Canadian Academy of Geriatric Psychiatry (CAGP) 2017 Annual Scientific Meeting Book of Abstracts

Positive Psychiatry and The Fountain of Health (FoH): Optimizing Brain Health, Vitality, and Resilience Across the Spectrum of Aging

Kiran Rabheru, Beverley Cassidy, Linda Gobessi

Background: The world is undergoing a major demographic shift as the population ages exponentially. A transformational change is required to optimize brain health, mental wellness and aging for all. Positive psychiatry aims to broaden the scope of traditional psychiatric practice by looking beyond symptom improvement into the realm of relapse prevention and resilience. The Fountain of Health (FoH) Initiative for optimal aging is a unique Canadian strategy that demonstrates positive psychiatry in action.

Methods: The FoH is the first global initiative to optimize aging by reducing negative stereotypes and promoting healthy aging through five scientific, evidence-based, measurable strategies: 1. physical activity 2. social activity, 3. engaging in lifelong learning, 4. taking care of our mental health, 5. changing how we think about aging.

Results: The science of healthy aging and neuroplasticity has been used to focus our attention on five key "health prescriptions" which can assist with healthy aging and well-being across the lifespan. The evidence supporting promoting social connectedness, physical activity, and lifelong learning will be explored. In addition, the importance of attitudes about aging, the impact of these attitudes and the effect they can have on health behavior will also be reviewed. Realistically knowing what is good for us or our patients doesn't necessarily lead to behavioral changes. In response, the FoH provides a variety of tools which use the cognitive behavior therapy model to help individuals set specific goals to bridge the gap between the knowledge about healthy aging and health behavior.

Conclusions: The FoH aims to create and disseminate user-friendly tools to affect positive change as primary, secondary, and tertiary strategies. These can be disseminated through strategic partnerships connecting populations, clinicians, governments, industry, and policy makers.

Understanding the Link Between Neuropsychiatric Symptoms and Cognitive Decline: Insights From Neuroimaging

Linda Mah, Krista Lancot, Corinne Fischer, Ariel Graff

Background: Neuropsychiatric symptoms (NPS) such as depression and apathy in cognitively normal older adults and Mild Cognitive Impairment (MCI) increase the risk of developing future AD and thus, may represent prodromal features of AD. Although these epidemiological associations are well-established, the neural underpinnings of NPS associated with AD are less evident. For example, do anxiety symptoms in MCI share similar neural correlates as generalized anxiety disorder? Do NPS result from, or do they accelerate, AD-related neuropathological changes in the brain?

Using the example of apathy, Geda and colleagues (American Journal of Geriatric Psychiatry, March 2017) proposed a hypothetical model on the pathways linking NPS and neuroimaging biomarkers of AD. Their model suggests that NPS symptoms result from cognitive impairment and AD-related neuropathology, and that NPS indirectly lead to neurocognitive disorders by moderating the pathway between cognitive impairment and incipient MCI or dementia.

Methods: In this symposium, we will use the proposed model as a conceptual framework in our review of neuroimaging findings associated with specific NPS: apathy, delusions, depression and anxiety. We discuss the applicability of the proposed model in accounting for the associations between these specific NPS and neurocognitive disorders, and propose alternative mechanisms that may link NPS and cognitive decline.

Results: There is overall evidence of associations between NPS and imaging markers of neurodegeneration, particularly within frontal regions.

Conclusions: While the model proposed by Geda and colleagues suggests that NPS result from cognitive impairment and neuropathological changes due to AD, for some NPS such as depression, these relationships appear to be bidirectional.

A Multimodal Neuroimaging Approach to Uncover the Link Between Alzheimer's Dementia and Depression

Eric Brown, Jun Ku Chung, Eric Plitman, Fernando Caravaggio, Yusuke Iwata, Julia Kim, M. Mallar Chakravarty, Philip Gerretsen, Ariel Graff-Guerrero

Background: Major depression (MD) is common in Alzheimer's Dementia (AD) patients. A lifetime history of MD is an independent risk factor for developing AD, and MD in late-life independently predicts subsequent dementia. Having more lifetime episodes of depression, or total time depressed, may increase the risk of dementia.

Methods: Positron emission tomography (PET) imaging allows the detection of cerebral amyloid and neurofibrillary tangles of tau proteins, which are both strongly associated with AD; furthermore, structural MRI allows the quantification of hippocampal volume, which is reduced in AD.

Results: In this talk, we will integrate recent PET findings from our lab supporting the association of a lifetime history of MD with increased amyloid burden in frontal regions. On the other hand, a single late-life episode does not increase amyloid burden. In addition, we will present longitudinal findings showing that depressed patients converting to dementia do so earlier than non-depressed individuals that developed dementia; and that depressed patients who converted to dementia had smaller hippocampal volumes than both non-depressed individuals who developed dementia and depressed patients that do not convert to dementia. The role of tau in dementia associated with MD is still unclear. We will present our recent meta-analysis as a starting point to understand the potential role of tau in dementia associated with MD.

Conclusions: Our multimodal imaging approach should help in the identification of individuals at high risk (e.g., MD) of developing dementia, which may be critical in the prevention and treatment of the disorder if future disease modifying therapies are developed.

Determining the Neural Correlates of Delusions in Alzheimer's Disease and Mild Cognitive Impairment

Corinne Fischer, Linda Mah, Ariel Graff

Background: Delusions and other psychotic symptoms are common in patients with neurodegenerative disorders such as Alzheimer's disease (AD) and are estimated to occur in 50% of patients at some point over the course of the disease. Moreover, they are associated with a number of adverse clinical outcomes. In spite of the prevalence of these symptoms and their association with adverse clinical outcomes, there is little understanding of the underlying neuropathogenesis.

Methods: In this talk we will review the functional and structural imaging correlates of psychotic symptoms, specifically delusions, in patients with Alzheimer's disease and mild cognitive impairment (MCI).

Results: Delusions in AD/MCI based on voxel based morphometry may be associated with atrophy in the cerebellum, right frontal lobe and regions corresponding to the default mode network including the precuneus. Moreover, we demonstrate reduced functional connectivity in the default mode network in AD patients with delusions compared to AD patients without delusions.

Conclusions: Both volumetric and functional imaging studies based on our data suggest that damage to the default mode network and associated anatomical areas may play a role in the neuropathogenesis of delusions in AD.

Neuroimaging Correlates of Apathy in Mild Cognitive Impairment

Krista Lanctôt

Background: Apathy is one of the most common neuropsychiatric symptoms in mild cognitive impairment (MCI). Importantly, the presence of apathy predicts increased risk of conversion from MCI to Alzheimer's disease. This talk will review recent results from neuroimaging studies examining the association between apathy and markers of neurodegeneration in MCI.

Methods: Studies assessing the association between apathy and cortical thickness (using structural magnetic resonance imaging (MRI)), functional connectivity (using resting state functional MRI), metabolism (using 18F-fluorodeoxyglucose positron emission tomography (FDG-PET)), and amyloid burden (using Pittsburgh Compound B (PiB) PET) in individuals with mild cognitive impairment MCI will be presented.

Results: MRI studies have shown greater inferior temporal atrophy was associated with greater apathy at baseline and increasing apathy over time. In fMRI, reduced frontoparietal control network connectivity was associated with greater apathy. Using FDG-PET, posterior cingulate hypometabolism was associated with greater apathy at baseline, while baseline supramarginal hypometabolism was associated with increasing apathy over time. Finally, greater dorsolateral prefrontal tau burden was associated with greater apathy at baseline.

Conclusions: In summary, apathy has consistently been associated with changes in multiple imaging modalities that

suggest neurodegeneration. The extent to which these findings are specific to apathy (e.g., frontal involvement), or represent regions typically affected in early AD (e.g., parietal and inferior temporal involvement) remains to be seen. This distinction may be important as it may have treatment implications.

Geriatric Addictions: Development of a Provincial Collaborative and the Road to creating National Guidelines

Marilyn White-Campbell, Bonnie Purcell, Simone Powell, David Conn, Lisa Van Bussel

Background: The Geriatric Addictions collaborative was established as an offshoot from the Behavioral Supports Ontario Catalyst event in 2015. A provincial Substance Use Older Adult Collaborative was formed in collaboration with Behavioral Supports Ontario. The work plan included the promotion of a Canadian Screening tools for geriatric addictions (SAMI), reviewing low risk drinking guidelines for older adults and to bring the voice of lived experience to inform best practice in Geriatric Addictions. The opportunity for collaboration at multiple systems and levels resulted in the identification of the need for national best practice guidelines for Geriatric Addictions including, Alcohol, Opiates, Benzodiazepines and Marijuana.

Methods: Monthly meetings with Knowledge brokers from BSO, Co-Chairs and collaborative membership. Further collaborations with Canadian Coalition for Seniors Mental Health an Health Canada, Canadian Center for Substance Abuse and CMHA national.

The Older Adult Substance Use Collaborative has shared at the local, provincial and national levels, This has helped to build and strengthens our networks. It is an enabling factor in the acknowledgement and growth on our work with older adults with SUD. The collaborative has served as a architect for thought leaders among several networks to help inform and improve best practice.

Results: The collaborative helps to build capacity and builds knowledgeable care teams through out the system

Conclusions: The collaborative is an effective way to build networks, identify systems gaps and inform best practices. It also brings the voice of the client and their lived experience to inform our work. This brings great value to connecting at all levels.

Medical Assistance in Dying: A Clinical and Ethical Conundrum for Psychiatrists

Sandy Simpson

Background: Capacity assessment in the presence of a psychiatric disorder needs close step wise evaluation. It can be challenging in the medically ill with disabilities. It involves psychiatric assessment, capacity assessment and legal considerations.

Methods: We present the case of an individual in her late 50's, with diagnosis of progressive multiple sclerosis for over 25 years, who requested medical assistance in dying (MAiD). She was in a chronic care unit for 10 years, dependent for all activities of daily living. She also had a diagnosis of major depressive disorder and was on treatment for the same. We explore the challenges of psychiatric assessment given her difficulties with communication. We further discuss the approach to assessment and management of depression as the initial step towards capacity assessment for MAiD.

We discuss the steps to assessment of a request for MAiD in the above clinical scenario. This essentially involves a psychiatric assessment, capacity assessment and eligibility assessment for MAiD. We further elaborate the process of capacity assessment in this situation and reflect upon the ethical, legal and practice issues for a psychiatrist assessing the situation.

Results: To be discussed.

Conclusions: To be discussed.

Psychiatric Assessment of a Medically Ill Patient Requesting Medical Assistance in Dying (MAiD)

Pallavi Dham

Background: Assessment of a patient with a psychiatric disorder complicating a medical illness that may be disabling becomes challenging especially when there is a request as critical as Medical Assistance in Dying. It is important to get it right as best as possible.

Methods: We present the case of an individual in her late 50's, with diagnosis of progressive multiple sclerosis for over 25 years, who requested medical assistance in dying (MAiD). She was in a chronic care unit for 10 years, dependent for all activities of daily living. She also had a diagnosis of major depressive disorder and was on treatment for the same. We explore the challenges of psychiatric assessment given her difficulties with communication. We further discuss the approach to assessment and management of depression as the initial step towards capacity assessment for MAiD.

Results: To be discussed.

Conclusions: To be discussed.

Capacity Assessment for Medical Assistance in Dying (MAiD) in Situations Where Psychiatric Disorders Complicate Medical Illness

Sandy Simpson

Background: With the introduction of the new legislation on MAiD, it is important to understand the the process of assessment in the presence of psychiatry disorders complicating a medical illness.

Methods: We discuss the steps to assessment of a request for MAiD in a clinical scenario where a medically ill patient has a comorbid psychiatric disorder. This essentially involves a psychiatric assessment, capacity assessment and eligibility assessment for MAiD. We further elaborate the process of capacity assessment in this situation and reflect upon the ethical and practice issues for a psychiatrist assessing the situation.

Results: To be discussed.

Conclusions: To be discussed.

The Legal Framework for Understanding Medical Assistance in Dying in patients with a Psychiatric Disorder

Michele Warner

Background: In the case of Carter v. Canada, the Supreme Court of Canada determined that the Criminal Code's absolute prohibition on medical assistance in dying violated the Charter rights of competent adults who are suffering intolerably from grievous and irremediable medical conditions, and seek assistance in dying. In response, the federal government enacted legislation that establishes a legal framework allowing for medical assistance in dying to people who meet certain eligibility criteria. We are in the early days of understanding how these legal criteria apply in cases of medically ill patients with an underlying psychiatric condition.

Methods: We present the relevant background to the legislative amendments, and provide an overview of the current legal framework including the eligibility criteria.

Results: We consider how those criteria are interpreted, and examine the legal issues that arise in the application of those criteria to patients who have a physical disability as well as psychiatric disorder.

Conclusions: We examine how the legal criteria applied in the case of an individual in her late 50's, with a diagnosis of progressive multiple sclerosis for over 25 years, who requested medical assistance in dying.

Refining EPA's: Incorporating Resident Feedback on EPA Content in to CBME-Based Curricular Reform

Melissa H. Andrew, Maria Hussain, Rylan Egan, Theresa Beesley

Background: Assessment within competency-based medical education (CBME) demands that residents show entrustable competence across pre-established skills and activities. However, in subspecialties such as geriatric psychiatry, the number and breadth of skills necessary for future practice is greater than a 1-2 year curriculum can encompass. It is challenging to develop Entrustable Professional Activities (EPA's) with assessments specific enough to assess essential training, but broad enough to allow for exploration across areas of interest. Queen's, as the first University to attempt comprehensive EPA development within geriatric psychiatry, is in a unique position to report on this process.

Methods: Utilizing self-study methodology, we have collected qualitative feedback from graduates nationally since Geriatric Psychiatry's recognition as a subspecialty in 2011, but have not maintained rigorous protocols.

Results: Our work suggests the need to modify traditional development of EPA's and assessment tools for subspecialties. Residents can generally be entrusted across a wide range of activities from the outset of subspecialty training. Our challenge, therefore, is to mass-customize our CBME implementation and assess refinement.

Conclusions: Similar subspecialties should include residents and recent graduates as partners in assessment by:
1. Adopting a quality improvement (QI) approach to iterative improvement of curriculum; dynamically adjusting to demands in the field, and opportunities in training, as identified by recently graduates across an array of practice niches.
2. We envision use of generalized entrustment scales, with requirements for extensive prompted narrative feedback, allowing for bounded (yet broad) EPA assessment across contexts, and providing quality data to inform Committee-level entrustment decisions.

Systematic Review and Meta-Analysis of the Prevalence of Major Depressive Disorder Among Older Adults with Alzheimer's Disease and Related Forms of Dementia

M. Selim Asmer

Background: There are increasing numbers of older adults with dementia, and major depressive disorder (MDD) is also common in this population. However, little is known about the overall prevalence of MDD in persons with dementia (DpD). The aim of this systematic review and meta-analysis was to determine the prevalence and factors associated with depression in this population.

Methods: We searched electronic databases to identify studies on the prevalence of DpD using validated criteria for both MDD and dementia. Meta-analysis was used to determine the pooled estimates and 95% confidence intervals for the prevalence of DpD. Subgroup analyses was used to compare the prevalence across dementia subtypes, study setting, and dementia severity.

Results: Fifty-four studies including 9,800 individuals with dementia were included in the review. Meta-analysis identified that the prevalence of MDD in all-cause dementia was 15.5% (95% CI:12.0-19.9%). The prevalence of MDD was higher among individuals with vascular dementia (24.7%) compared to Alzheimer's disease (14.1%). Studies using the provisional diagnostic criteria for DpD reported a higher prevalence of MDD (33.3%) compared to studies using either the DSM-III-R (13.2%) or DSM-IV (17.3%) criteria. The prevalence of MDD did not differ significantly according to dementia severity or study setting.

Conclusions: Depression is common among individuals with dementia. The types of dementia and criteria for diagnosing DpD have an impact on the prevalence estimates of DpD. Further studies are required to understand factors that lead to the development of DpD, and strategies to prevent and treat DpD.

Quality Improvement Activity Leading to Strengthened Suicide Prevention, Assessment and Intervention Practices within Community Seniors Mental Health Outreach Programs

Julia Baxter, Maxine Lewis, David Lam

Background: Suicide among seniors is an increasing issue and related data is thought to be undervalued due to stigma and more. Accreditation Canada has Required Organization Practices regarding suicide prevention. One practice involves assessing clients for suicide risk. An important aspect of suicide assessment is documentation.

Methods: A self-administered audit tool was developed, tested, and aligned with Accreditation Canada that a suicide risk assessment be completed at initial assessment. Questions focused on: previous suicidal risk, current suicidal risk, suicide risk factors, protective factors, level of suicide risk. Transdisciplinary case managers' comfort to conduct/document a suicide risk assessment was explored. In November 2015 and 2016 case managers of SJHH SMHOPs applied the audit tool based on criterion.

Results: 2015 audit results showed most frequently documented theme was previous suicidal behaviour (case manager) and current suicidal ideation (psychiatrist/residents). Documented least frequently by both clinician groups was level of suicide risk. 2016 audit results showed that the most frequently documented information by both groups was clients having risk factors for suicide and again documented least frequently by both was level of risk. While comfort in conducting a suicide risk assessment were relatively high, in both years less than 50% of case managers self-reported that same comfort level documenting a suicide risk assessment. A range of ideas were gathered to strengthen assessment and documentation.

Conclusions: Quality improvement initiative helped SMH service better define suicide risk assessment, identify a standardized tool, create a framework for documentation, explore practices around suicide prevention, assessment and intervention and elicit further improvement ideas.

Efficacy of Deep Transcranial Magnetic Stimulation for Treatment Resistant Late-Life Depression

Daniel Blumberger, Tyler Kaster, Yoshihiro Noda, Yuliya Knyahnytska, Jonathan Downar, Tarek K. Rajji, Benoit H. Mulsant, Zafiris J. Daskalakis,

Background: Treatment resistant late-life depression (LLD) is a major public health problem. Newer treatments, such as transcranial magnetic stimulation (TMS), have not been systematically studied in older adults, despite the overwhelming need. Deep rTMS (dTMS) may be a particularly efficacious neurostimulation strategy in older adults with depression as the coil can target broader cortical regions and overcome age-related atrophy.

Methods: Adults 60 years of age and older with LLD and prior treatment non-response (mean failed trials 2.9; SD 0.25) were recruited at a university mental health centre; 58 patients were randomized to receive active or sham dTMS using a Brainsway H1 coil that targets the dorsolateral and ventrolateral prefrontal cortex bilaterally, with deeper and wider penetration to the left prefrontal cortex. Treatment

parameters were: 6017 pulses per session;18 Hz; 20 treatments over 4 weeks; 120% resting motor threshold intensity. The Hamilton Depression Rating Scale (HDRS-24) was used to assess symptom severity. The primary outcome was remission (defined as HDRS-24 < 10 and 60% reduction in HDRS-24 scores relative to baseline at two consecutive assessments).

Results: In a modified intention to treat analysis (n=52; 6 subjects received treatment with a different coil), active dTMS treatment led to remission in 40% of patients (10 out of 25), while the sham treatment led to remission in 14.8% (4 out of 27) of the patients (Barnard's test, p=0.044).

Conclusions: Deep rTMS with the H1 Coil, using extended sessions, led to a clinically meaningful remission rate in older adults with treatment resistant depression that was superior to sham stimulation.

Considering a Career in Geriatric Psychiatry? Meet the Experts in Education, Research, Advocacy and Community Practice

Paul Blackburn, Keri-Leigh Cassidy, Mark Rapoport, Julia Kirkham, Alanna Baillod, Robbie Dosanjh, Suzanne Ettie, Vanessa Thoo, Sara Dalley, Carole Lazaro, Amanda Canfield,

Background: The Canadian Academy of Geriatric Psychiatry (CAGP) Trainee Strategy formed in 2011 with the goal of creating opportunities and support for Member-in-Training (MIT) CAGP Members.

Formal and informal feedback has shown that trainees often wonder "What is a geriatric psychiatrist?" and "What would a career in geriatric psychiatry entail?" Trainees have indicated that they are interested in learning more about the lifestyle and career of a geriatric psychiatrist from experts in the field.

In response to trainees' feedback, an interactive workshop has been created by the CAGP Trainee Strategy to explore career opportunities within geriatric psychiatry. This workshop will involve a brief introduction of the topic followed by a 30-minute panel discussion by experts in the field of geriatric psychiatry. Additionally, it is the intention of the workshop authors to administer a brief pre-annual scientific meeting (ASM) needs assessment questionnaire to MIT and affiliate in training (AIT) members who will be attending the ASM so as to determine specific questions and areas of interest.

The expert panel will be asked to describe why they chose a career in geriatric psychiatry while highlighting the various opportunities they have had during their careers and share their perspective of the lifestyle of a geriatric psychiatrist. They will also be asked to respond to questions arising from the brief needs assessment.

The second half of the workshop will involve trainees interacting within small groups in focused discussions with the panel experts. This is a great opportunity for residents, fellows, and students from all disciplines to network with experts and colleagues, and ask any questions they have about their career development in a friendly setting.

PACt-MD: A Trial to Prevent Alzheimer's Dementia in High-Risk Populations - Design and Early Baseline Findings

Tarek Rajji

Background: More than half-million Canadians live with Alzheimer's dementia (AD) and this numbers is likely to double every 20 years. To date, no treatment is available for AD. It is also thought that by the time AD is diagnosed it is too late to intervene. Thus, there is an urgent need to develop preventative interventions. Older persons with history of major depressive disorder (MDD) or with mild cognitive impairment (MCI) are at high-risk of developing AD.

Methods: In this symposium, we will first present the rationale and design of a ongoing randomized clinical trial that aims at preventing AD in these two high-risk populations. In PACt-MD ("Prevention of Alzheimer's Dementia with Cognitive Remediation plus transcranial Direct Current Stimulation in Mild Cognitive Impairment and Depression"), older persons with history of MDD or current diagnosis of MCI are enrolled to receive the combination of Cognitive Remediation and transcranial Direct Current Stimulation (tDCS) over a period of 5 years and are monitored for cognitive decline and progression towards AD.

Results: Second, we will present novel neurophysiological data that sheds light on the mechanisms underlying working memory impairment in older persons with MDD based on baseline data from PACt-MD.

Third, using also PACt-MD baseline data from older persons with MDD or MCI, we will present the impact of various analytical approaches to determine the beta-amyloid status to enhance the specificity of those persons that will progress to dementia.

Conclusions: Finally, we will present on the relationships among clinical, cognitive and neuropsychiatric symptoms in the MCI using their baseline assessments as well.

Evaluating the Association Between Neural Oscillations and Working Memory in Older Individuals with a History of Major Depressive Disorder

Michelle Goodman

Background: Working memory deficits are common among individuals at-risk for Alzheimer's dementia, including those with major depressive disorder (MDD). Yet, little is known about the mechanisms underlying these deficits. Studies have demonstrated that theta-gamma coupling (TGC) – the modulation of high-frequency gamma oscillations by low-frequency theta oscillations – is a neurophysiological process key to working memory functioning. Thus, dysfunctional oscillatory activity may be associated with deficits in working memory. As such, the aim of this study is to evaluate the relationship between TGC and working memory performance in individuals with a history of MDD.

Methods: Thirty-one healthy controls (HC) (Mage = 69.8, SD = 5.5) and 29 with MDD in stable remission (Mage = 73.5, SD = 5.2) completed the N-back working memory task during an electroencephalography (EEG) recording.

Results: A one-way ANCOVA revealed a significant difference on 2-back accuracy between groups, after controlling for group differences in age ($F(1,56) = 4.84$, $p = 0.032$). MDD participants demonstrated lower accuracy than HCs. In contrast, there were no significant differences in reaction time between groups ($p = .140$). Furthermore, a one-way ANCOVA revealed a significant difference on 2-back coupling between groups, after controlling for age ($F(1,55) = 12.82$, $p = 0.001$). MDD participants demonstrated less coupling than HCs. Finally, a linear regression demonstrated that TGC ($\beta = 0.37$, $p = 0.006$) but not theta ($\beta = -0.21$, $p = 0.117$) or gamma ($\beta = -0.04$, $p = 0.77$) power predicted 2-back performance.

Conclusions: This novel research provides insight into a potential mechanism underlying memory impairments in MDD.

Beta-Amyloid Brain in Pact-MD Participants: Comparison of Two Analysis Methods: and Impact of Partial Volume Corrections

Ariel Graff, Jun Ku Chung, Yusuke Iwata, Tarek K. Rajji, Nathan Herrmann, Bruce G. Pollock, Benoit H. Mulsant, PACt-MD Study Group,

Background: Using positron emission tomography (PET) [11C]-Pittsburgh Compound B (PIB), brain beta-amyloid can be quantified in vivo. PIB signal is often quantified with Logan plot (DVR) and standardized uptake value ratios (SUVRs). However, partial volume effects (PVE) may confound true PIB signals due to differences in brain atrophy. Our aim was to explore the differential sensitivity of Logan plot and SUVR estimates of amyloid to PVE, in regions of interest (ROI) relevant to the PACt-MD study.

Methods: We included 85 participants including depressed MCI, non-depressed MCI and depression without MCI. Trial remains blinded. ROIs (frontal, parietal, temporal, occipital and cingulate) and cerebellar region were automatedly delineated. PVC was performed using Rousset's method. DVRs were estimated using 90min acquisition and SUVR were estimated using 35-90min. Bivariate correlations were carried out between DVR and SUVR of the five ROIs to examine the reliability of the two analysis methods. Absolute % difference was calculated between SUVR values with and without PVC.

Results: We found a robust correlation between DVR and SUVR for the 5-ROIs ($r \geq 0.98$, $p < 0.001$). SUVR values with and without PVC were also strongly correlated ($r \geq 0.94$, $p < 0.001$). Absolute % differences between values with and without PVCs of frontal, temporal, parietal, occipital and cingulate regions were 4.23, 6.85, 13.57, 5.13 and 4.89, respectively.

Conclusions: PIB quantification using DVR or SUVR values were reliable, validating both Methods: of analysis. Despite the strong correlation between PVC uncorrected and corrected values, PVC still strongly confounded the true signals, most prominently in the parietal regions.

Positive Emotional Memory Impairment as a Potential Marker of Preclinical Alzheimer's Disease

Linda Mah, Aliya Ali Dunja Knezevic, Paul Verhoef, Corinne Fischer, Alastair Flint, Nathan Herrmann, Bruce G. Pollock, Tarek K. Rajji, Benoit H. Mulsant, PACt-MD Study Group

Background: Alzheimer's disease (AD) likely begins years to decades before onset of memory symptoms, as evidenced by the underlying neuropathology of AD. It is currently believed that interventions may have a greater impact if they are introduced in the presymptomatic phase of AD. To this end, AD research has shifted its focus towards identifying biomarkers of preclinical AD. Because AD-related neuropathology preferentially involves limbic regions that support emotion regulation in addition to memory, alterations in emotional memory may characterize the earliest stages of AD.

Methods: This talk will begin with a very brief overview of the neuropathological stages of AD and describe current preclinical AD biomarkers and their limitations. New findings based on neuropsychiatric and emotional memory measures in participants with Mild Cognitive Impairment (MCI) from the PACt-MD study will be presented.

Results: MCI participants show deficits in positive emotional memory, compared to a cognitively normal older adult group. Recall of negatively-valenced emotional information did not differ between groups.

Conclusions: These findings suggest that emotion dysregulation is altered early in the course of AD. Further work is needed to determine whether emotional memory impairment may serve as a potential biomarker of preclinical AD.

Prevention of Alzheimer's Dementia in High Risk Populations: A Randomized Controlled Trial of a Combination of Cognitive Remediation and Brain Stimulation: Study Design

Tarek Rajji

Background: By the time Alzheimer's Dementia (AD) and related disorders (ADRD) are diagnosed the brain has sustained substantial insult that limits the efficacy of current treatments. Preventive interventions are urgently needed but prevention studies require large numbers of subjects and long follow-up periods unless they can target a high-risk population. We propose to study the efficacy of a preventive intervention for AD in three high risk groups: (1) older persons with Mild Cognitive Impairment (MCI); (2) older persons with a major depressive disorder ("late-life depression" – LLD) without MCI; and (3) older persons with LLD and MCI. MCI is considered a prodromal condition for dementia with a conversion rate of about 1% per month. LLD has been identified as one of the most promising targets for AD prevention studies, as, even after successful treatment of their depressive episode, older depressed patients develop MCI or dementia at a rate of 1-2% per month.

Methods: Our proposed intervention is a combination of cognitive remediation (CR) and non-invasive brain stimulation – transcranial Direct Current Stimulation (tDCS). Subjects with MCI or LLD will be randomized to CR + tDCS or sham-CR + sham-tDCS. Both CR and tDCS have been shown to induce neuroplasticity and improve cognition. We hypothesize that their combination will enhance cognitive compensation and protect against cognitive decline.

Results: Our design is informed by our experience conducting randomized controlled trials (RCTs) in older patients with dementia, MCI, or LLD over more than two decades. In our recent donepezil prevention trial, combining donepezil with standard antidepressant maintenance prevented cognitive decline and the incidence of dementia in patients who had had both LLD and MCI. Building on this prevention trial, we conceptualize the proposed study as a high-risk, high-gain RCT aimed at enhancing cognitive reserve and preventing cognitive decline and dementia in the same high risk population. If we are successful in this high risk population, then CR + tDCS can be tested in, and extended to, the general population (i.e., for universal prevention) or other populations at high risk for AD (i.e., for selective or indicated prevention).

Over 24 months, five Toronto academic sites with a history of successful collaboration will enroll: (1) 125 non-depressed subjects age 60 and older who present with MCI; (2) 125 non-demented subjects age 65 and older who present without MCI but with an episode of major depression that has responded to antidepressant treatment; and (3) 125 non-demented subjects age 65 and older who present with MCI and an episode of major depression that has responded to antidepressant treatment These 375 subjects will be randomized under double-blind conditions to receive either CR + tDCS or sham-CR + sham-tDCS and followed for 30 to 59 months.

Conclusions: The two primary aims of the RCT are to compare the efficacy of CR + tDCS vs. sham + sham in the above three groups of patients in: (1) preventing long-term cognitive decline; (2) preventing the incidence of dementia. We hypothesize that compared to sham + sham, CR + tDCS will significantly: (1) slow down long-term cognitive decline; and (2) reduce the conversion of cognitively normal subjects to MCI or dementia or the conversion of those with MCI to dementia. A secondary aim (and a related hypothesis) will assess whether CR + tDCS improves cognition acutely. In addition, exploratory aims will assess the effects of CR + tDCS on several biomarkers related to MCI, dementia, and LLD and test hypothesized mechanisms of action of CR + tDCS.

Geriatric Psychiatry Training in the Era of CBD: Advances in Assessment and Remediation

Karen Saperson, Mark Bosma, Melissa Andrew

Background: The Royal College Competence by Design (CBD) initiative is being implemented across all specialties, including Geriatric Psychiatry. Within the CBD framework, valid assessment and remediation Methods: are key to the acquisition of defined competencies required by a geriatric psychiatrist.

Methods: There is a close relationship between effective learning and valid assessment Methods: , as observation and feedback are powerful tools to change learner behaviours. Faculty engagement and training are critical in ensuring that assessment Methods: are effective in measuring learner competence in real life.

When competence is not achieved, remediation is implemented to address deficits in performance. It is usually triggered by failure of a rotation, requiring the learner to repeat the rotation, resulting in longer training and utilization of limited resources.

Results: Queen's University has now developed and implemented a competency-based program. Examples and insights from Queen's experience in developing entrustable professional activities (EPAs) and assessment measures will be

discussed, to illustrate how a competency-based program can meet the challenges inherent in assessment and remediation for geriatric psychiatry residents.

Conclusions: With the advent of CBD, Geriatric Psychiatry postgraduate programs will need to ensure that faculty are engaged and trained in assessment Methods: . It is likely that remediation needs will be more common, as CBD requires frequent points of assessment, with more clearly identified outcomes. This will require a shift in approach to assessment and remediation, with a focus on early identification and intervention of performance deficits. The CBD framework is intended to address many of the aforementioned challenges in assessment and remediation.

Late-life Psychosis: Innovative Approaches and Management

Petal Abdool, Angela Golas, Corinne E. Fischer

Background: There is emerging data suggesting that the presence of psychosis, both in patients with established dementia and in patients with prodromal disease, may be associated with increased mortality and more rapid disease progression. The use of Integrated Care pathways (ICP) to standardize the management of Late-life psychosis has the potential to improve outcomes such as social function and reduction in psychopathology. Psychosocial interventions such as Cognitive Behavioural Social Skills Training (CBSST) and Cognitive Remediation (CRT) are components of the late-life psychosis ICP. CR enhances executive function and memory in individuals with schizophrenia. CBSST improves social and instrumental function by incorporating cognitive techniques and social skills training.

Methods: This symposium will look at the link between psychosis and neurodegeneration. It will also discuss the standardized management of psychosis and look at the efficacy of this approach and its impact on cognition and social function. One aspect of the ICP includes CBSST and CRT.

Results: The evidence linking psychosis to adverse outcomes will be discussed. We will summarize the effect of CR and CBSST on cognitive and functional measures for our patients who received these interventions. The overall efficacy of standardized management of late-life psychosis will be discussed.
Conclusions: The presence of psychosis in normal aging and in patients with established dementia should prompt close medical surveillance of these patients, early intervention with disease modifying treatments and judicious management of cardiovascular risk factors. Standardized management of late-life psychosis which incorporate interventions like CBSST and CRT can potentially impact clinical outcomes.

Understanding the Physiological Basis of Late-Life Psychosis and its Connection to Neurodegeneration

Corinne Fischer, Petal Abdool, Angela Golas

Background: Psychotic symptoms are common in dementia with estimates that approximately 50% of patients may experience these symptoms over the course of the disease. There is emerging data suggesting that the presence of psychosis, both in patients with established dementia and in patients with prodromal disease, may be associated with increased mortality and more rapid disease progression.

Methods: In this talk we will review our current understanding of the link between psychosis and neurodegeneration using illustrative cases and discuss how recent discoveries in this area have informed our approach to treatment.

Results: Psychotic symptoms are associated strongly associated with adverse outcomes both in normal aging and in patients with established dementia. Although the neuropathogenesis of psychosis in dementia is not known there is evidence to suggest that overlapping pathologies, such as lewy bodies, inflammation and cerebrovascular disease, may play a role.

Conclusions: The presence of late onset psychosis in normal aging and in patients with established dementia should prompt close medical surveillance of these patients, early intervention with disease modifying treatments and judicious management of cardiovascular risk factors.

Standardized Management of Late-life Psychosis

Petal Abdool, Petal Abdool

Background: There has been increasing interest in standardizing mangment of psychiatric illness. This is based on its potiential to lower cost, increase utilisation of evidence based care and improve clinical outcomes. To date however there is a dearth of literature supporting its use in mental health compared to the evidence base for physical illneses. Some of the studies looking at the impact of ICPs in schizophrenia have been poorly randomized or controlled and do not focus on the Geriatric population. Despite these limitations, there was evidence for a reduction in psychopathology, improved social functioning and quality of life.

Methods: This presentation will outline the components of a standardized care pathway for late-life Psychosis. It will then focus on two CAMH based studies a retrospective chart review and a randomized controlled trial looking at the efficacy of the Pathway.

Results: Currently there are 125 patients enrolled in the Late life Psychosis care Pathway. Indicators used to monitor the pathway efficacy include measures designed to detect side effect burden of antipsychotic agents like falls and metabolic syndrome. Cognitive and social functioning were also monitored. The data from the retrospective chart review compared ICP patients to 100 patients not in the Pathway and showed significant differences in these screening measures. Results from the RCT are pending.

Conclusions: Standardized management of Late-life psychosis allows for better screening for issues such as cognitive and functional impairment as well as metabolic syndrome. It discourages polypharmacy and these factors have the potential to positively impact clinical outcomes.

Psychosocial Approaches to Improve Cognition and Function in Late Life Psychosis

Angela Golas

Background: Cognitive deficits are among the strongest predictors of function in individuals with late life psychosis that are compounded by age-related declines. No pharmacological interventions reliably improve these impairments. Cognitive Remediation (CR) enhances executive function and memory in individuals with schizophrenia, bipolar disorder and major depression. Cognitive Behavioural Social Skills Training (CBSST) improves social and instrumental function by incorporating cognitive techniques and social skills training.

Methods: We implemented CR and CBSST into the clinical setting as part of a Psychosocial Interventions (PI) Clinic. We will describe how we adapted a CR protocol involving restorative and strategy-based Methods: for older outpatients with schizophrenia. Patients for both programs are assessed at baseline and end-of-study using clinical and cognitive assessments.

Results: We will summarize the effect of CR and CBSST on cognitive and functional measures for our patients who received these interventions and discuss our findings in terms of adapting these psychosocial interventions to address the unique needs of patients with late life psychosis.

Conclusions: These modalities are well tolerated by most older outpatients with psychosis and is a feasible addition to an integrated care plan. Further analysis is underway to assess for empirical improvements in cognition and social functioning by further tailoring these modalities to the needs late-life population.

Pharmacological and Clinical Profile of Newer Atypical Antipsychotics as Treatments for Bipolar Disorder: Implications for Use in Older Patients

Sumit Chaudhari, Rickinder Sethi

Background: Bipolar disorder prevalence rates vary in the older persons ranging from 1% in community dwellers to as high as 8% to 10% in hospital inpatients. Age related changes in drug metabolism and response coupled with high comorbidity with other physical illnesses in the older bipolar patient, demands targeted and safer treatment approaches. Newer atypical antipsychotics are of interest based on claimed improved efficacy as mood stabilising agents, coupled with enhanced tolerability profile. It is crucial to systematically evaluate the safety and efficacy of these newer agents compared to placebo or other agents. Such a review should guide the prescriber about the potential role of such agents as well as inform development of guidelines on the management of bipolar disorder in the elderly.

Methods: We will examine all randomised controlled studies comparing newer atypical antipsychotics approved by the FDA after 2001 including brexpiprazole, cariprazine, lurasidone, iloperidone, asenapine, paliperidone and aripiprazole; with placebo or another comparator, in the treatment of any phase of bipolar disorder including mania, depression or mixed episodes whilst used as an acute or maintenance treatment. We will restrict studies to an older aged population >55 years of age. We will conduct a systematic search utilizing MEDLINE, Embase, PsycINFO and the Cochrane Library. Outcome criteria will include change in mood scores, proportion of participants achieving a priori criteria of remission or of response (e.g. 50% fall in a mania or depression rating scale). We will evaluate all reported adverse effect measures across the arms.

Results: Findings of our systematic review and meta-analysis will be presented and discussed.

Conclusions: Findings of our systematic review and meta-analysis will be presented and discussed.

A Review of Eating disorders in Late Life

Catherine Cheng

Background: Eating disorders (ED) are frequently under diagnosed and under reported in older adults. Studies suggest that body dissatisfaction remains stable across the lifespan and does not diminish with age, suggesting that eating disorders continue to impact elderly patients. In the context of aging, multiple physiological and psychosocial factors can contribute

to the presence of eating disorders amongst older adults. In addition, comorbid psychiatric illness is a common finding amongst elderly patients with eating disorders and treatment of comorbid conditions is shown to improve outcome.

Methods: A literature review was conducted regarding eating disorders in the elderly. The primary objectives were to determine the prevalence and review current knowledge of eating disorders in late life.

Results: The exact prevalence of eating disorders in the elderly is unknown however a review of the literature indicates that the estimated prevalence is between 2.6 - 3.8%. Physiological changes with aging, combined with psychological and social factors unique to the aging process need to be considered in the diagnosis and treatment of eating disorders in older adults. Major depressive disorder is the most common comorbid psychiatric illness in elderly patients with eating disorders and can be present in 46-68% of cases.

Conclusions: Eating disorders should be considered on the differential when excessive weight loss occurs in geriatric patients. Early recognition and proper treatment of eating disorders in the elderly are essential to reducing the psychosocial and medical impact and improving quality of life. More research is needed, as current literature on eating disorders in the elderly remains limited.

Clinical and Hippocampal Volume Trajectories in Mild Cognitive Impairment with Suspected Non-Alzheimer's Pathology

Jun Ku Chung, Eric Plitman, Fernando Caravaggio, Yusuke Iwata, Philip Gerretsen, Julia Kim, Ariel Graff-Guerrero

Background: Suspected non-Alzheimer's disease pathophysiology (SNAP) are individuals showing evidence of neurodegeneration, such as cortical hypometabolism, without signs of beta-amyloid. Findings from previous studies focusing on clinical and structural trajectories of SNAP are inconsistent.

Methods: Using data from Alzheimer's Disease Neuroimaging Initiatives, we categorized patients with amnestic mild cognitive impairment (aMCI) into four different groups: amyloid positive with hypometabolism (Aβ+ND+), amyloid only (Aβ+ND-), neither amyloid nor hypometabolism (Aβ-ND-), and SNAP (Aβ-ND+). These groups - Aβ+ND+ (n= 33), Aβ+ND- (n = 32), and Aβ-ND- (n = 36) - were matched to SNAP patients for age, gender, apolipoE4 protein genotype, and scores on Montreal Cognitive Assessment. Elderly controls (n = 40) were also matched to patients with SNAP for age, gender, and apoE4 genotype. Longitudinal changes in hippocampal volume, clinical symptoms, daily functioning,

and cognitive functioning over a 2-year follow-up period, were compared across groups.

Results: At baseline, no difference in cognition and functioning was observed between SNAP and Aβ+ groups. SNAP patients showed worse clinical symptoms and impaired functioning at baseline compared to Aβ-ND- and controls. Two years of follow-up showed no significant differences in hippocampal volume changes between the SNAP group and any of the comparison groups. The SNAP group showed worse functional deterioration in comparison to the Aβ-ND- and control group. On the other hand, the Aβ+ND+ group showed more severe changes in clinical symptoms of dementia in comparison to the SNAP group. No difference in changes in cognition or functioning was found between the Aβ+ND- and SNAP groups.

Conclusions: In conclusion, patients with MCI and SNAP showed, i) more severe functional deterioration compared to Aβ-ND- and controls, ii) no differences with Aβ+ND-, and iii) less cognitive deterioration than Aβ+ND+. Future studies should investigate what causes SNAP, which is different from typical AD pathology and biomarker cascades.

Care of the Elderly ECHO – Establishing a Need for Service

David Conn, Lisa Sokoloff, Cindy J. Grief

Background: Project ECHO, created by Dr. Sanjeev Arora at the University of New Mexico, is an enhanced telehealth program that features a collaborative learning environment. It facilitates a community of practice by linking primary care providers with specialists to discuss cases with their colleagues in real-time. Project ECHO's goal is to increase access and capacity.

COE ECHO objectives align with ECHO Ontario:
- Equip primary care providers to provide more comprehensive care for their frail complex aging patients
- Utilize existing tele-services to facilitate geriatrics training to primary care providers across Ontario, particularly in remote, underserved areas
- Meet the demand for care of Ontario's aging population including those with mental health disorders

Methods:
- Hub and spoke model with Baycrest as the main hub and the North East Specialized Geriatric Centre as a sub-hub
- Core team of COE Family Physicians, geriatric psychiatrists, geriatric medicine specialists, and interprofessional geriatric health experts

- Targets interprofessional primary care and community health providers
- 20-30 "spokes" per session will connect via telehealth
- Didactic component + case presentations
- Program and individual session evaluation that includes clinical impact/effectiveness

Results: Evaluation includes:
- Feasibility and effectiveness of the model for hubs and spokes
- Improvement in competency, attitudes, confidence and knowledge of primary care providers
- Long term benefit for seniors' care
- Findings are pending

Conclusions: A Care of the Elderly ECHO is an excellent way to provide education and increase capacity of physicians and other healthcare providers who work with seniors, especially those with mental health issues, and to meet the MOHLTC declared needs.

Updates in the Management of Neuropsychiatric Symptoms of Dementia

Sanjeev Kumar, Daniel Blumberger, Bruce Pollock

Background: Neuropsychiatric symptoms (NPS) including agitation and aggression are common in Alzheimer's disease (AD) and pose a major burden for patients and caregivers. Current treatment interventions have limited efficacy and significant risks. This symposium will review the current state and future directions in the treatment of neuropsychiatric symptoms in dementia.

Methods: We will discuss: 1) Role of an integrated care pathway (ICP) in the management of agitation and aggression in AD, 2) Relevance of serotonin reuptake inhibitors in management of agitation in AD and 3) Role of electroconvulsive therapy (ECT)in the management of NPS of AD.

Results: We will present the design and data from implementation of ICP in geriatric psychiatry inpatient settings and its roll out to long term facilities. Further, the Results: from Citalopram in AD (CitAD) trial and the design of a NIA-funded multi-site trial of S-Citalopram will be presented. Finally, we will discuss a recently published study regarding use of ECT for NPS in AD.

Conclusions: Several recent advances have been made in the treatment of NPS of AD, particularly in the treatment of agitation and aggression associated with AD. This is an active and developing area of ongoing research.

Clinical Effectiveness and Tolerability of Electroconvulsive Therapy in Patients with Neuropsychiatric Symptoms of Dementia

Daniel Blumberger, Moshe Isserles, Tyler Kaster, Sanjeev Kumar, Tarek K. Rajji, Zafiris J. Daskalakis

Background: Dementia frequently presents with aggression, agitation and disorganized behavior for which current treatment is partially effective and is associated with significant adverse effects. The aim of this study was to retrospectively assess the clinical effectiveness and tolerability of Electroconvulsive Therapy (ECT) in a sample of patients with neuropsychiatric symptoms of dementia (NPS) and to explore factors associated with response and with cognitive adverse effects.

Methods: We examined the clinical records of 25 patients with dementia and a pre-existing psychiatric disorder treated with ECT at an academic mental health hospital between April 1, 2010 and January 28, 2016. Twenty-nine acute ECT courses and fifteen maintenance courses were reviewed. We assessed treatment effectiveness and cognitive adverse effects as well as factors associated with response to treatment, including pre-existing psychiatric disorders, concomitant pharmacological treatment and types of dementia.

Results: ECT resulted in a clinically meaningful response in 72% of acute treatment courses. Cognitive adverse effects affecting functioning were reported in 7% of the acute treatment courses. Maintenance treatment was effective in sustaining the response in 87% of treatment courses with two reports of significant cognitive adverse effects. No serious physical adverse events were observed. One patient fell and experienced a hip fracture a day after treatment. Use of antipsychotic or antidepressant medications, pre-existing psychiatric disorder or gender were not associated with response.

Conclusions: This study shows meaningful clinical effectiveness and good tolerability of ECT in patients with severe NPS of dementia. Furthermore, maintenance ECT was effective in sustaining treatment response.

An Integrated Care Pathway to Manage Agitation and Aggression Associated with Dementia: Experiences at an Inpatient Geriatric Psychiatry Unit and Future Directions

Sanjeev Kumar, Bruce Pollock, Daniel Blumberger

Background: Neuropsychiatric symptoms (NPS) of dementia including agitation and aggression affect up to 80% of patients with Alzheimer's dementia (AD). Medications used to treat these symptoms are associated with serious adverse effects including an increased mortality. Algorithmic treatment approaches have

been shown to have better outcomes in psychiatric disorders. An integrated care pathway (ICP) was developed at inpatient geriatric psychiatry services at Centre for Addiction and Mental Health (CAMH). The aim of this proposal is to discuss the implementation of the ICP at the geriatric psychiatry inpatient unit and its roll out to a long term care facility (LTCF).

Methods: The ICP consists of four key components: (1) a thorough medical/psychiatric work up; (2) non-pharmacological interventions; (3) a sequential algorithm of pharmacological interventions including electroconvulsive therapy with clear rules for switching and discontinuation; and (4) standardized assessments to guide the interventions.

Results: So far 42 patients have completed the ICP at CAMH geriatric psychiatry inpatient unit out of which 40 were able to fully adhere to the algorithm. 35 (83%) of these patients successfully exited the ICP with 0-1 pharmacological agent. There was a significant reduction in symptoms as assessed by Cohen Mansfield Agitation Inventory - Frequency (Mean improvement = 15.6 pts, P = 0.001). Updated data from the inpatient unit and the process of roll out to LTCF will be presented at the meeting.

Conclusions: The ICP has shown promise in management of agitation and aggression in AD at inpatient geriatric psychiatry settings and is now in the process of roll out to LTCF settings.

Citalopram and Escitalopram for Agitation in Alzheimer's Disease

Bruce Pollock, Sanjeev Kumar, Daniel Blumberger

Background: Agitation is common in Alzheimer's disease (AD) and is a major burden to patients and caregivers. Antipsychotics have been the treatment mainstay, although with limited efficacy and significant risks. The rationale for their use is limited and evidence suggests significantly increased risk of mortality. One hypothesis is that agitation results, in part, from disease-associated neurodegeneration that gradually disrupts, then destroys, the brain monoamine system, including ascending serotonergic pathways. Neuropathologic and genetic evidence for this hypothesis led to efforts to augment serotonergic neurotransmission to reduce agitation.

Methods: Building on the author's prior studies finding similar efficacy of citalopram to perphenazine and risperidone, a multi-institutional collaborative conducted the Citalopram in AD (CitAD) trial. 186 AD patients of at least 5 year's duration who had significant agitation but no depression were randomized to racemic citalopram 30mg/day or placebo (study was initiated prior to FDA dose warning).

Results: For the citalopram group, 40% of patients were responders (moderately or markedly improved agitation, a substantial clinical benefit), while in the placebo group, only 26% of patients were responders. Placebo response occurred mostly by week 3, while improvement on citalopram was mostly between weeks 3 and 9. Compared to placebo, those on citalopram did worse cognitively and had prolongation of the ECG-QTc interval. Pharmacokinetic modeling linked both these adverse effects to R- but not S-citalopram concentrations, while clinical benefit was linked primarily to S-citalopram concentrations.

Conclusions: Citalopram is beneficial in treating agitation in AD. S-Citalopram and R-Citalopram may have different benefit/Risk profiles for these patients. These findings have led to a new NIA-funded multi-site trial of S-Citalopram.

Using Self-Reflection for Training and Remediation in the Collaborator Role

Robert Madan

Background: Canadian Postgraduate Medical Education trains and evaluates residents based on the CanMEDs framework. The ability to collaborate effectively with others is a key competency. The ability to collaborate properly involves self-awareness and emotional intelligence. Residents may have difficulty in the collaborator role and are often unaware of it. A problem in this role may result in impaired professional relationships, conflict, poor job satisfaction, and suboptimal patient outcomes.

Methods: A self-reflection tool was designed to aid Residents in difficulty in this role. The Resident engages in a series of reflective questions in the context of collaboration. This novel reflective exercise allows the trainee to consider the impact of behaviours in real time before those behaviours occur. This is supplemented with collaborator self-assessments, encounter forms, and multisource feedback from the Royal College of Physicians and Surgeons CanMEDS Teaching and Assessment Tools Guide.

Results: The self-reflection tool was used for 2 Residents in Psychiatry during the core Geriatric Psychiatry training block. Both Residents were identified as having performance difficulties in the role of collaborator. The tool was used successfully and performance improved as verified by multisource feedback.

Conclusions: A remediation plan for the collaborator role is developed after formulating the problem by taking into account various possible contributing factors. The self-reflection tool can be used successfully as part of a remediation

plan. This tool may be helpful for training in the collaborator role and to help any health care professional who needs to improve performance in this area.

Development of a Standardized Version of the Dementia Observation System (DOS): An Interprofessional Collaboration

Lisa Van Bussel, Andrea Iaboni, Lori Schindel Martin, Kristine Newman, Debbie Hewitt Colborne, Fernanda Fresco, Pam Hamilton, Julia Baxter, Adriana Barel, Lina DeMattia, Tricia Domenic, Teresa Judd, Cecelia Marshall, Jane McKinnon, Lisa Quesnelle, Kimberly Schlegel, Mario Tsokas, Marilyn White-Campbell, Mary Woodman

Background: Clinical decision-making is enhanced when behavioural care plans are based upon assessment of behavioral data that reflect the frequency, duration, intensity and patterns of responsive behaviours associated with dementia (RBD). Interprofessional teams working across all health sectors need evidence-based measures to systematically record behavioural observations, identify the antecedents and consequences of RBD, tailor interventions to target these variables and track outcomes. One such tool, the Dementia Observation System (DOS), first developed in 1998 for use in chronic continuing care dementia units and long-term care homes is widely used, however there is no single version.

Methods: In early 2017, Behavior Supports Ontario (BSO) initiated an interprofessional collaboration to address this inconsistency. The DOS Working Group (DOS-WG) involves key stakeholders with the shared interest in developing a standardized version of the DOS. The main goal of the DOS-WG is to identify best features from each of the 13 DOS versions under review and combine them into a single, standardized tool to be made available across the province. The DOS-WG will also develop a user and instruction manual.

Results: The process through which the DOS has been revised, including a review of the literature, analysis of the DOS variables, development of a standardized format and components of the DOS manual.

Conclusions: Behavioral measurement is an important best practice for older adults experiencing RBD. Further exploration of the future directions regarding use of this tool and its impact on measurement, evaluation, clinical decision-making, and intervention research is imperative. (249 words) AV15

Mental Health First Aid Seniors: An Innovative and Accessible Approach to Supporting Seniors' Mental Health

Richard Shulman, Denise Waligora

Background: Canada has an aging population. As of July 1, 2015, there were more people aged 65 years and older in Canada than children under the age of 15 years. The Mental Health First Aid Seniors 14 hour course addresses this demographic trend.

There are four distinct populations of seniors living with mental illnesses:

1. Those growing older with a recurring, persistent or chronic mental illness
2. Those experiencing mental illnesses that appear for the first time later in life (after age 65)
3. Those living with behavioral and psychological symptoms associated with dementia
4. Those living with chronic medical problems with known correlations with mental illness (e.g., Parkinson's disease, stroke and chronic obstructive and lung disease).

MHFA Seniors is intended to increase the capacity of seniors, families (informal caregivers), friends, staff in care settings and communities to promote mental health in seniors, prevent mental illness and suicide wherever possible in seniors and intervene early when problems first emerge. It prioritizes the mental health concerns of seniors.

Methods: The course content and resource materials are based on best available evidence and practice guidelines and were developed in consultation with Canadian experts in the field of geriatric psychiatry. The curriculum was developed for the Mental Health Commission of Canada at Trillium Health Partners, a healthcare organizations which priorities seniors' health and wellness. The diagnostics criteria referenced in the MHFA Seniors course is in accordance with the American Psychiatric Association's (APA) Diagnostic and Statistical Manual of Mental Disorders 5th Edition (DSM-5).

MHFA Seniors includes two additional sections not found in other MHFA adaptations – Dementia and Delirium.

The MHFA Seniors course was pilot tested in 2016.

Results: The aims of this course are to teach members of the public, including caregivers, how to:

- Recognize the symptoms of mental health problems or crises as they develop in seniors
- Provide initial help when dealing with a mental health problem or crisis
- Guide a senior and/or caregiver toward appropriate professional help
- Provide strategies and resources to support both seniors and their caregivers

The evaluation has confirmed that the aims of the course above have been achieved.

Conclusions: MHFA Seniors addresses the unique needs of Canada's population of seniors and will be an innovative and accessible program which will contribute to supporting the mental health of seniors.

Connecting Community-Dwelling Depressed Seniors with their Clinicians: Feasibility and Acceptability of Using Tablets and a Telehealth/Patient Reporting Platform (TELEPROM-G)

Amer M. Burhan, Akshya Vasudev, Tony O'Regan, Cheryl Forchuk, TELEPROM-G study group

Background: With the growing health and mental health needs of Canadian seniors, current models of community based care is running out of capacity necessitating more innovative ways to facilitate care. Telehealth delivered via mobile technology offers innovative way of connecting seniors to their health providers to access support. However, the feasibility and acceptability of these technologies in seniors with mental health needs is largely unknown.

The main objective of this single-centre pilot study was to examine the feasibility of implementing a cloud-based telehealth and patient outcome reporting platform accessed via a mobile device (tablet). Based on patients and clinicians feedback, we aim to implement further modification of the system to allow more streamlined and wider application of the platform.

Methods: 30 community-dwelling seniors (65 and older) with depressive symptoms and 10 clinicians (mainly RNs) were recruited to this study. Tablets and wifi connection was provided and a secure, cloud-based TELE-health and Patient-Reported Outcome Measurement (PROM) developed by InputHealth group was customized for geriatric patients (TELEPROM-G) to be tested in this study. The platform allows healthcare providers to track patient-reported health outcomes and to connect with their patients via web-based secure conferencing. A mixed-methods (quantitative and qualitative) design was used to assess the feasibility of implementing this platform; i.e. individual interviews and focus groups with patients, and interview and focus groups with clinicians.

Results: Recruitment of seniors and clinicians was done very efficiently over 3 month period and retention rate was over 80%. Findings from interviews and focus groups with participants and clinicians will be summarized and discussed.

Conclusions: This pilot study assessed the feasibility and acceptability of using a cloud-based tele-health system and patient reporting platform delivered via a tablet over secure connection with depressed community-dwelling seniors. Recruitment and retention of patients and clinicians was excellent in this single centre pilot study. Lessons learned from implementation challenges will facilitate the design of a larger, multi-site study including several geriatric mental health programs across the Canada and with collaborators from the UK.

The Geriatric Patient and the Justice System in Canada

Zohar Waisman, Joanna Holley, Janet Katchaluba, Robin Waxman

Background: As Canada's baby boomer population ages, it is estimated that in the coming decades the aging population will double, representing approximately 28% of the population by the year 2060 [1]. As a consequence, the demands for long-term care (LTC) and all the associated challenges will continue to rise. The majority of LTC residents are over age 80, most of which display complex behavioural disturbances [2] that may result in expressions of aggression against other residents as well as against LTC staff [3]. One of the prevailing challenges is the reported increase in the number of violent incidents involving the police and the criminal justice system causing an increased media attention to serious violent offences that have occurred in the geriatric patient population.

Increasingly, LTC facilities use a zero tolerance policy with respect to resident to resident violence and involve the police [4]. Through extensive literature review it is evident that LTC staff require specialized training to effectively manage violent residents in a way that keeps the residents and staff safe, ensures proper care, and is cost effective, reducing strain on the social funding mechanisms.

Police throughout Ontario have had mixed responses to the zero tolerance policies that are now combined with the mandatory reporting of elder abuse in Ontario LTC homes. The implementation of these policies has been described as a "steep learning curve". The police want to be notified of reportable incidents of abuse and neglect in LTC homes. However, the investigation of these reports can severely affect the police staffing requirement.

The root of the problem is the absence of guidelines and protocols, and the lack of a clear understanding as to what forms a reportable offence under a zero-tolerance policy. It is difficult to know when behaviours that involve a cognitive impairment cross the line of criminality. In some cases, an overburdened home may respond to resident on- resident violence by simply involving the police in hopes that the arrest will relieve the home from taking other steps that might be needed to cope with the resident's behaviours. Such action most of the time is a poor substitute for a workable care plan in a LTC home. In most cases, if an arrest is made, the

older adult re-enters the LTC system at a different home. This merely transfers the problems from one home to another. This dynamic creates an uneasy tension between the roles of the health-care and criminal-justice systems, with the police, the courts, the tertiary care hospitals and long-term care homes on the front lines of the conflict [4].

The criminal justice system and the forensic psychiatric systems are not well prepared to care for elderly individuals and as such greater pressure is placed on general hospitals and tertiary care hospitals to keep such patients in hospital indefinitely due to lack of facilities who would accept such patients.

Methods: The workshop will use interactive problem solving using video vignettes and a multidisciplinary approach to case problem solving. We will specifically discuss two murders that have taken place at Long Term Care Facilities in Ontario over the past two years.

Results: Gain insight into the complexity of risk assessment and apply these concepts to the geriatric patient population

Conclusions:
References:
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Efficacy and Safety of Maintenance Electroconvulsive Therapy for Sustaining Resolution of Severe Aggression in Frontotemporal Dementia.

Robyn Waxman, Melanie Selvadurai

Background: Physical aggression and other Behavioral and Psychological Symptoms of Dementia (BPSD) cause significant morbidity to patients and can distress caregivers. The impact of BPSD on patients' quality of life supersedes that of cognitive symptoms and is an important predictor of long-term institutionalization. Recent data indicates that acute electroconvulsive therapy (ECT) may be an effective and safe way to address BPSD. Although ECT is commonly used to treat BPSD, clinicians have little information about when and how to stop a successful course of acute ECT or about the possible role of maintenance ECT (M-ECT). The case describes an individual with severe aggression associated with possible Frontotemporal Dementia (FTD), emphasize

the benefit of M-ECT, and describe potential challenges associated with abrupt discontinuation of acute ECT for BPSD.

Methods: The case describes an effective example of alternating the administration of acute and M-ECT trials to sustain improvements in agitation and aggression in a patient with FTD experiencing severe BPSD. The study overviews improvements in the patient's Neuropsychiatric Inventory Clinician (NPI-C), Mini Mental State Exam (MMSE), Cornell Scale for Depression in Dementia (CSDD) scores, and medications in response to acute and maintenance trials.

Results: A baseline MMSE and NPI-C scores were 0 and 72 respectively, indicating advanced cognitive impairment and severe disturbances. After M-ECT was continued for over a year, MMSE and NPI-C scores were 22 and 10 respectively, indicating substantial and sustained improvement.

Conclusions: This case is the first to detail initiation and tapering of M-ECT for managing treatment resistant BPSD in FTD.

Collaborative Care for Psychiatric Disorders in Older Adults: From Evidence to Practice

Nick Kates

Background: The prevalence of mild cognitive impairment, depression and anxiety in individuals over the age of 60 being seen in primary care is high, but these problems frequently go unrecognized and untreated although there is increasing evidence that evidence based interventions in primary care can increase identification and treatment rates for individuals with depression, anxiety and mild cognitive impairment.

Methods: This symposium describes a project with two goals. The first was to design and introduce an evidence-based pathway for the recognition and treatment of MCI and accompanying depression and anxiety within the offices of over 20 family physicians in two cities. The second was to identify changes and system adjustments practices needed to make to accommodate the new program and the pathway. To do this, 2 cohorts of patients were identified in each physicians patient as the study group – everyone born in 1951 and everyone born in 1956, with the populations being born in 1950 and 1955 being used as controls.

Results: The symposium summarises the pathway developed, the process for introducing into primary care, the adjustments that primary care practices needed to make to accommodate a change in their routines, and the results of focus groups held with primary care practices six months after starting the project. It will also present early results about numbers of

individuals screened, the problems identified, and the challenges the project has faced and overcome to date.

Conclusions: It is early in the project, but there is clear evidence of the appetite for primary care providers for assistance with managing seniors with cognitive and mood-related problems, of the need to tailor or adapt existing guidelines to fit with the realities of primary care and of the willingness of primary care practices to make adjustments to accommodate the new protocol.

Systematic Review of Collaborative Care for Psychiatric Disorders in Older Adults

Pallavi Dham

Background: The provision of mental health care, in collaboration with primary care and other medical specialties, is crucial for older adults given the high prevalence of medical and psychiatric co-morbidities. This review systematically assesses collaborative care for psychiatric disorders in older adults across different settings, to evaluate mode of implementation, clinical outcomes, cost effectiveness, and factors influencing uptake and sustainability.

Methods: Pubmed, MEDLINE, Embase and Cochrane databases were searched up until October 2016. Individual RCTs, cohort, case-control, and health service evaluation studies on collaborative care for psychiatric disorders, where the sample had a mean age of 60 years and over, were selected for review.

Results: Of the 549 articles identified, 29 individual studies met the criteria for inclusion. There were few studies on psychiatric disorders other than depression. Mode of implementation differed based on the setting, with beneficial use of tele-medicine. Clinical and functional outcomes for depression were significantly better compared to usual care even in the presence of other medical conditions in various settings except home health care or general acute inpatients. In depression, there is some evidence for cost effectiveness. There is some evidence for significantly better outcomes for behavioural symptom in dementia, greater adherence to dementia care guidelines, and increased confidence among caregivers using collaborative care. Single studies on at-risk alcohol use and psychiatric comorbidities failed to show significant benefit. Attitudes and skill of primary care staff, availability of resources and organizational support are some factors influencing uptake and implementation.

Conclusions: Collaborative care for depressive disorders is feasible and beneficial in the older population in diverse settings. There is a paucity of studies on collaborative care in

psychiatric disorders other than depression or in settings other than primary care, indicating the need for further evaluation.

The Role of the Geriatric Psychiatrist in Collaborative Care for Seniors

Nick Kates

Background: While the prevalence of depression, anxiety, and MCI in primary care in seniors is high, treatment and detection rates are low. These rates can be enhanced by the integration of a mental health team including psychiatrists within primary care settings.

The presentation looks at the role of the visiting psychiatrist in this project, their role in assisting with the implementation of the pathway for the detection and management of MCI and accompanying depression and anxiety in the offices of more than 20 family physicians, and the activities with which they were involved.

Methods: A psychiatrist will visit the offices of the participating family physicians every 2-4 weeks and will be available to discuss cases, provide direct consultation and management advice, provide educational input for the primary care team on MCI, depression and anxiety in seniors. They also conduct periodic reviews of the entire population being studied to ensure they are making satisfactory process and to adjust the management plans if they aren't with the goal of "treatment target" according to the guidelines.

Results: The psychiatrist visits have been appreciated by all primary care staff and have led to opportunities to review the entire population of a practice participating in the study, on a regular basis to ensure they are all receiving evidence-based treatment and progressing towards targets.

Conclusions: The psychiatrist role is appreciated and valued by the practice and has not only improved access to psychiatric assessment but also the capacity of the primary care teams to manage individuals with MCI, depression, anxiety, and other co-existing complex conditions.

Collaborative Care Initiative for Mental Health Risk Factors in Dementia: Depression, Anxiety and Mild Cognitive Impairment

Sarah Coleman

Background: Provision of mental health in collaboration with primary care is a useful strategy that can help with early detection and improved care in older adults. This project aims

to identify and treat potential mental health risk factors for dementia using the collaborative care model.

Methods: From the patients seen at the primary health care clinics, case and comparison groups were identified based on their year of birth. They were screened for anxiety, depression, and Mild Cognitive Impairment (MCI). If they reached a threshold level of symptom burden, cases were enrolled into the Integrated Care Pathway (ICP arm) and comparison group received treatment as usual (TAU).

The ICP offered evidence-informed treatment for the management of these syndromes in a routine, algorithmic fashion. All enrolled cases were provided with general interventions that addressed lifestyle and medical factors and linked to brief psychotherapy as needed. Based on symptom severity, evidence-based pharmacotherapy was offered using a standardized titration schedule. Collaboration was built into the ICP using Electronic Medical Records and specialist Psychiatrist input. The participants had repeat assessments every 6 months.

Focus groups with the clinics and minutes from meetings regarding the ICP was documented to examine the process of implementation, adaptations needed, and identify barriers or facilitators to implementation.

Results: The results of study will focus on the impact of the ICP on patient-related outcomes (symptoms, quality of life, and time to treatment initiation), and the impact on the rates of diagnosis/detection among patients. We will also discuss the process of implementation and barriers encountered. This is further discussed in the context of available evidence on collaborative care.

Conclusions: To be discussed.

An Affect Education C.A.R.E.R. Model for Long-Term Care Staff Caregivers Managing Behavioural and Psychological Symptoms of Dementia: A Feasibility Study

Kenneth Schwartz, Robert Madan, Rosalind Sham, Sandra Gardner

Background: Caring for people with behavioural and psychological symptoms of dementia (BPSD) is stressful. Our aim is to conduct a mixed methods pilot study to evaluate the effectiveness of an innovative Affect Education (C.A.R.E. R.) Model in improving current caregiver interventions.

Methods: Nursing staff and personal support workers from two long-term care homes (LTCH) in Toronto were taught the Affect Education (AE) Model in five weekly sessions. The model teaches caregivers the art of responding involves calming down, attending to the interaction without immediately reacting, reflecting on one's emotional response, empathising with the other and then responding (C.A.R.E.R.). Following the last session, staff from each LTCH participated in focus groups, used to identify common themes. Five questionnaires were administered to participants prior to, immediately after and 4-months after the last session.

Results: Content analysis of the focus group data identified four common themes: facilitators and barriers perceived in current care delivery; reflections on the Affect Education (AE) Model teaching experience, impact of the AE Model on staff care delivery, and future AE Model implementation. With respect to the questionnaires, there was evidence that the AE sessions improved participants' sense of safety and job satisfaction.

Conclusions: The use of medication and nonpharmacologic treatments of individuals with BPSD is greatly improved by implementing the Affect Education C.A.R.E.R. Model. Future directions include expanding the model to family caregivers.

Mind-Body Interventions in the Treatment of Late-Life Depression and Anxiety (Overall Symposium Abstract)

Soham Rej, Zoe Thomas, Angela Potes, Akshya Vasudev

Background: Mind-body interventions, such as meditation and mindfulness are becoming recognized as promising approaches to treat geriatric mental illness and promote health.

Methods: In this session, presenters will discuss new data about how mind-body interventions can be helpful in treating of late-life depression and anxiety.

Results: We will first learn about a pilot clinical trial of brief mindfulness meditation in hemodialysis patients with depressive and anxiety symptoms (n=41) (Dr. Thomas). We will then hear about the protocol of an ongoing mindfulness-based cognitive therapy trial in geriatric primary care patients with anxiety and depression symptoms (n=45 recruited as of March 2017, 70-80 recruited by Nov 2017) (Ms. Potes). Finally, we will learn about the results of a recent RCT examining Sahaj Samadhi meditation, belonging to the category of automatic self-transcending meditation, in late-life depression compared to treatment as usual (n=83) (Dr. Vasudev).

Conclusions: Following the presentations, there will be an interactive discussion led by Dr. Rej about the clinical applications of mind-body interventions and future directions for research.

Brief Mindfulness Meditation for Depression and Anxiety Symptoms in Patients Undergoing Dialysis: A Randomized Control Trial

Zoe Thomas, Marta Novak, Susanna G. Torres Platas, Maryse Gautier, Angela Potes, Marilyn Segal, Karl Looper, Marc Lipman, Stephen Selchen, Itsvan Musci, Nathan Herrmann, Soham Rej

Background: Depression and anxiety are common in dialysis patients and are associated with significant medical morbidity, yet remain undertreated in this population. We aim to investigate the feasibility and effectiveness of mindfulness meditation for patients on dialysis with depression and anxiety symptoms.

Methods: This is a randomized-controlled assessor-blinded trial conducted in an urban dialysis unit. Forty-one patients were randomly assigned to intervention (n=21) and treatment-as-usual (n=20) groups. During 8 weeks, the intervention group received individual chairside meditation interventions lasting 10-15 minutes, 3 times a week during dialysis. Symptoms of depression and anxiety were measured using the Patient Health Questionnaire (PHQ-9) and the General Anxiety Disorder-7 (GAD- 7).

Results: Of the participants randomized to the intervention group, 71.4% completed the study, with meditation being well-tolerated. Meditation was associated with subjective benefits but no significant impact on depression scores (change in PHQ9 -3.07±3.65 in the vs. - 3.79±7.11, p=0.94) or anxiety scores (change in GAD-7 -0.27±4.32 vs. -2.07±5.74, p=0.48).

Conclusions: Based on the results of this study, meditation may have some qualitative benefits in dialysis patients with depression and anxiety symptoms, but appears to have limited effect on depression and anxiety scores. It is possible that in dialysis patients, who often have many physical health comorbidities, symptom reduction may not necessarily be the most clinically feasible goal. Furthermore, mindfulness in this sample may require a concurrent cognitive therapy component to maximizes its effects on depression and anxiety symptoms.

Group Mindfulness-Based Cognitive Therapy for the Treatment of Late-Life Depression and Anxiety Symptoms: A Randomized Controlled Trial

Angela Potes

Background: Given our aging population and increased pressures in the health system, there is an urgent need to find alternative therapies that are cost-effective, scalable and efficient. Approximately, 10-20% of older adults treated in primary care settings suffer from symptoms of depression and/ or anxiety. Mindfulness-based interventions are an effective and affordable approach to reduce psychological morbidity and emotional distress in physical and mental illness.

Methods: We are performing ongoing randomized clinical trial of Mindfulness-based Cognitive Therapy (MBCT) group in older adults with depression and anxiety in primary care (n=45 recruited as of March 2017, 70-80 recruited by Nov 2017) using a treatment-as-usual control condition for comparison. Older adults aged 60 and above with significant symptoms of depression or anxiety, were randomized to the MBCT active condition (2hr sessions during 8 weeks) or were wait-listed. We assessed patients pre-/post-intervention for Depression (PHQ-9), Anxiety (GAD-7), inflammatory markers, and other measures. Additionally, 6 month follow-up assessments will test for endurance effects.

Results: We will talk about study design, the experience of implementing this trial in primary care, and descriptive data about recruitment and patient's baseline characteristics entering the study. Results from a brief qualitative account from administrators, interventionists and patients on the implementation of the program will also be discussed.

Conclusions: MBCT could potentially be an effective alternative and adjunctive treatment for late-life depression and anxiety in primary care. The final results of this study will be analyzed in Dec 2017. Future research can further evaluate the effectiveness and program implementation of mindfulness-based intervention.

Sahaj Samadhi Meditation in the Treatment of Late-Life Depression

Akshya Vasudev

Background: Late life depression (LLD) affects 2-8% of community dwelling seniors with standard treatment as usual (TAU) not leading to remission in a significant proportion of treated individuals. Sahaj Samadhi Meditation (SSM) is of interest as this type of meditation allows one to achieve quietness, quickly, and effortlessly, with alleviation of depressive thoughts within a few sessions of training.

Methods: We assessed SSM plus treatment as usual (TAU) versus TAU alone in patients with mild to moderate LLD. Seniors aged 60-85 meeting criteria for LLD either received training in SSM for four consecutive days (120 minutes per day) in the first week, followed by 60 minute sessions for 11 subsequent weeks, or, continued with TAU. Assessments were

completed at weeks 0, 4, 8, and 12 weeks on Hamilton Depression (HAM-D17) rating scale and other validated scales.

Results: Participants in SSM+TAU arm showed a significant fall in HAM-D17 scores from 14.2 (± 4.1) at Week 0 to 10.2 (± 5.5) at week 12 versus 15.2 (± 4.4) at Week 0 and 13.8 (± 5.9) at post-intervention in the TAU arm. The between-group mean difference at week 12 was 5.7 (95% CI 1.1- 6.1, Cohen's d 0.64). Forty % of SSM participants achieved remission as per criteria of HAM-D 17<8, as compared to 16% of TAU (p=0.002). There were no significant differences in adverse effects between groups.

Conclusions: SSM should be considered for adoption into routine clinical care as it is effective, safe and deliverable. Future studies should consider incorporating an active control comparator.

Clozapine for Treatment-Refractory, Severe Agitation in Dementia: a Case-Series

Andrea Iaboni

Background: Clozapine is an atypical antipsychotic uncommonly used in older adults due to its risks and side effect profile. Its primary indications in older adults are for psychosis in Parkinson's disease or in chronic schizophrenia. The use of clozapine in older adults for behavioural symptoms of dementia is off-label and under a black-box warning. There is a lack of evidence to guide its use in this population including little information on dosing, monitoring, tolerability and efficacy.

Methods: I review the literature on the use of clozapine in dementia, and present three cases of severe, treatment resistant behavioural symptoms of dementia treated with clozapine on the Geriatric Psychiatry unit at Toronto Rehab.

Results: Clozapine was effective in treating behavioural symptoms in three patients with advanced dementia, even when there was no evidence of Parkinson's disease or parkinsonism. It was well-tolerated with no significant adverse events. I identify and discuss an approach to the many challenges associated with clozapine treatment in people with dementia.

Conclusions: Clozapine is a treatment option for people with dementia and severe, treatment-refractory behavioural symptoms, although there are many cautions and the need for adequate support and education for health care professionals who are unfamiliar with this medication.

Views of Aging in Shakespeare's Works

Mark Rapoport, Keri-Leigh Cassidy

Background: Shakespeare died on his 52nd birthday in an era in which the average life expectancy was 35 years. Although there are a few positive examples of wise and loving elders as revered members of society in the Complete Works, an abundance of negative stereotypes pervades. Older adults are typically portrayed as in their "dotage", and the loss of strength and beauty is emphasized. Older fathers are typically tyrants preoccupied with disobedient children, older women are typically portrayed as witches and scolds, the bereaved and depressed are left to die, and the more severely mentally ill are shunned or locked away. Life expectancy is more than double of that in Shakespeare's time, yet enduring negative stereotypes of aging passed down through the centuries continue to have profound impact on modern day thinking.

Methods: We will discuss examples of negative stereotypes of aging in Shakespeare's works and engage participants in discussions of how such views continue to influence society and healthcare including our medical paradigm of pathological aging. We will also review the literature on the effects of ageism and negative self-perception of aging on quality of life, and on health behaviour and longevity. We will reflect on how approaches focusing on wellness and resilience may pose as an antidote and discuss how using literature and theatre, such as that created by Shakespeare, might provide a window to humanize views on aging to benefit the public, and healthcare providers.

Results: This will be an interactive workshop and the above themes will be discussed.

Conclusions: This will be an interactive workshop and the above themes will be discussed.

Stress Reduction for Senior Caregivers through Group Education in Mindfulness

Anne Hennessy, Julia Sage

Background: Mindfulness is an approach to feeling and thinking that fosters self-regulation, and strengthens attention. Aims include being non-judgemental and maintaining equanimity. The literature on the benefits of Mindfulness training in caregiving is burgeoning.

Elderly caregivers are the "unseen patients" coping with the stress of their unpredictable task coupled possibly with their own declining health. Caregivers are at greater risk of experiencing depression and anxiety. A new case of Alzheimer's arises every minute, support to unpaid caregivers is imperative.

Geriatric Psychiatry Community Services of Ottawa provides outreach and holistic care to mentally ill seniors in

their homes. The approach is collaborative, encompassing all aspects of a client's care. The needs of the elderly client's care giver may go unseen and unaddressed. It was thought that the development of meta-cognition and resiliency fostered in the MBSR program originated at U. Mass by Jon Kabat Zinn would benefit caregivers.

:Whitebird R.R.,Kreitzer MJ: MBSR for Caregivers: Gerontologist2013 Aug:53(4)

: Elliott AF, Burgio LD DeCoster J. Enhancing Caregiver Health: JAGS.201;58(1):30

Epstein-Lubow,G,McBee,I,et al: A pilot of MBSR for Caregivers of Frail Elderly: Mindfulness 2011 2(1)

American Alzheimer's Society Annual Report: Alzheimer's Dementia 2013 Mar(

Methods: With the support of clinic staff, an adapted MBSR program has been offered to groups of caregivers over that past 4 years. Pre and post measures of Depression, Caregiver Burden and client satisfaction are measured

Results: We will present the benefits and challenges of the program; explore interdisciplinary leadership and feedback from caregivers.

Conclusions: Our workshop is experiential and immersive, partakers receiving a sampling of a typical group, meditation, and inquiry.

Neural Correlates of Symptomology in Ageing Schizophrenia

Fernando Caravaggio

Background: The clinical presentation of patients with schizophrenia changes across the lifespan, presenting unique issues and challenges to effective treatment. Age-related changes in brain structure and function may relate to, or predict, symptoms and clinical trajectories in elderly patients with schizophrenia. Thus, elucidating neural correlates uniquely associated with clinical symptoms in elderly versus young schizophrenia patients may provide insights into improving treatment strategies.

Methods: This symposium will highlight in vivo brain imaging research aimed at uncovering the neural correlates of symptom severity in elderly patients with schizophrenia.

Results: Discussing the unique brain changes associated with symptom changes in elderly patients may help guide novel and more effective brain-based treatment strategies in the future.

Conclusions: Further appreciating the differences in late-life schizophrenia from young schizophrenia - in terms of s

ymptoms, brain function, and treatment - will advance clinical care and research for this debilitating illness.

Amotivation-Apathy is Associated with Smaller Ventral Striatum Volumes in Elderly Patients with Schizophrenia

Fernando Caravaggio

Background: Motivational deficits are prevalent in patients with schizophrenia, persist despite antipsychotic treatment, and predict long-term outcomes. Evidence suggests that patients with greater amotivation-apathy have smaller ventral striatum (VS) volumes. We wished to replicate this finding in a sample of older, chronically medicated patients with schizophrenia. Using positron emission tomography (PET), we examined whether amotivation uniquely predicted VS volumes beyond the effects of striatal dopamine (DA) D2/3 receptor (D2/3R) blockade by antipsychotics.

Methods: Data from 41 elderly schizophrenia patients (mean age: 60.2±6.7; 11 female) were reanalyzed from previously published PET data. We constructed multivariate linear stepwise regression models with VS volumes as the dependent variable, and various sociodemographic and clinical variables as the initial predictors: age, gender, total brain volume, and antipsychotic striatal D2/3R occupancy. Amotivation was included as a subsequent step to determine any unique relationships with VS volumes beyond the contribution of the covariates. In a reduced sample (n=36), general cognition was also included as a covariate.

Results: Amotivation uniquely explained 8% and 6% of the variance in right and left VS volumes, respectively (right: β=-.38, t=-2.48, p=.01; left: β=-.31, t=-2.17, p=.03). Considering cognition, amotivation-apathy levels uniquely explained 9% of the variance in right VS volumes (β=-.43, t=-.26, p=.03).

Conclusions: We replicate and extend the finding of reduced VS volumes with greater amotivation-apathy in schizophrenia. Importantly, we demonstrate this relationship uniquely beyond the potential contributions of striatal D2/3R blockade by antipsychotics. Elucidating the structural correlates of amotivation-apathy in schizophrenia may help develop treatments for this presently irremediable deficit.

Beta-Amyloid Burden in Elderly Patients with Schizophrenia

Jun Ku Chung, Eric Plitman, Fernando Caravaggio, Philip Gerretsen, Yusuke Iwata, Danielle Uy, Ariel Graff-Guerrero

Background: The pathology of schizophrenia (SCZ) has

developmental origins. However, the neurodevelopmental theory of SCZ cannot solely explain several progressive neurodegenerative processes in the illness. There is evidence of accelerated cognitive decline in elderly patients with SCZ. Further, overlapping symptoms of SCZ and AD suggest that there may be a similar neurodegenerative process in SCZ as is observed in AD.

Methods: Investigating beta-amyloid (Aβ) as a measure of neurodegeneration, we conducted a systematic review focusing on Aβ in patients with SCZ. An OVID literature search using PsychINFO, Medline and Embase database was conducted, looking for studies that compared Aβ levels between patients with SCZ and either healthy controls, patients with AD, or patients with other psychiatric illnesses.

Results: Among 16 identified studies, 14 compared Aβ levels between SCZ and controls, seven between SCZ and AD, and three between SCZ and other psychiatric illnesses. No evidence was found suggesting that Aβ levels differ in patients with SCZ from controls or patients with mood disorders. Six out of seven studies reported decreased cortical Aβ levels in patients with SCZ than patients with AD. Furthermore, five out of six studies, which investigated the relationship between Aβ levels and cognitive impairment in SCZ, observed no association between two factors. Subsequently, only one of five studies showed a correlation between the duration of antipsychotic usage and decreased level of Aβ, while the other four studies highlighted no link between the duration of antipsychotic usage and Aβ.

Conclusions: In conclusion, Aβ deposition is not associated with cognitive decline in late-life SCZ. Additionally, the relationship between antipsychotic exposure and Aβ in SCZ remains elusive. Future studies should investigate other neurodegenerative indicators in patients with SCZ to better understand the pathophysiological mechanisms underlying this illness.

Impaired Illness Awareness in Schizophrenia and Posterior Corpus Callosal White Matter Tract Integrity in a Sample from Across the Adult Lifespan

Philip Gerretsen, Tarek K. Rajji, Parita Saha, Ariel Graff-Guerrero, Bruce G. Pollock, David C. Mamo, Benoit H. Mulsant, Aristotle N. Voineskos

Background: Impaired illness awareness (IIA) in schizophrenia is associated with interhemispheric balance, resulting in left hemisphere dominance, primarily within the posterior parietal area (PPA). This may represent an interhemispheric "disconnection syndrome" between PPAs. To test this hypothesis, we aimed to determine if diffusion-based measures of white matter

integrity were disrupted in corpus callosal tracts linking the PPAs (i.e. splenium) in patients with IIA in schizophrenia.

Methods: One hundred participants with a DSM-IV diagnosis of schizophrenia and 134 healthy controls aged 18 to 79 years ($\geq$ 60 years, n = 58) participated in a cross-sectional neuroimaging study comparing whether the white tracts of patients with IIA (Positive and Negative Syndrome Scale [PANSS] item G12 $\geq$ 2, n = 54) differed from patients with intact illness awareness (PANSS G12 < 2, n = 46) and healthy controls. White matter disruption was measured with fractional anisotropy (FA), which quantifies directionally dependent diffusion. Group differences were evaluated using ANOVA and ANCOVA where appropriate.

Results: Preliminary analyses revealed group differences in FA in the splenium of the corpus callosum with patients with IIA having the lowest FA. These differences remained after controlling for gender, age, MMSE and premorbid IQ. By comparison, no group differences in FA were found in anterior tracts of the corpus callosum (i.e. body or genu) or for average whole brain fractional anisotropy.

Conclusions: White matter tracts of the splenium of the corpus callosum appear compromised in patients with IIA. Interhemispheric PPA white matter disruption may represent a "disconnection syndrome" manifesting as IIA in schizophrenia.

Psychotropic Drugs and Falls in Older Adults

Andrea Iaboni, Jennifer Macri and Dallas Seitz, Julia Kirkham

Background: Medication-related falls are a common and potentially catastrophic event in older adults. Psychotropic medications are the class with the strongest association with falls, particularly in the context of psychotropic polypharmacy. However, many psychotropic medications are effective for the treatment of mental disorders of late life. By emphasizing safety, there is a risk of under-treatment of suffering and distress.

Methods: In this symposium, we will discuss some of the evidence linking psychotropic medication and falls, discuss the magnitude of the risk, and review the prevention of falls as a quality of care issue in geriatric psychiatry.

Results: The evidence linking psychotropic medications and falls is observational in nature and limited by confounding, but largely consistent in finding all classes of psychotropics linked to falls. Most experimental studies confirm that sedating medications impair postural stability, but do not provide a mechanism for the relationship between non-sedating medications such as antidepressants and falls. Despite in-

creasing use of falls as a quality of care indicator, there is no evidence for decreasing falls rates.

Conclusions: Falls prevention is an important quality of care issue in geriatric psychiatry. There is a need for evidence about safer psychotropic prescribing practices from the perspective of falls prevention.

Fall-Related Injuries Among Long-Term Care Residents Newly Initiating Antidepressant Treatment: A Population-Based Study

Jennifer Macri

Background: Antidepressant medications have been previously associated with an increased risk of falls. Little is known of the comparative risks of different classes of antidepressants, and the effect of these antidepressants on individuals who are at a predisposed risk of falls.

Methods: A matched, retrospective cohort study was conducted examining the risk of falls in new users of antidepressants in long-term care (LTC) in Ontario, Canada from 2008 to 2014.

Results: Over 32,000 LTC residents over the age of 66 were included. New users of antidepressants were found to have an increased risk of falls within 90 days of starting antidepressants when compared to non-users (5.2% vs 2.8%, adjusted OR: 1.9, 95%CI: 1.7-2.2). New users of antidepressants were also at an increased risk of hip fractures, wrist fractures, and falls reported in LTC. These associations were most prominent in users of Selective Serotonin Reuptake Inhibitors, Serotonin Norepinephrine Reuptake Inhibitors, and Trazadone.

Conclusions: The risk of falls related to different classes of antidepressant medications and patient subgroups will be compared, along with information about the comparative safety to different medications within classes of other psychotropic medications.

Experimental Studies of the Effect of Psychotropic Medications on Postural Stability in Older Adults

Andrea Iaboni

Background: Psychotropic medications are among the most commonly prescribed drugs in older adults. The relationship between these drugs and falls has been established through observational studies. Less is known about the specific mechanisms of psychotropic-related falls. In this talk, I will

provide an overview of our current understanding of intrinsic factors that contribute to falls in older adults and will review the experimental evidence for the physiologic effects of falls-promoting psychotropic medications.

Methods: A review of experimental studies of psychotropics and balance, gait, and psychomotor function was completed.

Results: Sedative/hypnotics have a negative impact on postural control, gait psychomotor performance, and cognitive functioning in older adults. The effects of antidepressant medications are less clear, but may be more easily elucidated by more challenging dynamic balance testing paradigms, one of which will be introduced with some preliminary data.

Conclusions: Psychotropic medications are falls-promoting, but the risks need to be weighed by the potential benefits of therapy.

Psychotropic Medications and Falls in Long-Term Care: A Quality Improvement Perspective

Julia Kirkham, Andrea Iaboni, Dallas Seitz, Jennifer Macri

Background: Falls have long been recognized as a measure of overall quality of care, due to their association with a number of poor health related outcomes in older adults, including increased mortality and disability.

Methods: Falls and related injuries are tracked across care settings via several quality indicators in both Canada and the United States, and addressing the use of psychotropic medications, a modifiable risk factor for falling, is often a focus of quality improvement strategies.

Results: In long-term care, falls are common and individuals may be particularly vulnerable to serious adverse sequelae. Efforts to reduce the inappropriate prescribing of medications frequently associated with drug related falls in this setting, such as antipsychotics, antidepressants and benzodiazepines, is an important aspect of falls assessment and prevention programs. Effective strategies to improve prescribing in LTC include thorough assessment and treatment of contributors to falls and other conditions that may precipitate prescribing of psychotropics, education initiatives, and policy and administrative change. The impact of such interventions, in the context of broader falls prevention programs, has yet to be fully evaluated.

Conclusions: This session will review the use of falls as a quality indicator, and related quality improvement strategies including evidence-based approaches to reducing inappropriate psychotropic prescribing.

A Medical, Legal and Ethical Triple Threat: A Request for Medical Assistance in Dying in the Context of the On-Off Phenomenon in Parkinson's Disease with Comorbid Mood, Anxiety and Psychotic Symptoms

Michael Tau, Robert Madan

Background: We present a case of an 80 year-old woman admitted to a long-term care facility with advanced Parkinson's disease, psychotic depression, and generalized anxiety disorder. She experiences the on-off phenomenon, with intense mood swings and anxiety related to her physical symptoms and medication schedule. During her treatment course, she made a request for medical assistance in dying (MAID).

Methods: Using an interactive discussion format, the case will be discussed in terms of evidence-based medical issues and legal and ethical considerations. The discussion will be supplemented by a review of the scientific literature on diagnostic and treatment considerations for the on-off phenomenon, highlighting concerns about associated depressive and anxiety symptoms, and comorbid psychotic symptoms. The recent legislation of MAID will be discussed interactively, including issues of capacity and consent and what constitutes a "grievous and irremediable" condition where "natural death has become reasonably foreseeable," particularly in a gradually disabling condition such as Parkinson's disease. The impact of this patient's comorbid psychiatric illness will be reviewed as it pertains to her capacity to consent to MAID.

Results: This patient was treated using a multifaceted treatment plan, involving interdisciplinary collaboration between nursing, family members, and the medical, psychiatry, palliative, and neurology teams. Medication treatment involved antiparkinsonian, antipsychotic, antidepressant, and anxiolytic medications, and ultimately a plan was developed that concurred with the client's goals of care.

Conclusions: The recent legislation regarding MAID poses unique challenges and opportunities in approaching patients with neurodegenerative conditions and comorbid psychiatric illness. Collaborative, multi-faceted treatment plans are required to address patients' needs.

Man's Search for Meaning in Retirement: Facilitating Men's Groups to Enhance Psychological Resiliency and Prevent the Onset of Suicide Risk

Marnin Heisel, Sharon L. Moore, Ross M.G. Norman, Paul S. Links, Gordon L. Flett, Sisira Sarma, Rahel Eynan, Norm O'Rourke

Background: Older men have the highest rates of suicide worldwide, and the older adult population is growing (WHO, 2014). Intervention research is lacking targeting suicide risk reduction in this at-risk demographic (Heisel & Duberstein, 2016). "Upstream interventions" are needed that aim to enhance psychological resiliency and prevent the onset of suicide risk among men transitioning to retirement.

Methods: We are recruiting 80-100 cognitively-intact men 55 years or older, into 12-week courses of 90-minute Meaning-Centered Men's Groups (MCMG) for men struggling to transition to retirement. This multi-stage project involves: 1) delivery of two uncontrolled courses of MCMG, assessing the intervention's tolerance, acceptability, safety, and pre-to-post group change in mental health and well-being; 2) a controlled study phase, comparing change in study outcomes for participants in MCMG with a weekly Current-Events Discussion Group (CEDG); 3) dissemination of MCMG to distant sites and evaluation of facilitator training.

Results: We have completed 3 courses of MCMG and one course of CEDG thus far (M=63.5 years, SD=4.4, N=40). MCMG participants expressed strong satisfaction with group sessions (M=45.1, SD=3.9 on a 50-point group satisfaction scale), a strong working alliance, and a significant increase in Meaning in Life (Experienced Meaning in Life Scale; $t(29)=2.46$, $p<.05$) and decrease in Suicide Ideation (Geriatric Suicide Ideation Scale; $t(29)=2.45$, $p<.05$) by mid-group assessment. Qualitative interviews further suggest enhanced camaraderie, enjoyment of group sessions, and satisfaction with life in retirement.

Conclusions: This interactive workshop will outline the rationale and present preliminary findings of an innovative study aiming to develop, test, and disseminate Meaning-Centered Men's Groups (MCMG) for men transitioning to retirement. Experiential exercises and group discussion will be used to familiarize participants with the content and process of facilitating an MCMG group.

Agitated Behaviours Defined by the International Psychogeriatric Association in Moderate-To-Severe Alzheimer's Disease Patients are Predictors of Caregiver Burden

Eleenor Abraham

Background: Agitation is a frequent neuropsychiatric symptom (NPS) in Alzheimer's disease (AD) patients, and highly contributes to caregiver burden. Recently, the International Psychogeriatric Association (IPA) developed criteria for diagnosing agitation in cognitive disorders, outlining three behaviour subtypes; physical agitation, excessive motor activity and verbal agitation. We investigate whether these IPA subtypes in moderate-to-severe AD patients are predictors of caregiver burden.

Methods: Patients were recruited from a clinical trial investigating nabilone for the treatment of agitation in AD. Agitation and caregiver burden was evaluated using the Cohen-Mansfield Agitation Inventory (CMAI), and the Neuropsychiatric Inventory-Nursing Home Version (NPI-NH) total distress scores, respectively. The CMAI assesses physical aggressive (PA) and non-aggressive (PNA) symptoms, and verbal aggressive (VA) and non-aggressive symptoms. PA, PNA and VA subscores are consistent with the IPA subtypes for physical agitation, excessive motor activity and verbal agitation, respectively.

Results: To date, 26 moderate-to-severe AD patients (mean±SD age=86.6±11.1, NPI-NH total=32.4±14.3, Standardized Mini Mental State Exam=6.3±6.3, CMAI=67.6±18.6, 19 males) and caregivers were enrolled. After adjusting for age as a covariate, baseline CMAI PA ($F_{(2,22)}$=4.40, R=0.53, p=0.025) and PNA subscores ($F_{(2,22)}$=4.2, R=0.53, p=0.029) were significant predictors of caregiver burden. However, baseline CMAI VA subscores did not significantly predict caregiver burden ($F_{(2,22)}$=2.7, R=0.44, p=0.093).

Conclusions: The IPA criteria account for the most distressing behaviours of agitation in AD for caregivers. The use of standardized and validated diagnostic criteria for agitation allows physicians and caregivers to ascertain the nature of this NPS in AD patients, and can lead to more effective management techniques for agitated behaviours increasing caregiver burden.

Targeting Modifiable Risk Factors to Prevent Delirium Superimposed on Dementia: The PREvention Program for Alzheimer's RElated Delirium (PREPARED) Trial

Machelle Wilchesky, Philippe Voyer, Jane McCusker, Nathalie Champoux, Johanne Monette, Eric Belzile, Minh Vu, Ovidiu Lungu

Background: Delirium superimposed on dementia represents two of the 'three D's of geriatric psychiatry', and is a significant cause of morbidity and mortality among the elderly in long-term care (LTC) settings. Although several multicomponent delirium prevention programs (MDPP) targeting modifiable risk factors have proven successful in reducing delirium incidence in acute care, little work has focused on using this approach in LTC. The PREPARED trial will assess the efficacy of an MDPP intervention in reducing delirium (incidence, frequency, severity, episode duration) and falls among cognitively impaired LTC residents. The effect of the program on behavioral and psychological symptoms of dementia (BPSD) and antipsychotic use will also be examined.

Methods: This 4-year cluster randomized study will involve nursing staff and residents at approximately 40-50 LTC facilities in Montreal, Canada. Facilities will be randomized to the MDPP intervention or to usual care (control) using covariate constrained randomization. Residents at high risk for delirium who are delirium-free at baseline will be enrolled in cycles, and followed for 18 weeks. Study outcomes (i.e. incidence/severity) will be assessed weekly. Cognitive impairment and functional autonomy will be assessed at baseline and end of follow-up. Information pertaining to resident psychiatric profiles, risk factors, medical consultations, falls, and institutional transfers will be assessed retrospectively.

Results: As the intervention program has been shown to be both feasible and acceptable, we expect that exposure to the PREPARED intervention will reduce delirium in this frail population.

Conclusions: This large-scale study will contribute significantly to the development of evidence-based clinical guidelines for delirium prevention in LTC.

Chromosome 21 Duplications and Memory Deficit in Schizophrenia

Ali Bani-Fatemi, Vincenzo De Luca

Background: Copy number variants (CNVs) are the segments of DNA longer than one kb that present in variable numbers of copies across individuals within a population. Studies showed that specific CNVs are associated with susceptibility to nervous system disorders such as Alzheimer's disease, Parkinson's disease, and epilepsy; and also psychiatric disorders such as schizophrenia (SCZ), which often demonstrate co-morbidity with memory deficit. In this study, I aimed to investigate chromosome 21 duplications in older adults who were SCZ patients with memory deficit.

Methods: My sample consisted of 80 older adults with SCZ (age: 50-75) recruited from the Centre for Addiction and Mental Health. To provide a measure of the memory deficit of the participants, the Mini Mental Status Examination (MMSE) and Montreal Cognitive Assessment (MoCA) were used. Genomic DNA was extracted from white blood cells and genotyped using Illumina 2.5. The Chromosome 21 CNV analysis was performed using SNP and Variation Suite (SVS). Statistical analysis was performed using chi-squared test and Mann Whitney U test.

Results: This preliminary CNV analysis of Chromosome 21 did not show significant association with memory deficit

in my sample.

Conclusions: Although my results did not indicate any association between chromosome 21 duplication and memory deficit in schizophrenia patients, CNV studies in impairment of cognitive development including memory deficit may reveal important new insights and open the avenue of investigations that holds great promise for neuropsychiatric diseases. Future studies may perform this genetic approach in a larger sample size for predicting individuals who are more at risk for memory deficit.

Cognitive Functioning in the Elderly: Is There a Relationship with Characteristics of Suicidal Ideation?

Claude Bergeron, Geneviève Letourneau, Sophia Escobar, Gustavo Turecki, Stéphane Richard-Devantoy

Background: Among older adults, suicide rates are high and elderly suicide is an important public health matter. Unfortunately, predicting and preventing suicidal behaviours in elderly remain difficult. According to the stress-vulnerability model, the risk of committing a suicidal act is influenced by stressful life events and by vulnerability factors, including neurocognitive alterations. Therefore, neurocognitive risk factors of suicidal behaviors in this population, as measured by neuropsychology, are being studied. However, they remain poorly understood.

Methods: A total of 50 participants (14 elderly subjects with a personal history of suicide attempt, 18 elderly subjects with a current depression but no personal history of suicide and 18 elderly healthy controls) underwent a battery of clinical and neurocognitive tests. Thirty-one participants had an history of suicidal ideation. Subjects completed the Montreal Cognitive Assessment test (MoCA) and the Columbia Suicide Severity Rating Scale (C-SSRS).

Results: Total scores and visuospatial/executive subscores of MoCA were negatively correlated to the severity of lifetime suicidal ideation. Only the total MoCA score was also negatively correlated to the past month severity of suicidal ideation. The correlations were moderate. No significant correlation was found between MoCA scores and duration, frequency, controllability, deterrents and reasons for suicidal ideations.

Conclusions: These results may reflect that total score and visuospatial/executive subscores of MoCA could be associated with a cognitive vulnerability to severe suicidal ideation among elders.

Evaluating Neuroplasticity in Late-Life Depression Using Transcranial Magnetic Stimulation

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Background: The objective of this study was to evaluate motor cortical neuroplasticity using paired associative stimulation (PAS), a transcranial magnetic stimulation (TMS) paradigm, in patients with late-life depression (LLD) compared to healthy older adults.

Methods: PAS-induced motor cortical excitability changes were assessed in 40 patients with LLD and 35 healthy, non-psychiatric older adults aged 60 and over, by motor-evoked potentials (MEPs) evoked in the right abductor pollicis brevis (APB) muscle using single-pulse TMS.

Results: After PAS, an analysis comparing the MEP amplitudes of LLD patients to a baseline value of 1mV found significantly impaired neuroplasticity in patients with LLD. There were no significant differences between the MEP amplitudes of healthy controls and LLD patients.

Conclusions: This study provides the first objective examination of neuroplasticity in patients with LLD. Our findings suggest that the normative aging process advances the brain into a physiological state similar to that of LLD patients. However, it is clear that further research is necessary to gain a comprehensive understanding of the neurophysiological mechanisms underlying LLD.

From Good To Great: What Makes a Gifted Clinical Educator In Psychiatry?

Bryce J. M. Bogie, Anne Lizius, Sheila Harms, Karen Saperson, Meghan M. McConnell

Background: The shift in postgraduate training programs towards a Competency-Based Medical Education (CBME) framework has inspired extensive research interest. The literature suggest that good medical educators must possess both cognitive and noncognitive qualities (Bogie et al., 2016; Sutkin et al., 2008). Given that each medical specialty involves a unique clinical environment, Bogie et al. (2016) have recently suggested specialty-specific supervisor training programs as a way of maximizing educator capacity within a specific clinical context.

Methods: Psychiatry residents from McMaster University completed evaluations for their clinical teachers and supervisors during the 2015 and 2016 academic cycles. Using a descriptive qualitative approach, analysis of narrative comments from

anonymized faculty evaluations will be conducted by 3 independent reviewers. Data will be coded for themes in response to the question, "What qualities are associated with an excellent clinical teacher and supervisor in psychiatry?"

Results: We submit that responses will align with previous frameworks, highlighting cognitive and noncognitive qualities. Specifically, we anticipate that residents' narrative evaluations will describe cognitive qualities like medical expert knowledge, and noncognitive qualities like communication style for both clinical teachers and supervisors. We hypothesize that residents will value cognitive qualities for their clinical teachers, while appreciating noncognitive qualities for their clinical supervisors.

Conclusions: Findings from the qualitative analysis will be mapped onto previous frameworks for medical teachers and supervisors. Any qualities that are unique to psychiatry will be organized into a new framework. Characteristics that develop from the emerging themes will be used to create faculty development workshops to assist psychiatry supervisors in the transition to a CBME model.

A Quasi-Experimental Study on the Effects of a Combination of Secondary Preventive Interventions in Reducing Depressive Symptoms Among the Elderly in Luwalhati Ng Maynila

Juan Miguel Cajucom, Danica Lou T. Akiat, Melissa A. Corrales, Jon Martin O. de la Paz, Anne Janelle R. Sy, Eljine Mae T. Zhang, Joan Mae Perez T. Rifareal

Background: The study aims to determine the effectiveness of the designed program consisting of a combination of secondary preventive interventions as a means to reduce the depressive symptoms among the elderly in Luwalhati ng Maynila, a retirement home under the supervision of the Manila local government. The study utilized a quasi-experimental design that made use of a pre-test and and post-test. The major hypothesis was that there would be a significant difference between the Geriatric Depression Scale (GDS-15) scores before and after the intervention.

Methods: The intervention implemented modules integrating physical and cognitive exercises and social support activities over the span of three weeks. Qualitative data was gathered through interviews, records review, and observations, and was analyzed through thematic analysis. Quantitative data was gathered through the GDS-15 screening tool, and was analyzed using the SPSS statistical analysis software. The Paired Sample T-test was used to determine the overall effectiveness of the program. The McNemar test was conducted to observe the effect on individual items, and regres-

sion tests were conducted to account for confounders.

Results: Results show that there was a significant decrease in the mean GDS-15 scores of the sample from the Pre-Intervention Phase (M=5.88; SD=3.413) to the end of the Intervention Phase (M=4.00; SD=2.686). Among the items on the GDS-15 form, a total of seven significantly decreased in total percentage of answers suggestive of depression after the intervention. The regression tests revealed that willingness to stay was the only significant predictor of depressive symptoms after the intervention, with those who are more willing to stay being the ones more likely to have less depressive symptoms.

Conclusions: The combination of secondary preventive interventions proved effective in reducing the depressive symptoms of the elders in the sample, as seen in the significant decrease in the mean GDS-15 scores of the sample.

A Machine Learning Model to Predict Response on a Working Memory Task

Amay Cheam

Background: Alzheimer's dementia (AD) affects more than five million individuals in North America and this number is expected to double by 2050. By the time AD is diagnosed, it is late to interfere. Thus, towards preventing AD, our group is developing novel interventions to deliver to high-risk populations, e.g. patients with depression or mild cognitive impairment (MCI). These interventions aim at enhancing prefrontal cortical function which supports cognitive compensatory mechanisms to delay the onset of AD in these high-risk populations. However, prefrontal cortical function and its predictors can vary across different high-risk individuals. Classical statistical models are limited in addressing this variation across individuals. Thus, the aim of this study is to develop a machine-learning model to learn from each individual's data and predict prefrontal cortical function on the individual level towards the delivery of personalized interventions.

Methods: 70 cognitively healthy individuals performed a working memory task that indexes prefrontal cortical function (N-back task) while having electroencephalography (EEG) recorded. Using the EEG and behavioral data, we are applying a supervised-learning model to select the EEG features that most accurately predict each individual's performance on the N-back task.

Results: At the conference, we will present the results of the prediction model in those cognitively healthy individuals.
Conclusions: If successful, a supervised-learning model lends itself to accurate individualized production. It can then

be applied to high-risk populations to potentially develop personalized preventative interventions in the future.

Performance Assessment of Self Care Skills (PASS) Compared to Neuropsychological Battery for Differentiating Older Adults with Mild Cognitive Impairment (MCI) and Normal Cognition

Pallavi Dham

Background: As per the DSM 5, Mild Cognitive Impairment (MCI) is characterized by independent functioning but compensation or increased effort is needed for cognitively complex tasks. Performance Assessment of Self-care Skills (PASS) is a valid and reliable objective observational functional assessment tool. Use of PASS to differentiate between MCI and normal cognition has only been studied in a small set of patients with history of depression but not in MCI alone or healthy controls with no psychiatric disorders. Moreover, performance on PASS has not been compared to performance on neuro-psychological battery.

Methods: We used baseline participant data from PACT-MD trial, of healthy controls and those diagnosed with MCI using DSM 5 criteria. Preclinical disability and independence scores using three tasks from C-IADL component of PASS, rated at baseline for all participants by a trained clinician, are compared between the MCI and normal cognition groups using regression analysis. Further Receiver Operating Characteristics is used to identify the score with best predictive value for MCI. Performance on PASS is also compared to the composite score on neuropsychological battery to estimate the concordance between the two. Lastly, we evaluate if PASS and neuro-psychological battery together predict the clinical diagnosis of MCI.

Results: We will present the results from our study and discuss the role of PASS and neuropsychological battery in identifying MCI and healthy controls. We will further discuss the use of PASS in other mental illnesses and the clinical utility and application in diagnosis of MCI.

Conclusions: To be discussed.

End-Of-Life Care Preferences and Interest in Medical Assistance in Dying in Older SPMI Patients: A Comparative Cross-Sectional Study

Dominique Elie
Background: Physicians rarely engage severe and persistent mental illness (SPMI) patients into end-of-life care discussion despite an increased risk of debilitating medical illnesses and mortality. Whereas access to quality palliative care and medical assistance in dying (MAID) has become Canada's top priority, we 1) compared SPMI and chronic medically-ill (CMI) patients' end-of-life care preferences and comfort level about end-of-life care discussion, and 2) identified potential predictors of interest in MAID.

Methods: We conducted a cross-sectional study comparing 106 SPMI and 95 CMI patients recruited at the Jewish General Hospital, Canada. Patients aged ≥40 years, without severe cognitive impairment, able to communicate in English or French, and able to provide written informed consent were recruited. Attitudes towards pain management, palliative sedation, MAID, and artificial life support were collected with the Health Care Preferences Questionnaire. Adjusted odd ratios were calculated for each end-of-life care interventions. Comfort with discussion was rated on a Likert scale. A step-wise regression analysis was performed to identify predictors of interest in MAID.

Results: SPMI was not correlated to any specific end-of-life care interventions, except for MAID where SPMI patients were less likely to support its use (aOR=0.48, CI 95% 0.25-0.94). Religiosity was also correlated with interest in MAID (aOR=0.14, CI 95% 0.06-0.31). More than 85% of patients in both groups were comfortable talking about end-of-life matters.

Conclusions: Our findings show that older SPMI patients are able to voice their end-of-life care preferences, and contrary to some fears, do not want MAID more than CMI patients.

Anticholinergic Burden and Functional Capacity in Persons with Schizophrenia Across the Adult Life Span

Zaid Ghazala, Benoit H. Mulsant, Christopher Tsoutsoulas, Sanjeev Kumar, Aristotle N. Voineskos, Bruce G. Pollock, Robert S. Kern, Tarek Rajji

Background: The use of medications with high anticholinergic burden is associated with cognitive impairment and increased risk of functional decline and dementia in older individuals. In patients with schizophrenia, anticholinergic burden is associated with cognitive impairment but its relationship to functional abilities is not known.

Methods: 223 clinically stable participants with schizophrenia (F = 68, 30%), aged 19-79 (Mean Age = 49.0, SD = 13.1) were recruited in Toronto or through the MATRICS initiative. They were assessed using the UCSD Performance-Based Skills Assessment (UPSA) and the MATRICS Consensus Cognitive Battery. Olanzapine-equivalent dosage and psychoactive medications anticholinergic burden (ACB) scores

were calculated. Linear regression was used to assess the association between ACB and UPSA Total Score, co-varying for age, education, global cognition, negative symptoms, and antipsychotic dosage.

Results: Almost all (92%) our participants were using medications that have some anticholinergic activity and most (63%) had an ACB score of 3 or more indicating a high anticholinergic burden. In regression analyses, ACB scores significantly predicted UPSA total scores (R2 = 0.52, F (6, 216) = 39.7, p = < 0.0001; β = -0.154, p = 0.006), independent of age, education, negative symptoms, antipsychotic dosages, and cognition.

Conclusions: Our results show that the majority of patients with schizophrenia are exposed to medications with high anticholinergic burden and that these medications have a direct negative impact on patients' functional capacity. This highlights the challenge these medications pose for, not only cognitive enhancement interventions, but also psycho-social and functional rehabilitation ones.

Creation of Psychosocial Clinic for Elderly Patients with Schizoprhenia

Angela Golas, Petal Abdool, Joydip Banerjee, Rita Desai, Benoit H. Mulsant, Christopher R. Bowie, Tarek K. Rajji

Background: Cognitive deficits are among the strongest predictors of function in individuals with schizophrenia. No pharmacological interventions reliably improve these impairments. As patients grow older, additional age-related declines are observed. Cognitive Remediation (CR) improves cognition in individuals with schizophrenia. Cognitive Behavioural Social Skills Training (CBSST) improves social and instrumental function by incorporating cognitive techniques and social skills training. We discuss the implementation of CR with CBSST into the clinical setting as part of a Psychosocial Interventions (PI) Clinic.

Methods: We adapted a CR protocol involving restorative and strategy-based Methods: for older outpatients with schizophrenia. CR is provided in twelve, biweekly, two-hour didactic sessions with online clinic-based practice exercises. Computerized drill and practice exercises are used with bridging to activities of daily living. We modified computer lab ergonomics to accommodate mobility needs. CBSST is provided in 18-weekly, two-hour sessions covering cognitive, social skills and problem solving modules. Patients for both programs are assessed at baseline and end-of-study using clinical and cognitive assessments.
Results: We will summarize the effect of CR and CBSST on the patients receiving these interventions using standard cognitive and functional measures.

Conclusions: We will elaborate on our pilot data suggesting that these modalities are well tolerated by most older outpatients with schizophrenia and is a feasible addition to an integrated care plan. Our findings will assess for empirical improvements in cognition and social functioning given the current frequency and number of sessions for each intervention to better tailor these interventions to the needs of the elderly.

Evaluating the Efficacy of Recruitment Methods: for Clinical Trials within the Older Adult Population

Rhea Harduwar, Sara Gambino

Background: The Prevention of Alzheimer's Dementia with Cognitive Remediation plus Transcranial Direct Current Stimulation in Mild Cognitive Impairment (MCI) and Depression (PACt-MD) study is a longitudinal, multi-site clinical trial aimed to prevent or delay the onset of cognitive decline. The study aims to recruit 375 adults, 60 and older, with a diagnosis of MCI or a depression history. Recruitment of this population presents many obstacles due to mobility limitations, health problems, and language barriers for older immigrants. Assessing effective recruitment strategies may provide insight toward overcoming these barriers, increasing the effectiveness of clinical trials in this population. The aim of the current analysis is to determine the efficacy of various recruitment methods of older adults.

Methods: We compared the efficacy of strategic targeted advertising, physician referrals and community presentations to recruit older adults.

Results: Preliminary findings suggest that physician referrals represent the most efficient recruitment method for this population, with an estimated 25.5% enrollment rate, whereas reputable newspaper articles and print advertising had an estimated 12.5% enrollment rate following screening of participants. Community presentations may be the least efficient method tested (enrollment rate to be determined following more complete data collection).

Conclusions: The findings suggest that while all tested strategies may represent a viable option for recruitment of older persons, physician referrals and strategic advertising may be the superior sources for enrollment. This research may improve the recruitment efforts of other large scale clinical trials, thereby leading to increased efficiency of translating evidence-based research into practice.

Antidepressants and Bradycardia: Is There a Correlation?

Maria Hussain, Dallas Seitz, Adrian Baranchuk, Farzana Haq

Background: Antidepressant use in older adults is on the rise, which are prescribed for both psychiatric and non-psychiatric diagnoses. Antidepressants have been associated with cardiovascular adverse effects, including orthostatic hypotension, QTc prolongation, heart blocks, and arrhythmias. Bradycardia has been documented in case reports, but has not been investigated on a larger scale.

Methods: Utilizing linked administrative databases at the Institute for Clinical Evaluative Sciences (ICES), we conducted a case control study in adults over the age of 65. Cases were defined as individuals with symptomatic bradycardia leading to an ER visit, hospital admission or pacemaker insertion. Each case was matched to 5 controls for age, sex, general comorbidity, calendar year, and history of bradycardia. Antidepressants were categorized as SSRIs, SNRIs, NDRI, NaSSA, TCAs, and other. Using univariate logistic analyses, we calculated unadjusted and adjusted odds ratios for bradycardia occurrence for each antidepressant category at 7, 30, 90 and 180 days.

Results: There were a total of 8,852 cases and 32,234 controls. Adjusted odds ratios indicated a slightly increased likelihood for developing bradycardia with SSRIs (OR=1.078), the effect being most pronounced at 7 days. Adjusted odds ratios were <1 for SNRIs, NDRI and TCAs (OR=0.821, 0.943, 0.773) indicating these might be slightly protective. Subgroup analyses revealed men being at slightly higher risk.

Conclusions: These results indicate that antidepressants may be variably associated with bradycardia, SSRIs carrying a slightly higher risk, and others being slightly protective. It may be pertinent to consider antidepressants other than SSRIs in patients, especially males, with risk factors for bradycardia.

A Mobile Dementia Observation System (Dobs): Development and Pilot Usability Testing

Andrea Iaboni, Ari Cuperfain, Karen Chium, Mario Tsokas, Cecelia Marshall

Background: Responsive behaviours in dementia, such as agitation and aggression, are common and distressing for caregivers and patients. Direct observation is a valuable assessment tool in determining the frequency, severity, and patterns of behaviours. A widely used direct observation tool is called the dementia observation system (DOS), which is paper-based and onerous

Methods: We developed a prototype of a mobile application, Dementia Observation (DObs) for collecting direct behavioural observations of patients with dementia. We conducted usability testing of the DObs mobile application. Quantitative measures of speed and user interaction errors were recorded. Assessors completed the system usability scale (SUS), a perceived usefulness scale, and a technological self-efficacy scale. Qualitative assessment was performed via the 'cognitive walkthrough' and 'think aloud' approaches.

Results: The six assessors had a mean computer self-efficacy rating of 7.7 out of 10 (range: 4.2 to 9.5). On average, users completed 85% of tasks with all components correct, however, only 64% of tasks were completed on the first attempt. The most frequent anticipated DObs function, charting routine patient behaviours, took on average 51±31 seconds to complete the first time this skill was assessed. This time reduced to 42±22 seconds when a similar behaviour was recorded a second time.

Conclusions: Mobile technology offers an opportunity to improve the assessment and treatment of responsive behaviours in dementia. Future studies will examine DObs feasibility in clinical setting and develop machine learning algorithms to synthesize behavioural, contextual and motion tracking information.

A Rehabilitation Goal-Setting Mobile Application (On-MyFeet) in Older Adults: Usability and Acceptability

Andrea Iaboni, Karen Chiu, Ari Cuperfain

Background: There is a need for interventions to improve rehabilitation engagement in older adults. Patient-directed goal setting is one intervention that has been shown to enhance rehab participation and improve functional outcomes. We have developed a mobile application named OnMyFeet, based on principles of Enhanced Medical Rehabilitation, which guides patients in setting, prioritizing, and personalizing goals. The objectives of this pilot usability study were: 1) assess the usability and acceptability of OnMyFeet in older adults and 2) assess the effectiveness of OnMyFeet in enhancing client-centredness of goals-setting.

Methods: Participants (mean age 70.3 ± 10.6 years) were two healthy older adults and four inpatients on a MSK rehabilitation unit. The cognitive walkthrough approach was used as the usability evaluation method and task scenarios were moderated using concurrent think-aloud. Qualitative and quantitative measures were collected through usability testing, interviews, and surveys.

Results: OnMyFeet scored 65 ± 28 on the System Usability Scale. Users recommended adding clear and visible prompts

for advance buttons, keeping a consistent direction in scrolling through lists, and more written instructions. Users enjoyed maintaining a diary of their progress and having a larger role in decision-making. On the Client-Centredness of Goal-Setting survey, the mobile application received scores over 90% in all subscales, which were indicators of high client-centredness.

Conclusions: We found that OnMyFeet enhances client-centredness of goal-setting in therapy. The next prototype of the mobile application will aim to improve usability by addressing the identified usability issues specific to older adults.

An Update of the Clinical Profile of Patients with Dementia and Severe BPSD on a Specialized Care Unit: A Retrospective Pilot Study

Evelyn Keller, François Rousseau, Nassima Azouaou, Manel Jarboui, Loraine Telleria, Alexandra Simard, Lucie Morel, Chantale Mérette, Annie Labbé, Rossana Peredo Nunez De Arco

Background: BPSD affect upwards of 90% of people with dementia during the course of their illness. These symptoms pose major challenges to caregivers. Previous studies suggest that individualized interventions are effective in managing these symptoms. An 8-bed special care unit has been in operation since 2010 at the IUSMQ in Québec City. Our team evaluates and treats BPSD patients using individualized non-pharmacological and pharmacological interventions.

Methods: We conducted a systematic chart review for 144 patient admissions to our acute-care BPSD unit between December 2011 and December 2016. We hypothesized that a reduction in the Neuropsychiatric Inventory (NPI) scores and reduction in psychotropic drug use would indicated clinical improvement. Socio-demographic and clinical data, as well as NPI scores and psychotropic and analgesic drug use were documented. Treatment outcome was assessed using a clinical impression measurement as well as by change of the total NPI score from admission (T1) to discharge (T2).

Results: Most subjects had Major Cognitive Disorder due to mixed causes (45.1%) followed by Alzheimer's Dsease (31.3%). Smaller percentages were found for other causes. NPI total scores were available for 58 patients at T1 and T2 and showed significant change: 35 (SD 22) at T1, 21.8 (SD 14) at T2, (p<0.0001).The clinical impression measurement showed improvement in 85.3% of patients. Drug prescription information will be presented.

Conclusions: These results are part of an ongoing study documenting the efficacy of interventions on our specialized BPSD unit.

Impaired Positive Emotional Verbal Memory in DSM5 Mild Neurocognitive Disorder

Dunja Knezevic, Aliya Ali, Claudia Szabuniewicz, Nicolaas Paul L.G Verhoeff, Corinne E. Fischer, Alastair J. Flint, Nathan Herrmann, Benoit H. Mulsant, Bruce G. Pollock, Tarek K. Rajji, Linda Mah & PACt-MD Study Group

Background: The early involvement of Alzheimer's disease (AD) pathology in limbic regions suggests that changes in emotional memory may occur prior to the onset of clinically significant memory impairment. In previous work on emotional memory, cognitively-normal (CN) older adults demonstrated the expected positivity bias associated with healthy aging. However, this positivity bias was absent in individuals with single-domain amnestic Mild Cognitive Impairment (sd-aMCI). The objective of the current study was to replicate and extend these findings in a heterogeneous MCI sample.

Methods: Twenty-four CN (16 F, mean age=71.33± 5.88) and 19 MCI (11 F, mean age =78.05±7.84), participants completed an Emotional Verbal Learning Test (EVLT). The EVLT is a 15-word list of positive, negative, and neutral personality adjectives, which is read aloud to participants for five trials, followed by free recall. MCI participants met criteria for DSM5 Mild Neurocognitive Disorder and were non-depressed. Mixed analysis of variance (ANOVA) was performed to compare emotional memory between groups.

Results: Mixed ANOVA showed a main effect of emotion bias [$F(1,39)=4.69$, p=0.037], which was qualified by a significant interaction between emotion bias and diagnostic group [$F(1,39)=4.86$, p=0.033]. Individuals with MCI recalled fewer positive words relative to CN (Mean positive words recalled 1.79 ± 3.66 vs 2.88 ± 3.75, p <.05 respectively), with no differences in negative emotional memory between groups.

Conclusions: The current findings replicate and extend previous findings of positive emotional memory deficits in a heterogeneous, clinically-defined sample of MCI. These findings suggest that emotion dysregulation may characterize the prodromal phase of AD.

Resting EEG Power Spectra in Patients with Late-Life Schizophrenia, Late-Life Bipolar Disorder and Healthy Older Adults

Sanjeev Kumar, Benoit H. Mulsant, Reza Zomorrodi, Zaid Ghazala, Daniel M. Blumberger, Aristotle Voineskos, Zafiris J. Daskalakis, Tarek K. Rajji

Background: Changes in electroencephalogram (EEG) power spectra and event related gamma power have been found in schizophrenia and bipolar disorder in general adult population. The objective of this study was to investigate resting EEG spectra and the regional distribution of gamma power in late-life schizophrenia (LLS) and late-life bipolar disorder (LLBD).

Methods: 31 stable LLS (F=14), 18 stable LLBD (F = 11) and 26 healthy comparators (HC) (F = 15) underwent 62-channel resting EEG with eyes closed and electrodes positioned as per 10-20 system. Mean power and relative power was calculated for each frequency (Delta = 1-3 Hz, Theta = 4-7 Hz, Alpha 8-14 Hz, Beta = 14-30 Hz and Gamma 30-50 Hz) across frontal, parietal and occipital regions. One way ANOVA was used to compare the groups.

Results: LLS group had significantly higher delta ($F_{2, 72}$ = 5.05, p = 0.009) and theta power ($F_{2, 72}$ = 7.7, p = 0.001) as compared to HC and LLBD groups. Further, the LLS group had decreased relative gamma power compared to the HC group in frontal ($F_{2, 70}$ = 4.1, p = 0.02) and parietal regions ($F_{2,70}$ = 19.7, p < 0.001), and an increased relative gamma power in the occipital region ($F_{2,70}$ = 3.9, p = 0.02).

Conclusions: Patients with stable LLS have increased total slow wave power and abnormal distribution of relative gamma power. These findings suggest that stable patients with LLS may have abnormalities in resting state networks which may have significance as potential diagnostic biomarkers.

Socio-Cognitive Determinants of Neuropsychiatric Affective Symptom Management by Long-Term Care Nursing Staff

Ovidiu Lungu, Marie-Andrée Bruneau, Philippe Voyer, Philippe Landreville, Machelle Wilchesky

Background: Affective symptoms (depression, anxiety and apathy) are prevalent among nursing home residents with dementia. Clinical guidelines recommend non-pharmacological approaches over medication when managing neuropsychiatric symptoms; yet, the socio-cognitive determinants of clinical management strategies are poorly understood. Specifically, the extent to which front-line staff causal attributions and perceptions of effectiveness of different interventions affect the use of medication vs. non-pharmacological approaches when managing these symptoms in long-term care (LTC) residents are unknown.

Methods: We interviewed 63 nursing staff from two large LTC facilities and assessed their social attributions towards affective symptoms, preference for symptom management using four interventions types (medication, one-on-one interaction, environmental changes, ignoring the symptom), as well as perceived effectiveness and reported use of these interventions.

Results: Depression was most likely to be managed pharmacologically than non-pharmacologically, as compared to anxiety and apathy (p<0.001). Perceived effectiveness of pharmacological management was associated positively with reported use for all symptoms (all p<0.05). Staff making controllable attributions reported preference for pharma strategies over other approaches, for depression and apathy. A belief that depressive symptoms are caused by resident's personality/character was positively associated with medication use, whereas perceiving depressive symptoms as being stable over time reduced the effect of perceived effectiveness on medication use.

Conclusions: Socio-cognitive factors appear to play a role in the clinical management strategies preferred for the treatment of neuropsychiatric affective symptoms by LTC nursing staff.

Preliminary Results: from a Survey on the Barriers and Facilitators Associated with Antipsychotic Deprescribing: The Influence of Access to a Geriatric Psychiatrist

Matteo Peretti, Mark Karanofksy, Jonathan Salsberg, Machelle Wilchesky

Background: It is estimated that 27% of antipsychotic (AP) medications are prescribed "off-label" to long-term care facility (LTCF) residents in Canada for the management of neuropsychiatric symptoms of dementia. This occurs despite modest treatment efficacy, severe adverse side effects, regulatory warnings, and physician preferences for alternative management options. These high rates suggest that significant barriers to AP deprescribing exist in clinical practice. The aim of our study was to identify and quantify the barriers and facilitators associated with AP deprescribing in Canadian LTCFs, from the physician perspective.

Methods: We conducted a quantitative cross-sectional mixed-mode pan-Canadian survey of LTCF physicians. Participants were recruited from a listserv of Canadian LTCF medical directors and from academic conferences (n=58), and asked to rank how a number of barriers and facilitators affected their deprescribing efforts.

Results: "Lack of access to mental health specialist consults" (e.g., geriatric psychiatrists) was reported by 36% of respondents as being either very or extremely difficult to their deprescribing efforts. "Access to mental health consultants" was rated by 55% as being a very helpful. "Over use of antipsychotics by geriatricians and geriatric psychiatrists" was a suggested barrier to AP deprescribing.

Conclusions: From the perspective of LTCF physicians, having access to mental health specialists is perceived as helpful to their AP deprescribing efforts if available. The role of geriatric psychiatrists in the AP prescribing process in this setting will be explored in a qualitative follow-up phase.

Association Between Mini-Mental State Examination and Montreal Cognitive Assessment with the Cognitive Dementia Rating Scale in Individuals with Mild Cognitive Impairment

Brandon Pierre, Ashley Melichercik

Background: Brief cognitive screening tools, such as the Montreal Cognitive Assessment (MoCA), Mini-Mental State Exam (MMSE), and Clinical Dementia Rating (CDR), each possess diagnostic strengths and weaknesses. However, the fact that diverse measures are used across different clinical and research settings creates theoretical and practical limitations. This study assessed the association of MoCA and MMSE scores with CDR cognitive and functional domains in participants with MCI to better understand the relationship between these measures.

Methods: A sample of 136 participants diagnosed with MCI based on DSMV criteria [mean age (SD): 72.79(7.36); mean education (SD): 15.63(2.82) years; female: 72 (53%)] were classified as impaired (CDR = 0.5 and above) or intact (CDR = 0.0) across six domains (Memory, Orientation, Judgment/Problem Solving, Community Affairs, Home and Hobbies, Personal Care) for logistic regression analyses. CDR domains from significant logistic regression models became classifiers in the receiver operating characteristic (ROC) curves. The Youden index generated MMSE and MoCA cut scores for optimal specificity and sensitivity to CDR domain impairment.

Results: Three logistic regression models were significant at p <.05: MMSE and CDR Community Affairs [OR = 0.72, 95% CI (0.58, 0.90)], MoCA and CDR Community Affairs [OR = 0.79, 95% CI (0.69, 0.92)]; and, MoCA and CDR Memory [OR = 0.77, 95% CI (0.60, 0.99)]. A MoCA cut off score of ≤ 25 (81% sensitivity, 71% specificity) is optimal for detecting both Community Affairs [AUC (95%CI): 0.64 (0.45, 0.77), p<.05] and Memory impairment [AUC (95%CI): 0.78 (0.66, 0.91), p<.001].

Conclusions: Our findings demonstrate the discriminatory power and sensitivity of the MoCA in detecting CDR Memory impairment with a cut off score of ≤ 25. Previous research uses a similar MoCA score to distinguish the cognitively intact from cognitively impaired, and the current study confirms those findings. For CDR Community Affairs, both MoCA and MMSE have comparable sensitivity. These

Results: should be interpreted with caution as both measures have relatively weak discriminatory power in detecting CDR Community Affairs impairment.

Ontario Expands Behavioral Support Teams for Older Adults in Acute Care: The Ottawa Hospital Experience

Kiran Rabheru, Laura Wilding, Vera Hula, Margaret Neil-McKenzie, Nadine Sebahana

Background: The Behavioral Supports Ontario initiative was created in 2011 to enhance health care services for older adults living at home and in long-term care residences. With much advocacy, The Ottawa Hospital was successful in obtaining funding for a pilot project to care for hospitalized older adults with dementia and responsive behaviors.

Methods: Three years following its inception and due to its success, the Ontario Government has expanded the program to two other regional acute care hospitals, The Queensway Carleton and The Montfort Hospitals.

Results: The Behavioral Supports Ontario initiative was created in 2011 to enhance health care services for older adults living at home and in long-term care residences.

Conclusions: The process, advocacy, clinical & educational program development and outcome measures will be discussed.

Agitated Persons with Dementia in the Emergency Room: A Clinical Algorithm Based Approach to Optimize Safety and Quality of Care

Kiran Rabheru, Laura Wilding, Melissa Waggott, Joseph Kozar

Background: Patients with Dementia, Agitation and Aggression are increasingly seen by the Emergency Room staff. A systematic approach is necessary to optimize safety of the patient, staff, and visitors.

Methods: A Critical Incident Review of a such a case led to the development of a Clinical Algorithm Based Approach to care for agitated or aggressive patients in the ED.

Results: Draft of a clinical algorithm based approach will be presented.

Conclusions: This method of assessing, treating, and returning back to the community from the ED is viable.

The use of Social Networking Site Features in Developing Strong and Weak Ties: The Implications of New Media on Social Isolation in Older Adults

Mohamed Sarraj

Background: Socially isolated older adults face higher all-cause mortality, generally have lower levels of self-rated physical health, lower psychological well-being, and higher levels of suicidal ideation. Despite this, there is a shortage of interventions to meaningfully reduce social isolation. Much of the literature treats internet or social networking site (SNS) usage as monolithic despite the nuanced features. Particularly as SNSs become widespread, a model that describes the types of use and consequences of SNSs is critical.

Methods: Structural Equation Modeling will be used to validate a completed theoretical model integrating SNS usage into our current understanding of social interaction, isolation, and the unique risks faced by older adults. The model makes two main distinctions in the use of social media; active and passive use. Active use is divided into public and private use whereas passive use is divided into unprompted engagement and consumption. With certain moderating factors, such as living alone and physical disconnectedness, the types of usage are differently associated with strong and weak ties, which both affect social isolation in unique ways.

Results: Active public usage of SNS allows broadcasting of needs and connection. Active private usage allows users to develop strong ties in the face of geographic disparity. Unprompted engagement creates new weak connections between users, but may ultimately isolate them. Passive consumption, however, may detract from a user's ability to develop connections.

Conclusions: Both types of active use improve strong and weak ties. Passive consumption of media and unprompted engagement may erode strong and weak ties, worsening social isolation.

Baseline Predictors of Nutritional Status in Moderate to Severe AD

Chelsea Sherman

Background: Nutritional status (NS) is important in those with Alzheimer's disease (AD), as risk of malnutrition has been found in up to 80% of individuals. Poor NS has been associated with increased cognitive, behavioural and functional impairments, as well as with increased frailty and morbidity. AD patients at risk of malnutrition have demonstrated greater agitation levels compared to those who were well nourished but the association between NS and agitation remains unclear.

The goal is to investigate the association between agitation and NS in AD patients.

Methods: All patients were recruited from a clinical trial in AD patients with clinically significant agitation. Patients were dichotomized based on nutritional status into 1) normal/at risk, or 2) malnourished. Baseline medication history, cognitive and behavioural measures (neuropsychiatric inventory (NPI) and Cohen Mansfield Agitation Inventory (CMAI)) were compared between groups.

Results: To date, 26 patients (n=16 normal/at risk, n=9 malnourished) have been recruited (69.6% male, mean (SD) age=86.6 (11.10), NPI=32.4 (14.32), CMAI=67.6 (18.59). Malnourished patients had significantly greater scores on the CMAI/physical aggressive subscore (t(23)=1.36, p=0.05) and NPI irritability subscore (t(23)=0.52, p=0.02) and significantly lower scores on the NPI anxiety subscore (t(23)=5.13, p=0.01) compared to patients who had normal nutritional status/risk of malnutrition.

Conclusions: Compared to normal/at risk patients, malnourished individuals had greater physical/aggressive symptoms, irritability, but lower anxiety. By identifying the link between NS and neuropsychiatric symptoms, such as agitation, efficacious interventions may be established to manage these symptoms such that an improvement in one may benefit the other.

Clock Drawing Test: Qualitative Error Analysis in the Mild Cognitive Impairment Population

Matan Soffer, Ashley Melichercik

Background: The Clock Drawing Test (CDT) is a widely used neuropsychological tool for the assessment of dementia and cognitive dysfunctions. Qualitative scoring systems attempt to classify CDT errors according to specific corresponding impaired cognitive functions. However, the validity of such classifications has not been sufficiently examined, especially in those with Mild Cognitive Impairment (MCI). The aim of this analysis is to identify impaired cognitive processes that underlie some CDT error types. The primary hypothesis is that "stimulus-bound" errors will correlate with worse performance on executive function measures, particularly on the Stroop test. In addition, "conceptual" errors will correlate with deficient semantic functions, especially as measured by category fluency and semantic clustering on the CVLT-2 or executive processes such as attention and inhibition.

Methods: Data are currently being collected from participants diagnosed with MCI enrolled in a blinded randomized Alzheimer's Dementia prevention study. The CDT of 150

MCI participants will be rated according to main error types identified in literature. Correlational analyses between CDT and other neurocognitive measures will be used to examine whether hypothesized CDT errors are more highly associated with specific cognitive impairments.

Results: If certain CDT error types represent specific cognitive deficits in individuals with MCI, we expect to find distinct correlational patterns between different error types and other neuropsychological measures of specific cognitive processes.

Conclusions: Characterizing error types on the CDT by their specific underlying impairments may assist practitioners in their interpretation of the test and in detecting specific cognitive impairments.

The Virtual Think Tank – A New Model for Meeting and Collaboration

Lisa Sokoloff, Cindy Grief, David K. Conn, Keri-Leigh Cassidy

Background: A "think tank" is a forum where members collaborate to discuss specific topics allowing for exchange of ideas. Technology enables individuals separated by geography to connect virtually. We hypothesized that a "virtual think tank" would offer a novel and effective means for idea-sharing in geriatric mental health. To our knowledge, this methodology has not been trialed in continuing medical education.

Goals of Project:
- Increase knowledge of the virtual think tank topic
- Increase awareness of colleagues' work in topic area and partnerships to further scholarly practice
- Evaluate effectiveness of a virtual think tank for knowledge transfer

Methods:
- 2-hour virtual think tank on the Positive Psychiatry of Aging using Adobe Connect software
- Emphasized principles of wellness and resilience in late-life.
- Participants: researchers and clinicians from academic institutions in Canada, US and Germany who had little prior knowledge of others' work
- Presenters encouraged to use PechaKucha presentation style (20 slides, 20 seconds each)
- Pre- and post-evaluations addressed knowledge of topic, awareness of colleagues' research and process

Results:
- 60% felt participation triggered new ideas for research
- 60% felt the PechaKucha process was effective
- 90% felt the virtual think tank was effective in sharing information
- 75% felt the virtual think tank was effective for building relationships

Conclusions: The virtual think tank is a novel and effective means for:
- promoting knowledge transfer across distances
- creating partnerships and research collaborations that can be tracked over time
- learning about specific topics
- promoting interest in future collaborations

Technical support at all ends is crucial to success.

Can Dementia Observation Measures for Behaviours Incorporate Context?

Lisa Van Bussel, Adriana Barel, Iris Gutmanis, Nicole Marlatt

Background: This quality improvement project seeks to enhance the Dementia Observation System (DOS)™ tool, a measure that tracks expressive behaviours over 24-hours for up to seven days, by incorporating contextual information.

Methods: Front-line clinicians who work with older adults with expressive behaviours were asked to evaluate three versions of an enhanced DOS™ tool.

Results: Fifty-four healthcare providers from various settings [long-term care homes: 31 (57.4%); hospital: 20 (37.1%)] completed a questionnaire. While more than 85% agreed that sleeping, awake/calm, noisy, restless/pacing, exit seeing, and aggression, behaviours on the existing tool, needed to be tracked, many felt that hallucinations, sexual advances, unwarranted requests/attention seeking or demanding behaviours should be monitored. Whereas 100% agreed that pain should be tracked, the inclusion of other contextual events had less agreement (voiding: 72.2%; bowel movement, pro-attention or meaningful activity: 75.9%; falls: 88.9%). Everyone felt that: as needed medications should be tracked with 46.3% suggesting that there needs to be space for 3 or 4 medications; and documentation that used behavior-specific colours promoted a better understanding of diurnal patterns. The impact of adding context to an enhanced behavioural observation system (BOS) measure is reported.

Conclusions: Adding context to a behavioural observation measure provides clinicians with further detail, leading to increased understanding of triggers and tailored approaches to care.

Effect of Different Paired-Associative Stimulation Protocols in Neuroplasticity Assessment of Motor Cortex in Healthy Individuals: A Qualitative Review

Reza Zomorrodi, Michelle Minkovich, Yoshihiro Noda, Daniel M. Blumberger, Zafiris J. Daskalakis, Tarek K. Rajji

Background: Paired associative stimulation (PAS) is a transcranial magnetic stimulation (TMS) paradigm that assesses neuroplasticity in the human cortex. PAS consists of pairing peripheral nerve stimulation (PNS) with a subsequent TMS repeatedly over the primary motor cortex (M1). However, inter-individual variability in PAS response are well known. This review aims to systematically synthesize the literature on PAS parameters and confounding factors that have significant influences in the induction of neuroplasticity.

Methods: PubMed, ProQuest and OVID (2000-2016) were searched under the set terms. Two authors reviewed each article and came to consensus on the inclusion and exclusion criteria. All eligible studies were reviewed, duplicates were removed, and data were extracted individually. Only 52 articles met the criteria.

Results: Various factors appear to have significant impact on PAS effects: attention, time of day (i.e., morning vs. afternoon session), exercise, age, pharmacological manipulations biological factors (i.e., cortical thickness), anatomical location (i.e., ipsi/contra lateral), method of measurement (i.e., absolute or logarithmic ratio of amplitudes), and PAS parameters (i.e., interval, frequency and number of pulses).

Conclusions: PAS has great potential to investigate neuroplasticity in the human brain, but significant methodological variability in PAS protocols limits the ability to generalize conclusions. Further research is needed to standardize PAS administration, minimize its variation, and individualize it based on subjects' specific characteristics.

The Functional Role of Cross-Frequency Coupling During Human Memory Function

Reza Zomorrodi, Maria Mikail, Zafiris J. Daskalakis, Tarek K. Rajji

Background: Cognitive process and memory function require transient and distributed interaction of neural networks. The most plausible mechanism for integration, processing and coordinating of information within and across cortical locations is cross-frequency coupling. In this study, we systematically reviewed the current finding on Phase-Amplitude coupling (PAC), its role in memory processing, and explored the significance and abnormality in PAC strength by a simulation model.

Methods: We searched PubMed using "cross-frequency coupling", "phase amplitude coupling", "working memory," and "learning" keywords and filtered Results: for human species from (2000-September 2016).

Results: Vast evidence showed a significant strength PAC during memory function across different temporal and spatial scales. In healthy human brain PAC mechanism revealed in (1) Fronto-Parietal network for Delta/Theta-Gamma, (2) Parietal-Occipital and Visual cortex for Theta/Alpha-Gamma, and (3) Occipital, motor and left temporal cortex for Beta-Gamma. In contrast, patients with epilepsy an abnormally high PAC was reported for (I) temporal-limbic and prefrontal for Theta-Gamma (II) Thalamus and prefrontal cortex for Alpha/Beta-Gamma. However, in patients with schizophrenia an abnormally low PAC was reported in all brain network and frequency bands during task execution.

Conclusions: Although method of calculation and interpretation of results still is a challenge, recent evidence indicates the importance of PAC mechanism during cognitive function, which might be considered as a marker to assess neurological and psychiatric diseases.

Photobiomodulation Could Change 21st Century Alzheimer's Disease Expectations

Reza Zomorrodi, Lew Lim

Background: Alzheimer's disease (AD) is a high-impact disease, widely believed that there is no effective treatment. This set the expectation for failure for any intervention for patients presenting AD symptoms. However, early evidence suggests that photobiomodulation (PBM) could change this expectation.

Methods: Data from original investigations involving the authors were analyzed. These were based on home-use intervention devices directing NIR at 810 nm wavelengths pulsed at either 10 hz or 40 hz to the hubs of the brain's default mode network. Three studies analyzed: a case report of 5 dementia patients with mild to moderately severe impairment over 12 weeks (Study A), a case report of a moderately severe AD patient measured with electroencephalography (EEG) over 3 weeks (Study B), and a double-blind crossover EEG observational study on PBM of 20 healthy brains (Study C).

Results: Study A which used 10 hz pulsing devices reported significant improvements measured with the Mini Mental State Exam (MMSE) and Alzheimer's disease Assessment Scale - Cognition (ADAS-cog), presenting no side effects. Study B presented even more significant improvement with the 40 hz device, as measured with MMSE, ADAS-cog and EEG. Study C showed that pulsing at 40 hz evokes significant

alpha brainwave power, the lack of this has been associated with AD.

Conclusions: The aggregation of these early evidence suggests that PBM with 810 nm wavelength, pulsed at 40 hz has the potential to change the expectation for treating AD in the 21st century. A larger controlled study is needed, and has been mobilized to validate these findings.

Optimizing the use of Benzodiazepines and other Sedative-Hypnotics in a Canadian Long-Term Care Facility

Christopher Kitamura, Catalina Lopez de Lara

Background: Long-term prescription of benzodiazepines and other sedative-hypnotics ("Z-drugs") is common in the elderly, thereby increasing the risk of serious adverse events. Numerous practice guidelines and available resources about these risks make clear indications for their short-term use. Several studies have shown that the use of these medications remains high in long-term care. This highlights a discrepancy between published clinical recommendations and clinical practice. This study is the first part of a larger initiative aimed at assessing the patterns of use of benzodiazepines and Z-drugs in Baycrest's long-term care facility (Apotex), and then implementing best practices interventions towards optimizing the use of these medications.

Methods: We have conducted a retrospective chart review of 93 residents living at the Apotex with current use of benzodiazepine and/or Z-drugs at the time of data extraction (December 12, 2016). We will use descriptive statistics to analyze our data. Our study variables include current prescription patterns (dose, frequency, duration and indication) among other demographic and clinical variables. We have also conducted clinical surveys of primary care physicians, consulting psychiatrists and pharmacists about their beliefs and attitudes regarding the use of benzodiazepines and z-drugs in the Apotex. We are in the process of conducting similar surveys of nursing staff.

Results: These will be presented at the CAGP meeting pending acceptance of this abstract.

Conclusions: These will be presented at the CAGP meeting pending acceptance of this abstract.

Modulation of Cortical Oscillations by Transcranial Photostimulation Followed by Improvement in the Mental Status of Patients with Alzheimer's Disease: A Case Report

Genane Loheswaran, Reza Zomorrodi, Anita E. Saltmarche, Kai Fai Ho, Lew Lim

Background: A recent case series report presented significant improvement in dementia patients after transcranial intranasal photobiomodulation (PBM) treatments. This study utilizes electroencephalography (EEG) to investigate the case of one Alzheimer's disease (AD) patient experiencing significant improvement in cognition.

Methods: The study used 810 nm, 40 Hz pulsed, light-emitting diode devices combining intranasal PBM to treat the cortical nodes of the default mode network (DMN). The patient received the PBM intervention at home for 6 days/week for 2 weeks. He was administered the MMSE, the Alzheimer's Disease Assessment Scale (ADAS-cog), the Alzheimer's Disease Cooperative Study (ADCS-ADL) and resting state electroencephalograms (EEG) at baseline and 2 weeks post-treatment.

Results: The patient showed significant improvement in the MMSE score from 21 to 24, ADAS-ADL from 43 to 58, and ADAS-cog from 35.33 to 23.34. These cognitive improvements were accompanied by changes in the low frequency bands of EEG. The absolute power of alpha and peak frequency increased from 5.1 to 12.7 $\mu V2$ and from 8.6 Hz into 9.3 Hz, respectively. In addition, the absolute power of delta and theta increased from 1.86 $\mu V 2$ to 2.9 $\mu V 2$ and 2.12 $\mu V 2$ to 3.7 $\mu V 2$, respectively.

Conclusions: The patient improved significantly in his cognition following 2 weeks of PBM treatments, which was accompanied by increases in low frequency EEG activity. This enhancement in the brain oscillation may be associated with improved DMN function, which is impaired in AD. Further studies are warranted to validate the potential of this PBM intervention.

Clinical Symptoms of ADHD in the Elderly: A Review of Data

Adnan Rajeh, Shabbir Amanullah, Mohamad Elfakhani

Background: ADHD is a lifelong disorder that affects patients in different stages of their lives. Current literature gives us a prevalence rate of 7-10% for children, 3-6% in adults and 2.8-4% in older adult groups (65-90 years of age). However, the majority of adulthood cases go undetected and untreated. For the elderly, diagnostic criterion and symptom identification/recognition are poorly defined.

Methods: We reviewed literature on clinical symptoms of ADHD in the elderly age group. We searched Google Scholar,

PsychINFO, Medline, Cochrane, and CINAHL. We used the following keywords: "ADHD", "Symptoms", "Elderly", "Later adulthood", and "Diagnosis". A study was considered eligible if the disorder fulfilled DSM-IV criteria for ADHD. Given the recent introduction of DSM-V, we didn't feel enough relevant studies would be found if DSM-V search criteria were used.

Results: ADHD is a condition that continues throughout life's different stages with various degrees of effect on patients. As there may be a decrease in prevalence rates in later-adulthood, it is unclear whether this decrease is real or the result of follow-up loss and unpractical diagnostic criteria. Symptoms that define ADHD in childhood and early-adulthood are well established. However, clearer identification of signs and symptoms in the elderly is needed so that this population of patients doesn't go undiagnosed and untreated.

Conclusions: This study aims to identify and categorize the symptoms of ADHD in later-adulthood by using both the syndromatic and symptomatic diagnostic criteria for ADHD. This will also demonstrate that this topic has very little literature addressing it and thus warrants further study.

Significant Improvement in Cognition and Qualitative Parameters in Mild to Moderately-Severe Dementia Cases Treated with Transcranial Plus Intranasal Photobio-modulation: Case Series Report

Anita Saltmarche, Margaret A. Naeser, Kai Fai Ho, Michael R Hamblin, Lew Lim

Background: Animal studies have shown the potential of PBM for AD. Dysregulation of the brain's default mode network (DMN) has been associated with AD, presenting the DMN as an identifiable target for PBM. This study investigated whether patients with mild to moderately-severe dementia or Alzheimer's Disease (AD), MMSE Baseline scores of 10-24, would improve after near-infrared (NIR) photobiomodulation (PBM) therapy.

Methods: The study used 810 nm, 10Hz pulsed, light-emitting diode (LED) devices combining transcranial plus intranasal PBM to treat the cortical nodes of the DMN. Five patients with mild to moderately-severe dementia or AD received 12 weeks of active treatment followed by a no-treatment, 4-week period. The MMSE, ADAS-cog tests and qualitative data were collected, pre-and post-PBM therapy and post- the 4-week follow-up. The protocol involved weekly, in-clinic transcranial-intranasal PBM therapy, and daily at-home intranasal-only therapy.

Results: There was significant improvement after 12 weeks of PBM (MMSE, $p<0.003$; ADAS-cog, $p<0.023$). Functional and qualitative improvements (e.g. better sleep, fewer angry outbursts, less anxiety and wandering) were also reported post-PBM. There were no negative side effects. Precipitous declines were observed during the 4-week no-treatment follow-up period. This case series study is the first completed PBM pilot study to report significant, cognitive improvement in mild to moderately-severe dementia and AD patients.

Conclusions: Results suggest that larger, controlled studies are warranted for dementia and AD. PBM shows potential for home treatment.

Use of Novel Multi-Sensory Dementia Tools to Improve Quality of Life of Seniors with Dementia and their Caregivers

Catherine Cheng, Jorge Perez-Parada, John McCahill

Background: Behavioural and Psychological Symptoms of Dementia (BPSD) is a heterogeneous constellation of non-cognitive symptoms and behaviours that occur in the context of dementia and can result in distress for both seniors with dementia and their caregivers. Behavioural and pharma-cological treatments are used to decrease the symptoms of BPSD, preserve function and increase quality of life. The use of multi-sensory dementia tools, sometimes called dementia toys, may decrease BPSD symptoms such as agitation and restlessness, improve quality of life through the power of play and multi-sensory stimulation, and provide a sense of accomplishment that is positive and therapeutic. However, research has not yet been conducted on the effectiveness of these tools. We propose that multi-sensory tools may be beneficial to the quality of life of the senior with dementia within the context of current cognitive functioning and abilities. We hypothesize that multi-sensory dementia tools may decrease BPSD such as agitation and restlessness, and will decrease as-needed emergency pharmacological and physical restraint use. These tools may also assist in reducing caregiver burnout. Quantitative data will be collected to support or refute our hypothesis. We will also collect qualitative data to provide contextual meaning to the use of multi-sensory dementia tools for both seniors with dementia and their caregivers. Multi-sensory dementia tools hold promise as they may increase the quality of life for seniors with dementia and their caregivers, are relatively inexpensive, and are easily placed into use in a large spectrum of care settings.

Developing an Entrustable Professional Activity for the Evaluation of a Geriatric Psychiatry Subspecialty Resident's Ability to Perform a Capacity Assessment

E.E. St. Denis, M. Hussain, M. Andrew

Background: CBME (competency based medical education) is an outcomes-based approach to medical education, which uses specialty-specific entrustable professional activities (EPAs) to assess competency at each stage of training. EPAs are the key tasks necessary for a trainee to be able to perform competently in order to progress through a discipline. Capacity assessment in older patients and those with cognitive impairment is an integral skill for a geriatric psychiatrist to learn and master during training. The assessment of capacity is complex, and involves multiple facets, including capacity to drive, to manage property, to make medical and personal care decisions, and testamentary capacity. Although the skill of capacity assessment is essential for a geriatric psychiatrist, is it not yet known how to best capture and assess this competency within the CBME framework.

Methods: We will expand on some of the challenges of the design and development of an EPA to evaluate the assessment of capacity by a geriatric psychiatry subspecialty resident, within the CBME framework. The literature will be searched to determine how similar international models have addressed assessment of this skill. The subsequent development of an EPA on capacity assessment and assessment tool(s) will allow for more objective evaluation of a geriatric psychiatry resident, as well as enhance competency in this important skill for a future geriatric psychiatrist.

A Toolkit: Using an iPad to Play Family Video for Safety and Quality of Care

Ryan O'Neill

Background: Staying in the hospital can be a very stressful experience for patients with dementia. A familiar face and reassuring voice of a trusted loved one or care provider can offer a sense of safety and comfort.

Objective: This project will examine the use of an iPad to play a video purposefully created for patients with dementia by his or her family, and its potential for enhancing safety and quality of care.

Methods: Using a case study design, we will invite patients with dementia in a tertiary mental health unit to watch a one-minute video clip prepared by their family prior to receiving personal care. The video will include a reassuring, comforting and supportive message to be played to the patient while staff perform a specific care task. The interaction process will be recorded by structural observations (Dementia Observation System) and in-situ videotaping of the care task. We will analyse behavioural and mood changes in patient participants and compare data between baseline and intervention phases. Staff interviews will be conducted to investigate contextual factors that may enable or hinder the success of the iPad use. We will use our findings to put together a toolkit that can be used by healthcare staff to help reduce risky behaviours and improve the safety and quality of care interactions. The toolkit will include a pocket card with instructions for staff, a brochure for families to explain the program and provide guidance for recording a short video using their cell phone, and a website with resources such as success stories and practical strategies to overcome challenges.