three provinces and looking at associations with special needs as a covariate.

References

11. The relationship between Adverse Childhood Experiences (ACEs) and criminal behaviour in the forensic mental health system  
Dalia R. Ahmed, Kaitlyn McLachlan, Heather Moulden & Gary Chaimowitz

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The Relationship between Adverse Childhood Experiences (ACEs) and Criminal Behaviour in the Forensic Mental Health System

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Rationale: Adverse childhood experiences (ACE)s are strongly linked with poor emotional, physical, and behavioural outcomes in adulthood (Felitti et al., 1998). Scientific literature shows that high rates of ACEs are present in both forensic/correctional populations and in individuals with mental health concerns. ACEs have been shown to be associated with offending and risk patterns, however, limited evidence is available regarding individuals in the forensic mental health system (Stinson, Quinn, & Levenson, 2016).

Purpose: To examine the association between ACEs and criminal history (age at first offense and total number of charges) in adults admitted to a forensic mental health program,

Methods: This study used a secondary analysis design of previously collected archival data abstracted from the charts of adults admitted to the forensic mental health program at St. Joseph’s Healthcare Hamilton over a two-year period. A structured coding manual was used to record the presence of ACEs, criminal history, and demographic data.

Results: In total, 188 charts were reviewed (Mage = 39.6 ± 14.3 years, 85% male). The primary reported diagnosis was Schizophrenia (n = 82, 43%) and most participants were admitted for court ordered assessment and/or treatment related to fitness to stand trial (n = 53, 28%) or criminal responsibility (n = 124, 66%). The average age of first recorded criminal offence was 26.8 years (SD = 13.6) and, on average, participants had incurred approximately 13.5 criminal charges (SD = 18.6). Rates of ACEs were high (M = 2.6/11, SD = 2.2) across the sample, with concentrated ACEs (e.g., ≥ 4 ACES) present for approximately one-third of participants (n = 58, 30.1%). Total ACEs scores significantly predicted both age of first offence, \( r = -.26, t(168) = -3.49, p = .001 \), and total number of criminal charges, \( r = .25, t(178) = 3.37, p = .001 \).

Conclusion: Results of this study are consistent with research demonstrating high rates of ACEs in forensic mental health samples and their association with various adverse outcomes, including elevated and earlier onset offending. Further exploration of the prevalence of ACEs and associated long-term outcomes in this population (e.g., self-harm, violence, victimization) is essential for improving trauma informed services, which in turn improve the safety of individuals admitted or working in mental health settings.

References

ABSTRACT #12

Understanding Marijuana Use in Individuals with Anxiety Disorders: Predictors of Use and Misuse

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Rationale: Cannabis use is associated with numerous long-term problems (Pope & Todd, 1996). Individuals with anxiety disorders use cannabis at elevated rates, often to manage anxiety symptoms (Buckner et al., 2007). More research is needed to understand vulnerability factors associated with cannabis use in an anxiety disorders population to inform efforts to help individuals manage problematic use.

Purpose: To further understand the extent to which two common vulnerability factors for the development of anxiety disorders, anxiety sensitivity and intolerance of uncertainty, predict cannabis use, cannabis misuse, and motives for cannabis use.

Methods: Participants (N = 75) were recruited from the Anxiety Treatment and Research Clinic at St. Joseph’s Hospital Hamilton, West 5\textsuperscript{th} campus. Participants had a diagnosis of an anxiety disorder and reported current or past marijuana use. Participants completed the Anxiety Sensitivity Index (ASI-3) and the Intolerance of Uncertainty Scale (IUS-12) at the time of their initial diagnostic assessment at the clinic. Participants then completed the Marijuana History Questionnaire (MHQ), Cannabis Use Disorder Identification Test (CUDIT-R), and Marijuana Motives Questionnaire (MMQ) approximately 1-4 months after the initial diagnostic assessment.

Results: Data analyses are ongoing. We hypothesize that anxiety sensitivity and intolerance of uncertainty will be positively correlated with cannabis use, misuse, as well as coping motives for use.

Conclusion: Understanding factors that predict cannabis use, misuse, and motivation to use will further our understanding of vulnerability to cannabis use, and can be used by clinicians to better understand patient outcomes based on baseline traits.

References

Investigating Sex Differences in Preparing for a Suicide Attempt (A Study in Progress)

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Rationale: Suicidality is an ever-growing concern that continually increases in its prevalence from childhood to adolescence/adulthood (Brent et al. 1999). As a widely spread concern, research has focused on reasons as to why suicide occurs between sexes, cultures and other demographics, as well as the differing methods between groups. A gap that currently exists in the literature is whether differences exist in terms of preparation methods and final anticipations, as well as if previous suicidal attempts or behaviours influence the prevailing attempt.

Purpose: To identify any significant differences between males and females in suicide intent and preparation, and to see if previous attempts influence current method type or preparation.

Methods: Data is obtained through a Case Questionnaire used in the DISCOVER study (Samaan et al. 2015). Questions on the questionnaire pertaining to preparation methods will be analyzed retrospectively. Qualitative analysis will also be conducted between and within the sexes in terms of identifying any significant or recurring patterns, changes or similarities in previous attempts/methods, preparation style and final acts as well as demographic information.

Results: 65 males (mean age 46.64) and 81 females (mean age 44.01) were included. The predominant ethnicity existing in both groups was European. Of the males, 43.1% had a previous suicide attempt(s), and 65.4% of the females had a previous attempt(s). A multi-linear regression analysis will be done on variables and data from the Questionnaire related to or indicating preparation methods. Results from the qualitative analysis will be reported.

Conclusion: If any significant difference exists between male and female preparations in a suicidal attempt, future research should be conducted to identify what causes any differences. Findings in changes made between past and previous suicide attempts, as well as any differences seen between the sexes could indicate what changes need to be implemented in future research strategies as well as therapeutic services for suicidal populations.

References


Psychoeducational Inservice Programming in Inpatient Settings

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**Rationale:** Schizophrenia is a disorder characterized by cognitive disturbance intimately linked with behavioural symptoms, including aggression (Robinson, Littrell & Littrell, 1999). Under a holistic, patient-centred model of care, such symptoms must be addressed. Furthermore, many of these behaviours present significant difficulties to nursing staff charged with the long-term care of individuals with schizophrenia. There is a complex, dynamic relationship between patient behaviours and nurses’ stress levels (McVicar, 2003).

**Purpose:** The present study evaluated nurses’ perceived prevalence of aggressive patient behaviour, and level of workplace stress or burnout. In addition, we evaluated whether a psychoeducational inservice program provided to nursing staff which addressed the relationship between cognitive impairment and responsive aggressive behaviour in patients with schizophrenia was effective in improving nurses’ knowledge and sense of capacity in responding to such behaviours.

**Method:** The program included information pertaining to prevalence and effects of workplace stress, the cognitive and neurological bases of aggression in schizophrenia, and the tenets of behaviourism and behavioural therapies. Participants included 23 persons currently involved with the Mental Health & Addiction program at St. Joseph’s Healthcare, Hamilton. Participants were asked to provide ratings of patient behaviour, as part of a self-report questionnaire which also assessed for measures of stress, self-efficacy, ability to empathize, and psychological knowledge. Knowledge questions were evaluated pre- and post-inservice.

**Results:** Preliminary results suggest that participants reported moderate prevalence of aggressive or responsive patient behaviours, and that the inservice was effective in increasing knowledge ratings.

**Conclusions:** The results indicate that a substantial proportion of nurses surveyed reported responding to aggressive patient behaviour frequently. The pre-post knowledge evaluation expounded the relative effectiveness of the psychoeducational inservice programs aimed at enhancing knowledge.

**References**

The Efficacy of Cognitive Behavioural Therapy in the Acquired Brain Injured Population

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Rationale: Brain injury is the leading cause of death and disability for Canadians under the age of 40, with 1.5 million Canadians currently living with a brain injury, and 100 000 Canadians expected to experience a brain injury every year (Brain Injury Association of Canada, 2014). A significant factor mediating the level of disability experienced post injury are related to the affective sequelae of these injuries.

Purpose: To examine the efficacy of cognitive behavioral therapy (CBT) in reducing affective symptoms in Acquired Brain Injury (ABI) patients post injury.

Methods: In a 10-week outpatient group setting, ABI patients learned how to identify thought processes related to their negative moods and strategies to shift distortions in thinking to more adaptive ones using a basic CBT model. Measures evaluating patients’ affective states (i.e. depression and anxiety), coping strategies, and integration were evaluated pre- and post- treatment, and at a 6-month follow up to determine if the treatment was effective in reducing symptoms, improving adaptive coping, and facilitating quality of life.

Results: In a pilot data analysis, significant improvements in depression, anxiety, stress, adaptive coping, and social integration following treatment, and retention of treatment gains at a 6-month follow up were observed (Velikonja, Brum, & Scott 2014). Hence, to evaluate whether this trend is significant and stable, we will replicate these findings using a larger sample size.

Conclusions: The use of CBT techniques modified for the ABI population may be effectively managed in the context of a group therapy model. The application of manualized structured CBT in the ABI population has been met with challenges related to compliance and poor integration of strategies due to the nature of post injury cognitive challenges. Application of modified strategies in a group format is demonstrating efficacy in facilitating instructions to help patients control the negative thoughts mediating their affective symptoms.

References
Mind the Kids: Investigating the Role of Maternal Cognitive Sensitivity between Maternal Depression and Child Externalizing Behaviour (A study in progress)

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Rationale: Women are one of the highest at-risk groups for experiencing depression. This is a concern, as maternal depression is linked to increased risk of child externalizing behaviours (Norcross, Leerkes, & Zhou, 2017). However, research has shown maternal sensitivity may act as a protective factor, such that higher levels of maternal sensitivity are correlated with higher levels of cooperation in children of depressed mothers (NICHD Early Child Care Research Network, 1999). Recent studies have isolated the cognitive aspect of maternal sensitivity, allowing for target research on the protective nature of sensitivity.

Purpose: To evaluate the role of maternal cognitive sensitivity in the association between maternal depression and child externalizing behaviour

Methods: This study utilizes a subset of data from the longitudinal study – Maternal Executive Processes and Parenting Study, which recruited participants from the maternity ward at St. Joseph’s Hamilton Healthcare (N =95). Maternal variables include maternal depression, measured at child age 36 and 48 months using the Center for Epidemiological Studies Depression Scale (CES-D); maternal cognitive sensitivity, measured at 36 months using Cognitive Sensitivity Parent-Child Thin Slice Dyadic Interaction Code; and household sociodemographics. Child externalizing behaviour was measured at 48 months using the Child Behaviour Check List (CBCL). All statistical analyses will be done using SPSS 20.0.

Results: Data analyses is currently underway, and results will be presented

Conclusions: Conclusions based on this study are pending completion. This information will add to the current literature on maternal sensitivity and help to inform interventions targeting maternal depression.

References:

The Impact of Safety Behaviour Use on Likeability in Interpersonal Interactions for Individuals with and without Social Anxiety Disorder

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Rationale: Safety behaviours are believed to play a vital role in the maintenance of symptoms in social anxiety disorder (SAD) (Clark & Wells, 1995). Previous research demonstrates that individuals who engage in safety behaviours are perceived as less likeable, and others are less likely to desire future interaction with individuals with SAD who use safety behaviours (McManus, Sacadura & Clark, 2008; Plasencia, Alden & Taylor, 2011). Few other studies have explored the link between safety behaviours and likeability, or whether safety behaviour use is associated with similar social outcomes for people low in social anxiety.

Purpose: To examine whether the self-reported use of safety behaviours affects perceived likeability and genuineness during a conversation with a stranger in both individuals with SAD and individuals low in social anxiety.

Methods: The SAD sample (n=29) consisted of individuals with a formal diagnosis of SAD, and the low social anxiety sample (n=40) consisted of undergraduate students from McMaster University. A confederate and the participant engaged in a semi-structured interaction task. Afterwards, the participant provided self-report ratings of their use of safety behaviours during the interaction and how genuine they felt in the interaction. The confederate provided ratings on how likeable and genuine they found each participant.

Results: As expected, the SAD sample reported more severe social anxiety symptoms (p<.001) and safety behaviour use (p<.001) than the low anxiety sample. Additionally, conversation partners perceived participants in the SAD sample as significantly less likeable (p=.005) and less genuine (p=.012) than those in the low anxiety sample. Individuals in the SAD sample perceived themselves to be significantly less genuine (p=.03) compared to individuals in the low anxiety sample. A mediation analysis will be conducted to better discern the role of safety behaviours in understanding differences in likeability and authenticity observed between groups.

Implications: The results will further our understanding of the negative social outcomes linked to safety behaviour use, and whether any association between safety behaviours and negative social outcomes in SAD populations can be extended to low-anxiety populations.

References
Sexual behaviour: what is a normal sexual behaviour and how to identify hypersexual disorder?

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Introduction: Myths are widely spread in regards to sexuality. Although research has been conducted for several decades it is difficult to know what a normal sexual behaviour is. Indeed, sexuality has to be divided into the level of libido, the nature of the fantasies, and the actual acts performed by an individual. People tend to misreport their sexuality, regardless of the context of the assessment. Sexuality issues may be at play in mood disorders, medication compliance, impulsive behaviours and paraphilic disorders. Among the issues that can be described, forming a concrete definition of Hypersexuality Disorder (HD) remains to be a difficult task for the psychiatric field. As of now, HD is broadly defined as “Compulsive sexual behavior”. Although HD is often mentioned amongst the psychiatric literature, specific criteria for understanding HD is not precise. The American Psychiatric Association chooses not to incorporate HD criteria within the DSM-V, which might have given HD a standard definition and diagnostic criteria. The concern with this ambiguity is that defining and diagnosing becomes difficult to complete. It appears necessary that newer tools be developed in order to explore and classify normal sexual behaviours in general and HD in particular.

Material and Methods: The purpose of the study is to explore the sexual behaviour, fantasies and level of libido of non- deviant adult participants. This task will be performed through an online questionnaire. A systematic literature review will guide the design of these questions. In addition to general questions related to normal sexuality (i.e. non-deviant), the HBI-19 and the Internet Sex Screening Text will be added in order to assess the presence of any issues in relation to the sexuality of the participant.

Results: This study should help us draw a better definition of normal sexual behaviour. The data will be of great value in comparing typical and hypersexual behaviour, in order to formulate diagnostic criteria.

Discussion: This study will have many applications in the mental health field. From a forensic psychiatry perspective, this study will be relevant as deviant sexual behaviour requires the scrutiny of a mental health expert for the purpose of guiding the court in their decisions. In addition, treating paraphilia does not define that the patient is not allowed to have non-deviant and consensual sexual activities. The difficulty is that these individuals charged with sexual crimes have a tendency to underestimate their non-deviant sexual behaviour as they feel that it will be a positive factor in their assessment/rehabilitation process. Having scientific data to demystify these believes will be helpful. Moreover, HD appears to be at play in many cases of inappropriate behaviour. A better assessment of HD will help identify the disorder and make appropriate recommendation.

References
Executive Functioning and Fetal Alcohol Spectrum Disorder in the Criminal Justice System

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Rationale: Adults with Fetal Alcohol Spectrum Disorders (FASD) are overrepresented in the criminal justice system (CJS) with prevalence estimates ranging from 10 to 23% (Flannigan, Pei, Stewart, & Johnson, 2018). Among the range of neurocognitive difficulties observed in individuals with FASD, deficits in executive functioning (EF) are consistently observed in clinical pediatric populations (Kodituwakku, 2007). Limited data is available regarding EF in adults with FASD, particularly in the CJS context, where such difficulties may be linked with recidivism and other challenges (e.g., Hancock, Tapscott, & Hoaken, 2010), and where further understanding may aid in the development of screening tools.

Purpose: To assess EF (working memory, response inhibition, conceptual set shifting, and attention control) in CJS-involved adults with FASD compared to both CJS-involved and neurotypical controls.

Methods: This pilot study included 37 adult participants (18-40 years, Mage = 30 years, 38% female) diagnosed with FASD (CJS and non-CJS involved, n = 15), and both CJS and non-CJS involved neurotypical controls (n = 22), recruited from community and custodial settings in a Northern Canadian jurisdiction. Participants completed computerized EF tasks (directional stroop, reverse fish flanker), and measures of attention and working memory (WAIS-IV: Arithmetic; WMS-IV: Symbol Span), and reasoning abilities (WAIS-IV: Matrix Reasoning).

Results: Preliminary analyses indicated that on a computerized EF directional stroop task participants with FASD committed significantly more errors (70% vs. 86% accuracy), t (32) = -2.5, p = .02, d = .88, 95% CI (-.29, -.03) and had significantly slower reaction times (RT) (M_{FASD} = 819ms, SD = 107ms vs. M_{cont} = 731ms, SD = 77ms), t (35) = 2.9, p = .006, d = .98, 95% CI (26.8, 149.5) compared to controls. They also showed significantly greater impairment on measures of attention and working memory compared to controls.

Conclusion: Preliminary findings suggest high levels of EF deficits in adults with FASD, including those with CJS-involvement, and underscore the need for continued study given the conservative nature of the current pilot sample. Better understanding EF deficits in this population may be helpful in developing more precise and specific screening tools.

References:
Rationale: Few people are aware of the size of a standard alcoholic beverage, leading people to frequently pour an excessive amount of alcohol in their beverages (Carruthers & Binns, 1992). This has important implications for the accuracy of self-reported drinking in clinical and research contexts, potentially leading to underreporting of alcohol consumption (Stockwell et al. 2004). These inaccurate perceptions are also important to understand for the purposes of creating low-risk drinking education materials for university and college students.

Purpose: To examine whether university students and the general public can accurately identify the size of a standard alcoholic drink, and examine differences by severity of alcohol misuse.

Methods: Participants were 100 undergraduate students from a large US university and a comparison sample of 250 adults recruited from Amazon Mechanical Turk online crowdsourcing platform. Stimuli included high-quality photographs of four alcoholic beverage categories (beer, white wine, red wine, whiskey), ranging in volume from 50% below the size of the standard drink to 50% above the size of the standard drink. Photos were taken in representative glasses with a bottle of the alcohol placed beside it for a size comparison. Participants completed a picture rating task where they judged a randomized series of photographs of their two most commonly consumed beverage categories. For each image, participants were asked to state whether the drink was a standard size drink, smaller than standard, or larger than standard, as well as their confidence on a four-point scale. Blocks of beverage cues were interspersed with a visual symmetry distraction paradigm. At the end of the survey, participants completed an assessment of drinking quantity & frequency and demographics.

Results: Data collection is ongoing. Preliminary results show that of 15 males and 85 females at the University of Kansas, most of the students were fairly inaccurate at determining standard drink size. For instance, the students often reported that a standard drink of whiskey was greater than what it actually was, overestimating the size of a standard drink. Students with a lower Alcohol Use Disorders Identification Test (AUDIT) score were more likely to overestimate the size of a standard drink. Analyses of MTurk sample are forthcoming.

Conclusions: Early results show that participants are overestimating the size of standard drinks, especially those who may have less experience with alcohol. This suggests that novice drinkers may be at greater risk of consuming a greater amount of alcohol than intended. These data could have implications for how low risk drinking guidelines are presented. Using photographs of alcohol to teach people standard drink sizes could improve accuracy and reduce overconsumption. Photographs could also increase the accuracy of self-reported drinking quantity in research studies and clinical care.

References
THE EFFECTS OF TECHNOLOGY-BASED PARENTING INTERVENTIONS FOR HIGH-RISK FAMILIES: A META-ANALYSIS

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RATIONALE: Safe, stable and nurturing parent-child relationships have been proven by decades of research to lay the groundwork for child development (Bornstein, 2002). The effectiveness of evidence-based parenting interventions in improving parent-child interactions and parent mental health has been notably established (Tully & Hunt, 2015). The use of digital methods to deliver parent training has recently been identified as a means to increase accessibility, reduce costs, and enhance engagement. However, this is a relatively new domain of research and little is known about their effectiveness.

PURPOSE: The objective of this meta-analysis was to compile evidence of the efficacy of technology-based parenting interventions for high-risk populations; specifically quantitatively assessing their effects on parenting behaviours and maternal outcomes.

METHODS: A systematic literature search was conducted in the following databases: MEDLINE, PsycINFO, PubMed and ERIC. High-risk families were defined as families that include at least one of the following characteristics: young mothers, single parenthood, or low socioeconomic status. Nine studies were extracted from this search. These evaluated interventions that use technology, such as computers or smartphones, to deliver at least some components of the intervention and were delivered to high-risk families with children between the ages of 0 to 12 years. Comprehensive Meta-Analysis (CMA) software was used to compute composite effect sizes of parenting behaviours and maternal outcomes. Evidence of publication bias and heterogeneity between effect sizes was also assessed.

RESULTS: The meta-analysis showed a significant medium effect across parenting behaviours (ES= 0.377, SE= 0.082, studies= 6) and maternal effects (ES= 0.338, SE=0.175, studies= 8). High heterogeneity was found between effect sizes for parenting behaviours (I²= 55.261%) and maternal outcomes (I²= 96.234%); however, no tests for moderation were conducted due to the small sample of included studies.

CONCLUSION: The meta-analytic results of this study demonstrate the potential of technology-based parenting interventions to reach high-risk families. Additional studies are needed to assess for potential moderators, such as the methods of delivery (ie. videoconferencing vs. websites) that are most effective, to provide further support for the development and evaluation of these interventions.

References:
A Systematic Review: Childhood trauma and Borderline Personality Disorder (A study in progress)

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\textbf{Rationale:} The DSM-5 characterises Borderline Personality Disorder (BPD) as a pervasive pattern of instability of interpersonal relationships, self-image, and affects, and marked impulsivity. Patients who live with BPD often report a high frequency of childhood traumatic events (1). Within the current literature however, there is a discrepancy of the reported frequency of said events. While some research hypothesizes those who develop BPD have underlying personality traits that predispose them to later develop the disorder, others propose that childhood trauma increases chances of later development of the disorder (2).

\textbf{Purpose:} This systematic review aims to determine the general consensus of the scientific literature on the developmental course of BPD. Additionally, we aim to determine the course of illness, prognosis of BPD, how childhood trauma effects the course/severity of BPD and if the age trauma occurs at effects the degree of symptomology.

\textbf{Methods:} Cumulative Index to Nursing and Allied Health Literature (CINAHL), Web of Science, Cochrane, PubMed/MEDLINE, EMBASE and PsychINFO were searched using a comprehensive search strategy. Relevant data will be extracted that pertains to BPD diagnosis, symptom severity, type of childhood trauma and age of occurrence if reported, as well as any demographic data provided.

\textbf{Conclusion:} Although in the preliminary stages, it is hoped that enough articles will meet the criteria to perform a meta-analysis. The goal is that the results from this systematic review will add valuable knowledge to the scientific community and lead to a better understanding of BPD.

\textbf{References}

Metacognition, Shyness, and Quality of life in Schizophrenia

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Rationale: Schizophrenia has many complications relating to quality of life (Ritsner et al., 2003). Many factors can impact quality of life (QoL) such as shyness, which is defined as discomfort in the presence of others (Buss, 1980). Shyness in individuals with schizophrenia is associated with poor social functioning (Jetha et al., 2007) and it also hinders subjective quality of life (Hansson 2001). Individuals with schizophrenia have also been shown to struggle with metacognition, which is thinking about your own or others' thoughts (Frith 1992). Metacognitive training (MCT) has shown to improve social quality of life scores in schizophrenia patients (Moritz et. al. 2011). Although both shyness and metacognition impact social functioning in individuals with schizophrenia, to date, no studies have examined these factors together as they pertain to QoL in this population.

Purpose: The purpose of this study is to explore the relations between metacognition, shyness and QoL in adults with schizophrenia and schizoaffective disorder.

Method: Adults diagnosed with schizophrenia or schizoaffective disorder were recruited from the Schizophrenia Outpatient Clinic and Cleghorn clinic at St. Joseph’s Healthcare. Participants completed the Metacognition Questionnaire-30, the Cheek and Buss Shyness Scale and the Quality of life Enjoyment and Satisfaction Questionnaire. The relationship between scores on measures of metacognition, shyness and QoL will be analyzed with a Pearson’s r correlation and linear regression analysis.

Results: The current study is still in progress, results will be presented once data collection is complete.

Conclusions: Metacognition may interact with shyness to influence QoL outcomes. If that is the case, determining differential susceptibility for hindered quality of life would be important for individualised treatment planning. For example, if individuals with schizophrenia or schizoaffective disorder show poorer metacognition and increased shyness in adults, then administering MCT and social skills training concurrently may be beneficial for quality of life outcomes.

References:


Trajectory and Quality of Life in Forensic Mental Health Patients with Adverse Childhood Experiences (In Progress)

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Rationale: Studies show that adverse childhood events may be a predictor for decreased quality of life in adulthood (Corso, Edwards, Fang, & Mercy, 2008). Adverse childhood events are common experiences shared by individuals in the correctional system (Krammer, Eisenbarth, Hügli, Liebrenz, & Kuwert, 2018). The Ontario Review Board (ORB) Project is an ongoing data-collection study that analyzes personal history, criminal and psychiatric history, current treatment information, and current risk evaluation in a population of adults who have been found Unfit to Stand Trial (UST) or Not Criminally Responsible (NCR).

Purpose: To examine the relationship between adverse childhood experiences and the trajectory and quality of life of patients in the forensic mental health system.

Methods: Data was collected as part of a larger study that aims to increase our understanding of individuals under the jurisdiction of the forensic mental health system in Ontario. Thus far, N=900 from ORB reports. All of these reports were submitted to the ORB in the time period between March 2014 and March 2015, resulting in a catalogue of newly admitted and long-term forensic psychiatric patients across Ontario. The current study examines adverse childhood experiences, such as: childhood abuse, living with an individual who is abusing substances or absence of one or both parents prior to the age of 16. Trajectory and quality of life will be analyzed using the following characteristics: level of education, financial status, current employment status, marital status, number of previous psychiatric hospitalizations, and criminal justice involvement. All statistical analyses will be done using SPSS.

Results: Data analysis is currently in progress.

Conclusion: Conclusions are pending completion of the data analysis. These findings will add to current research about the early risk and resilience of forensic mental health patients and its impact on later outcomes within the criminal justice and forensic mental health systems.

References
Coping skills and resilience as moderators for the relationship between employment status and symptom severity in individuals with anxiety disorders.

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Rationale: In most developed countries, mental illnesses including anxiety and depression are the leading cause of absence, unemployment, and long-term disability (Canadian Mental Health Association BC Division, 2014). In fact, one of the most powerful ways in which mental illnesses can lead to social exclusion is through its debilitating impact on occupation (Canadian Mental Health Association BC Division, 2014).

Purpose: Given the importance of employment for wellness, the goal of our research is to examine two potential factors (resilience and coping style) that may be associated with employment in a sample of individuals with anxiety disorders.

Method: Participants (N=396) were patients at the Anxiety Treatment and Research Clinic (ATRC), St. Joseph’s Healthcare, Hamilton who met criteria for at least one anxiety disorder. Participants completed the following measures: 33-item Resilience Scale for Adults (RSA, α = 0.913), 6-item Brief Resilience Scale (BRS, α = 0.717), 28-item Brief Coping Orientations to Problems Experienced Scale (Brief COPE, α = 0.744) and 21-item Depression Anxiety Stress Scale (DASS-21, α = 0.930). All participants were assigned to one of three groups based on self-report data on employment status: employed (N=301), unemployed (N=82), or unable to be assigned (N=13) based on their self-reported occupation.

Results: Symptom severity in the employed group was significantly lower than that of the unemployed group as measured by the 3 subscales of DASS-21: depression, \( t(381) = -5.601, p < 0.01 \), anxiety, \( t(381) = -5.601, p < 0.01 \), and stress, \( t(381) = -5.601, p < 0.05 \). Additionally, significantly higher resilience scores were observed in the employed group as compared to the unemployed group as measured by BRS \( t(381) = 3.748, p < 0.01 \) and RSA \( t(335) = 6.637, p < 0.01 \). There was no significant difference in the endorsement of problem-focused and emotion-focused coping styles between employed and unemployed group.

Conclusions: Initial results suggest a meaningful difference in both symptom severity and resilience scores between employment groups, while coping style did not differ between groups. As this is a correlational study, it is unclear whether symptom severity leads to lower resilience or whether resilience is affected by increased symptom severity. Further research is warranted to better understand the factors that may influence employment status and the important role that resilience may play in occupational functioning.

References:
Feedback from long-term care home staff utilizing the St. Joseph's Seniors Mental Health Outreach Program: A quality assurance study

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Background: As the elderly population in Canada continues to grow, the number of seniors in long-term care (LTC) homes, and in particular those suffering from psychiatric disorders, is expected to increase considerably. Therefore, an understanding of the strengths and shortcomings of current mental health services in LTC is necessary to ensure the most appropriate care for seniors. Despite the high prevalence of psychiatric problems in LTC home residents, there have been few studies evaluating the effectiveness of geriatric mental health outreach programs in LTC, and even fewer conducted in Canada.¹,²

Objective: The goals of this current study are to gather feedback and evaluate the perceived effectiveness of the St. Joseph’s Healthcare Seniors Mental Health Outreach Program in LTC, in terms of staff satisfaction. The study also aims to identify the strengths and shortcomings of the program in order to improve the service and tailor the program to LTC homes’ needs. Furthermore, the study will explore other components that LTC home staff find valuable, that could be added to the program.

Methodology: A service-based referral database was used to identify the LTC homes that have requested service from the St. Joseph’s Healthcare Seniors Mental Health Outreach Program within the past two years. 65 LTC homes from the Brant (n=8), Halton (n=23), Hamilton (n=2), and Niagara (n=32) regions were identified. Three types of representatives of LTC home staff (directors of care, front-line-staff, and physicians; n=199) were contacted by email and by fax. Both the email and the fax contained a link with an invitation to complete the online survey. The surveys consisted of three multiple choice questions, ten Likert-scale questions, and one open-response question. Participants were also given the opportunity to provide comments after each question. A reminder email and fax was sent two weeks after the initial request for survey completion. Quantitative data will be analyzed using means, medians, and standard deviations. Qualitative data will be analyzed through thematic and content analysis.

Results: Data collection is currently ongoing.

References

Effectiveness of electronically-delivered cognitive behavioural therapy in depressive disorders: A systematic review and meta-analysis

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Background: Cognitive behavioural therapy (CBT) is a commonly used treatment for depression.¹ However, barriers such as long wait-times prevent patients from receiving CBT. This has prompted health care systems to introduce electronically delivered CBT (eCBT) to promote increased access. Unfortunately, there lacks adequately powered evidence comparing eCBT to normal face-to-face CBT. Therefore, the purpose of this study is to compare the clinical effectiveness of eCBT to normal face-to-face CBT through a systematic review of existing literature. Methods: Our inclusion criteria included a form of randomized controlled trial evaluating outcomes such as severity of symptoms, adverse outcomes, global functionality, participant satisfaction, quality of life, and cost-effectiveness. There was no restriction on age or sex of the participants. We searched MEDLINE, EMBASE, Psych Info, CENTRAL, and CINAHL databases from inception to May 20th, 2017. Initial abstract and title screening was completed by two independent reviewers. We conducted a risk of bias analysis for included studies. Qualitative measures are reported in a narrative summary. We pooled quantitative data in a meta-analysis to provide an estimated summary effect for symptom severity, participant satisfaction, and global functionality. This review adhered to PRISMA reporting guidelines.²

Results: Our results found that eCBT was more effective than face-to-face CBT at reducing depression symptom severity (SMD -1.73 95%CI -2.72, -0.74). The intervention was less effective at improving global functionality than face-to-face (SMD 3.98 95% CI 1.44, 6.52) as well as quality of life. However, participants favoured eCBT over control (SMD -0.29 95%CI -0.56, -0.02) and eCBT was found to be economically friendlier than face-to-face. Conclusion: Although we found eCBT to be effective, high heterogeneity subjects our results to be less definitive. We recommend further investigation into the utility and efficacy of eCBT for depression before implementation of this intervention as a replacement for face-to-face CBT.

References
Use of the Copenhagen Burnout Inventory in front-line staff implementing dialectical behavior therapy on a pediatric eating disorders unit (Study in progress)

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Objective: Eating disorders are life-threatening illnesses that commonly affect adolescents. Treatment of eating disorders presents challenges in terms of slow treatment progression and comorbidities that contribute to staff burnout. Dialectical behavior therapy (DBT) has emerged as a viable treatment and has also reduced staff burnout in other settings. The purpose of this study is to evaluate the effects of DBT implementation on front-line staff burnout working in a child and adolescent inpatient and day hospital program, and to examine the use of the Copenhagen Burnout Inventory in this participant population.

Methods: Front-line staff were trained in DBT and completed the Copenhagen Burnout Inventory (CBI). Scores on the CBI were compared to those from several previous studies involving other participants including human service employees, nursing staff from a psychiatric residential institution, and pediatric health systems employees.

Results: Thirteen front-line staff completed the CBI with average personal burnout score of 34.3, work-related burnout score of 33.0, and client-related burnout score of 29.5. One staff member experienced high personal burnout, while another experienced high client-related burnout. Burnout scores appear similar to those of other human service employees and post-DBT training from another psychiatric institution.

Discussion: The similarity in CBI scores to those of other human service employees suggests that it is an appropriate instrument to quantify burnout in an eating disorders setting. The similarity in CBI scores with post-DBT training from other nurses suggests that DBT holds promise in reducing burnout in pediatric front-line staff.

References:
The Impact of Disordered Eating on Borderline Personality Disorder Symptomatology and Treatment

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Rationale: Dialectical behaviour therapy (DBT) is one of the most effective treatments for borderline personality disorder (BPD), wherein clients learn specific skills to effectively express emotion and interact with others, thereby decreasing symptoms of BPD. Those with high levels of emotion dysregulation may experience impulsivity in multiple behavioural domains (e.g., eating). Those with BPD and disordered eating have a more complex symptom presentation (e.g., Johnson et al., 1990; Wisniewski & Anderson, 2017). They also experience difficulties in attaining successful treatment outcomes. One understudied avenue is whether these individuals have unique treatment trajectories relative to individuals without significant disordered eating.

Purpose: To assess (1) whether presence of disordered eating habits in BPD clients is associated with more severe psychopathology at baseline before beginning treatment, and (2) how these difficulties may affect DBT skill acquisition in a standard DBT protocol.

Methods: Clients diagnosed with BPD completed self-report measures at the beginning of DBT (n = 13) and at a 4-month time-point (data collection ongoing). These measures examined borderline symptoms (Borderline Symptom List-23), emotion dysregulation (Difficulties in Emotion Regulation Scale), depression and anxiety (Depression Anxiety Stress Scales), and eating behaviours (Eating Disorder Examination Questionnaire).

Results: Disordered eating is associated with higher levels of BPD symptoms, anxiety, depressive symptoms, and emotion dysregulation (trend level). Further analyses will examine these relationships with a larger sample size (data collection ongoing). Future analyses will dichotomize the group (median split) to evaluate groups of individuals with low and high levels of disordered eating. This difference will be evaluated at a 4-month time-point. Relative to the low disordered eating group, we hypothesize that individuals in the high disordered eating group will have smaller reductions in overall BPD symptoms, and will use fewer DBT skills.

Conclusion: At present, symptom variables are positively correlated with one another. Analyses will be re-evaluated with a larger sample size. Based on the literature, we expect that those with disordered eating would experience more severe psychopathology across multiple symptom domains. This study is novel in the way it considers changes in DBT skill acquisition during treatment. Most studies typically evaluate change at pre- and post-time-points rather than throughout the course of treatment, and most outcome measures are specific to symptom presentation (i.e., BPD) and behaviours (e.g., self-harm) rather than skill usage. This study also considers the role of disordered eating, which has been established as a rate-limiter of treatment gains. Findings may have implications for determining reasonable treatment trajectories for individuals with disordered eating.


Examining the Relationships between Problematic Behaviours and Anxiety Symptoms in the Perinatal Period

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Rationale: The perinatal period (i.e., pregnancy to 12 months postpartum) is a period of vulnerability in which 11-17% of women develop an anxiety disorder (Giardinelli et al., 2012; Wenzel et al., 2005). Despite the frequency of perinatal anxiety, research on it is lacking. Particularly, few studies have examined the behavioural characteristics of anxiety during this period. Within a cognitive behavioural framework, behaviour has been theorized to have a role in maintaining and potentially worsening anxiety. Because of this, it is important to examine the role of behaviour in the context of a perinatal population with anxiety disorders.

Purpose: To examine the relationship between problematic behaviours (i.e. avoidance, safety behaviours), anxiety, and associated symptoms and assess whether cognitive behaviour therapy (CBT) for perinatal anxiety is effective in reducing these behaviours.

Methods: 26 participants were recruited from a larger ongoing RCT examining the effectiveness of CBT as treatment for perinatal anxiety. Participants completed measures of behaviour (Worry Behaviour Inventory, WBI), worry (Penn State Worry Questionnaire, PSWQ), anxiety (State-Trait Inventory of Cognitive and Somatic Anxiety, STICSA), and depression (Edinburgh Postpartum Depression Scale, EPDS) at baseline and following treatment. Pearson correlations were calculated using data from baseline in to examine the relationship between problematic behaviours (avoidance, safety behaviours), anxiety, and other symptom variables. Paired-samples t-tests were used in order to examine change over the course of treatment.

Results: Significant positive correlations were found between problematic behaviours (avoidance, safety behaviours) and anxiety, problematic behaviours and worry. In particular, there were significant positive correlations between the Avoidance subscale of the WBI and all measures, including depression. When looking at the Safety Behaviours subscale of the WBI, significant positive correlations were only found with worry and cognitive aspects of anxiety. Results from the paired-samples t-tests indicated significant reductions on all measures from pre- to posttreatment.

Conclusion: The results from this study suggest that women who engage in more problematic behaviours also experience more worry and anxiety. While there was a significant reduction in problematic behaviours following treatment, a number of women still scored above the suggested clinical cut off on the WBI. This may point to an area within the CBT treatment that could be improved for potentially better outcomes.

References:
Association of social factors with level of suicidal intent in adult psychiatric in-patient population who have made a recent or past suicide attempt

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Rationale:

Level of suicidal intent is defined as “seriousness or intensity or the patient's wish to terminate his or her life”, and it has been found to anticipate completed suicide in a number of studies. In fact, a high level of suicidal intent has been seen to be a more powerful predictor of completed suicide than the number of previous attempts made by the individual. Thus, level of suicidal intent has been seen to be a factor in predicting suicidal behaviour. However, some studies suggest that level of suicidal intent may have varying degrees of impact depending on the co-presence of certain social factors. One study depicted that high score’s on Beck's Suicidal Intention Scale predicted completed suicide, whereas male gender, physical illness or disability combined with high scores on Beck's Suicidal Intentional Scale predicted death. Thus, level of suicidal intent is a factor of suicide, but there is also some indication that level of suicidal intent when combined with other social factors can produce differences in suicidal behaviour. Another study that looked at social support and its impact on non-suicidal self injury (NSSI) and non-NSSI population found that social support from peers was lower for the NSSI group rather than NSSI-group, which reinforces the fact that social factors and level of intent are correlated. However, it is unclear whether level of intent and social factors impact suicidal behaviour independently, or if it is a causal mechanism where social factors influence level of intent, which in turn impacts suicidal behaviour. Thus, this study will attempt to explore the relationship between social factors and their effect on level of suicidal intent. Social factors will include demographic factors, level of emotional and physical distress, family history of suicide, and level of social support.

Purpose:

To examine association between level of suicidal intent and social factors in adult psychiatric in-patients who have made a recent or past suicide attempt

Methods:

The data from this study was obtained from a project called DISCOVER (Determinants of Suicidal Behaviour: Conventional and Emergent Risk), which identified common and new risk factors of suicidal behaviour in individuals with a previous suicide attempt. Beck Suicide Intent Scale will be used to evaluate level of suicidal intent. Emotional and physical distress will be assessed using the H.A.R.K. questionnaire. Social support will be measured using the data from the Social Support Questionnaire.

References


Clinical Predictors of Response to ECT in Patients with Depression

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Rationale: A recent meta-analysis found the presence of psychotic features, older age and severity of depression as predictors of response to Electroconvulsive Therapy (ECT) in patients suffering from Major Depressive Disorder (MDD) (van Diermen et al, 2018). This study suggests that baseline patient characteristics could guide clinicians in prescribing ECT to those patients who would be most likely to benefit from the treatment.

Purpose: To identify baseline clinical characteristics that differentiate responders from non-responders to ECT for depression with the ultimate goal of creating an index for predicting efficacy of treatment in a given patient.

Methods: This longitudinal study utilized cognitive data collected over the past 10 years from patients with depression who were referred for ECT at St. Joseph’s Healthcare, Hamilton. Responders were defined as patients with 50% or greater reduction in BDI-II score at 2-4 weeks post ECT from their baseline score. Patients with less than 50% change in BDI-II score were categorized as non-responders. The two groups were compared at baseline for anxiety (PAI), perceived memory impairment (SSMQ), age, education level, suicide risk (MINI), verbal learning (HVLT) and attention (RBANS digit span and coding). A one-way ANOVA was conducted using SPSS.

Results: Of the 53 patients included in the analysis, 30 were non-responders and 23 were responders. Non-responders had an average baseline BDI-II score of 40.2 (SD = 10.3) while responders scored 36.3 on average (SD = 8.02) (ns). The anxiety score was significantly higher for non-responders (M = 40.7, SD = 11.1) as compared to responders (M = 29.9, SD = 17.4), F(1,50) = 7.30, p = .009. Non-responders also had significantly higher baseline suicide risk score than responders (M = 15.5, SD = 12.9) vs (M = 8.08, SD = 7.02), F(1,51) = 6.08, p = .017. There was no significant difference between the two groups for perceived memory impairment, age, education level, verbal learning and attention.

Conclusion: The results suggest that at baseline, non-responders did not experience significantly different depression levels than responders but did have significantly more severe anxiety and higher suicide risk. Therefore, the response to ECT in this sample may be affected by clinical indicators other than severity of depression. This finding has clinical implications when determining the patient’s suitability for ECT for treating depression. Given the naturalistic design and small sample size of this study, further research is needed to establish anxiety levels and suicide risk as robust predictors of response to ECT.

References:
Relationships between impulsivity, inhibitory control, and childhood trauma in Binge Eating Disorder, Gambling Disorder, and Cannabis Users (A study in progress)

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Rationale: The Research Domain Criteria (RDoC) approach explores basic dimensions of functioning across mental disorders to understand varying degrees of psychological dysfunction. Individuals with Gambling Disorder (GD), Binge Eating Disorder (BED), and Substance Use Disorder all demonstrate problems of impulsivity and inhibitory control. For example, in BED and GD groups, impulsivity correlates with disorder severity (Manasse el al., 2016; Savvidou et al., 2017). The experience of childhood trauma may play a role in developing impulsive behaviours; high rates of trauma in GD are related to greater gambling severity. In BED, high rates of childhood trauma predict eating pathology. In those with Cannabis Use Disorder (CUD), trauma is associated with greater cannabis use. Childhood trauma has been implicated in disrupting circuitry related to inhibitory control. Thus far, an RDoC approach has not been used to examine relationships between impulsivity, inhibitory control, and childhood trauma across these groups.

Purpose: To examine links between childhood trauma, impulsivity, and inhibitory control across individuals with GD, BED, and CUD.

Methods: Participants completed self-report impulsivity scales, and the Childhood Trauma Questionnaire (CTQ). The Go/No-Go task was administered as a behavioural measure of inhibitory control. A total N=56 individuals including 19 GD and 21 CUD participants from the community completed the Problem Gambling Severity Index, and the Cannabis Use Disorder Identification Test respectively, to measure disorder severity. Sixteen BED participants were recruited from the Eating Disorders Clinic at St. Joseph’s Healthcare Hamilton and completed the Eating Disorders Examination Questionnaire to assess eating pathology. Post hoc comparisons examined group differences and relationships with disorder severity.

Results: Inhibitory control measured by errors of commission on the Go/No-Go Task, were not related to self-reported trauma or self-reported impulsivity. Group comparisons showed that the GD group reported higher levels of impulsivity, specifically on lack of premeditation of thought in comparison to BED and CUD groups. Additional analyses between impulsivity, childhood trauma and inhibitory control will further explore group differences.

Discussion: This research has implications for improving our understanding of disorders of impulse control and how early trauma may affect inhibitory control. Group comparisons in self-reported impulsivity demonstrate both similarities and differences across BED, GD, and CUD groups. These findings further have implications for comorbidity and substitution behaviours that may exist between groups. Further research could attempt to understand the directionality of these relationships and links with treatment outcome.

References:
The Role of Shame in Predicting Treatment Outcomes in Dialectical Behaviour Therapy

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Rationale: Borderline personality disorder (BPD) is a mental illness characterized by extreme instability of emotions. There is extensive research concerning depressive symptoms, anxiety, and emotion dysregulation among individuals diagnosed with BPD, with most treatments for the disorder alleviating these symptoms. Shame has also been identified as a central emotion in BPD, often having been linked with suicidality and self-injurious behavior. Therefore, it is a compelling avenue of study in the treatment of BPD.

Purpose: To examine the role of shame in the exacerbation of BPD symptoms, specifically emotion dysregulation, depression, and anxiety at baseline before engagement in Dialectical Behaviour Therapy (DBT), and to evaluate the role of baseline shame in predicting treatment gains at 4-months into a standard DBT protocol.

Methods: Clients diagnosed with borderline personality disorder completed self-report measures at the beginning of DBT ($n = 13$) and at a 4-month time-point (data collection ongoing). These measures examined borderline symptoms (Borderline Symptom List-23), emotion dysregulation (Difficulties in Emotion Regulation Scale), depression and anxiety (Depression Anxiety Stress Scales), and shame (Experiential Shame Scale).

Results: The Experiential Shame Scale (ESS) was found to be significantly correlated (all $p_s < 0.05$) with Borderline Symptom List-23, the Difficulties in Emotion Regulation Scales, and the depression subscale of the Depression Anxiety Stress Scales (DASS). Higher ESS scores were also associated with higher scores on the anxiety subscale of the DASS. Further analyses with an increased sample size are required to strengthen these findings (data collection is in progress). In future analysis, the baseline and 4-month time points will be evaluated to examine the predictive value of baseline shame in determining DBT treatment gains at 4-months.

Conclusion: These findings echo previous literature as they suggest that shame is associated with higher BPD symptoms (Rüssch et al., 2007). Furthermore, as anticipated, higher shame is also associated with more severe psychopathology across symptom domains of anxiety and depression, and emotion dysregulation. Future research using ongoing data collection will evaluate the differential role of shame relative to anxiety, depression, and emotion dysregulation in predicting treatment gains 4-months into a standard DBT protocol. This more comprehensive understanding of the role of shame as it relates to treatment gains may illuminate the need to target shame earlier in the course of treatment and provide additional insight into the anticipated treatment trajectory expected for individuals with BPD who experience high levels of shame.

Effects of Informant Discrepancies Regarding Family Functioning on Child Depressive Symptoms

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Rationale: Informant discrepancy occurs when multiple informants report diverging results when assessing the behavior of the same individual or group. Traditionally viewed as a result of methodological flaws, informant discrepancy can be an indicator of other important processes, and thus has recently been exploited by many researchers as a variable capable of predicting important child developmental outcomes. Particularly notable are discrepancies in perceived family functioning between children and their parents. Although this divergence may be due to methodological errors, it could also reflect certain elements of child development, such as a healthy yearning for autonomy and independence, or even more maladaptive processes within the family. Indeed, previous research has demonstrated that divergence between children and their parents on certain dimensions of family functioning can lead to both child internalizing and externalizing problems (Córdova et al., 2016; Hou, Kim, & Benner, 2018).

Purpose: To investigate whether parent-child reporting discrepancies on family functioning are associated with child depressive symptoms, and whether this association is moderated by immigrant generational status.

Methods: Data is provided from the Hamilton Youth Study (HYS), a cross-sectional study examining family processes and child and youth mental health outcomes in a representative sample of 1,449 students in grades 5-8 from 36 different schools in Hamilton.

Data analysis is currently underway, and preliminary findings will be ready for presentation on May 2\textsuperscript{nd}, 2018.

References:
Youth Perspectives On the Link Between Marijuana and Psychosis

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Rationale: With the upcoming legalization of marijuana, it is important to understand the effects of prolonged use on vulnerable populations, which include youth and people with a family history of serious mental illness (Volkow, Baler, Compton & Weiss, 2014). In 2015, youth aged 15-19 and young adults aged 20-24 had the highest prevalence of cannabis use, at 21% and 30%, respectively (Statistics Canada, 2015). Therefore, it is important to make youth aware of the negative effects of marijuana use, and provide information where gaps in knowledge exist.

Purpose: To analyze the perspectives of homeless and street-involved youth on the association between marijuana and psychosis, and determine the effectiveness of educational video games as tools to provide youth with information.

Methods: Homeless and street-involved youth between 16-19 years of age were recruited from Good Shepherd youth services to participate in the study. Participants were randomized to play either Harry’s Journey (a video game that allows players to make decisions regarding a character’s marijuana use) or Morpheus’ Spell, the control game. Immediately following gameplay, participants were interviewed on their gameplay experience and ideas about marijuana and psychosis. Interviews were then coded and qualitatively analyzed for key themes.

Results: Following a thematic analysis of the data, three broad themes were identified: knowledge about the negative effects of marijuana use; the value of accessing support services; and willingness to recommend marijuana use. The categories were then broken down further according to within-category similarities and differences. Many participants identified that marijuana affects cognitive functioning, making users slower and irritable. Some participants talked about the social effects of marijuana use, such as social isolation. Two participants emphasized the importance of accessing support services, and found it valuable that Harry’s Journey included supports youth can access. Many participants were able to draw personal connections to their own marijuana use, and the negative effects they experienced. Some participants also had increased knowledge of the marijuana-psychosis link following gameplay.

Conclusion: Educational video games may be effective in teaching youth about marijuana and psychosis. Further research should focus on whether behaviour change can occur through educational video games.

References:


Metacognition in Relation to Gambling Disorder, Cannabis Use and Binge Eating Disorder (A study in progress)

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Rationale: Metacognition is the concept of awareness and understanding of one’s own thinking and cognitive processes. There is some evidence that individuals with impulse control problems may have altered metacognitive processes. For example, previous studies found no correlation between problem gamblers’ (PG) confidence rating and test scores, indicating deficits in metacognitive processes (Brevers et al, 2012). Findings from recent literature focusing on metacognition in eating disorders indicate the importance of higher level cognitive control related to eating habits in this population (Quattropani et al, 2012). Few studies to date have examined metacognition in individuals with heavy cannabis use.

Purpose: To investigate metacognitive processes in populations with gambling disorder, heavy marijuana use and binge eating disorder relative to a healthy control population.

Methods: The current study included 84 participants; 21 individuals met criteria for problem gambling (PG), 25 reported heavy cannabis use (MJU), 16 individuals met criteria for binge eating disorder (BED), and 22 individuals were healthy controls (HC). All participants completed the Metacognitive Questionnaire-30 (MCQ-30), a validated measure containing 30 questions with 5 subscales of metacognition, including lack of cognitive confidence, positive beliefs about worry, cognitive self-consciousness, negative beliefs about uncontrollability and danger, and the need to control thoughts. In addition, individuals’ self-reported mood and impulsivity were assessed using the Beck Depression Inventory (BDI) and Barratt Impulsiveness Scale, respectively.

Results: Analyses will focus on group differences on the MCQ-30 scores as well as scores on the subscales. Additionally, group scores will be correlated with symptom severity, mood and impulsivity.

Implications: Findings from the current study will shed light on whether individuals with GD, heavy cannabis users and individuals with BED demonstrate alterations in metacognitive processes in comparison to a healthy population. Specifically, the study will provide a better understanding of which subfacets of cognitive confidence and beliefs relate to problem gambling, cannabis use and BED. These findings may have implications for treatment development.

References:
Unexpected Benefits: Can Methadone Maintenance Treatment Decrease Polysubstance Use in Patients with Opioid Use Disorder?

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Rationale: Polysubstance use is a significant issue in methadone maintenance treatment (MMT) and is particularly concerning for increased risk of opioid overdose and death (Srivastava & Kahan, 2006). Of the existing studies investigating polysubstance use in MMT, most focus on the impact of polysubstance use on MMT outcomes rather than factors influencing concurrent changes in non-opioid substance use (White et al., 2014). Although methadone was not intended to reduce substance use other than opioids, preliminary evidence may support its usefulness in this area.

Purpose: To examine change in comorbid non-opioid substance use, and the demographic and clinical factors associated with this, among patients on MMT for opioid use disorder (OUD).

Methods: This was a prospective observational study of patients receiving outpatient MMT for OUD through the Genetics of Opioid Addiction (GENOA) research collaborative. The Maudsley Addiction Profile (MAP) was administered at baseline and 12 months to identify the presence and extent of comorbid substance use; urine drug screens were used to assess treatment adherence. Our primary outcome was the change in use of each substance between baseline and 12 months, with a secondary aim of determining the relationship between significant decreases and several predetermined independent variables (age, sex, employment status, methadone dose, length of time on methadone, and percent positive urine screens at 12 months) using multivariate logistic regression. All statistical tests were performed using Stata.

Results: We collected data from 597 participants including baseline demographic and clinical characteristics. The mean age of participants was 40.03 ± 11.17 years. At baseline, 226 individuals (37.86%) had used alcohol in the past 30 days, 43 (7.20%) benzodiazepines, 10 (1.68%) amphetamines, and 300 (50.25%) cannabis. A significant decrease was found in participants’ use of alcohol and cannabis (reported in days of use per month) between baseline and 12 months, with a mean difference of 0.58 for alcohol (p=0.0066) and 1.29 for cannabis (p=0.0005). We found a significant association between age and decrease in alcohol use (OR 0.98, 95% CI 0.9619–0.9999, p=0.049).

Conclusion: These findings suggest that patients on MMT for OUD may experience concomitant reductions in non-opioid substance use, which could have implications for both health and social outcomes. Determining factors associated with these reductions could have a significant impact on clinical thinking regarding polysubstance use in MMT and treatment outcomes, and future studies should aim to investigate this.

References
Exploring the Effects of Emotional Dysregulation and Interoceptive Deficits in Patients with Binge Eating Disorder (BED) and Bulimia Nervosa (BN)

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Rationale: Bulimia nervosa (BN) and binge eating disorder (BED) affect millions of Canadians and many of those who receive treatment end up relapsing, indicating a need for more effective treatments (Fairburn et al. 2000). Recent literature has demonstrated a connection between eating disorder severity and emotional dysregulation (ED) and interoceptive deficits (ID), suggesting their potential as treatment targets (Lavender et. al 2015; Preyde et al. 2016).

Purpose: To examine the relationship between interoceptive deficits and emotional dysregulation with treatment outcome in BN and BED groups.

Methods: This retrospective review examined treatment records collected at the Eating Disorders Clinic at St. Joseph’s Healthcare Hamilton (SJHH). The participants attended a 25-week long out-patient program at the Eating Disorders Clinic and received CBT-based treatment for BED and BN. The Eating Disorders Inventory-3, administered at the beginning of treatment, examined ED and ID scores across treatment groups. Bingeing behaviour was monitored weekly using checklists. An ANOVA will test group differences in ID and ED and treatment outcome. A mixed model analysis will test for changes in bingeing behaviour across the 25 weeks of treatment in BN and BED groups.

Results: Participants consist of N=100 individuals undergoing treatment at the ED clinic at SJHH between 2014-2017. The BED group consists of n=50 individuals meeting criteria for BED and the BN group consists of n=50 individuals meeting criteria for BN. We hypothesize that the BN and BED groups will have similar rates of ID, but the BN group will report significantly higher rates of ED, given that the participants choose to purge following a binge. In the BED group, we anticipate no relationship between treatment outcome and ID and ED scores at treatment onset; in the BN group higher ED scores at treatment onset is expected to relate to poorer treatment outcome. We also expect significant decreases in bingeing behaviour for the BED and BN groups across treatment weeks.

Conclusion: This research can inform clinicians on how ID and ED may play a role in treatment outcome for people with BN and BED, potentially leading to more effective treatments. This research can also demonstrate which weeks of treatment have the greatest decrease in bingeing behaviour and any differences between BN and BED groups. Further research should examine the change in ID and ED across treatment and identify their roles in eating disorders.

References:

Temperamental Shyness and Preoperative Anxiety in Children:
Associations with Parental Bonding, Stress, and Anxiety (A study in progress)

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Rationale: Surgery can cause fear and distress for children. Of the millions of children who undergo surgery each year, it is estimated that up to 75% experience significant anxiety (Perry, Hooper, & Masiongale, 2012). Preoperative anxiety, which may manifest as crying, agitation, cessation of conversation or play, or attempts to escape from caregivers, can cause difficulties prior to, during, and after surgery (Fortier, Rosario, Martin & Kain, 2010). Several predictors of preoperative anxiety have been identified in the literature including age, sex, previous upsetting surgeries or hospitalizations, state anxiety, temperament, attachment style, quality of the parent-child relationship, and parental anxiety. However, there have been contradictory findings for a number of these risk factors. This study examines the associations between common risk factors for preoperative anxiety.

Purpose: To examine associations between preoperative anxiety in children undergoing surgery, child temperament (i.e., shyness and sociability), and parental anxiety, bonding, and stress.

Methods: Participants are children between the ages of 8 and 13 scheduled to receive any elective outpatient surgery. Only children accompanied by the same parent or guardian on the day of recruitment and the day of surgery are eligible for this study. Exclusion criteria included children diagnosed with neurodevelopmental disorders and families who were unable to provide both assent and consent. Participants were recruited during their preoperative clinic visit, approximately a week before their scheduled surgery (T1) and followed up on the day of surgery at McMaster Children’s Hospital (T2). Measures include child anxiety (CPMAS), child temperament (CCTI), parental anxiety (STAI), parental stress (PSI), and parental bonding (PBI).

Expected Results: We predict that temperamentally shy children, as well as those who have parents with high stress, high anxiety, and sub-optimal bonding will show the highest levels of preoperative anxiety. These findings can improve our understanding of child and parental risk factors for preoperative anxiety in children, identify children at higher risk for preoperative anxiety, and inform interventions that have the potential to prevent or reduce preoperative anxiety and postoperative complications.

References
Female arsonists: a systematic review

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Background: The psychiatric literature regarding arson, fire-setting, and pyromania is quite rich. However, despite key differences between male and female arsonists, there are relatively few studies directly investigating female arsonists or gender-related differences among fire-setters. At present there is only one review article on this topic, published in 2010.

Methods: The databases MEDLINE and Web of Science were searched for studies on female arson, fire-setting, and pyromania until January 2018. Study selection, data analysis, and reporting will be conducted according to the PRISMA guidelines.

Results: A total of 320 articles were identified and 44 were selected. Of these, 13 were published on or after 2010. We plan to extract data regarding study type, country, key characteristics of offenders, associated DSM diagnoses, motivators for fire-setting, and treatment details.

Conclusions: Our study will attempt to review the existing literature and highlight any differences identified between literature published before and after 2010. Any differences brought to attention may improve our understanding of female arsonists and help guide further research.

References
Stylometric Assessment of Individuals with Psychosis

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Introduction: Computational stylometric assessments have gained admissibility in some U.S. courts. Using the protocol developed by Chaski (2005), this technology can identify digital authorship of documents with 95% accuracy. This present study hopes to apply this software to a clinical setting, by analyzing responses for individuals with psychosis in order to identify some linguistic changes according to the mental status of the patients. The collected responses will be analyzed using ALIAS (Automated Linguistic Identification and Assessment System), a software developed by Chaski in the 1990’s, across several dimensions including syntax, punctuation, and vocabulary.

By adapting Chaski’s protocol to include prompts specific to a clinical setting, we can gain valuable insights into patient attitudes. Including prompts that will cover themes such as medication, hospitalization, family, or police, we can use both stylometric and qualitative assessments to evaluate changes in patient attitudes when stable and psychotic. This information can provide insight on patient non-compliance to treatment options, and perhaps inform new strategies for addressing and predicting patient concerns.

Materials and Methods:

This study will use a similar protocol to Chaski (2005), which consists in participants writing prompts. Participants who are diagnosed with a psychotic disorder will be asked to complete the task, on two occasions, when presenting with acute psychotic symptoms and once stable. Psychotic symptoms will be measured using the PANSS. ALIAS will screen the submitted content for a variety of linguistic parameters. Some responses may also be read for their qualitative content. The study will compare the linguistic differences and similarities of stable and psychotic participants on a neutral topic. The study will also compare participant responses to an existing database of people without psychosis. Finally, the study will compare written responses of emotionally charged prompts to neutral prompts (such as medication, involuntary admission etc.) in participants with psychosis.

Results: We hypothesize that differences be found in respect to the semantics and stylistics of patients’ writing according to the presence or absence of psychotic symptoms. This could be correlated to the cognitive changes experienced by these patients.

Discussion: If the results of the study are significant, stylometric assessments could be implemented as a diagnostic tool to measure the level of psychotic symptoms in patients. Linguistic differences between psychotic and stable patients have been readily observed and are characterized by disorganization of speech patterns (Schwartz, 2013). Focusing on these differences from a linguistic written perspective may garner new perspectives and insights for the neurocognitive processes behind psychotic speech patterns and allow these differences to become measurable tools for clinicians. In the same vein, stylometrics could also be used to track patient treatment by monitoring the changes in the differences in written language production. Finally information from this study could be used to indicate the underpinnings of language cognition in individuals with psychosis.

References
Identifying effective coping strategies and associated personality characteristics for chronic pain through a retrospective data analysis (a study in progress)

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Rationale: Individuals suffering from chronic pain struggle with daily activities such as maintaining relationships and independence, working, social activities, and sleeping (Breivik, Collett, Ventafridda, Cohen & Gallacher, 2006). Recent studies demonstrated that patients with chronic back pain with different Minnesota Multiphasic Personality Inventory -2 (MMPI-2) profiles use different pain coping strategies (Riley & Robinson, 1998).

Purpose: The purpose of this study is to predict changes in coping strategy use as determined by the Chronic Pain Coping Inventory (CPCI) scores at discharge from a four-week interdisciplinary chronic pain management program using the MMPI-2 clinical scale scores.

Methods: Participants were patients with heterogeneous chronic pain referred to the program by insurance companies, worker’s compensation, and veterans affairs. Patients completed a set of questionnaires that assess various pain-related measures at admission and discharge, including the CPCI and MMPI-2. Changes in coping strategy use was determined by the CPCI difference scores between admission and discharge. Paired t-tests were conducted to examine differences in the scores of each subscale of the CPCI between admission and discharge. Multiple regression was then used to predict changes in significant CPCI subscale difference scores with the clinical scales of the MMPI-2 as predictors. Data were analyzed separately for males (N = 229) and females (N = 266).

Results: In males, all except the coping strategies of Resting and Asking for Assistance significantly changed between admission and discharge (p < 0.05). In females, all except Resting significantly changed (p < 0.05). In males, changes in Relaxation scores were negatively predicted by Scale 1 (Beta = -0.253, p < 0.05) whereas in females, these were predicted by Scale 6 (Beta = -0.171, p < 0.05). Moreover, in females, changes in Asking for Assistance were positively predicted by Scale 9 (Beta = 0.158, p < 0.05); changes in Task Persistence were negatively predicted by Scale 5 (Beta = -0.152, p < 0.05), and positively predicted by Scale 8 (Beta = 0.270, p < 0.05); changes in Coping Self Statements were positively predicted by Scale 4 (Beta = 0.133, p < 0.05) and negatively predicted by Scale 6 (Beta = -0.220, p < 0.05).

Conclusions: Males with higher scale 1 scores and females with higher scale 6 scores are less likely to benefit from using relaxation as a coping strategy following a four-week interdisciplinary chronic pain management program. Changes in females’ scores on several coping strategies were predicted by a number of MMPI-2 scales. These results have not been previously reported.

References
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Can Caring Parenting Protect Infants Born Extremely Low Birth Weight from Mental Health Challenges in Adulthood?

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Rationale: Individuals born at extremely low birth weight (ELBW; <1000 g) are exposed to early life adversities that may alter stress response systems, putting them at increased risk for psychological problems (Mathewson et al., 2017). As adults, ELBW survivors are at increased risk for problems on the internalizing spectrum, particularly depression and anxiety (Mathewson et al., 2017; Van Lieshout et al., 2015). Fortunately, protective experiences like caring parenting have been shown in general population samples to reduce the negative effects of early adversity. However, it is not known if such positive experiences can offset problems associated with exposure to perinatal adversity.

Purpose: To examine if caring parenting moderates the link between being born preterm and self-esteem and internalizing problems (i.e. depression and anxiety) in the 4th decade of life.

Methods: Data from the world’s oldest longitudinally followed cohort of ELBW survivors (N=179) and socio-demographically matched normal birth weight (NBW) control participants (N=145) were used. Participants retrospectively reported on maternal parenting using the Parental Bonding Instrument in their early 20s. At 30-35 years of age, self-esteem and internalizing psychopathology were self-rated using the Coopersmith Self-Esteem Inventory and Young Adult Self-Report (YASR) questionnaire, respectively.

Results: A statistically significant interaction was seen between birthweight status and caring maternal parenting on self-esteem and internalizing psychopathology in adulthood ($B=.484$, $p=.04$). Stratified analyses indicated that caring parenting was associated with better self-esteem ($B=-.366$, $p=.00$) and lower levels of internalizing symptoms ($B=-.582$, $p=.001$) in the NBW group only.

Conclusions: Despite the protective effect of caring maternal parenting in NBW participants, it did not appear to have the same positive effect on self-esteem and internalizing problems in adult ELBW survivors. It is possible that exposure to early adversity (e.g., physiologically stressful procedures in the Neonatal Intensive Care Unit, maternal psychological stress), may mute the positive effects of protective factors such as caring parenting on later self-esteem and psychopathology.

References

EXAMINING THE EFFECTS OF HOUSEHOLD CHAOS ON CHILD EXECUTIVE FUNCTIONS: A META-ANALYSIS

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BACKGROUND: Household chaos (e.g. crowding, chronic noise, unpredictable routines) has emerged as a significant adverse environmental predictor of child outcomes. However, literature examining its association with child executive functions (EF) is sparse; despite the importance of EF to child self-regulation and school readiness and the growing numbers of children affected by chaos.

OBJECTIVES: This meta-analysis aims to: aggregate extant findings to identify potential true effects between household chaos and child EF; elucidate potential moderators influencing this association; and make recommendations for future research and clinical practice.

METHODS: A search was conducted in the following databases: EMBASE, PsycINFO, Medline, PubMed, ERIC, and ProQuest Theses and Dissertations. Relevant search terms were categorized in: “household* chaos” AND “executive function*” AND “child or adolescent*”. The initial search yielded a total of 3,172 non-duplicate results from which independent reviews were conducted using predetermined inclusion and exclusion criteria. Overall, 22 articles were included in the current meta-analysis.

Analysis: Comprehensive Meta-Analysis (CMA) software was used to compute overall effect sizes using reported or computed correlations and variances. Publication bias was also determined via funnel plot. Proposed moderators included: percent female children, mean child age, percent minorities, household income, maternal education, marital status and EF measurement approach (direct assessment vs. parent-completed questionnaires).

Results: A small, but significant effect size was found between household chaos and child EF ($d=0.242$, $p<0.001$). Additional sub-analyses assessing the effect size between household chaos and hot (emotional) EF were also conducted. While there was an expected trend of increasing effect size with the higher percentage of hot EF tasks (25%, $d=0.174$; 50%, $d=0.231$; 100%, $d=0.265$), it was not significant ($p=0.198$). Significant moderated effects were found for maternal education ($\leq$ high school or GED) ($p<0.05$) and EF measurement approach (questionnaires: $d=0.295$ v. direct assessment: $d=0.199$; $p<0.05$).

CONCLUSIONS: This meta-analysis provides clear evidence of an association between household chaos and child EF which has the capacity to inform targeted interventions for vulnerable families. Future research should broaden its inclusion of EF tasks and increase its focus on testing cool (cognitive) EF.

REFERENCES


Evaluating the Antipsychotic Efficacy of Lurasidone Hydrochloride via the Intranasal Route in an MK-801 Model of Schizophrenia (A Study in Progress)

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Rationale: Lurasidone Hydrochloride is a novel second-generation (atypical) antipsychotic drug (APD) recently approved for the treatment of Schizophrenia (SZ) and Bipolar Disorder. It is a potent antagonist of dopamine D2, serotonin 5-HT²A, 5-HT₇ receptors and partial agonist of 5-HT¹A receptors [1]. Its unique receptor binding profile makes it a promising candidate for treating the diverse symptomology of SZ. However, despite its potential therapeutic value, the use of Lurasidone is limited due to its poor aqueous solubility and is currently only available for oral administration. Alternatives to oral administration are evident in situations where a patient is unconscious, unable to swallow, or experiencing gastrointestinal abnormalities [2]. Intranasal (IN) drug delivery is a noninvasive alternative drug targeting strategy that increases bioavailability at target sites, reduces drug exposure to nontarget sites, and enhances the safety and efficacy of drug delivery. IN drug delivery can be enhanced by encapsulating drugs into nanoscopic carrier systems that protect against degradation and improve drug targeting. At present, there are no APD approved for intranasal use [2]. We seek to validate the efficacy of Lurasidone and optimize a nanoscopic carrier system that can be administered intranasally for the treatment of SZ.

Purpose: To evaluate the acute and sub-chronic antipsychotic potential of Lurasidone Hydrochloride in vivo following IP (intraperitoneal) and IN administration using a noncompetitive NMDA receptor antagonist (MK-801) model of SZ.

Methods: Drug-naïve adult, male Wistar rats will be pre-treated with Lurasidone or a vehicle solution via the IP or IN route prior to the administration of MK-801. We will use the following behavioural paradigms to evaluate comparable symptoms of SZ induced by MK-801: locomotor activity monitoring (positive symptoms), social interaction (negative symptoms), novel object recognition (cognitive symptoms), and pre-pulse inhibition (sensorimotor gating deficits). We intend to use a novel Poly(oligo ethylene glycol methacrylate (POEGMA)-based nanogel system to encapsulate Lurasidone for IN delivery.

Anticipated Results: We hypothesize that MK-801 rats treated with Lurasidone will outperform the vehicle-treated rats in behavioural experiments. We expect IN administration of the nanogel formulation to yield a higher distribution of Lurasidone in the brain and plasma compared to IP injections. We also hypothesize that lower IN doses of Lurasidone will produce behavioural responses comparable to IP injection.

References


Identifying a Blood-Brain Barrier Disruption Animal Model for Bipolar Disorder

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Rationale: The BBB is a structure responsible in regulating the transport of substances between the blood and the brain parenchyma. While tight junctions are important to maintain the BBB structure, increased levels of peripheral cytokines and oxidative stress can lead to the loosening of these integral junctions. Consequently, a neuroinflammatory response may be triggered through microglial activation, leading to impairments in astrocyte, oligodendrocyte and neuronal function. Many studies have already shown an elevated pro-inflammatory state in psychiatric disorders, such as bipolar disorder (BD). For instance, simultaneous changes in mood level, cognitive function and inflammation level have been described in patients with BD. Therefore, if we consider BD as a chronic, low grade inflammatory state, patients could exhibit BBB disruption, which may play an important role in the pathophysiology of the disorder.

Purpose: to develop a translational rat model of BBB disruption in BD, using a well-established model of mania induced by amphetamine (AMPH).

Methods: Male Wistar rats (n=32) will be maintained at standard room temperature, with free access to food and water. From day 1 to 14, half of the animals will be injected with saline or AMPH 2 mg/kg i.p. From day 8 to 14, animals from each group will be divide in subgroups to receive saline or lithium 47.5 mg/kg i.p. injections. On the day 14, locomotor activity will be evaluated 2h after the last injection of AMPH in the open field. After the behavioural test, animals will be anaesthetized and decapitated. Troncular blood will be collected and centrifuged, and the brain will be removed and dissected (prefrontal cortex, striatum and hippocampus). Levels of inflammatory cytokines and oxidative stress markers will be analyzed in serum and brain tissue (ELISA), while the quantification of BBB proteins will be performed in all brain regions (western blotting).

Expected results: An increase in oxidative stress and peripheral inflammatory parameters have already been described in this animal model of mania, which are considered the main contributors to BBB disruption. Given this, we expect to observe a significant reduction in BBB protein levels in the brain of animals injected with AMPH. Considering that this is a well-established model of mania, we also expect that treatment with lithium will reduce hyperlocomotion, decrease peripheral and central inflammatory and oxidative stress, as well as increase the levels of BBB proteins.

Conclusion: BBB disruption may play an interesting role in the pathophysiology of BD and if we could understand this role and develop an experimental model, it will be of great value and may lead to novel therapeutic strategies and further knowledge of distinct pathways involved in the disorder.

References
The Effects of Extracellular Tau on BDNF Expression in Human Neuroblastoma Cells

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Rationale: Tau is a phosphoprotein implicated in Alzheimer’s disease. When tau is abnormally hyperphosphorylated in the Alzheimer’s brain, it changes conformation leading to the formation of toxic, soluble tau oligomers causing neurodegeneration and memory loss. Tau can also disrupt neuronal function by reducing neurotrophin levels. We have previously shown that intracellular tau over-expression reduces brain derived neurotrophic factor (BDNF) mRNA expression (Rosa et al., 2016). BDNF is critical for neuronal function and for learning and memory. Tau is secreted from cells and propagates in a spatiotemporal fashion in Alzheimer’s disease, recruiting healthy tau protein to a pathological form. This extracellular tau may down-regulate BDNF transcription in neighbouring healthy cells.

Purpose: To determine if elevated levels of extracellular tau down-regulate BDNF in human neuroblastoma (SH-SY5Y) cells in vitro.

Methods: Differentiated SH-SY5Y cells and empty vector-transfected SH-SY5Y cells were treated with conditioned medium harvested from human tau-overexpressing SH-SY5Y cells and from empty vector-transfected SH-SY5Y cells (negative control). Geneticin-resistant, empty vector-transfected cells were included to test if the geneticin present in the conditioned medium would have an adverse effect on the non-resistant cells. Tau concentrations in the medium were determined by ELISA. SH-SY5Y cells were treated for 24 hours with conditioned medium at either 0, 0.2ng/mL (negative control medium), 3.5ng/mL or 5ng/mL of human tau (n=6/group). For empty vector-transfected cells, conditioned medium was concentrated using Amicon tubes to increase the tau concentration, and cells were treated at 0, 0.2 ng/ml, 3.5ng/ml or 7ng/ml of human tau (n=6/group). All cells were then harvested and their RNA extracted. BDNF mRNA levels were quantified using qRT-PCR and normalized to β-actin. Differences between groups were analyzed by one-way ANOVA.

Results: No significant differences were found in BDNF mRNA levels across all groups of untransfected SH-SY5Y cells. For empty vector-transfected SH-SY5Y cells treated with concentrated medium, no significant differences were found between treatment groups, however, BDNF mRNA levels were down-regulated by ~20% in all treatment groups compared to no treatment controls.

Conclusion: These findings suggest at these concentrations, tau does not have an effect on BDNF down-regulation. For future experiments we will treat SH-SY5Y cells with higher concentrations of extracellular tau closer to the threshold for extracellular tau toxicity (~6µg/mL) to determine the effects on BDNF levels in vitro. It was also determined that at these concentrations, geneticin does not have an effect on BDNF levels. Since concentrating the medium concentrates additional factors that can down-regulate BDNF, we will use other methods to increase tau protein concentrations for treatment such as adding recombinant tau.

Cardiac Vagal Withdrawal during a Frustration Task in 3 to 5-Year Old Preschoolers who were classified with Conflicted Shyness

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Rationale: Shyness and sociability are often thought of as opposing ends of one continuum. However, Cheek and Buss (1981) suggested that these two personality dimensions are conceptually and empirically orthogonal traits. Individuals who are high on shyness and sociability (i.e., conflicted shyness) are at elevated risk for developing social anxiety (Poole et al., 2017) and substance use disorders (Page, 1990), and manifest more behavioral anxiety during social interactions (Cheek & Buss, 1981). Exploring physiological regulation early on may elucidate possible mechanisms underlying emotion regulatory factors maintaining conflicted-shyness and its outcomes. Physiological regulation indexed via modulation of respiratory sinus arrhythmia (RSA; variability in the heart due to respiration) from baseline to an emotionally frustrating task (vagal withdrawal) is one index of physiological regulation (Porges et al., 1996).

Purpose: To determine associations between high and low shyness and sociability groups and cardiac vagal withdrawal during an emotionally frustrating task in preschool age children.

Methods: Cardiac vagal withdrawal was obtained by subtracting mean task-RSA during an emotionally frustrating task (where children were precluded from playing with a desirable toy) from mean at-rest RSA (obtained from children watching a calm video) to index physiological regulation. Membership to shyness and sociability groups was determined through maternal report from the Colorado Childhood Temperament Inventory (Rowe & Plomin, 1977). We conducted a one-way between-groups ANCOVA to explore the impact of shyness by sociability group membership on physiological regulation (vagal withdrawal) during an emotional frustrating task, controlling for children's sex and age in 74 typically developing 3 to 5-year old children (32 girls).

Results: Group membership significantly predicted cardiac vagal withdrawal, $F(3, 68) = 3.61, p = .02, \eta^2 = .14$; children in the conflicted-shy (high shy/high social) group displayed significantly less vagal withdrawal ($M = -.65$) than children in high shy/low social ($M = .01, p = .02$), low shy/high social ($M = .34, p = .001$), low shy/low social ($M = .21, p = .01$) groups.

Conclusions: Conflicted-shy children are presumed to experience an approach-avoidance conflict and may have an underlying physiology that impedes adaptive responding to environmental challenges. Given that higher levels of cardiac vagal withdrawal are typically considered more adaptive (Calkins & Fox, 2002), physiological dysregulation observable as early as during the preschool years may portend some of the more negative outcomes observed in individuals with conflicted shyness.

References
Does the school setting matter? Examining associations between schools and classroom settings and health behaviours among students in Ontario

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Background: Although individual-level characteristics are strongly associated with health behaviours, studies have also found associations between school-level characteristics and health behaviours such as physical activity (Harvey et al., 2017) and cannabis use (Maybetter et al., 2009).

Purpose: The purpose of this study is twofold: 1) To determine the extent to which students’ cannabis use and physical activity vary across schools and classrooms and 2) To identify characteristics of school and classroom settings that are associated with cannabis use and physical activity among students in grades 6-12 in schools in Ontario.

Methods: This study will use secondary data from the School Mental Health Survey, a cross sectional study of 31,124 students in grades 6-12, and 3,373 teachers and 206 principals from 248 schools in Ontario. Multilevel modelling will be used to examine school and class effects on health behaviours while controlling for student compositional effects. MLWiN version 2.35 will be used for the analysis.

Anticipated Results/Significance: Results from this study are expected to identify and quantify the potential impact of schools and classrooms on physical activity and cannabis use. Identification of school and classroom characteristics associated with health behaviours can inform the development of targeted initiatives in schools and classrooms. As well, this research can support context-specific policy development.

References:


Self-regulation and maternal shyness differentially predict empathic concern in young children

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Rationale: Physiological and emotion regulation can influence empathic responding in early childhood. In addition, family environment also plays a role in the development of this social cognitive skill. Relations among self-regulation, empathy, and maternal shyness are yet to be explored.

Poor self-regulation in children is a susceptibility factor for adverse outcomes. For example, dysregulation of negative emotions can lead to later aggression and irritability. Rubin et al. (1995) introduced soothability as a temperamental measure of emotion regulation, operationalizing it as recovery from an aroused emotional state.

Self-regulation can also be measured physiologically, through collecting respiratory sinus arrhythmia (RSA) data, which is a measure of heart rate variability. Vagal withdrawal is the RSA reduction that occurs on task. It is computed by subtracting on-task RSA from baseline measures.

It has been established that well-regulated children exhibit higher levels of empathic functioning. Dysregulated children are more likely to experience personal distress in mildly stressful situations rather than attend to another. Possessing the ability to regulate emotional arousal in such cases is crucial for adaptive responses.

Factors such as environmental family influences also contribute to the development of self-regulatory skills. Maternal personality is an example of such a factor.

Purpose: To examine whether self-regulation (soothability + vagal withdrawal) would moderate the relation between maternal shyness and empathic concern in children.

Method: Forty-eight 6-year-old children (23 male; \( M_{\text{age}} = 78.7 \) months) and their mothers visited the Child Emotion Laboratory. Children were outfitted with a Mindware Mobile Impedance Cardiograph to measure RSA during 5 minutes of resting baseline and 5 minutes of an on-task period. Empathy was assessed by having an experimenter feign injury and express pain outwardly for a 35-second period. Video of this episode was subsequently coded for empathic concern. Coders assessed the child's vocalizations, proximity to the experimenter, and facial expression. While children completed the tasks, mothers answered questionnaires in a separate room. They reported on their own shyness with the Cheek and Buss Shyness scale and on their child's soothability with the Colorado Childhood Temperament Index (CCTI).

Results: Children with low self-regulation (low vagal withdrawal + low soothability) were differentially susceptible to maternal personality in predicting empathic concerns. Children with poor self-regulation exhibited the highest and lowest empathic concerning depending on whether their mothers were low and high in shyness, respectively. Children classified as "good" self-regulators were insensitive to their mother's personality, showing an average level of concern regardless of mother's shyness.

Conclusion: Our findings imply that that development of some social cognitive skills in dysregulated children may depend on environmental family factors.

References

Smiling through the shyness: The adaptive function of positive affect in shy children

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Background: Although most research treats shyness as a homogenous phenomenon when examining its correlates and consequences, not all shy individuals are alike. One source of this heterogeneity is emotional expression, such that shyness can be expressed and experienced in either a positive or negative way; that is, displaying shy behavior with or without a smile, respectively (Colonnesi et al., 2013). By accounting for heterogeneity in shy children when investigating social and psychophysiological correlates, we may be able to more precisely identify specific groups of shy children who are at risk for maladaptive social outcomes than by treating shyness as a homogenous construct, as well as identify factors that may play a protective role in social adjustment for some shy children.

Purpose: To examine if positive and negative shyness in school-aged children is differentially associated with social adjustment and physiological stress-reactivity.

Method: Using macro-level behavioural coding and a person-oriented approach, we classified children (N = 92; Mage = 7.47 years; SD = 2.23 years) based on their relative occurrence of avoidance behaviours and positive expressions coded during a videotaped speech task. We operationalized three shyness groups as follows: 1) positive shy (high avoidance and high positivity), 2) negative shy (high avoidance and low positivity), and 3) non-shy (all low avoidance children). We collected parent-report and teacher-report of children’s social anxiety, and parent-report of children’s sociability. Further, direct observation of activity level was coded during the speech delivery given that reduction in activity level to perceived threat is considered a fear response. Finally, saliva samples were collected to index children’s salivary cortisol reactivity in response to the social stressor. A series of one-way analyses of covariance (ANCOVA) were conducted to compare group differences (i.e., positive shy, negative shy, and non-shy) on each dependent measure, adjusting for child age as a covariate.

Results: We found that negative shy children were more socially anxious according to both parent- and teacher-report, with severity of symptoms consistent with a diagnosis of social anxiety disorder. Negative shy children were also rated as less sociable, and they displayed reduced activity levels during the speech than the positive shy and non-shy children. Positive shy and non-shy children were indistinguishable across all measures of social behavior. Shyness group had no influence on children's cortisol stress-reactivity.

Conclusions: Our findings provide support that there is heterogeneity in the phenomenon of shyness, and that the expression of positive affect during social challenges may be one factor underlying these differences. Importantly, we report that not all shy children experience negative social consequences such as social anxiety. It appears that the expression of positivity during social situations may serve an adaptive function that buffers some shy children from social anxiety, as well as may facilitate their opportunities for social learning and socializing. This finding has important clinical implications. Since positive expressions in shy children appear to have a protective role, this may be an emotion regulatory skill that could be taught to shy children in order to help them deal with their arousal in social situations, aid in the development of social competence, and possibly prevent the development of clinical levels of social anxiety.

Basal Forebrain Cholinergic Neurons Display Age-Related Axonal Transport Deficits That Are Ameliorated by Axonal Neurotrophin Stimulation

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Rationale: Basal forebrain cholinergic neurons (BFCNs) are critical for learning and memory¹. Loss of cholinergic innervation to the hippocampus has been shown to underlie normal, age-related cognitive decline¹. Profound and accelerated BFCN degeneration is also a hallmark of Alzheimer’s disease (AD)¹. BFCNs depend for their survival and function on neurotrophins such as nerve growth factor (NGF) and brain-derived neurotrophic factor (BDNF) which are retrogradely transported from BFCN target tissues. In AD patients, NGF-immunoreactive material is found at abnormally high levels in BFCN target tissues such as cortex and hippocampus and is reduced in basal forebrain². These findings implicate dysfunctional axonal transport of neurotrophins in AD. Age is the greatest risk factor for developing AD, and yet the influence of age on BFCN survival and function is unclear. Retrograde axonal transport within this highly susceptible neuronal population is poorly understood.

Purpose: To assay both neurotrophin-specific and general axonal transport in embryonic rat BFCNs aged in vitro.

Methods: Basal forebrain or cortical neurons were dissected from E18 rat embryos and cultured in microfluidic chambers to separate axon terminals from cell bodies. Neurons were maintained in culture for 4 weeks, with DIV7 neurons being classified as “young” and DIV21 neurons classified as “aged”. Quantum-dot (QD)-labeled neurotrophins or a mitochondrial tracer were introduced to the axonal terminal compartment of the chambers. Speed and direction of transport were recorded via fluorescence microscopy and analyzed using Image J.

Results: Mitochondrial transport was markedly different between young BFCNs and young cortical neurons; significantly more mitochondria were transported in BFCNs, with most moving retrogradely. BDNF transport was similar between cell types. Once aged, retrograde transport of BDNF was impaired in BFCNs. These age-induced transport deficits were absent in cortical neurons. Mitochondrial transport was also impaired in aged BFCNs. Providing neurotrophin-rich medium to BFCN axons while starving the cell bodies of neurotrophins rescued these deficits.

Conclusion: We demonstrate that neurotrophic and general retrograde transport are impaired in BFCNs aged in vitro compared to young neurons. We also show that providing axonal neurotrophin stimulation rescues these deficits. Neurotrophic transport deficits are absent in cortical neurons, demonstrating that transport is context-specific. The reliance of BFCNs on retrograde transport, coupled with the fact that this transport is impaired in an age-related manner, may explain the vulnerability of BFCNs to age and age-related disorders like AD.

References:
Investigating the Neuroprotective Effects of TP5 in an *in vitro* Model of Parkinson’s Disease

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**Content:** Parkinson’s disease (PD) is a neurodegenerative disease that is characterized by the loss of dopaminergic neurons in the substantia nigra and formation of Lewy bodies. Paraquat (PQ), one of the risk factors of PD, causes mitochondrial dysfunction and increased oxidative stress which can lead to a hyperactive Cdk5/p25 pathway to cause neuronal death and induce PD pathologies (Lopes & Agostinho, 2011). However, truncated peptide 5 (TP5) is a peptide that has a similar structure to p35, which binds to Cdk5 to induce synaptogenesis. TP5 has shown to inhibit the cdk5/p25 pathway to reduce cell death, making TP5 a potential therapeutic towards PD (Binukumar et al., 2015).

**Purpose:** To determine if TP5 will have neuroprotective effects against PQ in a differentiated SH-SY5Y cell line that models dopaminergic neurons in PD.

**Methods:** The optimal concentration of PQ was examined for cell viability in the differentiated SH-SY5Y cell line. Using this optimal concentration of PQ, TP5 was tested to examine its neuroprotective effects. Undifferentiated cells were plated using 96 well plates on the first day, and retinoic acid was added on the second day to induce differentiation. Differentiation media was added every other day to administer a fresh supply towards the differentiated cells. On day 8, cells were administered 10uL of TP5 (250uM) into each well. 12 hours later, 5uL of PQ (250 and 500uM) were administered to the selected wells to examine neuroprotective effects of TP5. Each treatment group had a sample size of 6. MTT assay was completed 48 hours after the administration of PQ.

**Results:** PQ’s optimal concentration was determined to be at 250uM due to a 75.1% of cell viability whereas controls were normalized at 100%. There was a significant decrease in cell viability with PQ at 250uM compared to controls (p<0.05). Using PQ at 250uM, we determined TP5 has significant neuroprotective effects by observing cell viability at 143% compared to cells exposed to paraquat alone, which was 82% (p<0.01).

**Conclusion:** These results indicate that TP5 may be a potential therapeutic towards PD because TP5 may be able to block the hyperactive pathway of Cdk5/p25. Future research will use TP5 in *in vivo* models to perform behavioural testing and examine biochemical properties. Research will also focus on shorter sequences of TP5 to determine if there is a specific active sequence that has similar neuroprotective efficacy as TP5 itself.

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Impact of Cognitive Behavioural Therapy for Perinatal Anxiety on Emotion Dysregulation

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\textbf{Rationale:} The perinatal period, which includes pregnancy and the first 12 months post-partum (Beck, 2006) is a period of vulnerability in which 11-17\% of women develop an anxiety disorder (Giardinelli et al., 2012; Wenzel et al., 2005). The presence of anxiety at this time in life can not only cause distress and impair functioning of the mother but also has a negative impact on her infant’s development, which can have long-term adverse outcomes into adulthood (Austin et al., 2005). Thus, more research and clinical attention needs to be dedicated to this field to understand the variables associated with perinatal anxiety and adapt treatments accordingly.

Emotion dysregulation (ED) which refers to maladaptive strategies in regulating emotions (Gratz \& Roemer, 2004), has been linked to anxiety disorders in adult clinical samples (Barlow, 1991; Mennin et al., 2007). A bidirectional interaction exists among emotions, cognition and behavior, with each having the potential to affect the other; thus, ED may be associated with the experience of perinatal anxiety and can have important treatment implications (Cole et al., 2004; Mennin et al., 2007).

\textbf{Purpose:} The proposed study will investigate 1) the impact of group Cognitive Behavioural Therapy (CBT) for perinatal anxiety on ED and 2) whether the severity of ED is associated with poorer treatment outcomes.

\textbf{Methods:} Participants were N=37 women in the perinatal period, with a primary anxiety disorder, were recruited from the Women’s Health Concerns Clinic, St. Joseph’s Healthcare Hamilton. Participants were randomized into either a CBT for perinatal anxiety condition (Green et al., 2015) or a waitlist condition. They completed self-report measures of anxiety symptoms (State-Trait Inventory of Cognitive and Somatic Anxiety, STICSA; Ree et al., 2000 & the Penn-State Worry Questionnaire, PSWQ; Meyer et al., 1990), mood symptoms (Edinburgh Post-Natal Depression Scale, EPDS; Cox et al., 1987) and emotion dysregulation (The Difficulties in Emotion Regulation Scale, DERS; Gratz et al., 2004 & The Emotion Regulation Questionnaire ERQ; Gross \& John, 2003) before and after CBT or the wait period.

\textbf{Results:} A 2x2 mixed model analysis of variance revealed there was a significant interaction effect between group and time on ED the DERS ($F_{1,35}=7.183; \ p=.01$) and the ERQ\textsubscript{Suppression} ($F_{1,35}=4.12; \ p=.05$) subscale. Moderation analyses revealed that the severity of ED at baseline was associated with poorer scores on the PSWQ, STICSA, and EPDS.

\textbf{Conclusions:} CBT for perinatal anxiety has a statistically significant impact on ED compared to a WL control, however ED is also associated with poorer treatment outcomes for participants. These findings can be used when considering future treatment adaptations for women receiving treatment for perinatal anxiety. Specifically, by targeting ED within a treatment program it could positively impact treatment gains. Future directions include examining long-term effects of CBT for perinatal anxiety on ED and incorporating emotion regulation strategies into current treatments.

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ABSTRACT #56

The Effects of Acute Tryptophan Depletion on Emotional Stroop in Midlife Women Receiving Estrogen-based Treatment: An fMRI Study

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Rationale: Dysregulation in the serotonergic system may modulate estrogen level changes in menopausal transition. Serotonin availability can be temporarily manipulated with an acute tryptophan depletion (ATD) paradigm. The Emotional Conflict Task (Etkin et al., 2006), demonstrates differences between two emotional Stroop stimuli types: Conflict Generation/Adaptation. Serotonin availability manipulation may influence brain response to emotional Stroop.

Purpose: To date no study has examined the effect of ATD on emotional Stroop in midlife women receiving estradiol.

Methods: In a repeated measures design, 16 midlife women (mean age 52 ± 4 years) receiving estradiol were assigned to ATD or SHAM in a functional magnetic resonance imaging (fMRI) session. Condition order was randomized and participants were blind to condition. Brain blood oxygen level dependent (BOLD) activity was measured with fMRI in a 3T MRI, while participants completed the Emotional Conflict Task. The task was comprised of 148 happy or fearful faces with the word “HAPPY” or “FEAR” superimposed on happy or fearful faces, counterbalanced for equal numbers of congruent (affect and word match) and incongruent (affect and word do not match) presentations.

Results: Significant differences in conflict generation trials (incongruent trials preceded by a congruent trial) indicated greater activity in the SHAM condition in right BA 32 and in conflict adaptation (incongruent trials preceded by an incongruent trial) in right BA 44, compared to ATD. In both congruent and incongruent trials, there was greater activity in right BA 32 in SHAM compared to ATD condition (all results, p<0.001 uncorrected).

Conclusion: Since the ATD paradigm depletes serotonin in the brain, these results may implicate the serotonergic system in processing emotional Stroop in dorsal anterior cingulate cortex and inferior frontal gyrus/pars opercularis in SHAM compared to ATD conditions.

References
Eating Disorder Behaviours and Borderline Personality Disorder in Adolescents

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Rationale: Borderline Personality Disorder (BPD) has been shown to be highly comorbid with disordered eating and eating disorders in adult populations (Zanarini et al., 2010). However, this relationship has not yet been explored in adolescents despite eating disorders being common and significantly associated with mortality and morbidity in young women.

Purpose: To examine the relationship between disordered eating behaviour and borderline personality disorder in female adolescents from a clinical population.

Methods: Participants were 74 female patients aged 11-18 presenting for treatment at the outpatient psychiatry clinic (ICYMHS). A score of > 16 on the Children’s Depression Inventory or having endorsed suicidal thoughts or self-harm was required in order to participate in the study. Data was collected on various pathology and personal characteristics including eating disorder behaviours, diagnostic group and temperament. We compared eating disorder behaviour on the Eating Behaviour Questionnaire (Miller & Boyle, 2009) to diagnosis of BPD (DIB score of >6) as well as Major Depressive Disorder (MDD) using t-tests. All statistical tests were performed using SPSS.

Results: 18 girls in the study obtained a DSM-V diagnosis of BPD and 35 received a diagnosis of MDD. Using a 2-tailed t-test comparing those with BPD and those without the diagnosis, the BPD group had significantly higher disordered eating behaviour compared to those without BPD \( t(72) = 3.605, p < .01 \), Cohen's \( d \) effect size = 0.958. This relationship was not significant for those with MDD \( t(72) = .167, p > .05 \).

Conclusion: These data suggest that there is an association between a diagnosis of BPD in adolescents and disordered eating. This relationship is not significant with diagnosis of MDD. Given the substantial overlap between these two diagnoses, screening for eating disorders or eating disorder behaviour may be a distinguishing factor of BPD. Given the limitations of this study (small sample size, lack of eating disorder diagnosis), further examination of the link between BPD and eating disorders is required to clarify this relationship.

References

Stress and Risk-taking Personality in Gambling Disorder: 
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Rationale: Individuals with a Gambling Disorder (GD) report a greater number of daily stressful events1. Problem gamblers are also more likely to use gambling to regulate mood – a motivation that is stronger in those with mood disturbances2. However, to date, few studies examine how different types of stressors, including trauma, chronic stressors, and life events relate to GD. Additionally, little is known about the cumulative impact of different types of stressors and their interaction with perceived stress and personality factors in GD.

Methods: The Chronic Stress Checklist (CSC), a 141-item questionnaire, was administered to 38 individuals with GD and 28 healthy control (HC) participants. The CSC consists of four sections – Major Life Events, Trauma, Recent Life Events and Chronic Stressors. Participants also completed the South Oaks Gambling Screen (SOGS), a proxy measure of problem-gambling severity, the Perceived Stress Scale, a 10-item questionnaire, which measures appraised stressfulness of different situations, and the Zuckerman-Kuhlman Personality Questionnaire (ZKPQ), a 99-item measure of risk-taking personality and temperament, that includes six subscales – Impulsivity, Sensation Seeking, Neuroticism-Anxiety, Aggression-Hostility, Activity and Sociability. In the ZKPQ, additional items comprise the Infrequency subscale to detect lying or carelessness in responding.

Results: The GD group reported a significantly higher mean total Perceived Stress Scale score and weighted cumulative CSC score (including the number and frequency of such events) in comparison to the HC group. This latter effect was driven by a significantly higher frequency of Chronic Stress events experienced by the GD group. Within this group, those who reported a higher number and frequency of Major Life Events also scored higher on the Infrequency subscale of the ZKPQ. Additionally, higher number and frequency of reported Trauma is related to greater scores on the Sensation-seeking subscale of the ZKPQ. Finally, higher perceived stress score was associated with lower scores on the Sociability and Activity subscales.

Conclusion: The GD group reported a significantly greater number of cumulative stressful life experiences and perceived stress than HC individuals. Major life events and trauma also interact with risk-taking personality measures, an effect that is not due to differences in age and body mass index. In particular, the interaction of major life events with infrequency may imply dishonest reporting on the ZKPQ and the CSC. Stressful life events may be over or under represented in the GD population. This is interesting as some patients report not being honest to family and friends about gambling or the money spent gambling. Although gambling may be used to cope with stressors in both populations, stress may have a differential impact in the GD population, where pathological gambling may in turn exacerbate pre-existing differences in personality and perceptions of stress over time.

References:
Emotional Memory in Bipolar Disorder and Major Depressive Disorder: A Preliminary Report

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Introduction

Bipolar disorder (BD) and major depressive disorder (MDD) are associated with memory recall deficits for emotional information\(^1\). While emotionally positive and negative information is preferentially recalled by healthy controls (HC), individuals diagnosed with MDD display a recall bias towards emotionally negative information\(^1\). Recall for emotionally positive and negative information in BD is blunted, and emotionally neutral information is preferentially recalled\(^2\). We aimed to be the first to compare emotional memory performance between BD, MDD and matched HC.

Methodological Description

All participants completed clinical assessment measures to confirm their eligibility, including the SCID. All participants in the MDD and BD groups met criteria for past MDD and BD I, respectively, but were currently euthymic. Participants completed an encoding task that involved rating the emotional intensity of charged (positive, neutral and negative) images. Participants returned 1 week later for a surprise incidental recognition memory task.

Summary of Results

Each group reacted more intensely to positive and negative images versus neutral images. Overall memory accuracy scores revealed that the MDD group correctly recalled more negative images (73.6\% versus 70.8\% positive and 69.4\% neutral), the BD group correctly recalled more neutral images (88.9\% versus 86.1\% negative and 84.5\% positive), and the HC correctly recalled more positive images (81.9\% versus 79.2\% negative and 76.8\% neutral).

Conclusion

The reactivity trends for MDD and BD did not align with the observed memory trends. Individuals with a history of MDD and BD may have an encoding/reactivity bias similar to HC and an emotional memory bias consistent with individuals who are currently depressed and/or manic.

References

Evaluating the Efficacy of Goal Management Training for individuals with PTSD and MDD

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Introduction: Posttraumatic Stress Disorder (PTSD) and Major Depressive Disorder (MDD) feature cognitive dysfunction across highly similar domains, including memory and executive function. Although such difficulties are associated with functional impairment and reduced treatment response, limited research has investigated the treatments aimed at improving cognitive function among individuals with PTSD or MDD. Here, we investigated the efficacy of a cognitive remediation therapy, Goal Management Training (GMT)$^1$, in reducing cognitive and functional impairment among individuals with MDD and PTSD in two separate, but related studies. GMT is a validated intervention aimed at improving goal-directed behaviours and self-regulation with proven efficacy in several populations (e.g., traumatic brain injury, aging).

Methodology: The MDD study was a randomized controlled trial (RCT) comparing GMT with a waitlist condition (WLC). To date, twenty-three individuals with MDD ($n = 11$ GMT; $n = 12$ WLC) have participated in this study. Participants completed baseline and follow-up (post-treatment or post 9-week delay) testing on neuropsychological, clinical, and functional measures. The PTSD study was a feasibility trial, where individuals receiving treatment on an inpatient PTSD unit at Homewood Health Center were offered the opportunity to participate in the group ($n=14$), or have their clinical data used for comparison purposes if they did not wish to participate in the group (treatment as usual (TAU); $n=15$). Mixed-design ANOVAS treating time (pre vs. post-treatment) as a within subjects factor and group (GMT vs. WL (MDD study) or TAU (PTSD study)) as a between-subjects factor were used to analyze these data. Paired sample t-tests were used to analyze differences between pre- and post-treatment for individuals receiving GMT in the PTSD study.

Results: MDD study: GMT group participants showed significant improvement on measures of social and family functioning, depressive and anxiety symptoms, verbal learning, working memory, and processing speed, while the wait-list group did not. PTSD study: GMT group participants improved on measures of processing speed, verbal memory, and rule learning. The GMT group demonstrated significant improvements on measures of emotion regulation and intrusion symptoms while the TAU group did not.

Discussion: The results of these studies suggest that GMT is successful in remediating cognitive difficulties and improving functional and clinical outcomes among individuals with PTSD and MDD. We anticipate that these improvements will lead to reductions in the disease burden of PTSD and MDD.

References:

Seasonality patterns of mental health Google searches in Ontario

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Background: There has been long lasting interest in the association between mental health symptoms and seasonal patterns. Population mental health surveillance has been traditionally used to detect and measure seasonal patterns. However, population studies are expensive and are limited in their ability to sample multiple time points over long periods. The recent explosion of internet searches suggests that mining search databases yields unique information on public interest in mental health disorders. This information may then be analyzed in the context of seasonality. However, the study of search trends and mental health is still in its infancy and not much is known. The present study aims to investigate seasonal patterns of mental health queries in Ontario.

Methods: Data on mental health queries in Ontario from Google Trends were downloaded for a five-year period from 2012-2017 for the terms “anxiety,” “autism,” “bipolar,” “depression,” “OCD,” “schizophrenia,” and “suicide” with the term “health” as well as the term “how” (and related searches). A wavelet phase time series analysis with four month periodicity was performed to isolate seasonal components in the search volume. Results: All mental health queries showed significant seasonal patterns with peak periodicity occurring over the winter months and troughs occurring during summer. Percent change in search volume between seasonal components was smallest for “anxiety” (12%, 95% CI = 10% to 15%) and greatest for “depression” (20%, 95% CI = 16% to 23%). Analysis of phase angle showed no significant difference in timing of peak search volume between any mental health queries. The comparison term “health” also exhibited seasonal periodicity while the overall search volume did not, indicating that general information seeking may not follow a seasonal trend in the way that mental health information seeking does. Conclusions: Although limited by potential validation issues—such as geographic and demographic profile resolution—monitoring trends available from internet queries is an affordable, instantaneous and naturalistic method for aiding in the understanding of broad patterns of mental health.

References


Impact of time in bed prescription adherence on treatment outcome in Group Cognitive Behavioural Therapy for insomnia (A study in progress)

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Background: Cognitive Behavioural Therapy for insomnia (CBTi) is the gold-standard and first-line treatment for insomnia (Trauer et al., 2015). Time in bed (TIB) restriction is a critical behavioural component of CBTi, which involves adhering to a clinician-prescribed total time spent in bed based on individual sleep needs. Formulating individualized TIB prescriptions is one of the main challenges of providing CBTi in a group format. CBTi adherence, in general, has been identified as an important but challenging concept to measure (Matthews et al., 2013). Adherence to TIB prescriptions specifically is crucial in implementing sleep restriction; however, its effectiveness has yet to be examined in the context of group CBTi.

Purpose: The aim of this study is to evaluate adherence to individualized TIB prescriptions during group CBTi and its impact on treatment outcome.

Methods: Individuals with primary insomnia diagnoses will be recruited from the Sleep Medicine Clinic, Firestone Institute of Respiratory Health, and participate in the 6-session group CBTi. Self-report measure of insomnia symptoms will be assessed with the Insomnia Severity Index pre- and post-treatment as a measure of treatment outcome. Actual time spent in bed will be determined from the Consensus Sleep Diary, which will be collected at baseline, over the 6-weekly sessions, and at post-treatment. The actual TIB will be compared to the individualized TIB prescriptions, as a measure of adherence to sleep restriction throughout the course of the group CBTi treatment.

Results: Analyses will be conducted in an expected sample of N=27 participants who will have completed the group CBTi treatment and follow up by April, 2018. Multiple linear regression analyses will be run to determine whether adherence to TIB prescriptions is a predictor of treatment change in insomnia symptoms, following group CBTi. We hypothesize that patients with greater adherence to TIB prescriptions will have greater reduction in insomnia symptoms.

Conclusion: Findings from this study will provide insight on the extent that adherence to TIB prescriptions impacts treatment outcomes, specifically in group CBTi. This will further elucidate the importance of use of sleep restriction as an active ingredient of CBTi.

References

Cognitive and Neural Processes in Youth with Obsessive-Compulsive Disorder and Hoarding Symptoms (Work in progress)

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Rationale: Hoarding symptoms (HS) affect up to 25% of youth with obsessive-compulsive disorder (OCD) and these symptoms often begin in childhood and adolescence (Tolin et al., 2011). Comorbidity of HS and OCD is a marker for poorer prognosis and worsened symptomology; however, HS in youth with OCD are not well understood. Research has suggested impaired decision-making in individuals with HS, particularly when it involves making decisions about personal possessions (Steketee & Frost, 2007). This is a key deficit in HS that results in the inability to discard unneeded possessions. Many factors affect decision-making in those with HS, particularly endowment. The endowment effect (EE) is the increase in valuation of an item once we take ownership of it. The EE can dramatically influence decision-making, however, very little research has focused on understanding how these factors influence decision-making in youth with HS and OCD.

Purpose: To investigate possible associations between HS in youth with OCD and cognitive and neural aspects of endowment.

Methods: This prospective study will include 90 youth (ages 9-16 years old), 60 with a primary diagnosis of OCD and 30 “healthy controls” (no existing anxiety disorder). Youth will be recruited via the Pediatric OCD consultation team at the Anxiety Treatment and Research Clinic at St. Joseph’s Hospital Hamilton. The Child Saving Inventory – Parent Version will be used to indicate the presence and severity of HS. Youth will complete cognitive and neural activation measures that will assess components of endowment. More specifically, EE will be investigated using a trading task, completed in person and during functional magnetic resonance imaging (fMRI). Structural and functional imaging will be analyzed to identify neural activations associated with decision-making in youth with OCD and either High Hoarding or Low Hoarding symptoms. Additionally, participants will complete a cognitive battery to rule out abnormalities in cognitive functioning (i.e. cognitive flexibility, decision-making etc).

Novelty and Implications: The aim of this study is to understand the cognitive and neural aspects of decision-making in youth with HS and OCD. Increasing our understanding of these factors will facilitate the early detection, intervention and treatment of HS in youth, resulting in improved outcomes and quality of life.

References:
The role of emotion regulation in the intergenerational transmission of risk following childhood adversity

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Rationale: Extensive research has linked adverse childhood experiences (ACEs) with a variety of negative health outcomes across the lifespan, with only more recent work beginning to investigate the intergenerational impacts of parental ACEs. Emerging research suggests that maternal ACEs are associated with child behavioural problems (Fredland, McFarlane, Symes, & Maddoux, 2017; Pereira, Ludmer, Gonzalez, & Atkinson, 2017). However, little is known about the mechanisms that may transmit risk across generations.

Purpose: The objective of the current study was to examine maternal emotion regulation capacity as a potential mechanism that transmits risk to child development following maternal exposure to ACEs.

Methodology: Participants included a community sample of 105 mothers and their 3-year-old children. Mothers completed questionnaires that assessed their retrospective self-report of ACEs, self-report of emotion regulation capacity, and report of their child’s behaviour problems.

Analyses & Results: Using structural equation modeling, latent variable mediation models were run which controlled for maternal characteristics (i.e. age, socioeconomic variables, mood) and child characteristics (i.e. age, gender, IQ). We found that maternal difficulties with emotion regulation significantly mediated the associations between maternal history of ACEs and a) child internalizing behaviours (β = 0.089, p = 0.036) and b) child externalizing behaviours (β = 0.111, p = 0.039).

Implications: These findings suggest that maternal difficulties with emotion regulation may serve as a mechanism that transmits risk to children’s development following maternal exposure to ACEs. Interventions that seek to improve parental emotion regulation capacity are an important avenue of exploration for families exposed to ACEs.

References
Mental health inpatient and outpatient cost in Ontario (A study in progress)  
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Rationale: In Canada, it is estimated that 1 in 5 people will experience a mental illness at some point in their lifetime. Individuals with mental health illness represent high users of health care system resources¹ and experience different standards of care in terms of the length of their visits with their psychiatrist along with the frequency of such visits². Currently, it is unknown if the frequency of follow up visits for psychiatric care are linked to significant cost effective benefits in patient health outcomes.  

Purpose: To investigate if high frequency outpatient follow up visits (>16 visits per year) following discharge from hospital for mental illness (substance or addictions, anxiety, adult personality disorders or schizophrenia) is cost effective in reducing inpatient hospitalizations.  

Methods: This retrospective cohort study utilized linked patient databases at ICES (the Ontario Health Insurance Pan (OHIP) and the Ontario Mental Health Reporting System (OMHRS) database) to observe the frequency of follow-up visits in adult patients (over 18 years old) discharged from mental health designated hospital beds from April 1, 2010 to March 31, 2011. In the first year following discharge, patients that utilized outpatient mental health services <4 times were matched to patients who used outpatient services >16 times, representing atypical continuing care². Both groups were matched on age, sex, neighbourhood income, the primary diagnosis for hospitalization, and frequency of hospitalizations 2 years prior. We compared both the cost incurred through inpatient and outpatient mental health services along with the frequency of inpatient hospitalizations 5 years post hospital discharge.  

Preliminary Results: 14,844 patients that were discharged from mental health designated hospital beds in Ontario could be allocated to each group (<4 vs. >16 visits 1 year post discharge) and matched based on our criteria. Patients who visited a psychiatrist less than 4 times during the year post hospitalization were readmitted to hospital on average 1.69 times whereas those that visited their psychiatrists more than 16 times were readmitted 2.24 times on average. Patients with higher frequency of psychiatric outpatient usage (>16 times) incurred 3.34 times greater health care costs over 5 years of follow up.  

Impact: The findings of this study could inform future planning of mental health services in Ontario by providing insight into the downstream health implications of frequency of outpatient visitation patterns and could inform efforts to effectively allocate scarce resources in psychiatric care.  

Biological and Psychosocial Predictors of Perinatal Anxiety Worsening
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Rationale: Greater than 20% of women will experience an anxiety disorder during the perinatal period (Goodman et al., 2016), yet only 15% receive appropriate treatment (Smith et al., 2009). These women are more likely to feel less competent as mothers, experience significant suffering, and their children are at greater risk of developing cognitive and behavioural problems (Davis & Sandman, 2010; Britton, 2011). Despite its high prevalence and associated risks, little attention has been paid to the detection of anxiety during the perinatal period.

Purpose: To identify the psychosocial and biological predictors of anxiety worsening during the perinatal period.

Methods: This ongoing prospective observational study follows pregnant women recruited during the third trimester of pregnancy to 24 weeks postpartum. To assess perinatal anxiety worsening, women with a current and/or past diagnosis of an anxiety disorder were included. All diagnoses were established using the Mini International Neuropsychiatric Interview for DSM-5 (MINI). A range of psychological (e.g., intolerance of uncertainty, perfectionism), social (e.g., socioeconomic status, social support), and biological factors (e.g., oxytocin exposure, C-reactive protein) are being assessed. The primary outcome of the study is the Hamilton Anxiety Rating Scale (HAM-A) score at 6 weeks postpartum.

Results: 24 women have been recruited thus far, with 14 reaching 6 weeks postpartum. Women in the study are 31.04±5.15 years of age. Baseline levels of intolerance of uncertainty (p<0.05), depressive (p<0.05), and obsessive compulsive symptoms (p<0.05) predicted anxiety severity at 6 weeks postpartum.

Conclusions: Preliminary results from this ongoing study highlight the predictive value of pre-existing psychological factors, specifically, intolerance of uncertainty, depressive and obsessive compulsive symptoms in detecting anxiety severity postpartum. Further examination of potential predictors will continue, with the hopes of identifying clinical and biological risk factors for perinatal anxiety worsening. This knowledge will aid in the early detection and treatment, and guide preventive measures aimed at decreasing or preventing adverse effects for women, children, and their families.

References:
Title: School Factors And Substance Use: A Multilevel Approach In A Large Sample Of Adolescents

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Purpose: Apart from academic achievement, student substance use exhibits the greatest variability between schools compared to most other behavioral health outcomes. This study examines the association between school contextual variables, such as school climate, belongingness, and bullying and student substance use, including marijuana use, tobacco use, and binge drinking.

Methodology: A representative cross-sectional sample of 10554 Ontario secondary school students in 823 classrooms in 68 schools during the 2014-2015 academic year. Three-level (student, class, school) logistic regression models were used to explore relationships between school variables at both the individual and school levels and 1) any marijuana use, 2) any tobacco smoking, and 3) past month binge drinking. School variables (at both the individual and collective levels) were first explored in separate models, adjusting for socio-demographic characteristics, and subsequently integrated into a model simultaneously including all school variables.

Results: The collective and individual perceptions of school climate were inversely related to substance involvement in all models (OR = 0.70-.78 for collective and 0.89-0.92 for individual; p<0.001). Collective and individual experiences of bullying were positively associated with marijuana use and tobacco smoking in all models (OR 1.09-1.53 for collective and 1.04-1.09 for individual; p<0.001), but relationships differ with binge drinking. Belongingness at the collective and individual level also had differential relationships, being inversely associated with tobacco smoking, positively associated with binge drinking, and mixed for marijuana.

Conclusions: These findings suggest substantial influences of secondary education contextual factors on substance use and may inform educators, administrators and prevention specialists about modifiable factors for potential intervention.

References

Outside of the Disorder: How Individual Difference Factors Influence Quality of Life in Adults with Schizophrenia (Work in progress)

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Background

Schizophrenia is one of the most debilitating disorders that is often associated with poor quality of life (QoL) (Ritsner et al., 2003). Although schizophrenia is associated with reduced QoL, this is not always the case, suggesting other influences (Khalesi et al., 2018). Some factors have been identified to influence QoL outcomes in individuals with schizophrenia, such as temperament and living circumstances. However, the literature on how sociodemographic, social, and cognitive factors interact to influence QoL in individuals with schizophrenia (Ritsner et al., 2003) is scarce. The purpose of this study was to examine how psychological, environmental, and personality factors were associated with the quality of life and well-being of outpatients with schizophrenia.

Methods

Ongoing recruitment of participants with schizophrenia are taking place at the Cleghorn Clinic and Schizophrenia Outpatient Clinic at St. Joseph’s Hospital, West 5\textsuperscript{th} campus. Participants complete an online survey comprised of self-report questionnaires assessing a variety of factors and outcomes such as temperament, schizotypal personality types, empathy, metacognition, social support, happiness, disability, and quality of life.

Results

Because data collection is currently ongoing, preliminary results will be presented at Research Day.

Discussion

The results of this study will inform us of how factors outside of the disorder’s manifestation impact the QoL of individuals with schizophrenia. Knowledge about how the factors interact with each other to influence QoL will be instrumental in designing future psychosocial interventions. For example, if individuals who endorsed both high shyness and poor metacognition reported the lowest quality of life then interventions can be designed to include training modules such as social and cognitive skills training for such factors.

References:


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

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Rationale: Peri-traumatic tonic immobility (TI) is an important predictor of the development and course of PTSD (Kalaf et al., 2015). Despite serving as an adaptive defensive response, TI is a debilitating state that has the capacity to disrupt functioning across domains. At present, are no validated measures that assess specifically post-traumatic TI.

Purpose: The primary objective of this study was to evaluate the Dissociative Freezing Response Onset Scale following Traumatic stress (D-FROST), a measure developed to assess the presence and severity of post-traumatic TI across trauma-exposed populations. TI is reconceptualised as a dissociative freezing response – a trauma-related dissociative state involving alterations across four dimensions of consciousness (body, thought, time-memory, and emotion).

Methods: Participants (N = 462) with a history of TI completed the D-FROST, and measures of post-traumatic symptoms, dissociation, depression and anxiety.

Results: The D-FROST assessed four latent constructs, which were interpreted following the 4-D model of Trauma and Dissociation. Together, these factors capture precursors and dissociative experiences associated with TI as a trauma-related altered state, as well as residual effects and the experience of sense of self. Notably, the residual effects of TI included feelings of shame, guilt, and embarrassment. D-FROST scores demonstrated excellent reliability, as well as good construct and convergent validity with other measures of dissociation and PTSD.

Conclusion: The D-FROST is the first comprehensive measure of post-traumatic TI conceptualized within a dissociative framework as a dissociative freezing response. This measure demonstrates excellent psychometric properties and may be useful for researchers and clinicians wishing to assess chronic forms of TI.

The Association between 5-HTTLPR and Obsessive-Compulsive Symptoms in Women during the Perinatal Period (A Study in Progress)

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Background: Obsessive-compulsive disorder (OCD) is a debilitating psychiatric disorder which affects up to 9% of women in the perinatal period (McGuinness et al., 2011). Many genetic association studies fail to incorporate sex differences when investigating OCD (Mattina & Steiner, 2016). The perinatal period is associated with increased vulnerability for women to develop severe obsessive-compulsive symptoms (OCS), which are often focused on the well-being of the fetus/newborn. A functional polymorphism of the serotonin (5-HT) transporter (known as 5-HTTLPR) is a candidate gene thought to confer greater susceptibility to OCD. The 5-HTTLPR is a tri-allelic functional variant that is comprised of the long (L) and short (S) allele. The S allele results in lowered transcriptional activity compared to the L allele; however, the L allele has two functionally distinct forms, L_A or L_G, where the L_G form is functionally similar to the S allele. This study will investigate whether the 5-HTTLPR is associated with OCD diagnosis and perinatal OCS severity. We will also explore whether 5-HTTLPR genotype status moderates the effect of childhood trauma on perinatal OCS.

Methods: A total of 107 women were seen during the 2nd-3rd trimester of pregnancy, of which 20 were diagnosed with having OCD. All women completed a CIDI-Venus clinical interview, several self-report behavioural measures and a blood sample collection. From this cohort, 62 women returned to re-complete the behavioural measures during 3-6 months postpartum. Behavioural measures collected at both time points included the Perinatal Obsessive-Compulsive Scale (POCS), Yale-Brown Obsessive-Compulsive Scale (Y-BOCS), Edinburgh Postnatal Depression Scale (EPDS), State-Trait Anxiety Inventory (STAI) and Childhood Trauma Questionnaire (CTQ). Genotyping of the 5-HTTLPR is being conducted using polymerase chain reaction - restriction fragment length polymorphism (PCR-RFLP). Chi-square test of independence will be used to examine the association of allele and genotype frequencies with OCD diagnosis. Linear regression models will be used to determine whether perinatal OCS can be predicted by 5-HTTLPR genotype status. A moderation model will be constructed to determine whether 5-HTTLPR genotype status influences the relationship between childhood trauma and perinatal OCS.

Discussion: This will be the first reported genetic association study to investigate whether the 5-HTTLPR candidate gene confers susceptibility to the subgroup of women who develop OCS during the perinatal period. Detecting a potential risk marker will provide a beneficial method for identifying women with a genetic predisposition to develop OCS in the perinatal period, which is essential for providing preventative care to ensure the health, safety and wellbeing of mother and infant.


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Title: Investigating Intracortical Myelin in Alcohol and Substance Use Disorders

Rational:
Intracortical myelin (ICM) is a myelinated segment of the cerebral cortex thought to play a role in cognitive functioning and neural communication. Mental health disorders highly co-morbid with alcohol and substance use disorder, such as schizophrenia and bipolar disorder, have found ICM abnormalities in various regions of the cerebral cortex (1,2). Moreover, myelin damage has been found in animal models exposed to pre-natal, maternal alcohol consumption (3). There has yet to be a study examining the effect of alcohol and substance use on ICM in human subjects.

Purpose:
The current study aims to use MRI to investigate ICM in a sample of participants with alcohol use disorder, substance use disorder, and control participants.

Methods:
Eligible participants complete two study sessions. The first session consists of a structured clinical interview and various neurocognitive measures. The second session consists of a 1 hour MRI scan. A computer algorithm is applied to the MRI data to divide the cortex into myelinated and un-myelinated portions, providing a whole-brain map of ICM thickness.

Results:
MRI analyses of ICM thickness are in progress. Preliminary results (N=8; 4 Alcohol use, 4 substance use) have demonstrate various regions of ICM disruptions throughout the cortex. Comparisons of ICM thickness between groups and continuous associations between ICM and cognitive performance will be presented.

Conclusions:
This study will provide proof-of-concept as to whether deficits in ICM are present in those with alcohol and substance use disorder when compared to control participants. Significant findings from the study will provide preliminary insights regarding the effect of alcohol and substance use on ICM.

References:
Assessing the Utility of Symptom Validity Tests in Individuals with FASD

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Rationale: Symptom validity tests (SVT) are administered as a standard component of neuropsychological assessment, in order to assess the accuracy or truthfulness of an examinee’s performance on psychological tests. There is some concern regarding the validity of such measures for individuals with severe neurocognitive deficits, due to high failure rates on SVTs in these populations (Merten et al., 2007). However, no studies have assessed the validity of SVTs in individuals with fetal alcohol spectrum disorder (FASD), who experience complex deficits in cognitive functioning, as well as other areas, following prenatal exposure to alcohol. Individuals with FASD are also overrepresented in criminal justice settings (Popova, et al., 2017), where the implications of a diagnosis are severe. As a result, there is also increased incentive to mislead an examiner in these settings. This highlights the importance of evaluating the utility of SVTs in individuals with FASD.

Purpose: To explore the validity of SVTs in offenders with diagnosed/suspected FASD.

Methods: Data for this study was collected as part of a larger project that sought to estimate the prevalence of FASD in adult offenders in a Northern Canadian jurisdiction. Diagnostic decisions were made following a comprehensive interdisciplinary assessment. Participants completed four SVTs, including Green’s Word Memory Test (GWMT), Advanced Clinical Solutions (ACS), Reliable Digit Span (RDS) from the Wechsler Adult Intelligence Scale (WAIS-IV), and the Logical Memory – Recognition (LMR) subtest from the Wechsler Memory Scale (WMS-IV).

Results: Participants included 80 adult offenders ages 19 to 40 years, including 25 (31.3%) with diagnosed or suspected FASD, and 55 (68.8%) without FASD. Results suggest that previous findings regarding the validity of SVTs in individuals with neurocognitive deficits may extend to those with FASD. Specifically, more participants in the FASD/Suspected group failed at least one SVT indicator relative to the undiagnosed group χ2 (1, 68) = 7.31, p = .007, ϕ = .33), and they also failed more SVT indicators, on average, than those who were not diagnosed (M = 1.52 vs .36, p < .001). Additional results will be discussed.

Conclusion: Effort testing is a key component of neuropsychological testing. False positive results on SVTs may erroneously mislabel individuals as having provided suboptimal effort, resulting in potentially serious negative consequences ranging from misdiagnosis and restriction of interventions to more serious legal consequences in the context of adjudication (e.g., fitness to stand trial, or sentencing). The current results highlight a need for further research into the validity of SVT use in offenders with FASD and similarly complex neurocognitive deficits.

References:
Kindergarten Prevalence of Children with Special Educational Needs in Ontario and their Developmental Health at School Entry (A study in progress)

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\textbf{Rationale:} One in every nine school-age children in Ontario has special educational needs (SEN) as a result of developmental disorders (Open Policy Ontario, 2015); however, the distribution of SEN is unequal among schools. There is strong evidence establishing the association between prevalence of childhood disability and neighbourhood socioeconomic status (SES). Multiple studies have also cited neighbourhood SES as a prominent factor in determining childhood developmental and learning outcomes. Currently, it is unknown whether unequal distribution of SEN kindergarten prevalence among schools is associated with a child’s developmental outcomes.

\textbf{Purpose:} To conduct descriptive analyses of SEN school prevalence in kindergarten and examine its association with child development and neighbourhood SES.

\textbf{Methods:} We use data from the Early Development Instrument (EDI), which is a kindergarten measure of child development (Janus & Offord, 2007) administered in Ontario between 2010-2012, and neighbourhood SES to examine associations between SEN distribution and children’s development. Overall school SEN prevalence and demographic characteristics of the SEN population were examined. Further analyses of associations between SEN distribution and child development are ongoing.

\textbf{Results:} Non-SEN and SEN children had a mean age of 5.67 and 5.70 years respectively. SEN prevalence was higher among males than females, with 5.4% and 2.4% respectively. Ontario EDI data reveal overall SEN prevalence of 3.7% with large variation between 0.6% and 85.7% per school among a total of 2191 schools. Despite the wide range, 95% of the schools had SEN prevalence in the lowest quintile with mean and median school SEN prevalence of 4.4% and 2.8% respectively. SEN children in schools with higher prevalence appeared to have lower scores in physical, social and language/cognition domains but higher scores in emotional and communication domains.

\textbf{Conclusion:} Results from this study will be the first to provide population-level data to further investigate outcomes for students with SEN in relation to where they live and have the potential to help inform policies surrounding SEN resource allocation.

\textbf{References}


Trauma Types in Hoarding Disorder

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Background: Research has shown that individuals with hoarding disorder (HD) report an elevated rate of stressful life events and traumatic experiences compared to controls (Landau et al., 2011). Landau et al., (2011) investigated the rates of traumatic life events (TLEs) in three domains (crime and related events, general disaster and trauma, and physical and sexual experiences) in individuals with HD and controls; those with HD reported significantly higher rates of disaster-related events and TLEs in general.

Purpose: To replicate and extend previous findings on TLEs in HD, we examined self-reported rates of TLEs in a large sample of individuals with HD and compared them to the rates previously published for non-clinical controls.

Method: Participants ($N = 64$) had a principal diagnosis of HD and were seeking specialized treatment for HD at an outpatient clinic. They completed the Trauma History Questionnaire (THQ), which asks about serious or traumatic life events across three domains. The THQ was scored in three ways: the total number of events reported by each participant, the total number of events within each of the three domains, and the number of events reported for each particular event. We compared mean scores to the control group used in Landau et al., (2011).

Results: The mean number of TLE’s reported in the current sample was significantly different than published rates of controls from Landau et al., (2011) ($t(84) = 3.91, p < 0.001$). The number of crime-related events were not significantly different than Landau’s control group ($t(78) = 1.26, p = 0.21$) but physical and sexual experiences as well as general disaster and trauma-related events were significantly different ($t(73) = 3.40, p = 0.001$ and $t(69) = 3.46, p < 0.001$ respectively). Additionally, the following are some of the most commonly reported events in the current sample: 83% endorsed receiving news of a serious injury, life-threatening illness, or unexpected death of someone close to them, 61% reported that someone has attempted to or has robbed them, and 50% were home when someone attempted to or broke into their home.

Conclusion: Results converge with previous findings published by Landau et al., (2011), which suggest that TLE’s and general disaster-related events are more common for people with HD than control populations. Additionally in this sample, physical and sexual experiences occurred at a higher rate in HD than in controls and some traumatic events were near universal. TLE’s likely increase vulnerability to exacerbations of HD. Future studies should examine whether or not controls and individuals with HD identify with TLE’s differently to better understand the involvement of TLE’s in HD.

References:
A PILOT STUDY OF EPISODIC FUTURE THINKING IN A TREATMENT SEEKING ADDICTION SAMPLE

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Rationale: A characteristic trait seen in individuals with addictive disorders is a shortened temporal window [1], which could interfere with treatments focusing on long-term sobriety. Episodic Future Thinking (EFT) is a cognitive exercise in which individuals generate personalized cues related to positive events that they are looking forward to at various time points in the future. EFT is often compared to a control condition known as Episodic Recent Thinking (ERT) which involves participants generating personalized positive events from the present or recent past. EFT has been shown to reduce temporal discounting, cigarette consumption, and reinforcing value of addictive substances, but only in non-treatment samples [2]. An important empirical question is the extent to which widening the temporal windows of individuals receiving treatment for substance use disorders impacts decision-making and treatment success.

Purpose: In this pilot study, we have two goals: 1) To conduct an experimental study of EFT on decision making (e.g., impulsivity) and drug motivation (e.g., craving, reinforcing value) in a sample of people receiving treatment for SUD; and 2) To determine cumulative and sustained effects of EFT over a 1-week protocol of repeated EFT training and 1-week follow up.

Methods: Individuals currently in addictions treatment will be randomized to either undergo EFT or ERT protocols. In the first session, participants will complete a series of questionnaires, behavioural economic, and neurocognitive tasks measuring craving, substance demand, and decision making before and after the implementation of EFT/ERT. This will be followed by practice of EFT/ERT for 3 days. In the second session, participants will complete measures to assess changes in craving, substance demand, and decision making. Lastly, after a week of no instructions, participants will undergo a follow-up interview assessing use of EFT/ERT as well as complete behavioural economic tasks measuring substance demand and decision making.

Results: Data collection is ongoing, and we will present preliminary findings from this intervention at Psychiatry Research Day 2018. We expect EFT to significantly reduce impulsive decision making and decrease subjective motivation for substances.

Conclusion: If successful, this study will lay the foundation for future larger-scale clinical trials of EFT intervention in this population. The validation of EFT as an effective supplementary intervention used in complement to other cognitive-behavioural therapies to treat SUD will have significant impact for individuals suffering from addiction as well as the public health system in Canada.

References
Cannabis use and neurocognitive performance among the Population Assessment for Tomorrow’s Health (PATH) cohort.

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Rationale: Research interest in the potential relationships among exposure to THC, heavy cannabis use, and cognitive impairment has been increasing in recent years. Impairments in cognitive ability have been associated with both the acute and long-term effects of cannabis use, however the evidence for these effects are mixed and in need of further investigation [1]. Inconsistency among the existing literature may be partially due to the wide variety of methods used to assess cannabis use patterns, tolerance levels, and cannabis-related problems [2].

Purpose: To examine relationships between cannabis use and cognitive performance in a large, representative community sample of non-treatment seeking adults.

Hypotheses: We predict that greater quantity, frequency, and severity of cannabis use will be associated with poorer performance on neurocognitive measures of intelligence, working memory, and impulse control. Specifically, we predict that earlier age of first use and more frequent use of cannabis will predict lower verbal intelligence and working memory capacity. We also predict that individuals who endorse having more cannabis-related problems will also be more impulsive in terms of immediate reward preference, risk-taking, and behavioural impulse control.

Methods: We recruited adults from the Greater Hamilton Area to enroll in the Population Assessment for Tomorrow’s Health (PATH) research registry, with a final sample size of n=1435. Participants completed a one-time in-person assessment, where they performed cognitive tasks and provided self-report information on a broad range of measures related to lifestyle, mental health, and addictive behaviours. Cannabis use patterns were characterized by age of first ever use, typical frequency of past-year use, and number of hours “stoned” on a typical day of use, and severity of cannabis-related problems. Cognitive domains assessed were impulsive and risky decision-making, verbal intelligence, attention, working memory, and behavioural inhibition. Exploratory analyses will be conducted by examining correlations and hierarchical regressions between cannabis use variables and performance on neurocognitive tasks.

Conclusion: Final results of these analyses will be shared via a poster presentation, and will inform our understanding of the associations between degrees of cannabis use and performance on several domains of cognition. Given the representative nature of our large sample, our findings will reflect the characteristics of people within the Hamilton community.

References:


Rationale: Sleep-related violent behaviour has been noted for hundreds of years, yet relatively little is known about this phenomenon. While occurrences may be rare, the consequences can be serious and may result in criminal charges [1]. In these scenarios, it is difficult for experts to render opinions regarding the legal issues surrounding sleep disorders, presenting a gap in knowledge in our current system [2].

Purpose: To examine the literature for reported cases of criminal activity and sleep disorders, and identify and synthesize common themes to help inform experts rendering opinions on cases of forensic sleepwalking.

Methods: This retrospective case series involved a thorough search of the literature around forensic sleepwalking. In order to access this literature, the search strings (1) “forensics” + “sleepwalking” and (2) “sleepwalking” + “violence” were used. These searches were conducted on both Web of Science, and the US National Library of Medicine PubMed databases. The initial results were then screened to include case reports and remove duplicate citations. These case reports were then screened by title and abstract to ensure they fit the inclusion criteria of (1) case report and (2) relation to forensics and sleepwalking. The remaining references were then used to inform our literature review.

Results: At this point in time, the study is still ongoing. However, it is expected that our results will help to identify past offenses and behaviour that led to forensic sleepwalking cases. These results will focus on the past medical history, psychiatric history, behaviour, and outcomes surrounding these offenses. The data will identify if there exists any pattern when it comes to forensic experiences in episodes of sleep disorders.

Conclusion: Criminal cases involving sleepwalking are rare occurrences, making it difficult to render an opinion based on a high level of scientific rigor. This research could help synthesize when sleepwalking could be a relevant diagnosis for a forensic expert to make.

References:

Intergenerational Transmission of Risk in Rural Kenya: The Mediating Role of Maternal Mental Health

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\textbf{Rationale:} Mothers in low- and middle-income countries suffer heightened vulnerability for early life adversity (ELA) and psychiatric disorder, which is exacerbated by poverty\textsuperscript{1}, conferring further risk for intergenerational transmission of vulnerability to her child\textsuperscript{2}.

\textbf{Purpose:} To examine the relationship between ELA and maternal-child mental health in rural Kenya, where resources for assessment and treatment are limited, and where the prevalence of psychiatric illness is relatively high.

\textbf{Methods:} The current study examined the association between maternal ELA and the mental health of her child, mediated by her own mental health. Mother-child dyads (n=121) in Machakos, Kenya were examined using self-report measures of ELA (Yale-Vermont Adversity in Childhood), maternal mental health (Adult Self Report, 18-59), and child mental health (Child Behavior Checklist, 6-18).

\textbf{Results:} There was a significant conditional indirect effect of maternal ELA on child mental health symptoms at high (b = 0.32, BC CI [0.136, 0.519]) and average (b = 0.21, BC CI [0.080, 0.367]) levels of maternal education, mediated by maternal mental health, and controlling for income and sex of the child. A causal relationship was found between maternal ELA, maternal mental health symptoms, and child mental health symptoms. Maternal education served as a protective factor at lower levels of maternal ELA. This model accounts for 29\% of the variance in child mental health.

\textbf{Conclusions:} This model explains how the impact of ELA persists across the lifespan and has a negative impact on maternal mental health, conferring further risk to subsequent generations. Elucidating intergenerational transmission of risk, especially in low-resource settings where risk is exacerbated, may improve targeted programs for prevention and intervention.

\textbf{References:}

Examining the Effects of a Team-Based Running Program on the Mental Health and Cognition of Emerging Adults: A Pilot Study

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Background: Traditional approaches to treatment of mental illness in Canadian youth, such as psychotherapy and medication therapy, are often inaccessible, expensive, and ineffective (Merikangas, Nakamura & Kessler, 2009). Exercise offers an alternative to traditional treatments with demonstrated benefits on mental health, in part due to the impact of regular exercise on cognitive functioning (Anderson & Brice, 2011). The current study utilizes a novel client-facing platform allowing participants to individually track mental health symptoms and activity level over the course of a running intervention group. The study seeks to examine whether participation in a running group leads to improvements in mental health symptoms, and whether this relationship is moderated by improvements in cognition.

Methods: Two cohorts of youth (N=17) aged 17-25 were recruited from the Youth Wellness Centre to participate in a 10-week running program involving two 30-minute running sessions per week. Participants completed pre- and post-group cognitive testing, as well as self-report questionnaires through an online platform, Greenspace, at bi-weekly and monthly intervals throughout the group and up to 6-months post-group in order to measure symptoms of depression and anxiety, levels of distress, and self-esteem. As data collection is ongoing, follow-up results at 2-months post-group will be reported below.

Results: Analyses using paired t-tests showed significant improvement in: depression symptoms using the PHQ-9 (Mₐ = 3.77, SD = 6.76), t(16) = 2.30, p = .035; anxiety symptoms using the GAD-7 (Mₐ = 3.18, SD = 3.81), t(16) = 3.44, p = .003; distress using the Kessler-10 (Mₐ = 3.59, SD = 5.28), t(16) = 2.80, p = .013; and self-esteem using the Rosenberg SES (Mₐ = -2.35, SD = 4.05), t(16) = -2.40, p = .029. T-tests assessing for differences between post-group and 2-month follow up scores were not significant for all clinical measures, indicating that participants maintained their reduced symptomology for at least 2-months post-group. Analyses using paired t-tests showed no significant differences in cognitive test scores pre- and post-group, indicating no improvement on the cognitive measures over the course of the 10-week running program.

Conclusion: Overall, results support the use of exercise as an alternative transdiagnostic treatment for depression, anxiety, distress, and self-esteem. Results also demonstrate the utility of a client-facing platform that takes advantage of online and mobile technology to monitor and track clinical symptoms over time.

References:
Association between Introduction to Opioids through a Legitimate Prescription and Health and Treatment Response Outcomes in Opioid Use Disorder Patients (A completed project) 
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Rationale: Opioid use disorder (OUD) is a prevalent and serious psychiatric condition and the most common treatment used to for this is methadone maintenance treatment (MMT). Canada has witnessed a significant increase in the incidence of hospitalizations related to opioid poisoning in the past 10 years, rising to 23% and evidence suggests that there is a great increase in the number of people that begin opioid use through a physician’s prescription as they are often used to treat pain (1). Majority of the research conducted in the MMT population has been focused on heroin and street users and fails to address the cohort of patients that were exposed to opioids through a prescription. Given the high prevalence of comorbid pain in the OUD population, it is important to investigate factors that may help identify characteristics and alternative treatment options as past studies have shown that this cohort of patients is susceptible to poor treatment response (2).

Purpose: We aim to 1. compare clinical, socio-demographic and health functioning profiles between the two different cohorts and 2. investigate any sex differences among factors associated to being introduced to opioids through prescription.

Methods: Data for this study will be obtained from the GENetics of Opioid Addiction (GENOA) project. Participants are diagnosed with OUD and currently enrolled in MMT across multiple sites of Canadian Addiction Treatment Centres (CATC) in Ontario. Socio-demographic data and blood samples are collected at baseline in addition to weekly urine drug screen testing. All participants are asked about the initial exposure sources to opioids (i.e. prescription, street, family, friends, etc.). A multivariable logistic regression was done to examine both general clinical profiles and differences by sex for those introduced to opioids through a legitimate prescription versus those introduced to opioids through other means.

Results: We found that being female (OR = 1.385, 95% CI 1.027, 1.866, p = 0.033), having chronic pain (OR = 2.72, 95% CI 1.97, 3.75, p < 0.001) and older age of opioid use onset (OR = 1.05, 95% CI 1.03, 1.08, p < 0.001) were significantly associated to being introduced to opioids through prescription. In males, cannabis use decreased the odds of being introduced to opioids through prescription. In females, having a higher methadone dose was association with being introduced through prescription.

Conclusion: Source of initial opioid use may be useful in clinical practice to promote discussion about specific concerns, and recommend appropriate harm reduction strategies and important to consider when developing treatment programs as well as specific goals of care. These options may be able to significantly improve treatment outcomes and assist in tackling the growing public health crisis of increasing rates of OUD.

References
Social determinants of development of children with Autism Spectrum Disorder: A population-level study

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Rationale: Ecological factors, such as characteristics of neighbourhoods, may be the most important determinants of health of a population – highlighting the importance of examining the impact of neighbourhood socioeconomic status (SES) on the development of children with Autism Spectrum Disorder (ASD) (Pickett & Pearl, 2001).

Purpose: To examine the variance explained by neighbourhood SES in development of children with ASD across Canada.

Methods: A population-wide database of child development in kindergarten, measured with the Early Development Instrument (EDI) was used. EDI is a teacher-completed questionnaire that provides information on children’s developmental status in 5 domains: physical, social, emotional, language/cognitive, and communication/general knowledge. A score below a baseline 10th percent cut-off on any of the 5 domains indicates vulnerability. The EDI data have been merged at the neighbourhood level with SES variables from the Canadian Census, and Taxfiler data, and SES index created with a subset of 10 variables. Linear regressions were used to examine variance explained by the SES index and each of its components in overall vulnerability in a neighbourhood for each province/territory.

Results: In Ontario, 3 SES index variables (parent’s marital status, education, wealth) explain the most variance in overall vulnerability, with adjusted R² values ranging from 0.002 to 0.004. The adjusted R² value for the overall SES index score is 0.034. The analyses for remaining jurisdictions are ongoing.

Conclusion: Among children with ASD in Ontario, demographic and material components of neighbourhood SES explained the most variance in their development, although a large proportion of variance remains unexplained. The large EDI-SES linked database presents an unprecedented opportunity to examine the impact of neighbourhood SES in development of children with ASD at an aggregate level, which is not possible through sample-based research where these children are not included in sufficient numbers. Findings of this project can facilitate customized service planning according to the jurisdictional policies and needs.

References
Changes in Biological Rhythms and Mood from Pregnancy to Postpartum in Women with Comorbid Mood and Anxiety Disorders

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Background and Aims:
Although changes in sleep and biological rhythm disruptions occur as part of mood episodes and precede mood episodes (1, 2), current knowledge regarding the role of biological rhythms in mood disorders during the perinatal period is limited. Moreover, little is known about the effect of perinatal anxiety on sleep and biological rhythms. Here, we evaluated subjective and objective measures of biological rhythms and sleep in euthymic women with bipolar and major depressive disorders, with and without anxiety comorbidities during pregnancy and postpartum.

Methods:
Seventy-eight pregnant women (N=17 Mood, N=31 Mood with comorbid Anxiety, N=30 Controls) completed 15-day actigraphy and the Biological Rhythms Interview of Assessment in Neuropsychiatry (BRIAN) during the third trimester of pregnancy, between 1-3 weeks postpartum and again between 6-12 weeks postpartum. Participants also completed validated self-reported questionnaires assessing depression (Edinburgh Postnatal Depression Scale, EPDS), anxiety (Generalized Anxiety Disorder-7, GAD7), seasonality (Seasonal Pattern Assessment Questionnaire, SPAQ) and sleep (Pittsburgh Sleep Quality Index, PSQI).

Results:
During pregnancy and the postpartum period, women with a history of mood disorders and anxiety disorders had worsened subjective sleep, biological rhythms, mood and anxiety symptoms than controls. Women with a history of mood disorders had less poor subjective sleep, and mood symptoms than those with comorbid anxiety. Analysis of actigraphy data revealed differences in sleep efficiency between the groups during pregnancy. At 1-3 weeks postpartum, euthymic women with mood disorders had lower (worse) interdaily stability than the control group. At 6-12 weeks postpartum, women with mood and anxiety disorders had lower intradaily variability during weekends than controls. Finally, there were differences in light exposure during rest and sleep between women with mood disorders and women with mood and anxiety disorders (all p<0.05).

Conclusions:
In this longitudinal study, women with a history of mood disorders with anxiety disorders experienced worsened subjective sleep and biological rhythms in pregnancy and the postpartum period. Women with a history of mood disorders without comorbidities did not differ from controls in terms of depressive symptoms and sleep quality during pregnancy and 1-3 weeks postpartum. By investigating changes in sleep and biological rhythm patterns throughout the perinatal period, we hope to identify circadian rhythm parameters which can be used to predict postpartum depression onset, and to be used as targets for treatment strategies to prevent postpartum depression and anxiety.

A Pilot Study Examining the Effectiveness of the Family Connections Program for Families of Youth with Emerging Mental Disorders

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Rationale: Family Connections (FC) is a manualized, psychoeducational, skills training and support program that focuses on borderline personality disorder (BPD) specifically, and emotion dysregulation, generally, as well as family functioning (Flynn et al., 2017). FC was developed for family members of individuals with BPD and is based on Dialectical Behaviour Therapy (DBT) skills, which is an evidence-based treatment for individuals with BPD. Previous pre-post studies evaluating the effectiveness of FC have found that it is beneficial at improving family members’ self-reported scores of depression, grief, burden, and mastery. A recent non-randomized controlled study found that FC was superior at improving family members’ scores of burden and grief compared to optimized treatment-as-usual (Flynn et al., 2017; Krawitz et al., 2016). The Youth Wellness Centre (YWC) of St. Joseph’s Healthcare Hamilton (SJHH) piloted a transdiagnostic intervention, the Emotional Regulation Group (ERG), based on DBT skills for youth (ages 17-25) with emerging mental disorders. Clients entered into the ERG intervention were randomized to have their family members either complete FC or not (control group).

Purpose: To determine if the FC group was effective at improving family members’ self-reported depression, emotion dysregulation, burden and grief scores compared to no FC.

Methods: A randomized controlled trial methodology was used to randomize family members (N=24; n=12 for the FC group). The FC group consisted of 12-weeks of weekly 2-hour sessions that were led by health care professionals. Measures included: depression (Depression Anxiety and Stress Scale; DASS21); emotion dysregulation (Difficulties in Emotion Regulation Scale; DERS); burden (The Burden Assessment Scale; BAS); and grief (The Texas Grief Inventory). Measures were assessed for all study participants at baseline (pre-treatment), 12-weeks (post-treatment), and 3 months post-treatment (follow-up). Analysis: Repeated measures ANOVA.

Results: Preliminary analyses showed nonsignificant results: depression (F (2, 28) = .938, p=.40); emotion dysregulation F (1.37, 19.24) = 1.47, p=.25); burden (F (2, 28) = 1.47, p=.247); and grief (F (2, 28) = 1.55, p=.23).

Conclusion: Although nonsignificant, these findings were informative and suggest that an adequately powered sample is required in order to make conclusions about the effectiveness of FC in the future and guide practice. A feasibility and power analysis of the FC group will follow.

References:
Profiles and Predictors of Premature Discharge from an Inpatient Addictions Treatment Centre

Sabrina K. Syan, PhD¹,², Courtney Ropp, MSc³; Sarah Sousa, MSc³; Chris Ryan, MSc³; Jean Costello, PhD³; Wendi Woo, MA³; Harry Vedelago, MD³, James MacKillop, PhD¹,².

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Rationale: Premature discharge from inpatient addiction treatment programs is a major barrier for treatment success and results in severe psychosocial, medical and economic consequences. Predictive factors related to early attrition from inpatient addictions programs may help identify patient at high risk of premature discharge and allow for the development of targeted interventions to improve patient outcomes and retention.

Purpose: To investigate profiles and predictors of premature (unplanned) discharge from inpatient addictions services for the treatment of substance abuse disorders.

Methods: Initial intake assessments of 1139 (premature discharge: n=175, planned discharge: n=964) individuals admitted to an inpatient addiction medicine program at the Homewood Health Centre (Guelph, ON, Canada) were studied. Discharge information was obtained from patient charts. The presence of depressive and anxious symptoms was analyzed using the Patient Health Questionnaire (PHQ-9) and Generalized Anxiety Disorder 7-item (GAD-7) Scales, respectively. DSM-5 Symptoms of posttraumatic stress disorder (PTSD) were captured using the PTSD Checklist for DSM-5 (PCL-5). The ICD-10 Alcohol Symptom Index (ASI) provided a measure of alcohol-related severity and the Drug Use Disorders Identification Test (DUDIT) provided a measure of other substance use severity.

Results: Patients who prematurely terminated treatment spent an average of 15.48 fewer days in treatment than those who completed the program (p=5.0e-73). Patients in the premature discharge group reported greater psychopathology evidenced by higher symptoms of depression (p<0.001), anxiety (p<0.001) and PTSD (p<0.001) than the planned discharge group. Further, the premature discharge group reported higher drug use severity (p<0.001) and lower alcohol use severity (p<0.001) than the planned discharge group. A binary logistic regression analysis, using the intake variables described above indicated that only alcohol use severity (β=-0.073, p=0.003) was negatively associated and PTSD symptoms (β=0.15, p=0.02) were positively associated with premature discharge (Nagelkerke R²=0.074, p<0.001). Gender was not different between groups.

Conclusions: Data suggests that patients who prematurely withdrew from inpatient addictions services at the Homewood Health Centre entered the program with a more complex profile of psychopathology and reported greater drug use severity than alcohol use severity. Alcohol use severity and symptoms of PTSD were best associated with premature discharge and greater therapeutic support in these areas may be warranted.

References:

85. Improving the quality of psychiatry chief residents’ teaching sessions to medical students
   Alanna Courtright & Jonathan Duboff

86. The role of weight control beliefs in predicting treatment outcomes in patients with eating disorders
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Tea Rosic, Laura Duncan, Mohamed Eltorki, Michael Boyle, Roberto Sassi, Kathryn Bennett, Lawna Brotherston, Paulo Pires, Olabode Akintan & Ellen Lipman

98. The use of environmental barriers to reduce exit seeking behaviours  
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99. Pulmonary rehabilitation: Preliminary results from an 8-week outpatient program  
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100. Novel models of mental healthcare delivery for youth: The development and design of the Youth Wellness Centre, St. Joseph's Healthcare, Hamilton  
Alyssa Wang, Juliana Tobon, Peter Bieling & Lisa Jeffs

101. Treatment outcome and clinical challenges for young adults with eating disorders (work-in-progress)  
Mengran Xu, Stacy Tweed & Michele Laliberte
94. Examining the impact of perfectionism on homework compliance and CBT outcomes across anxiety disorders
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    Mengran Xu, Stacy Tweed & Michele Laliberte
Improving the Quality of Psychiatry Chief Residents’ Teaching Sessions to Medical Students

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Rationale: Medical residents in the psychiatry program are chosen as teaching chiefs for 6-month terms whose role is to provide weekly teaching sessions to McMaster University’s medical students. These sessions are conducted during the students’ 6-week core clinical psychiatry block and were created as a means for near-peers to deliver applicable information and review practical skills.

Purpose: To optimize the resident teaching sessions by examining the medical students’ perspectives of how the sessions were conducted and by relaying this information to future teaching chiefs.

Methods: A student evaluation of teaching (SET) tool was created to collect information about the students’ satisfaction with the course and their perceptions about the quality of the teaching (Oermann et al., 2018) and it was first administered upon completion of the medical student cohort from March 29 – April 26, 2017. The information gathered from the SET data was then reviewed and changes were applied to the next medical student cohort (from May 8 – June 18, 2017). The SET was then provided to the second medical student cohort upon completion of the course in order to compare the first cohort’s teaching experience to the second cohort’s with the alterations in place. The information gathered from the two iterations of SET questionnaires was then communicated to the incoming teaching chiefs.

Results: There were 17 completed SET questionnaires after the first cohort, which acknowledged that 16 students found the topics of the sessions to be useful but had suggestions regarding the order that the sessions were delivered, 6 students wanted the sessions to be more interactive, and 3 students wanted supplemental material to be provided. This feedback was then integrated into the teaching sessions for the second cohort, specifically changing the higher prioritized topics to be earlier in the course, integrating interactive multiple-choice questions and anecdotal cases into the sessions, and emailing supplemental readings after the individual sessions. After completion of the second cohort, 17 SET questionnaires were completed which stated that 14 students found benefits in the topic choices, nobody raised concerns about the order of the topic sessions, 7 students specifically commented on enjoying the interactivity, and 3 students remarked they found the supplemental readings to be helpful.

Conclusion: The SET tool allowed the psychiatry resident teaching chiefs to gather a sense as to what is helpful for teaching medical students and what could be improved upon. This information was then utilized and applied to a second cohort who demonstrated benefits from the alterations and provided more suggestions for future sessions. These insights were then passed on to the incoming teaching chiefs in order to allow continued quality improvement.

References:

The Role of Weight Control Beliefs in Predicting Treatment Outcomes in Patients with Eating Disorders

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\textbf{Rationale:} Cognitive Behavioural Therapy (CBT) supports a “non-dieting” approach to treating eating disorders, advocating normalized eating for all patients regardless of their Body Mass Index (BMI). Normalized eating is described as eating at regular time intervals throughout the day and eating balanced meals without the avoidance of any foods (Fairburn, 2013). Despite being a key factor in eliminating binge eating, normalized eating is associated with very little weight change in patients with Bulimia Nervosa or Binge Eating Disorder, even if these patients have a higher body weight (Fairburn et al., 1991). Beliefs underlying weight control (“weight can and should be controlled”) has been associated with disturbed eating, body dissatisfaction, and low self-esteem in a non-clinical sample of females (Laliberte, Newton, McCabe, & Mills, 2007). In contrast, beliefs underlying non-dieting (“strive for a healthy lifestyle and accept one’s natural weight”) showed a strong protective relationship from eating pathology in the same sample. Thus, weight control beliefs are considered important targets for eating disorder interventions and shifts in these beliefs may predict the degree to which patients will recover from their eating disorder in response to treatment.

\textbf{Purpose:} The current study seeks to address two research questions: 1) how effective is CBT at reducing a belief in controlling weight and enhancing a belief in controlling lifestyle in patients with eating disorders? and 2) does a shift in these beliefs predict treatment outcomes?

\textbf{Methods:} The current study will use the retrospective data from a group of 187 eating disordered patients (diagnoses of Anorexia Nervosa, Bulimia Nervosa, Other Specified Feeding and Eating Disorders) who completed a 20-week CBT outpatient group at the St. Joseph’s Eating Disorders Program. To address the first research question, paired sample t-tests will examine pre- to post-treatment changes in the two subscales of Weight Control Beliefs Questionnaire (WCBQ): BCWeight, which assesses the belief that one should control one’s weight, and BCLifestyle, which measures the belief that one should control one’s lifestyle and accept the resulting weight. To answer the second research question, multivariate regression models will be conducted. In this model, the independent variables will be pre-post changes in BCWeight and BCLifestyle and the dependent variables will include the Drive for Thinness, Bulimia, and Body Dissatisfaction subscales of the Eating Disorder Inventory (EDI; Garner, Garner, Olmsted, & Polivy, 1983). Pre-treatment WCBQ scores will be controlled for.

\textbf{Implications:} Eating disorders are notoriously difficult to treat, with high relapse and readmission rates. Findings from the current study will offer some further insight into the extent to which changing weight control beliefs can facilitate positive treatment outcomes for patients suffering from these psychiatric conditions.

Rates of long acting injectable antipsychotic use in patients followed by a community based early psychosis intervention clinic

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**Rationale:** Historically, Long acting injectable (LAI) antipsychotics have been used primarily for patients with chronic schizophrenia that suffer from repeated relapses due to medication non-adherence. However, recent studies have demonstrated potential clinical superiority for LAIs over traditional oral agents in patients with early schizophrenia\(^1\). Additionally, Health Quality Ontario, a provincial advisor on health care, recommends that all patients with a diagnosis of schizophrenia be offered an LAI. Despite this, many psychiatrists still have negative views regarding LAIs and believe that patients with early psychosis are not eligible for this formulation\(^2\).

The Niagara Health System operates an Early Psychosis Intervention (EPI) clinic based in Thorold, Ontario, which currently provides care to approximately 90 individuals. Standard practice is to have an informed discussion with each patient regarding LAI use early on in their treatment. The following study will look at how this practice affects LAI prescription rates.

**Purpose:** To examine rates of LAI use in a community EPI setting where patients are frequently offered LAI prescriptions early in their treatment. This project will also examine outcomes associated with LAI use including social functioning (employment, enrolment in school), as well as PHQ-9 and Psychosis Rating Scale scores.

**Methods:** A retrospective chart review will be performed to examine current and lifetime rates of LAI prescription in patients enrolled at the Thorold EPI clinic. Records for approximately 90 patients are available. Each chart contains comprehensive information regarding prescription history, functional inquiries, PHQ-9 and Psychosis Rating Scale scores. The charts also contain comprehensive past psychiatric history, past medical history and social history documentation for each patient.

**Note:** This is a planned study, and as such, results and conclusions are not available at the moment but will be presented at the research day.

**References:**

Are Motivational Factors Associated with Clinical Features of Youth Seeking Treatment for Emerging Mental Health Concerns?

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\textbf{Rationale}: Much of the literature on early intervention in mental illness has focused on the development of treatments to optimize outcomes for individuals with emerging mental health concerns. Nevertheless, service disengagement represents a barrier to timely and effective treatment for youth who may lack the motivation to engage with services in a consistent and sustained manner.

\textbf{Purpose}: Limited research has examined readiness to change in youth seeking psychological treatment (Merrill et al., 2017). The goal of the present study was to examine whether motivational factors are associated with the clinical status of help-seeking youth.

\textbf{Methods}: Participants ($N = 114$) were drawn from a database of consecutive referrals who completed a set of screeners at the Youth Wellness Centre, a specialized mental health clinic for youth (ages 17-25) at St. Joseph’s Hospital, Hamilton. Subscales of the University of Rhode Island Change Assessment (URICA; McConnaughy, Prochaska & Velicer, 1983) were used to create two composite measures of motivation: readiness to change (RTC) and committed action (CA). Demographic and clinical correlates of RTC and CA were examined.

\textbf{Results}: There was no association between motivational factors and age, gender, and referral source. Youth with a family physician reported lower RTC compared to youth without ($p = .02$). Lower CA was associated with higher psychological distress, emotion dysregulation, and internalizing symptoms, while higher RTC was only associated with higher externalizing symptoms ($p < .05$). Additionally, a trend level relationship emerged between lower CA and higher suicidal ideation ($p = .06$).

\textbf{Conclusions}: Motivational readiness, specifically CA, shows greater associations with clinical features of youth who present an at early intervention clinic compared to RTC, yet it is unclear whether this translates to following through with service engagement. Additional analyses will explore the predictive validity of RTC versus CA on service utilization and treatment outcomes to determine whether CA reflects a potentially important mechanism of change in the treatment of youth.

\textbf{References}


Rationale: Borderline personality disorder (BPD) symptomatology has been associated with lower levels of trait mindfulness (Baer, Smith, & Allen, 2004; Wupperman, Neumann, & Axelrod, 2008). Mindfulness skills training is an important component of dialectical behaviour therapy (DBT; Linehan, 1993), which as a whole has been shown to be effective in treating BPD (Lynch, Chapman, Rosenthal, Kuo, & Linehan, 2006). It has been theorized that mindfulness skills training may lead to decreases in BPD symptomatology via decreases in emotion dysregulation (Lynch, et. al., 2006). Further empirical support for this potential pathway is needed.

Purpose: To investigate the relationship between trait mindfulness and BPD symptomatology in an outpatient sample, and to identify whether this relationship is mediated by severity of emotion dysregulation.

Methods: Clients with a diagnosis of BPD who are taking part in outpatient DBT at St. Joseph’s Healthcare Hamilton are eligible to participate in this study. Data collection is currently underway. To assess trait mindfulness skills, clients complete the Kentucky Inventory of Mindfulness Skills (KIMS; Baer, Smith, & Allen, 2004) which assesses 4 types of mindfulness skills: observing, describing, acting with awareness, and accepting without judgment. Clients are also asked to complete a measure of emotion dysregulation (the Difficulties in Emotion Regulation Scale, or DERS; Gratz & Roemer, 2004), and a measure of borderline personality disorder symptoms (the Borderline Symptom List – 23 item version, or BSL-23; Bohus et. al., 2009). Clients complete all 3 questionnaires when they join their DBT skills group.

Results: Baseline data have been collected from 13 clients. Preliminary correlational analyses suggest that, at baseline, higher levels of BPD symptoms are related to lower levels of the ‘acting with awareness’ (r = -.66, p<.05) and ‘accepting without judgement’ (r = -.61, p<.05) mindfulness skills. Interestingly, higher levels of BPD symptoms appear to be related to higher levels of the ‘observing’ mindfulness skill (r = .67, p<.05). Mediation analyses have not yet been performed, given the current sample size.

Conclusion: The current study aims to investigate whether the relationship between trait mindfulness and BPD symptomatology is mediated by emotion dysregulation, as a first step toward understanding how and why DBT mindfulness skills are effective in decreasing BPD symptom severity. Preliminary analyses generally support prior research which found that BPD symptomatology relates to lower levels of trait mindfulness, although these results should be interpreted with caution as data collection is ongoing.

References
Employing continuous quality improvement in psychiatric emergency services disposition planning

Ashley Johnson and Janet Song
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Rationale: There is a need for continuous quality improvement (CQI) in the psychiatric emergency services setting. CQI is an important philosophy which involves ongoing evaluation and modification to improve quality (Chowanec, 1994). The plan-do-study-act (PDSA) is an established four-step systematic model for carrying out change and improvement in many settings including clinical settings (Institute for Healthcare Improvement, 2018).

Purpose: The PDSA model was used to improve disposition planning in the Psychiatric Emergency Services (PES) department.

Methods: One cycle of the PDSA model was utilized with the agenda of quality improvement. Opportunities for change were identified through small focus groups and one-on-one interviews with key stakeholders in the PES department (i.e. residents, nurses, social worker). The focus groups and interviews informed a plan of action which involved community and hospital resource information gathering and a centralized allocation of resource information for disposition planning. A centralized document containing resource information was made available to PES staff. After three weeks of availability, focus groups and one-on-one interviews were performed again to assess the usefulness of this resource tool in improving disposition planning out of PES.

Results: A conceptualized framework of community and hospital resource information was developed to improve the efficiency and proficiency of disposition planning out of PES.

Conclusion: The success of quality improvement in PES relied on the communication and openness for change within a multidisciplinary team. The PDSA model for change is favoured in this setting due to its ease of implementation and re-iterative process. Due to the re-iterative nature, there is hope for further improvements in developing tools and building on the current framework to improve the disposition planning process.

References:
Predicting Treatment Outcome of Electroconvulsive Therapy for Depression

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Rationale: Electroconvulsive therapy (ECT) is a widely used treatment for depression. Bilateral (BL) ECT is moderately more effective than right unilateral (RUL) ECT, but BL treatment is associated with more severe cognitive side effects than RUL treatment (Carney et al., 2003). At St. Joseph’s Healthcare Hamilton, the most common clinical practice is to provide patients with BL ECT, but RUL may be provided or substituted when the higher risk of cognitive effects is considered to outweigh the potential benefits.

Purpose: This study aimed to 1) identify factors that predict the proportion of BL vs. RUL ECT and 2) to examine the role of baseline factors and the proportion of BL ECT in predicting treatment outcome in ECT for depression.

Methods: The current study included patients who received ECT at the ECT Clinic at St. Joseph’s Healthcare Hamilton from 2010-2016 and consented to have their de-identified data included in the ECT Mood and Cognition Database. Diagnosis of depression was confirmed by structured diagnostic interview. Patients underwent psychological and cognitive assessment at baseline pre-ECT, 4th session of ECT, 2-4 weeks post-ECT, and at 6 and 12 months follow-up. The current study examined data from pre-ECT and 2-4 weeks post-ECT. Both pre- and post-ECT assessments included measures of general cognition, subjective memory impairment, general disability, depressive symptoms (Beck Depression Inventory-II; BDI-II), and general psychopathology. The pre-ECT testing also included an estimate of premorbid general intellect and a verbal memory measure. We hypothesized that decrease in objective cognitive testing would predict a lower proportion of bilateral ECT and that higher proportions of bilateral ECT would predict optimal improvements in depressive symptoms from pre- to post-ECT.

Results: This study included 53 participants (39 women, mean age=49.08). BDI-II scores decreased from pre- to post-ECT (38.51 vs 23.08, p<0.001), but only 43.4% of participants were classified as 'responders' and had BDI-II scores decrease by over 50%. Responders had a higher proportion of BL ECT (p=0.006) and significantly fewer ECT sessions (p=0.014) than non-responders. The linear regression predicting the proportion of BL ECT (F(3,43)=3.29, p=0.03) showed that worsened subjective memory from pre- to post-ECT predicted a lower proportion of BL ECT, but premorbid IQ and change in general cognition from pre- to post-ECT were not significant predictors. A separate linear regression was conducted to determine the extent to which the proportion of BL ECT and baseline data could predict treatment response (post-ECT BDI-II scores) while controlling for depressive symptoms at baseline. Results show that lower proportion of BL ECT and lower baseline anxiety and suicide risk scores predicted a greater decrease in depressive symptoms from pre- to post-ECT (F(8,44)=2.65, p=0.02).

Conclusion: This study suggests that subjective - but not objective - memory declines predict greater use of right unilateral ECT in this naturalistic sample. In contrast to previous research, lower proportions of bilateral ECT predicted greater improvement in depressive symptoms. Lower levels of baseline anxiety and suicide risk were also associated with greater reduction in depression. These results are limited by the small sample size, high proportion of female participants, and lack of randomization in the assignment of bilateral vs. right unilateral ECT.

TITLE: Reading Between the Lines: What do Psychiatry Learners Tell us About Educator Effectiveness?

Authors: Sheila Harms¹, MD, FRCPC, Bryce J. M. Bogie², BSc (Honours), MSc Student, Anne Lizius¹, MD, PGY3, Karen Saperson¹, MBChB, FRCPC, Susan Jack³, PhD, Meghan M. McConnell⁴, PhD

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Purpose: The shift in postgraduate medical training towards a competency-based framework has focused on the competencies of medical educators, in addition to learners. Research has identified traits of good educators, but these findings do not consider the clinical context. This study examined narrative comments in Psychiatry faculty evaluations to understand educator effectiveness and compared findings with existing literature.

Methodology: Data consisted of McMaster University Psychiatry faculty evaluations completed in 2015-2016 by postgraduate and undergraduate learners (N=268) in clinical and didactic settings. Descriptive qualitative methods were applied to faculty evaluation comments by three independent reviewers to answer the question: What do learners in Psychiatry tell us about educator effectiveness? Saturation of themes was achieved prior to completion of coding.

Results: Qualitative analysis revealed four major themes and two sub-themes. Effective psychiatry educators demonstrated specific personal characteristics, which aligned with previous frameworks [1, 2]. Data revealed novel themes, including the importance of relationships and affective factors, including learner security and inspiration through role modeling, which transcended the importance of medical expertise. Effective educators embodied pedagogy in a way that moderated learning barriers.

Conclusion: Medical expertise and educator-learner relationships continue to be important. Discussions of educator effectiveness in Psychiatry have thus far excluded the dynamic, relational, and affective components of the educational exchange highlighted in the current study. This may be an important focus for future educational research.

References:

Facing Fear: Improving the Identification of Anxiety Symptoms and Anxiety Disorders Among Children and Adolescents in Primary Care

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**Rationale:** Children and adolescents experiencing significant anxious symptomatology typically make first contact with the health care system by way of their primary care physician (PCP); however, screening for pediatric anxiety disorders is not typically performed as part of routine primary care (Wren et al., 2007). If pediatric anxiety disorders are left untreated, they can result in a number of negative physical and mental health outcomes, including co-morbid depression and increased suicidal ideation, which may persist into adulthood and contribute to long-term functional impairment.

**Purpose:** To review current, evidence-based literature examining the screening and identification of anxiety symptoms among school-aged children and adolescents presenting to primary care physicians (PCPs).

**Methods:** A thorough review of major health databases was conducted over a six-month period using a fixed pool of MeSH terms. All abstracts were screened for relevancy by a two-member academic panel using predetermined inclusion and exclusion criteria prior to being included in the study. Due to the heterogeneity of the available studies, data could not be pooled using meta-analytic methods. As such, the findings of the included studies were synthesized using a qualitative approach.

**Results:** The literature search identified 824 unique abstracts. Initially, 29 abstracts were assessed to meet study cutoffs; of these abstracts, 6 non-experimental studies with a cumulative population of 1114 pediatric outpatients were included in the final review. All of the studies supported the use of a multimodal, multi-informant approach when screening for pediatric anxiety disorders; however, results from 3 cross-sectional studies suggested that parental reports may provide a more accurate characterization of anxious symptomatology in certain patient groups. There was a small amount of level 3 evidence suggesting that demographic and situational factors influence the presentation of pediatric anxiety disorders. Patient age, gender, level of ego development, medical co-morbidities, and level of familial conflict were implicated as potential variables affecting symptom expression, patient reporting, and multi-informant agreement.

**Conclusion:** There is a paucity of rigorous evidence-based data to guide PCPs in the screening and identification of anxiety disorders among school-aged children and adolescents. This limitation has implications for timely referral for diagnostic assessment and subsequent management of pediatric patients with anxious symptomatology (Wren et al., 2007).

**References:**

Examining the Impact of Perfectionism on Homework Compliance and CBT Outcomes Across Anxiety Disorders

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Rationale: Perfectionism is elevated in Social Anxiety Disorder (SAD) relative to healthy controls, and to a lesser extent in Obsessive-Compulsive Disorder (OCD) and Panic Disorder with or without Agoraphobia (PDA; Wheeler, Blankstein, Antony, McCabe, & Bieling, 2011). Cognitive-behavioural therapy (CBT), and particularly the use of exposure techniques, leads to symptom improvement in anxiety disorders. Recent research has shown that pre-treatment perfectionism levels are associated with increased skill use during early sessions of CBT for SAD, but reduced skill use in later sessions (Hawley, Rector, & Laposa, 2016). The relationship between pre-treatment perfectionism, homework completion, and treatment outcomes has yet to be investigated in other disorder-specific CBT groups.

Purpose: To examine associations between perfectionism, homework completion, and treatment outcome in anxiety disorders.

Methods: Participants were approximately 200 patients at the Anxiety Treatment and Research Clinic, St. Joseph’s Healthcare Hamilton, who were enrolled in group CBT for SAD, OCD, PDA, and Generalized Anxiety Disorder. Participants completed measures of symptom severity and perfectionism pre- and post-treatment. Participants also completed weekly questionnaires assessing amount of homework completed and effort put into homework.

Results: Data analysis is ongoing. Based on previous research, it is expected that higher perfectionism levels will be associated with poorer treatment outcome and higher attrition across groups. The relationship between perfectionism and treatment outcomes is expected to be mediated by lower homework completion. A Reliable Change Index (RCI) score will be used as a standardized outcome measure across groups. Correlations between the pre-treatment perfectionism measures and RCI scores will be used to assess the relationships between perfectionism, homework completion, attrition from group CBT and treatment outcomes. Regression analyses will be run to test the effect of perfectionism as a possible moderator of treatment outcome, and mediation analyses will examine homework completion as a possible mediator of treatment outcome.

Conclusion: The results of study will provide insight into the role that perfectionism plays in CBT outcomes across anxiety disorders. These findings may provide a rationale for treating perfectionism directly in addition to disorder-specific interventions to improve CBT outcomes.

References
Optimizing Videoconferencing in Academic Seminars
Quality Improvement Project
Dr. Kurt Moyst, B.Mus., M.D.
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Rationale: All resident core academic seminars in the McMaster Psychiatry Department are held at the McMaster West 5th Campus in Hamilton. Psychiatry residents from the Waterloo Regional Campus join these seminars via videoconferencing. It has been recognized by residents, facilitators and faculty that the videoconferencing implementation has been problematic and that this must be addressed to optimize resident experience.

Purpose: To identify specific problems which have obstructed effective implementation and formulate an actionable plan to optimize the resident academic experience. To determine if use of traditional QI methods is an effective approach to achieve this aim.

Methods: Traditional quality improvement methods and tools were used: change concept, brainstorming, affinity diagram and PDSA cycle.

Results: Problems identified include hearing / viewing and contributing for the WRC residents, lack of awareness of facilitators on how to contribute to optimizing each session, inadequate available of technical support and technical issues with setup.

Changes Implemented: A videoconferencing software was chosen which allowed necessary flexibility to address problems. Documents were created for residents, facilitators and faculty to standardize process of preparation for sessions, arrangement of room, setup of equipment, use of software and site-to-site interaction protocol.

Changes Planned: Test the setup instructions on a single cohort, review and finalize documents and provide training sessions for residents and administrators prior to launch.

Conclusion: Use of quality improvement methods and tools were helpful in concretizing this vaguely defined problem and to formulate a focused and actionable plan.

References
TITLE: Navigating the Labyrinth: Improving Psychiatry Residents’ Knowledge of Outpatient Mental Health & Addiction Services

Authors: Sarah Payne, MD, PGY3, and Anne Lizius1, MD, PGY3
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Purpose: The emergency department can often be a point of access to services for individuals presenting with mental health and addiction concerns. Given the vast number of mental health and addiction services available within the Hamilton-Niagara-Haldimand-Brant (HNHB) LHIN, referral to the most appropriate community-based supports from the emergency department can often be challenging. This quality improvement project aimed at identifying the mental health and addiction services offered through the HNHB LHIN that receive the fewest referrals from residents and staff working in Psychiatric Emergency Services (PES) at St. Joseph’s Healthcare Hamilton. Once under-utilized services were identified, the need for providers to have more information on these services was assessed and an educational initiative was created in order to address this identified need with the goal of improving use of community-based mental health resources.

Methodology: Data were collected on the referral pathways to community-based mental health and addiction services within a 30-day period from patients assessed through PES. Referral patterns were analyzed based on clinician role and level of training, and services that received fewer referrals were identified. PES staff and psychiatry residents were then surveyed to determine level of knowledge regarding these services. Based on the results of this survey, an informational handout describing these services was circulated to psychiatry residents. Residents’ perceived level of knowledge about these services was assessed and an educational initiative was created in order to address the identified need with the goal of improving use of community-based mental health resources.

Results: While the majority of patients are referred to community-based primary services, there are a number of primary services that are less often utilized. These include Youth Wellness Centre, Community Addiction and Mental Health Services of Haldimand and Norfolk (CAMHS), West Lincoln Mental Health, and St. Leonard’s Community Services. Residents self-identified lower levels of knowledge about the latter 3 primary services and these services were targeted in the informational handout distributed to psychiatry residents.

Conclusion: Given the immense number of mental health and addiction services offered through the HNHB LHIN, it is difficult for residents in training to have a complete understanding of each outpatient service. In order to support psychiatry residents in making the most appropriate referrals from PES, residents would benefit from ongoing discourse pertaining to outpatient mental health and addiction services with the goal of improving system efficiency and continuity of patient care.

References:
Repeat mental health visits to the pediatric emergency department: McMaster Children’s Hospital

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Rationale: Pediatric mental health (MH) emergency department (ED) visits are rising rapidly in Canada, while visits for other reasons plateau or decrease [1,2]. Repeat visits represent more than 30% of all MH-related visits annually [2], therefore understanding predictors of representation is important for addressing this growing healthcare concern. Existing literature has demonstrated associations between repeat visits and older patient age, female sex, lower socioeconomic status, and mood and psychotic disorder diagnoses. Repeat MH visits to McMaster Children’s Hospital ED have not previously been explored.

Purpose: To examine the association between demographic, clinical, and systems level factors and repeat visits to the ED for a MH concern within 7 days and 30 days of prior presentation.

Methods: This is a retrospective cohort study of more than 2,288 unique patients presenting to the McMaster Children’s Hospital ED for a mental health concern between February 2013 and March 2016. Using multinomial logistic regression analysis, we examined the association between demographic and clinical factors and repeat presentation to the ED within 7 days and within 30 days of prior presentation. Demographic and clinical factors examined include age, sex, diagnosis, consulting service, time and day of week of visit, and disposition. Secondary analysis will be done to examine the association between patient neighborhood (by postal code) and repeat visits. These study methods will be repeated on a larger sample of patients presenting between February 2013 and February 2018 once data become available.

Results: Repeat MH visit to the ED within 7 days occurred in 17.31% of all visits (n = 396) and were made by 231 unique patients. Repeat MH visit within 30 days occurred in 40.03% of visits (n = 916), and were made by 432 unique patients. Preliminary analysis did not reveal statistically significant associations between age, sex, psychiatric consultation, or triage chief complaint but further analysis will be done on a larger sample when the data is available to further examine these factors.

Conclusion: This study allows us to better understand the prevalence of repeat MH visits to the McMaster Children’s ED, something that has not been previously explored at our centre. Further, this study allows us to examine risk factors for repeat mental health visits to the ED, which may inform interventions targeted at reducing MH ED visits.

References:
1. Canadian Institute for Health Information. Care for Children and Youth With Mental Disorders. Ottawa, ON: CIHI; 2015.
The Use of Environmental Barriers to Reduce Exit Seeking Behaviours

Elliot Stansfield M.D. McMaster University.

Purpose: In Geriatric Psychiatry units, exit-seeking behaviour among patients is a common scenario that can be a source of distress for patients and lead to agitation and situations of decreased safety for patients and staff. Within the literature, the use of different environmental mechanisms have been implemented to lower exit seeking behaviour.

Content: After review of the relevant literature, a black floor mat was chosen for placement in front of the exit doors of an inpatient geriatric psychiatry unit at a regional tertiary unit. In contrast to other options, this method was chosen for its lack of expense and logistical barriers to implementation. The implementation of the floor mat constructed in the framework of a continuous quality improvement project.

Methodology: Prior to the floor mat being placed, an observer sitting out of the direct line of vision made four 45 minute observations through a hallway mirror, keeping track of the number of exit seeking attempts with a specific criteria for what qualified as a single attempt. The measurements were completed at two different times of day to try to account for variances from program scheduling on the unit. Following initial observations the black floor mat was placed in front of the exit doors, and an additional four observations were made at the same times of day by the same observer.

Results: From a continuous quality improvement framework, the black mat was shown to improve exit-seeking behaviour and was a favourable option given its inexpense and lack of barriers to implementation in the hospital setting. On this individual unit, the black mat seemed to be more effective among some individuals over others. Beyond the quality improvement goals, a brief analysis of pre and post-test results showed significant to the reduction of exit-seeking attempts.

Reference:

Tilley, J. (2015). Responding to the Wandering and Exit-seeking Behaviors of People with Dementia (Rep.)
Pulmonary Rehabilitation: Preliminary Results from an 8-Week Outpatient Program

Tyler G. Tulloch¹,2; Joseph R. Pellizzari¹,3; Joshua Wald¹,4; Diana Hatzoglou¹; Stewart O. Pugsley¹,4,5; Natya Raghavan¹,4,5; Fatima Foster¹; Ramya Bakaraju¹; Nadina Cowburn¹

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Rationale: Chronic obstructive pulmonary disease (COPD) is characterized by progressive airflow limitation, and symptoms include chronic cough, sputum production, and dyspnea. Anxiety and depression are prevalent in COPD, and lead to poorer prognosis, including greater risk of functional impairment and disease exacerbation. Recommended management of COPD and restrictive lung disease includes pulmonary rehabilitation to improve physical and psychological functioning and increase adherence to healthy behaviours (Vogelmeier et al.).

Purpose: To examine the effects of an 8-week outpatient pulmonary rehabilitation program on physical and psychological outcomes.

Method: 76 adults with COPD (n = 56) or a restrictive lung disease (n = 20) participated in a multidisciplinary pulmonary rehabilitation program. Participants attended breathing, education, and exercise classes three days/week for 8 weeks. At both admission and discharge, lung capacity, breathlessness, exercise tolerance, occupational performance, quality of life (QoL), and psychological outcomes such as depression, anxiety, breathlessness catastrophizing, activity avoidance, and body focus were assessed using objective and self-report measures.

Results: 55 participants completed the 8-week program, representing an attrition rate of 28%. Relative to completers, non-completers had greater breathlessness, p < .05, and fatigue, p < .01, and lower dyspnea-related QoL, p < .05. The program resulted in improvements in several outcomes, including large effect sizes for self-reported occupational performance, p < .001, d = 1.34, and performance satisfaction, p < .001, d = 1.16. Medium effect sizes were observed for lower extremity strength, p < .001, d = .70, fatigue-related QoL, p < .001, d = .58, emotional function-related QoL, p < .001, d = .66, mastery-related QoL, p < .001, d = .74, depression, p < .001, d = .70, breathlessness catastrophizing, p < .001, d = .73, activity avoidance, p < .01, d = .56, and body focus, p < .001, d = .68. Small effect sizes were observed for breathlessness, p < .05, d = .30, anxiety, p < .01, d = .47, dyspnea-related QoL, p < .05, d = .37, and exercise tolerance, p < .01, d = .49.

Conclusion: This multidisciplinary outpatient pulmonary rehabilitation program improved daily living performance and satisfaction, physical strength, exercise tolerance, depression, anxiety, breathlessness catastrophizing, activity avoidance, body focus, and quality of life. Targeting depression, anxiety, and other psychological outcomes may increase the efficacy of pulmonary rehabilitation as participants learn to manage emotional distress in more adaptive ways, further reducing functional impairment and risk of COPD exacerbation.

References
Title: Novel Models of Mental Healthcare Delivery for Youth: The Development and Design of the Youth Wellness Centre, St. Joseph’s Healthcare, Hamilton

Authors: Alyssa Wang, MB BCh BAO, PGY-3 Psychiatry Resident\textsuperscript{1}; Juliana Tobon, PhD, CPsych\textsuperscript{1,2}; Peter Bieling, PhD, CPsych\textsuperscript{1,2}; Lisa Jeffs, Med\textsuperscript{2}
\textsuperscript{1}Department of Psychiatry and Behavioural Neurosciences, McMaster University
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Purpose: This paper aims to provide background on the local mental health needs for youth and how pre-existing service gaps identified informed the development of the Youth Wellness Centre (YWC). It will also provide an overview of services offered and client flow, and a demographic overview of the client population. Ultimately, we hope to share this information with other groups/stakeholders who are interested in developing youth-friendly models for delivery of mental health services to a diverse group of clients.

Introduction: The majority of mental illnesses develop during adolescent and early adult years.\textsuperscript{1,2} Models of care focusing on early detection and intervention have been growing in the past decade.\textsuperscript{1,2} International centres of expertise for youth-centred models of mental healthcare include Australia and the UK. Canada has also seen a number of new developments in service delivery in this area, one of which is the Youth Wellness Centre, located in Hamilton, Ontario.

Methods: A review of current models of youth-centred mental health services internationally, nationally, and provincially will be completed to provide context for the development of YWC services. Next, a review of the evolution of development of the YWC will be completed with input from early developers of the service. Finally, using existing client databases, including Client Activity Tracking System (CATS), REDCap, Global Appraisal of Individual Needs (GAIN-Q3) and the Ontario Perception of Care questionnaire (OPOC) from the standard intake process, information will be gathered and tabulated to inform us on current client characteristics.

Results: Results from information gathered about the design and history of the YWC will be presented in narrative form. We will discuss current streams of care, intake processes, available services, staffing model, and community partners. We will present observations and trends gleaned from basic demographic information of the clinic, prior mental health contact, severity and types of presentations, socioeconomic markers, and level of engagement with our services.

Discussion: We will briefly review current means of obtaining feedback for ongoing quality improvement of YWC services, including some outcome measures.

Conclusion: We will present a discussion of current and upcoming projects within the YWC that have been developed in response to feedback gathered from client questionnaires. Some of these projects include: a new intake process triaged based on readiness and use of a telephone suicide screen based on intake data.

References:
Treatment Outcome and Clinical Challenges for Young Adults with Eating Disorders
(work-in-progress)
Mengran Xu; Stacey Tweed; and Michele Laliberte
Eating Disorders Program, St. Joseph’s Healthcare Hamilton

Rationale: Eating disorders are particularly popular in young adults, affecting up to 13% young females (Stice, Marti, & Rohde, 2013) and typically have their onset around the age of 20 (Allen, Byrne, Oddy, & Crosby, 2013). There is a body of research demonstrating that young adults with eating disorders were more severe in their symptomology (Ackard, Richter, Egan, & Cronemeyer, 2014) and had poorer treatment outcome (Welch, Birgegard, Parling, & Ghaderi, 2011).

Purpose: To examine if there are significant differences between younger and older adults in their responses to eating disorder treatment at an out-patient clinic, including remission, attendance, and a variety of eating disorder symptoms.

Methods: Data were collected from 696 individuals who were diagnosed with an eating disorder (e.g., anorexia nervosa, bulimia nervosa, or binge eating disorder) and attended a 25-week CBT group through the Eating Disorders Program at St. Joseph’s Healthcare Hamilton. Participants completed demographic questionnaires prior to the start of their treatment. Participants also completed measures of eating disorder symptoms (e.g., frequency and severity of restricting, binge eating, purging, weighing, and exercising) both before and after treatment. Furthermore, we included patients’ attendance and clinicians’ evaluation of patients’ recovery in our analyses. We divided our sample into two age cohorts (below or above age 25) and compared their treatment outcome using one-way ANOVAs.

Results: Preliminary analyses revealed that young adults were less consistent in their treatment attendance and had a higher drop-out rate than their older counterparts. In addition, young adults appeared to retain more eating disorder symptoms at the end of treatment and had a lower chance of remission from their eating disorders.

Conclusion: Our results suggest that young adults with eating disorders respond more poorly to a group-based CBT treatment offered at an out-patient clinic. However, given the limitations of the current study (e.g., significant missing data, lack of consistency across clinicians in their evaluation of patient progress, errors in archived data), more research is needed to confirm these findings and further explore the mediating mechanism(s) of poorer outcomes in young adults with eating disorders.

References:
102. Childhood trauma and incidence of suicide risk in an outpatient sample of subjects with major depressive disorder
Taiane de Azevedo Cardoso, Thaise Campos Mondin, Fernanda Pedrotti Moreira, Karen Jansen, Luciano Dias de Mattos Souza, Ricardo Azevedo da Silva & Flávio Kapczinski

103. Linking shyness, frontal brain activity, and preoperative anxiety in children undergoing surgery (a study in progress)
Cheryl H.T. Chow, Richard Y. Xu, Kristie L. Poole, Ryan J. Van Lieshout, Norman Buckley, Graeme Moffat & Louis A. Schmidt

104. Applying machine learning algorithms to improve the management of suicide ideation
Sinisa Colic, J.D. Richardson, James P. Reilly & Gary M. Hasey

105. Family income, neighbourhood disadvantage, and children's trajectories of emotional and behavioural problems (a study in progress)
Jinette Comeau, Kathy Georgiades, Laura Duncan, Li Wang & Michael H. Boyle

106. Understanding caregivers' readiness for involvement in autism care (study in progress)
Stephen J. Gentles, Linda Nguyen & Stelios Georgiades

107. Cannabis coping motives affects the relationship between psychopathology and cannabis use disorder severity: Findings from the McMaster PATH registry
Candice Graydon, Alex Lee, Jessica Gillard, Emily Vanderhei, Justin Scherer, Randy Ramdial, Allan Fein, Jane DeJesus, Iris M. Balodis & James MacKillop

108. Immunosuppression modulates central pathology in the 3xTg-AD mouse model
Minesh Kapadia, M.F. Mian, Bernadeta Michalski, David Morgan, Iva Zovkic, Paul Forsythe, Boris Sakic & Margaret Fahnstock

109. The role of sleep quality and physical activity in the association between screen time and mental disorders in adolescents
Soyeon Kim, Lindsay Favotto, Jillian Halladay, Michael Boyle & Kathy Georgiades

110. Temperament mediates the relationship between symptom severity and adaptive functioning in school-aged children with autism spectrum disorder
Vivian Lee, Eric Duku, Lonnie Zwaigenbaum, Terry Bennett, Peter Szatmari, Stelios Georgiades & the Pathways in ASD Team
111. Number of children missed or over-identified by child maltreatment screening tools: An update of a systematic review
   Jill McTavish, Andrea Gonzalez, Jennifer C.D. MacGregor, Chris McKee, Nancy Santesso & Harriet MacMillan

112. Effects of acute stress in binge eating disorder (BED): A review
   Katherine R. Naish, Michele Laliberte, James MacKillop & Iris M. Balodis

113. EGR3 immediate early gene in bipolar disorder: An in vitro study for validation of bioinformatics findings (a study in progress)
   Bianca Pfaffenseller, Bianca Wollenhaupt-Aguiar, Marco Antônio De Bastiani, Mauro A.A. Castro, Fábio Klamt & Flávio Kapczinski

114. Links between maternal and child verbal abilities: Mediation through parental scaffolding
   Heather Prime, Gillian England-Mason & Andrea Gonzalez

115. Childhood maltreatment and cortisol reactivity among postpartum women - Examining the moderating effects of neuroticism
   Ashwini Tiwari, Harriet MacMillan & Andrea Gonzalez

116. Depression and anxiety among migrant girls
   Irene Vitoroulis & Kathy Georgiades

117. Machine learning analysis of peripheral biomarkers to differentiate bipolar and unipolar depression
   Bianca Wollenhaupt-Aguiar, Diego Librenza-Garcia, Lucas Spanemberg, Marco Antônio Calderaro, Devon Watts, Monica Doctor, Marcelo Fleck, Ives Cavalcante Passos & Flávio Kapczinski
Title: Childhood trauma and incidence of suicide risk in an outpatient sample of subjects with Major Depressive Disorder

Contributing authors: Taiane de Azevedo Cardoso, Postdoctoral Research Fellow, Department of Psychiatry and Behavioural, McMaster University; Thaise Campos Mondin, Postdoctoral Research Fellow, Department of Health and Behavior, Catholic University of Pelotas; Fernanda Pedrotti Moreira, Postdoctoral Research Fellow, Department of Health and Behavior, Catholic University of Pelotas; Karen Jansen, PhD, Department of Health and Behavior, Catholic University of Pelotas; Luciano Dias de Mattos Souza, PhD, Department of Health and Behavior, Catholic University of Pelotas; Ricardo Azevedo da Silva, PhD, Department of Health and Behavior, Catholic University of Pelotas; Flavio Kapczinski, MSc MD PhD, Department of Psychiatry and Behavioural, McMaster University.

Abstract

Introduction: Subjects with Major Depressive Disorder (MDD) presents high rates of suicide risk\(^1\). In addition, the childhood trauma is associated with suicide risk in subjects with MDD\(^2\). However, few studies have investigated the incidence of suicide risk, and the early trauma as a predictor of suicide risk in this population.

Objective: To assess the incidence of suicide risk, and to verify if childhood trauma is a predictor of suicide risk in outpatient sample of subjects with MDD in the South of Brazil.

Methods: This is a prospective cohort study. The first wave happened between 2012 and 2015, and included 598 subjects between 18 and 60 years old, diagnosed with MDD. The diagnosis of MDD, as well as the suicide risk, were assessed using the Mini International Neuropsychiatric Interview – Plus. The childhood trauma was assessed through of the Childhood Trauma Questionnaire. The second wave happened between 2017 and 2018, and all subjects were invited for a new interview. Subjects who presented suicide risk at first wave (n= 221) were excluded of the analysis, and 156 were losses or refusal at second wave.

Results: Were included 221 subjects. The incidence of suicide risk was of 19.5%. Subjects with suicide risk at second wave showed higher scores of emotional neglect (17.57±8.33 vs 14.81±6.34, p=0.019), and emotional abuse (11.24±4.56 vs 9.44±4.33, p=0.018) as compared to subjects without suicide risk. We found no association between physical neglect, physical abuse, and sexual abuse with the incidence of suicide risk.

Conclusion: Subjects with MDD who suffered early emotional trauma presents a higher risk to develop suicide risk over time.

References:


ABSTRACT #103
Linking Shyness, Frontal Brain Activity, and Preoperative Anxiety in Children Undergoing Surgery (A study in Progress)

Cheryl H.T. Chow, PhD¹, Richard Y. Xu, HBSc², Kristie L. Poole, MSc³, Ryan J. Van Lieshout, MD⁴, Norman Buckley, MD⁵, Graeme Moffat, PhD⁶, Louis A. Schmidt, PhD⁷

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Rationale: Preoperative anxiety affects up to 75% of the 6 million children who undergo surgery every year (Perry et al., 2012). It is associated with adverse clinical (e.g., increased pain and recovery time), and psychological outcomes (e.g., separation anxiety) that can have significant short and long term implications for health and functioning (Kain et al., 1996). Given the negative impact of preoperative anxiety, researchers have begun to focus their attention on understanding the etiology of this phenomenon in order to reduce its prevalence and impact. To our knowledge, no studies have examined the neural correlates of temperament in relation to preoperative anxiety in the surgical setting.

Purpose: The objective was to examine relations among measures of children’s temperament, overall frontal EEG alpha power (i.e., a neural correlate of stress), and preoperative anxiety in children undergoing elective surgery.

Methods: 30 children (ages 8 to 13 years) who were scheduled to receive elective surgery were recruited. Temperamental shyness was measured using parent reports on the Colorado Childhood Temperament Inventory 1 week before surgery (Time 1). We also collected continuous EEG data using the dry sensor Muse Headband at Time 1 and on the day of surgery (Time 2). A self-report measure of preoperative anxiety (i.e., Children’s Perioperative Multidimensional Anxiety Scale) was completed by children at Time 2.

Results: Temperamental shyness was found to be associated with increased preoperative anxiety ($\beta = -.47; p = .02$) and decreased overall frontal alpha power (i.e., higher stress; $[\beta = -.55, p = .003]$). Moreover, overall frontal EEG alpha power was shown to fully mediate the relation between temperamental shyness and preoperative anxiety on the day of surgery.

Conclusion: These results suggest that overall frontal brain activity may be a putative mechanism of stress dysregulation, linking temperamental shyness and preoperative anxiety in children undergoing elective surgery. These findings may have practical implications for identifying and managing children who are at high-risk for anxiety in the surgical context. Furthermore, this work can provide important insights into the prediction, prevention, and amelioration of preoperative anxiety and its associated perioperative outcomes in children undergoing elective surgery.

References:
Applying Machine Learning Algorithms to Improve the Management of Suicide Ideation

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Rationale: Combat veterans, especially those with mental health conditions, are an at risk group for suicidal ideation (SI) and behaviour. Until recently the search for variables predictive of suicide has mainly been conducted with standard multivariate statistical approaches using general linear models (Franklin et. al., 2017). The limitation of many of these studies has been that they tested predictors in isolation. Unlike conventional approaches pattern recognition methods, known as machine learning (ML), have been shown to be highly effective (Khodayari-Rostamabad et. al., 2013) and have the ability search for relevant diagnostic patterns using all available information, not just information related to a particular hypothesis.

Purpose: This study attempts to use a ML algorithm to predict SI in a treatment seeking veteran population. Questionnaire data from 738 patients consisting of veterans, still serving members of the Canadian Forces (CF) and Royal Canadian Mountain Police (RCMP) were examined to determine the likelihood of SI and to identify key variables for tracking the risk of suicide.

Methods: In this study we examined a dataset of 738 patients along with 224 variables ranging from demographic information, general health and well-being to deployment related experience and post-traumatic stress disorder (PTSD) scale. Applying variable reduction techniques we select a subset of critical variables for diagnosing the risk of suicide and trained a random forest (RF) algorithms to predict SI in at risk personnel. Validation of sensitivity and specificity was performed using receiver operating characteristic (ROC) curves applied over a 5-fold cross-validation. The ROC area under the curve (AUC) was used to evaluate the performance.

Results: Our findings show that accurate prediction of SI of over 84.4% AUC can be obtained with only 25 variables, and 81% AUC using as little as 10 variables primarily obtained from the patient health questionnaire (PHQ). Surprisingly the best identifiers for SI did not come from occupational experiences but rather the patient quality of health, signifying that these findings could be applied to the general population.

Conclusions: These results suggest that MI could be used to screen veterans for suicidal risk and provide opportunity for early preventative interventions. We hope that ML based techniques would provide a useful tool to improve the health and well-being of Canadian military personnel, veterans and their families by maximizing evidence-informed practices, policies and programs.

References

Family Income, Neighbourhood Disadvantage, and Children’s Trajectories of Emotional and Behavioural Problems (A Study in Progress)

Jinette Comeau\textsuperscript{1,2}, PhD (Postdoctoral Fellow); Kathy Georgiades\textsuperscript{1,2}, PhD; Laura Duncan\textsuperscript{1,2}; Li Wang\textsuperscript{1,2}; Michael H. Boyle\textsuperscript{1,2}, PhD

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Rationale: Children exposed to poverty are at elevated risk for emotional and behavioural problems, yet the extent to which the neighborhoods they live in may mitigate or exacerbate this risk is not clear. Whereas a compound disadvantage framework posits that low-income children living alongside similarly disadvantaged neighbours are at greatest risk for emotional and behavioural problems, a relative deprivation framework posits that low-income children living alongside more affluent neighbours are at greatest risk for emotional and behavioural problems (Wodtke, Harding, & Elwert, 2016). However, whether these effects persist over time is not known.

Purpose: We examine whether low-income children living in neighbourhoods with less concentrated disadvantage are at greater risk for emotional and behavioural problems compared to low-income children living in neighbourhoods with more concentrated disadvantage and whether these effects persist over time.

Methods: We used data from the Canadian census to create a composite measure of neighbourhood disadvantage consisting of 4 variables: \% of owned dwellings, \% of single parent families, \% of the population aged 15+ without a high school diploma, and \% of the population 15+ who are unemployed. Neighbourhoods were classified into 4 ordinal groups indicating the extent of concentrated disadvantage. This data was linked to the National Longitudinal Survey of Children and Youth to examine trajectories of emotional and behavioural problems from age 4 to 11 among low-income children living in the 4 neighbourhood groupings.

Results: At baseline, low-income children living in neighbourhoods with less concentrated disadvantage were at greater risk for emotional and behavioural problems compared to their counterparts living in neighbourhoods with more concentrated disadvantage, consistent with a relative deprivation framework. Over time, low-income children living in neighbourhoods with less concentrated disadvantage experienced a significantly greater decline in emotional and behavioural problems compared to their counterparts living in neighbourhoods with more concentrated disadvantage, consistent with a compound disadvantage framework. Our research is ongoing to examine whether these effects vary as a function of child sex.

Conclusion: It has been suggested that creating economically mixed neighborhoods may improve the mental health outcomes of poor children (Cheshire, 2007). Our results indicate that living alongside more affluent neighbours has an initial negative effect. However, this negative effect decreases over time, suggesting that the longer low-income children live in neighbourhoods with less concentrated disadvantage, the better their mental health.

References


Understanding Caregivers’ Readiness For Involvement in Autism Care (study in progress)

Stephen J. Gentles\textsuperscript{1,2,3}, Linda Nguyen\textsuperscript{4}, Stelios Georgiades\textsuperscript{2,3}

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Rationale: Autism spectrum disorder (ASD) service providers across Canada are increasingly involving parents (caregivers) in the planning and delivery of intervention and care. However, our knowledge of and ability to evaluate caregivers’ readiness for involvement in autism care—including facilitators and barriers that influence this readiness—is limited. Greater knowledge of and ability to evaluate caregiver readiness for involvement in care is necessary to address discrepancies between caregiver capacity and system demands.

Purpose: We are addressing this knowledge and measurement gap by 1) conducting a systematic qualitative literature review to develop a broad model for understanding how caregiver readiness for involvement comes about and can be supported, and 2) developing an ASD-specific measure of caregiver readiness for involvement in care.

Methods: Best fit framework synthesis\textsuperscript{1} was chosen as the most suitable method for the qualitative synthesis, since its findings take the form of an actionable model and are accessible to policy-makers; this method begins with an existing \textit{a priori} framework, which is extended and modified through analysis of relevant qualitative studies. Content for the proposed measure will be derived from the qualitative synthesis, and qualitative interviews or focus groups with purposefully selected parents and service staff (clinicians, policy-makers).

Results: We have identified the theory to be used as the foundational \textit{a priori} framework for the best fit framework synthesis, which views caregiver readiness for involvement from a person-centered perspective as a natural process that should be supported rather than forced or induced. The search and selection of qualitative studies to include, extract, and analyze for the synthesis is ongoing. The possible domains to be addressed in the proposed measure of caregiver readiness for involvement in care will be presented.

Conclusion: Greater knowledge of barriers, facilitators to caregivers’ readiness for engagement in autism-related care that the synthesis provides will be applicable at the individual level to help ensure all caregivers benefit equally from the opportunities for involvement offered by individual service providers. Once validated, the proposed measure will provide health systems, such as the Ontario Ministry of Children and Youth Services and its ASD agencies transitioning to the new Ontario Autism Program (http://www.children.gov.on.ca/htdocs/English/specialneeds/autism/ontario-autism-program.aspx), a potentially valuable tool to monitor and improve the efficiency and effectiveness of delivering family-centered services.

Reference
Cannabis Coping Motives Affects the Relationship Between Psychopathology and Cannabis Use Disorder Severity: Findings from the McMaster PATH Registry

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Rationale: Cannabis Use Disorder (CUD) is characterized by craving, tolerance, withdrawal, difficulty controlling use, and continued use despite negative consequences (DSM 5; American Psychiatric Association). CUD develops in approximately 9% of individuals who experiment with cannabis (e.g., Volkow et al., 2014). While several studies report that there is a high comorbidity between CUD and other psychiatric conditions, few studies have investigated the reasons underlying these relationships. We hypothesize that one reason for these associations are that people may attempt to use cannabis to cope with their psychiatric symptoms.

Purpose: First, to examine the relationship between different cannabis use motives and cannabis use disorder severity. Second, to examine the relationship between different psychiatric conditions (depression, anxiety, PTSD, and somatic symptoms) and cannabis use disorder severity. Finally, to see whether cannabis use motives mediate the relationship between psychiatric conditions and cannabis use disorder severity.

Methods: We used data from the large Population Assessment for Tomorrow’s Health (PATH). Participants were between the ages of 19 and 65, and were representative of the general Hamilton Community. Participants completed 2 hours of assessments and provided a saliva sample for later DNA testing. The three assessments analyzed here included the PCL-5 assessment for PTSD (Weathers et al., 2011); the Patient Health Questionnaire (PHQ; Spitzer et al., 1999); the Marijuana Motives Questionnaire (MMQ; Lee et al., 2009); and the Cannabis Use Disorder Severity Test (CUDIT; Adamson and Sellman, 2003).

Results: 419 participants from PATH (48.7% females) reported using cannabis in the past 12 months. Ages ranged from 19 – 67 (M = 35.42, SD = 11.88). Using hierarchical linear regression (controlling for age, sex, income, and years of educations), we found that only two motives predicted CUDIT scores: enhancement (for positive reinforcement or to get “high”) and coping (to get “by”). Controlling for the same covariates, we found that only PTSD and depression symptoms predicted CUDIT scores. Finally, in mediation analyses we found that the cannabis use coping motive was a significant mediator of the relationship between both PTSD and CUDIT severity scores and depression and CUDIT scores.

Conclusions: This data affords the conclusions that certain individuals are motivated to use cannabis to cope (e.g., “to forget worries”). Using to cope is associated with greater CUD severity. Importantly, using to cope affects the relationship between depression and PTSD and CUD severity, potentially shedding light on factors that lead to comorbidity between psychopathology and CUD. One limitation of this study is that causal relationships cannot be drawn (i.e., is not part of a longitudinal study).

Immunosuppression Modulates Central Pathology in the 3xTg-AD Mouse Model

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Rationale: Sex discrepancy and autoimmune phenomena of unknown etiology are well-documented in Alzheimer’s disease (AD). Similar to women with AD, 3xTg-AD female mice develop more pronounced AD-like neuropathology than 3xTg-AD males, yet they do not show early immune activation as males do (Fahnestock et al., 2017). Treatment with an immunosuppressant abolishes autoimmune manifestations yet worsens the performance of 3xTg-AD males in anxiety-related tasks. These results suggest a protective role for autoimmunity, but the immune factors and neuropathological mechanisms remain unknown.

Purpose: This study was designed to examine the immunological and neuropathological consequences of prolonged immunosuppressive treatment in 3xTg-AD males and females.

Methods: 3xTg-AD and non-transgenic (WT) mice of both sexes were administered the immunosuppressant cyclophosphamide (CY) 2 days/week in sucrose-laced water from 4 weeks to 6 months of age. Mice were euthanized for post-mortem assessment of immune status (T cells and autoantibody profile) as well as molecular and epigenetic markers of AD pathology (soluble Aβ and tau) and neurodegeneration (histone variant expression).

Results: Sustained intake of CY increased the numbers of CD3⁺, CD3⁺CD4⁺ and CD3⁺CD8⁺ T cells exclusively in 3xTg-AD mice, irrespective of sex. Immunosuppression with CY also reduced amyloid-β (Aβ) antibody titers in all groups, but its effects were most pronounced in WT females, which exhibited the highest levels of Aβ autoantibodies when treated with vehicle alone. Exposure to CY did not affect tau levels in either strain but reduced cortical soluble Aβ levels in 3xTg-AD males and females. Analysis of histone macroH2A variant expression revealed that CY treatment significantly reduced higher H2afy expression in 3xTg-AD mice exclusively and independent of sex.

Conclusion: Taken together, these results point to a sex- and genotype-dependent autoimmune response that involves both cellular and humoral immune pathways and is associated with increased Aβ load and changes in the expression of H2afy. Consistent with the growing evidence implicating the immune system in AD, our results point to a complex role for autoimmunity in modulating AD-related pathology and behavioral deficits. These findings may shed light on the increased prevalence of AD in females and provide a novel framework to help understand, diagnose and treat a mental disorder that is gaining epidemic proportions and affecting many Canadian families.

The role of sleep quality and physical activity in the association between screen time and mental disorders in adolescents

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Rationale: The use of electronic devices and high amounts of screen time have been linked to elevated levels of mental health problems among adolescents (Jelenchick, Eickhoff, & Moreno, 2013; Martins & Harrison, 2012). Despite these established association, few studies have attempted to identify underlying factors that might explain the association between screen time and adolescent mental disorders.

Purpose: The objectives of the present study are to: 1) examine the strength and form of quantify association between screen time and adolescent mental disorder, and 2) the extent to which sleep duration and physical activity partially account for this association.

Method: This study is a secondary analysis of data from the 2014 Ontario Child Health Study (2014 OCHS). The 2014 OCHS is a comprehensive epidemiological survey of psychiatric disorders, which includes a structured diagnostic interview (Mini International Neuropsychiatric Interview for Children and Adolescents; MINI-KID). The current study included 3808 adolescents age 12 to 17 years in the analysis (Male=49.9%, mean age=14.43, SD=1.67). Binary logistic regression models were conducted to estimate the strength of association between screen time, sleep duration, physical activity and past 6-month mood and or anxiety disorders among adolescents).

Result: Preliminary results demonstrate an increased odds of mood and/or anxiety disorder with each one hour increment of screen time (OR=1.23, 95% CI=1.12-1.35, \( p \leq 0.00 \)). Lower amounts of sleep duration and physical activity were each associated with an increased odds of mood and/or anxiety disorders (Sleep duration: OR=1.25, 95% CI=1.11-1.42, \( p \leq 0.00 \), Physical activity: OR=1.15, 95% CI=1.08-1.22, \( p \leq 0.00 \)). Testing for the mediation effect of sleep duration and physical activity in the association between screen time and mental health are currently being conducted to address the second objective.

Conclusion: Preliminary results reveal consistent associations between past 6 month mood and/or anxiety disorders in adolescents and screen time, sleep duration, and physical activity. This study will extend existing evidence by i) examining the extent to which sleep quality and physical activity account for some of the association between screen time and adolescent mental disorder, and ii) examining these associations in relation to screen time and physical activity guidelines specified by the Canadian Society for Exercise Physiology (Tremblay et al., 2016).


Temperament mediates the relationship between symptom severity and adaptive functioning in school-aged children with autism spectrum disorder

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Background: Temperament refers to a set of individual differences in behavioural tendencies. An extensive body of literature establishes the association between temperament and childhood psychiatric disorders and more recent studies have documented specific temperament profiles in infants with Autism Spectrum Disorder (ASD). Previous studies have found that infants and children with ASD, compared to a control group, tend to have a particular temperament profile characterized by higher negative affect, lower urgency and lower effortful control, relative to peers who do not have ASD. However, little is known about how temperament varies within the ASD population and how that variability is associated with later outcomes in children with ASD.

Purpose: The purpose of this study was twofold: a) to identify subgroups of school-aged children with ASD with distinct temperament profiles; and b) to examine whether temperament subgroup membership mediates the relationship between ASD symptom severity and adaptive functioning outcomes.

Methods: Data came from the Pathways in ASD study, a large Canadian longitudinal study of children with ASD. The sample was composed of 185 school-aged children with ASD at T1 (mean age: 7.8 years; males = 155). Temperament profile was indexed using the T1 Temperament in Middle Childhood Questionnaire (TMCQ). Children were followed over a 3-year period (T1-T3, with T1 as the first assessment between age 7-8 years and one assessment every 12 months for 2 consecutive years). Seventeen TMCQ dimension scores were used in hierarchical cluster analysis to derive subgroups of children. A test of binary mediation was conducted to test whether the relation between T2 autism symptom severity (Autism Diagnostic Observation Scale; ADOS) and T3 adaptive functioning level (Vineland Adaptive Behaviour Scale; VABS II) was mediated by a child’s temperament profile.

Results: A 2-cluster solution was selected as the best fit to the data; the two clusters were characterized by distinct temperament profiles (for most TMCQ dimensions). Compared to children in Cluster 2 (60.5% of sample), children in Cluster 1 (39.5% of sample) had higher scores on activation control, affiliation, assertiveness, attentional focusing, fantasy/openness, and soothability, and lower scores on anger/frustration, impulsivity, discomfort, fear, sadness, and shyness. Children in Cluster 1 had significantly lower adaptive functioning skills compared to children in Cluster 2 (F(1,165) = 44.98, p < 0.01). The total direct effect of ASD severity at T2 was a significant predictor of adaptive functioning outcome at T3, before entering the mediator variable (t(161) = -3.51, p < 0.001; point estimate = -0.16, 95% CI = -0.41 to -0.13), and influence the relation between ASD severity and adaptive functioning outcome.

Conclusions: Study findings show that in school-aged children with ASD distinct temperament profiles influence the relation between ASD severity and adaptive functioning outcome. These findings suggest that temperament may be a previously under-researched but important child-level characteristic to consider when investigating developmental outcomes and intervention mechanisms in children with ASD.

Number of children missed or over-identified by child maltreatment screening tools: An update of a systematic review

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**Rationale:** Child maltreatment is a prevalent exposure with potentially serious physical, socioemotional, and behavioural consequences for children and extending across their lifespan. As such, providers require strategies for identifying children exposed to maltreatment early, before serious consequences can occur. The aim of this systematic review update was to identify and evaluate strategies for identifying child maltreatment and to consider the findings in relation to related recommendations published in the World Health Organization’s (WHO) (2015) Mental Health Gap Action Programme (mhGAP) update.

**Methods:** We searched across six databases (Medline, Embase, PsycINFO, CINAHL, Sociological Abstracts, ERIC) for studies estimating diagnostic accuracy of tools identifying physical abuse (including abusive head trauma), sexual abuse, emotional abuse, and neglect of children, published from 2012 (when the previous systematic review concluded) to February 7th, 2017. We extracted data about study design, patient populations, index tests, reference standards, and accuracy outcomes (sensitivity, specificity, and positive or negative predictive values). We also calculated number of true positives, false positives, true negatives, and false negatives per 100,000. Study quality was assessed using QUADAS-2 criteria and certainty of evidence was assessed using GRADE criteria.

**Results:** Twelve new articles were found for this update; combined with the 13 articles identified in the previous systematic review, a total of 25 articles were analyzed in this review. All included studies suffered from serious risk of bias and the certainty of the included evidence was either very low or low. Furthermore, only one of the recently evaluated screening studies did not suffer from serious verification bias. This study evaluated the SPUTOVAMO screening tool in children under eight years of age admitted to an emergency room for any physical injury and as such can be considered a selective screening tool. We have very low certainty that the SPUTOVAMO tool will miss 334 to 1670 per 100,000 children who have been exposed to neglect and will misidentify 11,970 to 13,034 children per 100,000 as having been neglected.

**Discussion:** Given the low certainty in the available evidence for various identification tools, including screening tools, screening for maltreatment is not recommended. No significant changes are suggested for the WHO mhGAP recommendation, which advises that children exposed to maltreatment should be identified via a case finding approach, by a clinician who is competent to do so.

**References**

Effects of acute stress in binge eating disorder (BED): A review

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Rationale: Binge eating disorder (BED) is an eating disorder that is estimated to affect 1-2% of the population. BED is characterized by recurrent episodes of binge eating, in which individuals eat an amount of food larger than would be eaten by most people in the same time period [1]. A commonly-reported trigger of binge eating episodes in individuals with BED is stress [2], but the mechanisms underlying the stress-eating relationship are unclear. Since some of the hormones that are implicated in the physiological stress response are also involved in reward and eating behaviour [3], one possibility is that the stress response itself facilitates overeating in BED.

Purpose: To review the literature on the effects of acute stress in individuals with BED.

Methods: A literature search was conducted in PubMed and PsychINFO, using the search terms ‘stress’, ‘binge eating disorder’, ‘binge’, ‘bingeing’, and ‘eating disorder not otherwise specified’. To be included in our review, an article had to be deemed by two reviewers to meet the following criteria: (1) Original research article published in a peer-reviewed journal; (2) Written in English; (3) The reported research investigated human participants, at least a subset of whom met the diagnostic criteria for BED; and (5) The reported research included an experimental manipulation of stress.

Results: Fourteen articles met our inclusion criteria and were included in the review. The resulting studies included measures of physiological and behavioural changes associated with acute stress. Measures reported in the included papers included: levels of cortisol and ghrelin, cardiovascular changes, and changes in food intake and the microstructure of eating. The literature presents partial support for the notion that individuals with BED respond differently to stress compared to those without BED, but discrepancies between studies exist.

Conclusions: The literature presents limited evidence that BED is associated with differences in the stress response, but the low number of studies and methodological discrepancies make it difficult to draw firm conclusions. We discuss the findings to date, consistencies and inconsistencies across the literature, and future directions for this research area.

References
**EGR3 Immediate Early Gene in Bipolar Disorder: An in vitro Study for Validation of Bioinformatics Findings (A study in progress)**

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**Rationale:** Our recent finding using gene network-based bioinformatics approach has shown that the regulatory unit of early growth response gene 3 (EGR3) is robustly repressed in postmortem prefrontal cortex from patients with bipolar disorder (BD) (Pfaffenseller et al., 2016). As a central transcription factor, EGR3 regulates genes that mediate critical neurobiological processes such as synaptic plasticity, memory and cognition, and seems to be related to brain-derived neurotrophic factor (BDNF) that has been consistently related to BD pathophysiology.

**Purpose:** The aim of this study was characterize the gene expression profile of the human neuroblastoma differentiated SH-SY5Y cell line to evaluate whether this in vitro model would be appropriate to study the EGR3 regulatory unit in order to validate our bioinformatics findings.

**Methods:** Neuronal differentiation of SH-SY5Y cells was induced by retinoic acid for seven days, as well as with BDNF from the fourth day of protocol. Then, RNA was isolated and purified for microarray analysis (GeneChip PrimeView, Affymetrix). Differential expression and gene set enrichment analysis were performed to identify biological process associated with cell phenotypes and modulation of EGR3 by differentiation.

**Results:** Microarray data were deposited on GEO repository (GSE71817). Genes associated with the differentiated SH-SY5Y cells were related to synapse, regulation of neurotransmitter levels and membrane potential. EGR3 was associated with differentiated cells, mostly in response to BDNF.

**Conclusion:** We characterized the gene expression profile of differentiated SH-SY5Y cells reinforcing the neuronal phenotype of this in vitro model. In addition, our results demonstrated that EGR3 is enriched in differentiated cells, suggesting that this regulatory unit is modulated by the differentiation process and induced by BDNF. This experimental model appears to be suitable for studying findings related to EGR3, and thus suggests new avenues to study the neurobiology of BD.

**References:**
Links Between Maternal and Child Verbal Abilities: Mediation Through Parental Scaffolding

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Rationale: There is evidence for the intergenerational transmission of verbal abilities from parent to child (e.g., Anger & Heineck, 2010), though the mechanisms through which this occurs are not well understood. Parenting behavior (e.g., verbal responsiveness and scaffolding) has been causally linked to early childhood language and communication (Landry, Smith, Swank, & Guttentag, 2008), and may represent one environmental mechanism.

Purpose: In the present study, we test the hypothesis that maternal verbal ability is related to child verbal ability through maternal scaffolding behavior.

Methods: Data come from a longitudinal cohort study using a community sample (N = 140), when children were aged 8 months (V2), 18 months (V3), and 3 years (V4), respectively. Maternal verbal abilities were measured at V2 using the Weschsler Abbreviated Scale of Intelligence (Verbal). At V3, children’s cognitive abilities were assessed using the Bayley Scales of Infant and Toddler Development (Cognitive). At V4, mother-child dyads were filmed interacting using a challenging task paradigm, and maternal scaffolding (e.g., promoting autonomy, responding sensitively to children’s cognitive needs) was subsequently coded. Also at V4, children’s verbal abilities were assessed using the Peabody Picture Vocabulary Test. Mplus 7 was used to analyze the direct and indirect effects of maternal verbal ability on child verbal ability, via maternal scaffolding and child cognition (mediators). Covariates included child sex and maternal education.

Results: Maternal verbal ability was significantly and positively associated with maternal scaffolding, but not child cognition. Both maternal scaffolding and child cognition were independent and significant predictors of child verbal ability. Finally, there was a significant indirect effect of maternal verbal ability on later child verbal ability via maternal scaffolding ($p < .05$). This effect was independent of the (nonsignificant) indirect effect of maternal verbal ability on later child verbal ability via child cognition, which was measured contemporaneously.

Conclusion: Results support the hypothesis that maternal verbal ability is transmitted to their children via environmental influence. By simultaneously examining a mediating pathway through child cognition, we gain a more robust estimate of the environmental contributions to the intergenerational transmission of language abilities.

References:


Childhood Maltreatment and Cortisol Reactivity among Postpartum Women- Examining the Moderating Effects of Neuroticism

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Introduction/ Purpose. Associations between exposure to childhood maltreatment and psychopathological outcomes are well documented. Burgeoning research also highlights links between childhood maltreatment and other risk factors for psychopathology, including physiological stress functioning across the hypothalamic pituitary adrenal (HPA) axis and adult personality traits. However, no research to date has considered the influence of personality traits in modifying associations between maltreatment and stress regulation; negative traits, such as neuroticism, may lead to differential risk of physiological stress dysregulation associated with childhood maltreatment. Thus, the purpose of this study was to examine neuroticism as a moderator of associations between childhood maltreatment exposure and HPA axis regulation via cortisol among a sample of postpartum women.

Methodology. Participants included 123 new mothers recruited from the maternity ward at St. Joseph’s Healthcare in Hamilton, Ontario. Consenting mothers completed a two-hour home visit assessment at 7-months postpartum. Participants were assessed for child maltreatment exposure, personality, and cortisol responsivity. Exposure to moderate-severe levels of childhood maltreatment was measured using the Childhood Trauma Questionnaire. Personality traits, including neuroticism, were measured using the NEO Personality Inventory. Salivary cortisol responsivity was measured over time in response to a computerized psychosocial task, the Emotional Stroop paradigm, in which participants were exposed to emotional and neutral stimuli. Saliva samples were collected at baseline, 20 minutes, and 40 minutes post-task.

Analyses. A stepwise regression was completed to examine the moderating effects of neuroticism on associations between exposure to child maltreatment and cortisol responsivity, controlling for thyroid medications, breastfeeding, and postnatal depression. Fluctuations in cortisol secretions following the Emotional Stroop task were calculated using the area under the curve (AUCi) computation – a measure of cortisol reactivity.

Results. At the time of 7-month postpartum assessment, women were 32.3 years of age, with 62% having at least a university level education. Approximately 37% reported exposure to some form of moderate childhood maltreatment. Regression analyses revealed neuroticism significantly moderated the association between exposure to maltreatment and AUCi ($\beta = -3.74$, 95% CI: -6.91, -0.560; $t = -2.33$, $p < .05$). Specifically, participants exposed to maltreatment with higher levels of neuroticism experienced lower levels of cortisol reactivity, in comparison to those exposed to similar maltreatment levels with lower levels of neuroticism.

Conclusions. Results add to a growing literature demonstrating the pervasive effects of childhood maltreatment. Findings suggest mechanisms by which varying levels of neuroticism can modify associations between childhood maltreatment exposure and physiological stress functioning among postpartum women. Replication and intervention studies are needed to determine the effects of parenting interventions on stress functioning among exposed and non-exposed women with different personality facets.

Depression and anxiety among migrant girls

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**Rationale:** Adolescent girls are three times more likely than boys to develop depression and anxiety disorders that persist throughout the lifecourse\textsuperscript{1}. Immigrant and refugee backgrounds may increase risk for depression and anxiety due to multiple pre- and post-migratory stressors within their family and school environments\textsuperscript{2}.

**Purpose:** The objectives of the present study are to: (1) examine differences in levels of depression and anxiety among immigrant versus refugee girls; and (2) identify pre- and post-migratory stressors associated with increased levels of depression and anxiety.

**Methods:** The Hamilton Youth Study includes a representative sample of 1,449 early adolescents (\textit{M} age=12.19 years), their primary caregiver (PMK; 95\% mothers) and teachers from 36 schools in Hamilton, Ontario. A cohort of 317 immigrant and 120 refugee girls was established for the present analyses. The PMK provided reports on their own mental health, exposure to adversity, and adolescents’ symptoms of depression and anxiety (CBCL-PRF). Adolescents rated their experiences with peer discrimination and victimization at school, and symptoms of depression and anxiety (CBCL-YSR).

**Results:** We found no significant differences in mean levels of depression and anxiety by migrant status (immigrant versus refugee). Based on adolescents’ self-reports, bullying victimization (\textit{b}=7.58, \textit{SE}=1.04) and discrimination (\textit{b}=2.92; \textit{SE}=1.01) at school were each associated with higher levels of depression and anxiety. According to parental assessments, lifetime history of mental disorder (\textit{b}=3.53, \textit{SE}=1.05) and current psychological distress (\textit{b}=0.35, \textit{SE}=0.07) were associated with higher levels of depression and anxiety in girls—a finding that did not emerge as significant in youth reports. Preliminary analyses did not reveal significant associations between exposure to war-related trauma and violence and adolescent mental health. This finding was consistent across both informants but further analyses are underway to confirm these results.

**Conclusion:** Parental mental health is associated with parental assessments of depression and anxiety among immigrant and refugee adolescent girls. Negative school experiences have a stronger association on self-reported mood and anxiety among migrant girls highlighting the importance of social contexts on mental health.

**References:**
Machine learning analysis of peripheral biomarkers to differentiate bipolar and unipolar depression

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Rationale: Bipolar disorder is often misdiagnosed and accurate diagnosis is delayed in average 5-10 years. Distinguishing between bipolar and unipolar depression is challenging given the high degree of symptom overlap (Goodwin and Jamison, 2007). It is known that oxidative stress, neurotrophic factors and the immune system are involved in the pathophysiology of mood disorders. However, few studies have evaluated changes in peripheral biomarkers between these disorders.

Purpose: To differentiate bipolar depression (BD), unipolar depression (UD) and healthy controls (HC) using serum biomarkers and machine learning techniques (Passos et al., 2016).

Methods: We assessed serum levels of BDNF, IL-2, IL-4, IL-6, IL-10, TNF-α, IFN-γ, IL-17A, the content of lipid peroxidation and oxidative damage to proteins in 54 outpatients with BD, 54 outpatients with UD and 54 HC, matched by sex and age. Patients were recruited from outpatient programs of Hospital de Clínicas de Porto Alegre (HCPA), Brazil. The diagnosis of BD and UD were performed according to the diagnostic criteria of DSM-IV-Axis I (SCID-I). Depressive symptoms were assessed using the Hamilton Depression Rating Scale (HDRS). Variable selection was performed with Recursive Feature Elimination with a linear support vector machine (SVM) kernel, followed by a random forest model with the selected variables.

Results: BD vs. UD classification achieved and AUC of 0.69, with 0.62 sensitivity and 0.66 specificity using three selected biomarkers (IL-4, TBARS, IL-10). For the comparison BD vs. HC, the model retained five variables (IL-6, IL-4, TBARS, Carbonyl, IL-17), with AUC 0.70, 0.62 sensitivity and 0.7 specificity. Finally, UD vs. HC comparison retained seven variables (IL-6, Carbonyl, BDNF, IL-10, IL-17, IL-4, and TNF-α, with AUC of 0.74, a sensitivity of 0.68 and 0.70 specificity.

Conclusion: The present study showed the feasibility of differentiating UD from BD with a panel of serum biomarkers related to inflammatory and oxidative stress processes. This shows the potential of machine learning models to aid in clinical practice, leading to more personalized assessment and treatment of patients.

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119. An appraisal of the trustworthiness of practice guidelines for depression and anxiety in children and youth
   Kathryn Bennett, Dareen Courtney, Stephanie Duda, Joanna Henderson & Peter Szatmari

120. Predictors of symptom change in CBT for perinatal anxiety: Intolerance of uncertainty and perfectionistic beliefs
   Eleanor Donegan & Sheryl M. Green

121. Patient centred knowledge dissemination tools in child and youth mental health: Development of a framework to facilitate youth and parent engagement
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Food Addiction and Adverse Health Effects within the Population Assessment for Tomorrow’s Health (PATH) Cohort

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Background: Food addiction is defined as the excessive and compulsive consumption of highly palatable foods, with behavioural and neurobiological parallels to that of drug addiction (Davis, 2013). It has recently been identified as an area of concern within the Canadian population as one study suggests that as many as 1 in 20 adults may struggle with food addiction, leading to obesity and other adverse health effects (Pedram et al., 2013).

Objective: The purpose of this poster is to determine the prevalence of food addiction in the PATH cohort. Associations of this addiction with negative health consequences (adiposity and increased blood pressure) and impulsivity will also be reported.

Methods: The population-based registry recruited participants from the general population in Hamilton and the surrounding communities. Each participant completed a one-time assessment visit at the Peter Boris Centre for Addictions Research, located at St. Joseph’s Healthcare Hamilton or at McMaster University. Data collected from the Yale Food Addiction Scale will be used in conjunction with the following psychometrically validated tools—impulsivity measures: Negative Urgency, Premeditation (lack of), Perseverance (lack of), Sensation Seeking, Positive Urgency, Impulsive Behavior Scale (UPPS-P), Go No-Go Task, Delay Discounting Task; and physical measurements: body mass index (BMI; including obesity status, defined as BMI>30), adiposity, visceral fat rating, muscle mass percentage, and blood pressure (diastolic/systolic).

Results: Descriptive statistics and correlational analyses will be used to analyze and identify the prevalence of food addiction within the PATH cohort, along with the corresponding side effects of obesity and the correlation of food addiction with impulsivity.

References:


An Appraisal of the Trustworthiness of Practice Guidelines for Depression and Anxiety in Children and Youth

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Objective: Little is known about the trustworthiness of clinical practice guidelines (PGs) relevant to child and youth depression or anxiety. To address this gap, we used systematic review methods to identify all available relevant PGs, quality appraise them and make recommendations regarding which PGs are trustworthy and should be used by clinicians.

Methods: Pre-specified inclusion criteria identified eligible PGs. Two independent trained reviewers applied the Appraisal of Guidelines for Research and Evaluation (AGREE II) tool. Using three AGREE II domain scores [stakeholder involvement, rigor of development (clinical validity/trustworthiness), editorial independence] PG quality was designated as: i) minimum (≥ 50%); and ii) high (≥ 70%).

Results: Of 25 eligible PGs, 5 met minimum quality criteria (depression, n=4; anxiety, n=1); 3/5 met high quality criteria (depression, n=2; anxiety, n=1). Among the 5 minimum quality PGs, developers included government (n=2), independent expert groups (n=2), and other (n=1). No PGs developed by specialty societies achieved minimum or high quality ratings; 8/25 PGs were up-to-date.

Conclusions: Trustworthy PGs are available to support clinical decisions about depression and anxiety in children and youth, but are few in number. Many existing PGs (up to 80%) may not be clinically valid. Clinicians who implement the high quality PGs identified here can increase the number of children and youth who receive effective interventions for depression and anxiety, minimize harm, and avoid wasted resources. Clinicians, service planners, youth and their families should encourage PG developers to increase the pool of high quality PGs using internationally recognized PG development standards.

References:

Predictors of Symptom Change in CBT for Perinatal Anxiety: Intolerance of Uncertainty and Perfectionistic Beliefs

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Rationale: The perinatal period (pregnancy to 12 months postpartum) is a time of increased vulnerability for anxiety disorders in new and expecting mothers (Lee et al., 2007). Cognitive behaviour therapy (CBT) can be effective in this population (Green et al., 2015) but empirical support has been mixed across trials and improving treatment outcomes is essential. One way to do so is to ensure that treatments target variables thought to play a role in symptom reduction. Two potential variables are intolerance of uncertainty and perfectionistic beliefs. Intolerance of uncertainty (IU) has been defined as a set of negative beliefs about uncertainty and its implications (Dugas et al., 2008). In samples of anxious adults, higher levels of IU are associated with higher levels of anxiety (de Bruin et al., 2006) and changes in IU mediate the effect of CBT on anxiety symptoms (Bomyea et al., 2015). However, the potential role of IU in symptom reduction during CBT for perinatal anxiety has not been examined. Perfectionistic beliefs about parenting are associated with greater reporting of anxiety symptoms in pregnant and postpartum women (Donegan, Green, & McCabe, 2016) and reductions in these beliefs may also play a role in symptom reduction during CBT.

Purpose and Methods: We examined the associations between IU, perfectionistic beliefs, and anxiety symptoms in a new group cognitive behaviour therapy program (CBGT; Green et al., 2015) designed specifically to target the worry and anxiety symptoms commonly reported by women during pregnancy and postpartum. A randomized controlled trial is currently underway to evaluate the effectiveness of this new CBGT program. A preliminary examination of the relationships between IU, perfectionistic beliefs and anxiety symptoms are presented in a sample of 34 women who have completed CBGT within this larger clinical trial. Assessments were conducted at baseline and 6-weeks post-baseline.

Results: At baseline, women who reported greater intolerance of uncertainty, and greater self-oriented and societally-prescribed perfectionistic beliefs about parenting also reported greater anxiety and depressive symptoms. Significant reductions were observed in intolerance of uncertainty and perfectionistic beliefs about parenting and these reductions were associated with significant reductions in anxiety and depressive symptoms by post-treatment.

Conclusions: Understanding the relationships between changes in IU, perfectionistic beliefs and anxiety symptoms during treatment may provide insight into how CBT for perinatal anxiety works as well as identifying factors that, if targeted more directly during treatment, may help improve treatment outcomes in this vulnerable population.

Reference:
Patient Centred Knowledge Dissemination Tools in Child and Youth Mental Health: Development of a Framework to Facilitate Youth and Parent Engagement

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Background: Youth and parent engagement in the design of tools to disseminate research relevant to child and youth mental healthcare is urgently needed to ensure alignment with their information needs, and ease of use. However, little is known about how to meaningfully integrate them into the tool development process.

Objective: To develop a framework to guide: integration of youth and parent collaborators into the design of a practice guideline website repository; and evaluation of the level of engagement achieved.

Methods: In collaboration with the Director of Knowledge Mobilization, Ontario Centre of Excellence for Child and Youth Mental Health (PS), an advisory group composed of 4 youth and 2 parents was convened. Members participated in a three step integrated knowledge translation process to co-create an engagement framework: i) focus group consultation; ii) advisory group wiki to identify specific points of engagement in website development and dissemination guided by the Patient Centred Outcomes Research Institute (PCORI) Spectrum of Patient and Stakeholder Engagement; iii) consensus exercise to quantify levels of agreement with each role/responsibility.

Results: The focus group consultation revealed 3 themes: i) practice guidelines are a potentially valuable resource for youth and parents, but at present what they are and where to find them is not widely known; ii) engagement of youth and parents in website repository development is relevant, desirable and possible; and iii) group members should take responsibility for identifying specific roles. Advisory group members identified 8 roles and responsibilities aligned with PCORI levels of engagement in the wiki. Agreement with each role ranged from 66-100%.

Conclusions: Advisory group members created a framework to guide youth and parent engagement in the development of the website guideline repository made up of 8 specific roles. Each role can be easily communicated to all team members, and the level of engagement achieved for each can be evaluated.

References:
Rationale: There is a growing body of evidence indicating a gradient between child development outcomes and socioeconomic status (SES) at the individual level. Even though the association between development indicators and neighbourhood SES is less well studied, it also shows a similar gradient. However, there is also evidence that some communities, labelled “off-diagonal”, diverge from this trend. Some “high” SES neighbourhoods have poorer than expected child outcomes, whereas some “low” SES neighbourhoods child outcomes are better than expected. One of the primary objectives of the Canadian Neighbourhoods Early Child Development (CanNECD, Guhn et al, 2016) project was to identify and characterize such “off-diagonal” neighbourhoods. This was done using data from the Canadian Census and Taxfiler databases for custom-defined neighbourhoods across Canada that were linked to child development outcomes collected with the Early Development Instrument (EDI; Janus & Offord, 2007).

Purpose: Building on earlier approaches (Kershaw et al., 2009; Hertzman, 2011; Tanton et al., 2017), this study investigated the existence and frequency of off-diagonal neighbourhoods by identifying possible homogenous groups based on neighbourhood-level child development outcomes (EDI) and SES index. It then used the derived groups to identify and describe off-diagonal neighbourhoods.

Methods: EDI data for 2038 neighbourhoods collected between 2008 and 2013 (Webb et al., 2016) were examined. Five indicators of developmental vulnerability were derived from these data. The CanNECD SES indicators were derived from the 2006 Census or the 2005 Taxfiler database (Forer et al., in prep). We used exploratory Latent Profile Analysis (LPA) in a structural equation model framework with Mplus software (Muthén & Muthén, 1998-2015) to identify possible subgroups separately for SES and EDI vulnerability. Last, we used contingency tables analysis to identify off-diagonal groups of neighbourhoods.

Results: We derived three child development groups based on prevalence of vulnerability: low (A, 57.2%), medium (B, 35.6%), and high (C, 7.3%). We also derived four meaningful SES groups: low (1, 31.6%), low-moderate (2, 12.7%), high-moderate (3, 38.4%) and high (4, 17.4%). Contingency table analysis of these groups showed that there were 209 off-diagonal neighbourhoods in the low SES and low EDI vulnerability group and no neighbourhoods in the high SES and high EDI vulnerability group.

Conclusion: The identification of off-diagonal neighbourhoods contributes to our understanding of modifiable and moderating factors influencing child development at the neighbourhood level. Our findings will be expanded through detailed analyses of demographic and geographic analyses of the off- and on-diagonal neighbourhoods.

References
The Michael G. DeGroote Centre for Medicinal Cannabis Research: The Development of and First Year Results from a New Research Centre.

Allan Fein, M.Sc.¹,²,³, Sarrah Lal, MBA¹,⁵, Ramesh Zacharias, M.D.¹,⁴,⁶, Jason Busse, Ph.D.¹,⁴, James Mackillop, Ph.D.¹,²,³

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Rationale: Since 2001 cannabis has been legal in Canada for medical use. According to Health Canada¹ the number of cannabis users has risen from about 8,000 individuals in 2014 to more than 235,000 individuals by the end of 2017. In response to the increasing use of cannabis as medicine and the uncertain evidence surrounding this use, in November of 2017 McMaster University launched the Michael G. DeGroote Centre for Medicinal Cannabis Research (MGD CMCR).

Objectives: This poster will highlight the vision, mission and actions of the Michael G. DeGroote Centre for Medicinal Cannabis Research. With the three pronged goal of (1) curating the collective body of knowledge on medicinal cannabis, (2) conducting innovative research projects and (3) creating a network of researchers, clinicians, and patients dedicated to increasing the evidence base for the clinical understanding of cannabis, the CMCR has actively engaged in establishing itself as the Canadian and International hub for expertise on medicinal cannabis.

Results: This poster will present the products for the MGD CMCR, including more than 20 knowledge translation titles, numerous high profile speaker engagements and presentations, and outputs from the first Innovations in the Science of Cannabis conference held in February 2018. A presentation of the future plans of the MGD CMCR as well as opportunities for networking and collaboration will be shown.

Conclusion: The MGD CMCR is working towards becoming the recognized hub of expertise on medicinal cannabis research. This first year of work demonstrates a high level of commitment and opportunity.

References
Examining “Turning Points” in Trajectories of Symptom Severity in Children with Autism

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Background: Autism Spectrum Disorder (ASD) is a complex neurodevelopmental disorder characterized by variability in symptom presentation and outcome. To date only a small number of studies have examined the longitudinal course of ASD symptom severity. In Szatmari et al. (2015) we reported two distinct trajectory groups of autistic symptom severity. Those results were based on data collected during the preschool years, so new studies are needed to explore how variability in autism severity unfolds beyond the key transition point of entry into school.

Objective: Extend our longitudinal investigation of symptom severity into the early school years and identify possible key “turning points” in the developmental trajectories of children with ASD.

Methods: Data were drawn from the Canadian Pathways in ASD study and included 360 children with ASD. Autistic symptom severity was indexed by the Autism Diagnostic Observation Schedule (ADOS) standardized severity score. Trajectories were plotted using data from four time points collected between the time of diagnosis and age 11. Three-way clustering methods consisting of variables and observations over time modelled as matrix variate data were used to identify homogeneous groups of children.

Results: Using the Bayesian Information Criterion, a 3-group model was selected as the best fit to the data. Symptom severity scores for children in Group 1 (54% of the sample) and Group 3 (14% of the sample) decreased over time and then plateaued. However, symptom severity scores for children in Group 2 (32% of the sample) increased over time. A “turning point” (or “elbow”) at around 54 months of age – a time that for many children coincides with transitioning into the school system – was identified in two trajectory groups. Specifically, at that point, severity scores for children in Group 3 stopped decreasing and leveled out; severity scores for children in Group 2 stopped decreasing and started to increase. Groups differed by sex and had different linear associations with ADOS, VABS and age at diagnosis.

Conclusions: The identification of key “turning points” in trajectories supports the idea that symptom severity does not unfold in a linear way. Child, family and contextual factors associated with “turning points” in symptom severity will be discussed within the longitudinal research and clinical practice frameworks.

References:
Tobacco and e-Cigarette Use: An Analysis of Patterns in Community Adults and Young Adult Binge Drinkers

Jessica Gillard, MSc¹; Alex Lee, BHSc¹; Emily Vandehei, BSc¹; Polina Andrievskaia, BSc¹; Randy Ramdial, BSc¹; Lana Vedelago; BA¹, Allan Fein, MSc¹; Jane DeJesus, BSc¹, Tashia Petker, BSc¹, & James MacKillop, PhD¹, ²

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Rationale: While the use of tobacco has steadily declined in Canada in recent years, the use of e-cigarettes has increased, especially among young adults (Government of Canada, 2016). This increase in popularity has sparked debate over whether e-cigarettes are a useful tool for smoking cessation, or a harmful product that promotes the normalization of smoking (Fairchild, Bayer & Colgrove, 2014).

Purpose: To examine the patterns and motivations of e-cigarette and tobacco use in among a general population (age 18-65) and young adult binge drinking (age 20-23) cohort of research participants in the Hamilton region.

Methods: Data on the general population and young adults will be analyzed from the Population Assessment for Tomorrows Health (PATH) Registry (N=1435) and the Behavioural Economic Trajectories of Alcohol Misuse (BETA) (current N= ~500, anticipated N = ~600) cohorts respectively. Both studies obtained baseline measures on a variety of standardized instruments focused primary on mental health and addictions. Validated measures of interest include the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST), Fagerström Test of Nicotine Dependence (FTND), and Brief Wisconsin Inventory of Smoking Dependence Motives (WISDM).

Results: As data collection is still ongoing, we plan to report descriptive statistics and use correlation and regression analysis to assess nicotine dependence, smoking motives, and readiness to change.

Conclusion: These analyses can provide insight on the prevalence of tobacco and e-cigarette use, nicotine dependence, motives, and willingness to change among adults and young adults in the Hamilton region. This information can help inform the improvement of treatment options for smoking cessation.

References:


CBT for Perinatal Anxiety: Preliminary Data from a Randomized Controlled Trial

Sheryl M. Green,¹,² Ph.D., Eleanor Donegan,¹ Ph.D., Benicio N. Frey,¹,² M.D., Arela Agako,² B.A., & Randi E. McCabe, Ph.D.¹,²
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Rationale: The perinatal period (pregnancy and the first 12 months postpartum) is a time of many biological, psychological and social changes in a woman’s life. Although this can be a joyful time, many women experience increased distress. The heightened risk for mood disorders in the perinatal period is well-known, but recent evidence shows that anxiety disorders are at least as prevalent, if not more so, than mood disorders (Goodman et al., 2016) and can also be disabling. Psychoactive medication can be effective for anxiety but many women cannot or choose not to take medication during pregnancy or when breastfeeding. As such, there is a critical need for effective non-medical treatments. Cognitive behaviour therapy is an empirically-supported psychological treatment for anxiety and depression but has received little attention in the context of perinatal anxiety.

Purpose and Methods: Our research team developed a new group cognitive behaviour therapy program (CBGT; Green et al., 2015) designed specifically to target the worry and anxiety symptoms commonly reported by women during pregnancy and postpartum. A randomized controlled trial to compare the effectiveness of this 6-week CBGT program to a 6-week waitlist is currently underway. Preliminary results from this trial are presented from a sample of 53 women who have completed CBGT or waitlist within this larger trial. The impact of CBGT versus waitlist was examined on anxiety and related symptoms (i.e., worry, and depressive symptoms) and on broader outcomes (i.e., perceived stress, coping, social support, perceived parenting satisfaction and efficacy). All variables analysed here were assessed at baseline and post-CBGT/waitlist.

Results: Compared to waitlist, CBGT for perinatal anxiety was associated with significantly greater reductions in anxiety, worry and secondary depressive symptoms by post-treatment. Participants in CBGT also reported significantly greater reductions in perceived stress and greater improvements in perceived coping. In these preliminary results, CBGT was not associated with significantly greater improvements in perceived social support, parenting satisfaction or perceived parenting efficacy. Future analyses will examine the impact of CBGT in the full sample (anticipated $N = 80$) and over a 3-month follow-up period. Participants rated the CBGT program as highly satisfactory.

Conclusions: The results presented here are promising and suggest that this new CBGT program is effective in reducing anxiety and related symptoms, as well as several broader outcomes, over a 6-week treatment program. Analyses in the full sample (projected $N = 80$) will examine the maintenance of treatment gains over a 3-month follow period. Overall, this study will help to validate a new non-medical intervention for this vulnerable population.

References:

Prevalence of functional difficulties at school entry in Ethiopia, Kyrgyzstan, Peru, and Vietnam: implications for data use and interpretation

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Rationale: The early years have a lifelong impact on one’s learning and social well-being. Sub-optimal health in early childhood is a risk factor for poor academic and behavioural outcomes. In high-income countries, 5-year-old children with at least one functional difficulty (FD) represent approximately 15% of the population and have been found to have poorer developmental health at school entry compared to their typically-developing peers. Little is known about child development and education among young children with functional difficulties and disabilities in developing countries (Menelik & Darmstadt, 2007)

Purpose: The study’s objective is to estimate the prevalence of children with FDs in four low- to middle-income countries (LMICs): Ethiopia, Kyrgyzstan, Peru, and Vietnam, and to examine the validity of FDs through their relationship with children’s development.

Methods: The Early Development Instrument (EDI, Janus & Reid-Westoby 2016), a teacher-completed checklist of developmental health at school entry, was used to examine the FDs in 250 children in Ethiopia, 596 in Kyrgyzstan, 18,601 in Peru, and 7,706 in Vietnam. EDI scores were compared between children with and without FDs.

Results: Prevalence rates of functional difficulties varied widely by country, ranging from 0.3% in Vietnam to 20.4% in Ethiopia. Except for Kyrgyzstan, children with at least one functional difficulty were found to have significantly lower scores on the EDI compared to those who had none.

Conclusion: Prevalence of functional difficulties in LMICs may be influenced by school admission systems. This could contribute to children with FDs facing greater challenges in obtaining equitable education compared to their typically developing peers. Further investigations need to combine access to education with educational outcomes for children with FD in LMICs to facilitate inclusion.

References

Cross-methods validation of a weekly symptom checklist in collection of eating disorder symptomology (A Study in Progress)

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Rationale: In eating disorder patients, it is important for both clinicians and patients to track symptoms as a method of evaluating the effectiveness of treatment. The current standard of symptom collection is the Eating Disorder Examination (EDE), an in-person interview designed to gather symptom information for the previous 28 days. However, the EDE only gives patients one opportunity per month to report symptoms. Furthermore, in an outpatient population, the EDE does not provide opportunity for clinicians to monitor patient progress, as well as evaluate the efficacy of treatment.

Purpose: To validate the Weekly Symptom Checklist (WSC) by comparing it to two other measures, the EDE and a Daily Symptom Checklist (DSC).

Methods: Participants (n=22) attended Cognitive Behaviour Therapy (CBT) groups at St. Joseph’s Eating Disorder Clinic. Participants completed a modified EDE interview prior to week 11 of treatment. In the four weeks prior to the EDE, participants also completed WSCs at the beginning of each CBT group. On week 10 of treatment, a sample of participants (n=9) were provided with an online survey link to collect daily symptoms using the DSC for 7 days. This data was used alongside the EDE to measure the convergent validity of the WSC.

Results: Pearson correlations were calculated between the DSC and WSC (n=9) and demonstrated moderate to high correlations (r = 0.55-0.99) between various symptoms reported, including meal and snack frequencies, binge eating, and vomiting. In comparing the WSC to the EDE (n=22), correlations between behavioral symptoms were typically moderate to high and significant (r=0.58-0.90, p<0.05).

Conclusion: The findings of this study indicate moderate to high degree of correlations for various behavioral symptoms between the different eating disorder measures. The findings of this study are promising in suggesting the WSC could be used to measure eating disorder symptoms as there is generally good correspondence between the WSC and the well-validated EDE. This study is still limited by sample size and further data must be collected.

References


Psychiatric Symptoms and Substance Misuse within Population Assessment for Tomorrow’s Health (PATH) Cohort

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Background: In 2011, the Mental Health Commission of Canada reported that 1 in 5 Canadians are affected by a mental or substance use disorder. Individuals with mental illness are two times more likely to develop substance use disorder when compared to matched controls. As well, individuals with substance use disorders are 3 times more likely to develop psychiatric disorders compared to matched controls (Rush et al., 2008).

Objective: The purpose of this poster is to examine the baseline prevalence of psychiatric symptoms and substance use among participants who have enrolled in the Population Assessment for Tomorrow’s Health (PATH) registry, a research registry being developed by the Peter Boris Centre for Addictions Research.

Methodology: This population-based research registry recruited individuals from the general population in the Hamilton community (current N = ~1500). Each participant had completed a one-time assessment visit at the Peter Boris Center for Addictions Research at St. Joseph’s Healthcare Hamilton or McMaster University. Data collected from the following psychometrically validated tools will be used for analysis - psychiatric symptoms: Patient Health Questionnaire, WHO ADHD Screen, Mood Disorder Questionnaire, Psychosis Screen, and PTSD Checklist for DSM-5; and substance use: Alcohol, Smoking and Substance Involvement Screening Test (ASSIST), Alcohol Use Disorders Identification Test, Daily Drinking Questionnaire/ Cannabis Use Disorders Identification Test and Drug Use Disorders Identification Test.

Results: Clinical psychiatric screens, alcohol use, tobacco use and cannabis use will be analyzed through descriptive statistics to show the distributions of psychiatric symptoms and substance use within the PATH Cohort. Further tests will include correlational analysis between severity of substance use and their corresponding motives for substance use.

References

Mood disorder in older adults: a proposed model of relationship between the disease and disability

Atul Sunny Luthra, Shannon Remers, Trevor Semplonius, Heather Millman

Introduction: The relationship between any medical disease, loss of function (disability), and return to function is very complex, and often not a linear one. As an example, four days post-acute coronary syndrome, the patient is in remission of the signs and symptoms of the illness, but return to function is not universal. Identifying the determinants for this discrepancy may assist in bridging this gap. Mood disorder in older adults (MDOA) is managed as a chronic medical disease with emphasis on optimal remission of the index episode and greater emphasis on recurrence prevention. The level of disability associated with it is amongst one of the highest in comparison to other chronic medical illnesses. Review of literature identifies a relative paucity of a comprehensive model to understand the determinants responsible for disability in MDOA. Review of the literature was done to identify some of the established determinants impacting functioning in MDOA. Three such determinants were identified: 1) amotivational states 2) intellectual dysfunction 3) psychological coping. Resident Assessment Inventory (RAI) is a standardized tool administered to all patients admitted to Program for Older Adults (POA), Homewood Health Centre. Embedded in this inventory are several subscales which reflect specific symptoms and functional factors. Three subscales were identified to suitably reflect the individually identified determinants of disability in MDOA. The “Withdrawal/ Negative Symptom Scale” accurately captures amotivational states, the “Cognitive Performance Scale” accurately captures intellectual dysfunction, and the “Depression” and “Anxiety Rating Scales” capture psychological function. Three subscales to capture functioning were: “Interpersonal Conflict/ Social Function Scale,” the “Activities of Daily Living Hierarchy Scale,” and “Activities of Daily Living Instrumental Scale.” Based on the outcomes of patients with MDOA, a dynamic interactional model amongst these “independent” and “dependent” variables was established as a way of proposing a new model to understand the relationship between disease and disability.

Methods: Three different multiple linear regression analyses were performed on the patients admitted to POA during the interval 2012 to 2015. They were managed in with this new innovative approach to tailor pharmacological treatment with the changing phenotype of the ‘index episodes’. 120 patients were included in the analysis. We first computed change scores for all embedded subscales in RAI to track a dynamic relationship between admission and discharge scores. Next, we allocated the ‘Independent’ (Negative Symptom Scale, Depression Rating Scale, Anxiety Scale and Cognitive Performance Scale) and ‘Dependent’ (Interpersonal Conflict Scale, Activities of Daily Living Hierarchy Scale, Activities of Daily Living Instrumental) variables relevant to the model. We used ‘multiple linear regression analysis’ to identify statistically significant relationships amongst these variables to establish the model. The first hypothesis evaluated the relationship between the four ‘independent’ variables with one dependent variable of interpersonal conflict/social functioning. The second hypothesis evaluated the relationship between depression (positive relationship) and anxiety (negative relationship) and interpersonal conflict/social function. The third hypothesis evaluated the relationships between four independent variables and the dependent variable of Activities of Daily Living Hierarchy (ADLH). The fourth hypothesis evaluated the relationship between the 4 independent variables and the dependent variable of Activities of Daily Living Instrumental (ADLI).

Results: Multiple linear regression was performed and found a statistically significant model where changes in Cognitive Performance (positive relationship) predicted changes in ADLI. That means that Depression, Anxiety and Negative Symptoms did not significantly influence ADLI. Multiple linear regression was performed and found a statistically significant model where changes in Negative Symptoms (positive relationship) predicted changes in ADLH. That means that Depression, Anxiety and Cognition did not significantly influence ADLH. Multiple linear regression was performed and found a statistically significant model where changes in Depression (positive relationship) and changes in Anxiety (negative relationship) predicted changes in Interpersonal Conflict. That means that Negative Symptoms and Cognition did not significantly influence Interpersonal conflict.

Conclusion: Motivational drives influence ADLs, executive function influences IADLs, and psychological coping influences social function. Optimal return to function must include individualized treatment interventions tailored to each of these determinants.
Rationale: Epidemiological studies consistently reveal high rates of comorbidity between addictive disorders and other psychiatric disorders (i.e., concurrent disorders, CD). Concurrent disorders are also associated with more severe presentations, including high psychiatric severity, poor medication compliance, diminished social relationships, greater difficulty maintaining employment, and unstable housing.1-3

Purpose: The objective of this study was to implement a standardized clinical screening battery at St. Joseph’s Hospital to aid in the diagnosis and treatment of individuals with CD.

Methods: Patients complete a computerized questionnaire battery prior to their intake assessment at the CD outpatient program and/or during their stay at the CD inpatient unit at SJHH. The battery is comprised of validated self-report measures and is used to screen for substance use and mental health symptoms. Client responses are then automatically scored to generate a one-page report summarizing the patient’s mental health and addictions profile.

Results: At present, 622 patients have completed the clinical screening battery, with 387 patients consenting to participate in the REB approved research component. The one-page report generated at the time of intake has enabled earlier identification of mental health and substance use disorders, which translates into earlier care and treatment. In addition, the “readiness to change” rulers have proven valuable when selecting treatment plans for patients. Data analysis will focus on the distinct clusters of mental health and substance use symptoms for the purpose of creating care paths; as well as identifying the prevalence of specific co-occurring disorders to support new program initiatives and future program direction.

Conclusion: The implementation of a standardized clinical screening battery offers valuable strategies for mental health programs providing care for individuals with CD. It represents a bench-to-bedside partnership between academic researchers and treatment providers that is consistent with a growing emphasis on translational research in mental health settings. Ongoing analyses will inform the CD treatment programs at SJHH and allow for continuous refinement when needed.

References

Use Your Words:
Temperament, SES, and Inhibitory Control in Typically Developing Four-Year Olds

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Rationale: Inhibitory control (IC) refers to an individual's ability to voluntarily inhibit dominant responses (Diamond, 2013), and is implicated in children's ability to successfully maintain social relationships and regulate their behaviour (Rhoades et al., 2009). Children's self-regulatory abilities mature rapidly during the preschool period (between the ages of 3 and 5; Eisenberg et al., 2004). Considering IC is a key factor in children's ability to regulate their behaviour, it is important to explore both internal and external factors that may be implicated in its development during developmentally sensitive preschool periods. Attentional focusing is a temperamental characteristic implicated in children's IC (Rothbart & Ahadi, 1994) and socioeconomic factors such as parental education and familial income are positively associated with children's self-regulation (Miech, Essex, & Goldsmith, 2001). Therefore, it is possible to test the relationship between children's attentional focusing and IC using a differential susceptibility framework.

Purpose: To investigate whether individual differences in 4-year-old children's attentional focusing (temperament) interacted with parental SES (environment) to predict differences in performance on an IC laboratory task.

Methodology: We coded IC from direct behavioral observations during the Dinky Toy Task (Kochanska et al., 1996). Children were presented with a box of toys, and were told to indicate with their words which toy they would like while keeping their hands on their lap. Children's responses were coded on a 0- to 5-point scale indicating the level of IC displayed. The Children's Behavioral Questionnaire-Short Form (CBQ SF; Putnam & Rothbart, 2010) was used to index temperament, and combined household income plus maternal education was used as a proxy for familial SES. We utilized a linear regression to predict IC based on SES and attentional focusing in 49 typically developing four-year old children.

Results: Results revealed a significant interaction between SES and children's attentional focusing ($B = -0.30$, $p = .04$, CI [-.56 – .01]). We found evidence for differential susceptibility such that children with low attentional focusing displayed the best and worst IC, depending on whether their SES was high or low, respectively. Children with high attentional focusing displayed relatively average IC regardless of SES.

Significance: These results highlight the importance of considering both internal and external factors when exploring influences of children's IC, and can inform targeted early intervention for children at risk for poorer IC.

References:
Comparison between the Canadian and French court ordered psychiatric assessment

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**Background:** The psychiatric assessments ordered by a criminal court are intended to help the justice system to deal with people who suffer from a mental health condition. From the assessment report, the court expects to get relevant information in order to tailor its final decision. The primary goal of the sentencing is to protect the society; however, in our view, it is always beneficial if the sentencing enhances some rehabilitation process for the accused. The court ordered psychiatric assessments are often defined by the criminal code of the country; thereof, the types of assessments depend on social and political history of the country. The scientific research in the field of the criminology also plays a role in defining what is relevant. Indeed, the professionals have improved their knowledge in identifying the origin of the criminal behaviors and in evaluating the risk posed by the offenders.

**Purpose:** In this presentation, we aim to compare the Canadian and the French forensic psychiatry system. Comparing both systems is interesting because France is considered as one of the oldest modern justice systems, and many of the forensic concept are inherited from it or its European neighbours. On the other hand, Canada is one of the countries where the modern forensic psychiatry is born, implementing the actual scientific concepts of criminology.

**Conclusion:** It exists many differences in terms of the theoretical and practical aspects of Forensic Psychiatry. In France, the legal model more beneficial to offer rehabilitation to individuals. In Canada, the practice of forensic psychiatry is more a scientific based model. Identifying the pros and cons in both systems may help improve the practice in each country.
Compulsive Internet Use within Behavioural Economic Trajectories for Alcohol Misuse-Hamilton (BETA-H) and the Population Assessment for Tomorrow’s Health (PATH) Cohorts

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Rationale: Compulsive internet use (also known as problematic internet use) lacks a formal definition; however, Thorsteinsson et al (2010) describe it as a loss of control in regards to internet activities and using the internet in a compulsive manner to engage with these applications. It has been noted that conditions such as anxiety and depression were found to correlate with problematic internet use. There is evidence to suggest that greater self-control and lower impulsivity reduce the risk of problematic internet use (Anderson & Stavropoulos, 2017).

Objective: The objective of this poster is to examine the prevalence of compulsive Internet usage among different population groups within the BETA-H and PATH cohorts. In addition, this poster will examine correlations between severity of Internet usage and self-reported symptoms of anxiety, depression, and level of impulsivity.

Methodology: Baseline data from the Behavioural Economic Trajectories for Alcohol Misuse-Hamilton (BETA-H) Study and the Population Assessment for Tomorrow’s Health (PATH) Study will be used. The aim of BETA-H is to examine drinking patterns in young adults over a period of 36 months. Individuals aged 20-23 were enrolled to complete a baseline visit, as well as 10 follow-up visits. Assessment visits compromise of cognitive tasks, physical measurements, and computer-based questionnaires. A subset of the total ongoing data collection will be used (current N = ~500) to examine the effects of multiple factors on problematic internet use The PATH study assesses participants aged 18-65 during a one-time visit. The purpose of this study is to create a database of individuals to be contacted for future research studies in relation to addictions and other mental health issues. Similar to BETA-H, PATH assesses individuals via cognitive tasks, physical measurements and computer-based questionnaires. The final PATH sample comprises 1435 community adults. Analysis will comprise of demographic information, as well as data collected from the following psychometrically validated measures- Internet Usage Questionnaire, UPPS-Brief Impulsive Behavior Scale, Generalized Anxiety Disorder 7-item Scale, and the Patient Health Questionnaire.

Results: Descriptive statistics will be used to illustrate the prevalence of compulsive internet use among population groups within the BETA-H and PATH cohorts. Correlational analysis will be used to examine levels of impulsivity and symptoms of anxiety/depression in association with levels of compulsive internet use.

References
Examining the Impact of the Concurrent Disorder’s Capacity Building Team’s Educational Initiatives on St Joseph Hamilton Healthcare Staff

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**Purpose:** According to a 2010 study, comorbidity training has a positive impact on clinician’s self-reported attitudes and confidence in dealing with comorbidity issues (Cameron, 2010). Furthermore, attitudes held by healthcare professions towards patients in their care, have been found to impact the quality of care delivered (Moodley-Kunnie, 1988). Since attitudes can impact the extent to which knowledge is accepted and used in practice, staff attitudes towards individuals with substance use problems may have the potential to influence the diagnosis, treatment, and rehabilitation of clients with concurrent disorders. The purpose of this study was two-fold. Our aim was to a) identify whether education sessions offered by the concurrent disorders capacity building team at SJHH, leads to improvements in self-reported attitudes and confidence when working with patients with substance use disorders; and b) identify the best method of delivery for the sessions.

**Content:** Content for the education sessions centred on several topics: Substances, Intoxication and Withdrawal; Documentation of Substance Use; Supporting Family Members; Harm Reduction; Motivational Interviewing; The Contemplative Client; Pain Management; Strategies for Pre-Contemplative Patients; Stigma

**Methodology:** A variety of education sessions were provided utilizing different delivery models (i.e., 20-minute rapid education, one hour sessions, full day training). After written consent was given, participants were asked to complete a self-report paper questionnaire containing a modified version of the Drug and Drug Problems Perception Questionnaire (DDPPQ) and the Concurrent Disorders Confidence Scale (CDCS) prior to education, which evaluated attitudes, knowledge and confidence. After the session, participants were asked to complete a post-survey via email within 5 days of the education (the electronic post-questionnaire was identical to the paper pre-questionnaire). Finally, a 6-month follow-up questionnaire was emailed to participant to evaluate sustained change.

**Results:** Overall, subjects (N=131) perceived to have experienced a very significant pre to post increase in the areas of role adequacy (p <.001), role support (p <.001), role-related self-esteem (p =.006), role legitimacy (p =.001), but not job satisfaction (p = .147) on the DDPPQ. The CDCS also showed that participants experienced significant increase in the capacity of their knowledge (p <.001) and application (p <.001) from pre to post. Upon comparing session models, the data from the one-hour sessions (n1 = 70) showed a slightly higher frequency of significant increases than data from the full-day sessions (n2 = 61) (25 vs 22 instances respectively). The 6-month post-session data is currently being collected and will be fully analyzed the end of March.

**References**

Modeling parental preferences for a distance-delivered training program for parents of children with ODD

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Rationale: Distance-delivered parent training programs are an effective intervention for children with Oppositional Defiant Disorder (ODD) (Sourander et al., 2016). In addition to face-to-face programs, a proportion of parents prefer to receive training from a distance via video or the internet (Cunningham et al., 2015). These programs can overcome the logistical barriers of traditional treatment delivery strategies such as long wait times and travel to and from clinics. Despite this, not all parents elect to participate in these distance-delivered programs.

Purpose: We used a discrete conjoint experiment (DCE) to model factors that might influence parental participation in a distance-delivered parent training program for children with ODD.

Methods: We identified 9 potentially actionable attributes (e.g. program length, mode of administration, and materials) that could influence parental decisions to participate in a distance-delivered training program. Each attribute was defined by 4 levels. 208 parents completed 20 experimentally manipulated choice tasks. For each choice task, parents were presented with 3 hypothetical delivery methods and asked to select the best method. We used latent class analysis to estimate utility coefficients and importance scores.

Results: Latent class analysis yielded a 3 segment solution. The inclusion of covariates (e.g. child externalizing behaviours) did not improve model fit. Across all 3 segments, parents preferred a delivery method that scheduled coaching sessions on weekday evenings, included 12 lessons, provided a video and a workbook to teach new skills, and provided coaching on all lessons. Parental views regarding coach location, child participation, coaching format (Phone vs. Email vs. Website), frequency of practice, and reminder calls varied by segment membership. Segment 1 (44% of the sample) preferred coaching to be done via email. Segments 2 and 3 (56% of sample) preferred coaching to be delivered by phone.

Conclusion: Engaging service users at the early phase of program design could capitalize on differing preferences, maximizing parental participation in distance-delivered training programs.

References


Background: Individuals and families living with schizophrenia are insufficiently involved in the treatment process, and lack preparation and supports for community living. 50-75% of individuals living with schizophrenia lack awareness and insight into their illness (Lysaker et al., 2009) that continues despite education, and medication (Pijnenborg et al., 2013). Consequences are disengagement from care, stopping medications, relapse and multiple rehospitalisations. Families and providers are challenged to maintain relationships, access interventions and supports with someone who, as a result of the condition itself, does not believe they have an illness requiring treatment. Self-management support is being advocated as a feasible, effective intervention for engagement and building capacity within individuals and their families/support networks to actively manage the impact of illness on daily living. Questions remain about how best to deliver a self-management approach that is routinely accessible and practical.

Purpose: To evaluate the integration of a model of self-management support (SET for Health) embedded into routine transitional care processes of an outpatient mental health case management service. Specifically, does the SET for Health program: a) add value with individuals receiving specialized services for schizophrenia from clients’/families’ and providers’ perspectives; and b) influence individuals’ engagement in treatment, participation in self-management, symptom distress, sense of hope and quality of life?

Methods: At two outpatient programs, 9 multi-disciplinary case managers are offering 12 months of self-management support to 120 outpatients living with schizophrenia. Within a program evaluation framework, supporting structures, implementation processes and outcomes will be assessed. Using a mixed methods approach, feasibility of delivery during routine care will be evaluated by: retention and completion rates; client, family/caregiver and provider satisfaction and perceived effectiveness; and goal attainment. Fidelity and ratings of self-management, symptom distress, sense of coherence, hope, and activation will be measured.

Anticipated Results: This work-in-progress will demonstrate the feasibility of the SET for Health model with outpatients living with schizophrenia. Findings will inform how it worked in practice and optimal conditions for delivery. A model of self-management integrated into goal-directed specialized case management services may improve outpatients’ engagement and activation, and management of illness and health.

References
Long Term Outcomes of Childhood Internalizing Problems in Extremely Low Birth Weight (ELBW) Survivors

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Rationale: Approximately 10-20% of children and adolescents experience mental disorders, and half of these persist into adulthood (Kim-Cohen et al., 2003). While internalizing problems are among the most common psychological disorders in children, their long-term sequelae are not well understood, particularly in survivors of preterm birth. Infants born at extremely low birthweight (ELBW) are particularly vulnerable to these problems (Boyle et al., 2011).

Purpose: To examine associations between childhood internalizing problems and mental and physical health problems in adulthood.

Methods: The parents of ELBW (n = 150) and normal birth weight (NBW; n = 145) participants reported on internalizing problems using the Child Behavior Checklist when children were 8 years old. At age 22-26 and 30-35 ELBW and NBW subjects self-reported their mental and physical health using the Young Adult Self-Report Questionnaire and Ontario Child Health Study Scales. At age 30-35 they completed the Mini International Neuropsychiatric Interview. Regression analyses were performed, controlling for sex, familial SES at age 8, and age.

Results: Childhood internalizing problems predicted internalizing problems at age 22-26 but not 30-35 in both birth weight groups (b = 42, p = .003 for ELBWs; b = 24, p = .036 for NBWs). However, they did predict clinically significant psychiatric disorders at age 30-35 (OR = 1.11, 95%CI, 1.01-1.23 for ELBWs; OR = 1.11, 95%CI, 1.01-1.22 for NBWs). Childhood internalizing problems also predicted chronic physical health conditions at age 30-35, but only for ELBW survivors (b = .15, p = .007).

Conclusion: Childhood internalizing disorders persist into young adulthood, and predict a range of depressive and anxiety disorders in the fourth decade of life in both typically developing children and those exposed to significant perinatal adversity.

References:


Association of insomnia complaints with comorbid psychiatric symptoms and medical conditions (A proposed study)

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Background: Insomnia affects 13.4% of Canadians and can negatively affect an individual’s social, occupational, and emotional functioning (Morin et al., 2011). Patients with insomnia report complaints of increased sleep onset latency (SOL; defined as difficulty falling asleep), increased wakefulness after sleep onset (WASO), and waking up before intended rise time (ie. early awakening). Although insomnia is often comorbid with chronic pain, gastrointestinal or psychiatric symptoms (Ishak et al., 2012), it is unclear whether these conditions are associated with specific types of sleep complaints.

Purpose: The proposed study aims to investigate the relationship between types of sleep complaints within insomnia disorder (SOL, WASO, early awakenings) and anxiety and depression severity and/or presence of chronic pain and gastrointestinal (GI) conditions.

Methods: This study will utilize data from 53 participants who have a diagnosis of insomnia recruited from the Sleep Medicine Clinic at the Firestone Institute for Respiratory Health. Anxiety and depression severity will be measured with the Hamilton Anxiety Rating Scale and the Beck Depression Inventory, respectively. Chronic pain and GI conditions will be assessed on a presence/absence basis. Three multiple linear regression analyses will be conducted to examine relationships between each sleep complaint (as assessed via Consensus Sleep Diaries for SOL, WASO, early awakenings) and anxiety, depression, and chronic pain and GI conditions.

Expected results: An exploratory multiple regression analysis will be completed on an expected sample of N=53 participants by April 2018. This analysis will determine if specific predictors (anxiety, depression, chronic pain and GI conditions) map onto specific sleep complaints (SOL, WASO or early awakening).

Clinical Implications: The results from this study can be used to tailor treatment for insomnia in accordance to a patient’s specific medical and psychiatric symptoms, and lead to a better understanding of the relationship of these comorbidities to specific sleep complaints.

References:

Consequences of Harmful Alcohol Use in Young Adults and Effects on Quality of Life in the Behavioural Economic Trajectories of Alcohol Misuse- Hamilton (BETA-H) Cohort

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Background: In 2012, the Canadian Centre for Substance Abuse reported that risky alcohol consumption peaks during young adulthood. More than 50% of past-year drinking males and approximately 45% of females between the ages of 18-24 were found to be consuming more than the recommended daily levels of alcoholic beverages at least monthly (Thomas, 2012). This level of alcohol consumption can lead to various personal and social costs, and in a study looking at alcohol-related consequences in drinkers around the world, Graham et al (2011) found some common consequences to be guilt/remorse, inability to remember the night before, and harmful effects on finances.

Objective: The purpose of this poster is to examine common consequences of harmful alcohol use among young adults enrolled in the Behavioural Economic Trajectories of Alcohol Misuse- Hamilton (BETA-H) longitudinal study. In addition, this poster will compare quality of life measures among those who engage in hazardous vs. non-hazardous alcohol use.

Methodology: Baseline visit data will be used from the Behavioural Economic Trajectories of Alcohol Misuse- Hamilton (BETA-H) study. The purpose of the study is to examine changes in drinking behaviours over time among young adults (aged 20-23 at time of enrolment). This longitudinal study comprises of one baseline visit and 10 follow-up visits (alternating between in-person and online every 4 months) over a period of 3 years. Each enrolled participant has completed a baseline assessment visit at either the Peter Boris Centre for Addictions Research in St. Joseph’s Healthcare Hamilton West 5th Campus or the McMaster University Medical Centre location. During this visit, participants completed cognitive tasks, filled out computerized questionnaires and provided physical measurements. A subset of the ongoing data collection (current N = ~500, anticipated N=665) will be used to examine patterns and consequences of harmful alcohol use. Data collected from the following psychometrically validated tools will be used for analysis – harmful alcohol use: Alcohol Use Disorders Identification Test, consequences of harmful alcohol use: Young Adult Alcohol Consequences Questionnaire, quality of life: World Health Organization Quality of Life questionnaire, The Patient Health Questionnaire- Depression Subscale (PHQ-9), and Generalized Anxiety Disorder 7-item scale (GAD-7).

Results: Descriptive statistics will be used to demonstrate the prevalence of harmful alcohol use within the BETA-H cohort. In addition, correlational analysis will be used to examine associations between severity of alcohol use and consequences of this use, as well as self-reported quality of life.

References
Hypersexuality, Mental Health, and Impulsivity in the Population Assessment for Tomorrow’s Health (PATH) Cohort

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Rationale: Hypersexuality has been characterized in the literature as an addictive behaviour involving a lack of control over one’s sexual behaviour, causing adverse consequences and significant personal distress for the individual (Reid et al., 2014; Reid et al., 2015). One mechanism common to hypersexuality and other addictive disorders is impulsivity (Reid et al., 2014). Examining the influence of impulsivity on hypersexual behaviours will improve our conceptualization of these behaviours and potentially improve treatment. The current research will further clarify the associations between hypersexual behaviours and impulsivity.

Purpose: The purpose of this investigation is to examine the continuous relationships between hypersexual behaviours and various measures of impulsivity along with other mental health variables.

Methods: Data were extracted from the Population Assessment for Tomorrow’s Health (PATH) Registry, an ongoing, large-scale population assessment taking place at St. Joseph’s Healthcare Hamilton and McMaster University in Hamilton, Ontario. Participants (N = 1906) attend a 2-3 hour assessment during which they complete computerized questionnaires, cognitive tasks, and provide physical measurements. Data collected from the following psychometrically validated measures were analyzed: Hypersexual Behaviour Inventory – Short Form, Barratt Impulsivity Scale, Short UPPS-P Impulsive Behavior Scale, Patient Health Questionnaire, and a Go/No-Go task. Potential moderators of these associations were also examined (e.g., gender, age, etc.).

Results/Conclusion: In this sample of the general population, there was low endorsement of items on the HBI-Short Form. Men scored higher overall on the HBI-Short Form than women. Hypersexual behaviours showed low positive correlations with drug and alcohol use severity and depression and anxiety symptoms. Hypersexuality was associated with the impulsive personality traits of positive urgency, sensation seeking, and cognitive instability, which taken together may point to an impulsive personality construct that could underlie risk for developing hypersexual behaviours.

References:

