SASKATCHEWAN
PSYCHIATRIC
ASSOCIATION

DEPARTMENT OF PSYCHIATRY
RESIDENTS AND GRADUATE STUDENTS
RESEARCH SESSION

April 5, 10:30 – 11:30 a.m.

(In person)

CONFERENCE & ANNUAL GENERAL MEETING

April 4 - 5, 2025

Questions to research.psychiatry@usask.ca

Department of Psychiatry, CoM, University of Saskatchewan

Adjudicators:
Dr. Adegboyega Adevumi, MD, FRCPC; Dr. Shazia Durrani, MD, FRCPC; Dr. Bassey Edet, MD, FRCPC; Dr. Natasha Gattey, MD, PGY6; Dr. Pedro Guedes, PhD, Postdoctoral fellow; Dr. David Petrishen, MD, PGY5; Dr. Ana Mendes Silva; PhD, Dr. Jennifer Woo, MD, FRCPC.

Poster Session (April 5th, 2025); 10:25 am – 11:30 am
Introduction:
10:25 am – 10:30 am
Dr. Mariam Alaverdashvili, PhD

Time (10:30-11:30)	Poster	Presenter Name	Campus	Adjudicators
10:30 - 10:42	1	Ali Alhasani, PGY5	Regina	Drs. Mendes-Silva, Edet & Gattey
10:45 - 10:57	2	Anicha Vickneaswaran, PGY1	Regina	Drs. Adevumi & Edet & Petrishen
11:00 - 11:12	3	Serena Malta, PhD student	Saskatoon	Drs. Petrishen & Adevumi & Gattey
		Lucas Matos, PhD student	Saskatoon	
10:30 - 10:42	4	Marelize Hagen, PGY5	Saskatoon	Drs. Durrani & Woo & Petrishen
10:45 - 10:57	5	Matheus Silva, PhD student	Saskatoon	Drs. Durrani & Woo & Gattey
11:00 - 11:12	6	Sarvenaz Esmaeelzadeh, PGY4	Saskatoon	Drs. Mendes-Silva & Edet & Guedes
11:15 - 11:27	7	Samantha Carley, MSc (pending conferral)	Saskatoon	Drs. Guedes & & Durrani & Mendes-Silva

Presentations will proceed in the order identified and maintain the schedule.

- Each presentation will be comprised of a Presentation (6-7 min) and subsequent Q&A (4-5 min).
- Judges will ask you up to four (4) questions, so up to one minute will be allocated to each question.
- There will be prizes of $600 (1st prize), $300 (2nd prize), $100 (3rd prize) provided by the SPA

Poster Presentation #1

The Safety and Effectiveness of Repeated Ketamine on Treatment-Resistant Depression: A Retrospective Chart Review

Ali Alhasani[1] MB BCh BAO PGY5, Kirat Shukla PhD, MSc[2]; **Katlin Halpape**[3] BSP, ACPR, PharmD, BCPP; **Evyn Peters**[1] MD, MSc, FRCPC[1]

1. Department of Psychiatry, College of Medicine, University of Saskatchewan
2. Research Unit, Saskatchewan Health Authority
3. College of Pharmacy and Nutrition, University of Saskatchewan

Introduction: Major depressive disorder (MDD) is a signific burden on the Canadian population with an annual prevalence of 4.7%. Treatment resistance is approximately 20-30%, even when ECT is considered. Ketamine, an NMDA receptor antagonist, is emerging as an option for MDD, particularly in cases of difficult-to-treat depression. There are limited studies involving patients under 18, or over 65 years old; more research is needed to define the role of ketamine in these populations.

Methods: Retrospective chart review of outpatients treated with IV ketamine in Prince Albert, Saskatchewan. We examined patients who were evaluated with the HAMD scale prior to each treatment session. Induction therapy was defined post-hoc as the first 3 to 6 infusions delivered over 6 to 12 weeks; patients were included if baseline and ≥ 1 post-baseline HAM-D scores were recorded.

Results: Induction HAM-D scores decreased by ~27% on average; including up to 6 sessions (over 90 days) did not result in lower HAM-D scores. Maintenance sample averaged 12.0 (9.5) infusions over 227.5 (113.7) days; average 21.5 (8.0) days between treatment for time at clinic. During maintenance, estimated ~50% will have persistent relapse of depressive symptoms in one year. Actual rate was 30%. There was a very weak (and nonsignificant) correlation between age and HAM-D change scores during induction

Conclusions: Induction therapy was less effective in this naturalistic treatment setting than would be expected from clinical trial results. Induction therapy might have produced better outcomes if ketamine had been administered according to current practice standards. Including patients under 18 or over 65 would not remarkably change efficacy estimates in future research. At least 50% of patients can receive maintenance therapy for a year without experiencing a persistent relapse of depression.

Acknowledgements: Thank you to Dr. Hazel Williams-Roberts and Maeve McLean who contributed to data collection, study design, and the initial report preparation.

Poster presentation #2

Environmental scan of inter-professional care models for patients with mental health conditions in Saskatchewan

Anicha Vickneaswaran[1] MD, PGY1, Ala Eisa[2] MD student, Lujaine Salem[1] Student, **Mariam Alaverdashvili**[1] PhD, Kirat Shukla[3] PhD, **Cameron Bye**[1] MSc, **Shazia Durrani**[1, 4]. MD FRCPC

1. Department of Psychiatry, CoM, University of Saskatchewan
2. CoM, University of Saskatchewan
3. Research Department, Saskatchewan Health Region
4. Wascana Rehabilitation Centre, Saskatchewan Health Region

Background: The importance of Collaborative Mental Health Care (CMHC) is well recognized by the Canadian Psychiatry Association and the College of Family Physicians of Canada. Despite national/provincial CMHC implementation efforts in health-care systems, there is no standard CMHC model across Saskatchewan. Each health region has developed own model likely leading to variable patient outcomes.

Methods: Using mixed methods design, we collected data with Research Electronic Data Capture (REDCap) generated survey and in-depth interviews with healthcare providers, leaders and administrative staff to understand the benefits and barriers in implementing the CMHC model. Individuals with lived experience were also invited to participate in interviews. We applied comprehensive statistical and thematic analysis to quantitative and qualitative data, respectively.

Results: The study collected 182 surveys and 21 interviews. Variable models of collaborative care services were present across the province. Health care providers interviews (n=9) demonstrate variation in their experience between rural and urban areas regarding needed infrastructure/capacity, collaboration between providers and services.

Conclusions: Findings from this study will be discussed regarding necessary adaptations in CMHC models necessary to align it with the unique needs of the given communities/regions.

Poster Presentation #3

Targeting β-Amyloid Aggregation with Kefir-Derived Fractions and Engineered Peptides

Serena Mares Malta[1,2#] PhD student, **Lucas Matos Martins Bernardes**[1,2#] PhD student, Matheus Henrique Silva[1,2], Ana Carolina Costa Santos[2], Tamiris Sabrina Rodrigues[2], Fernanda Naves Araújo do Prado Mascarenhas[3], Letícia Leandro Batista[4], Renata Graciele Zanon[3], Foued Salmen Espindola[2], **Ana Paula Mendes-Silva**[1*] PhD, Carlos Ueira-Vieira PhD[2*]

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[#] *These authors contributed equally to this work and share the first authorship*
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Introduction: Kefir is a probiotic-rich fermented beverage with neuroprotective properties. Its derived metabolites and fractions have shown potential to attenuate amyloid-beta (Aβ42)- induced neurotoxicity in neuronal cells and *Drosophila melanogaster* models of Alzheimer's disease (AD). This study examines the in vitro effects of kefir-derived fractions and synthetic peptides (KDPs), including mutated kefir-derived peptides (mKDPs) and a digested kefir- derived peptide (dKDP), engineered for enhanced Aβ binding and blood-brain barrier permeability, on Aβ42 aggregation and disaggregation.

Methods: Two kefir fractions, ethyl acetate (EtOAc) and <10kDa, were tested alongside all KDPs in Thioflavin T fluorescence assays. For preventive assessment, Aβ42 (10 μM) was co- incubated with the treatments for 24h, with hourly fluorescence readings. In the late-treatment assay, Aβ42 was pre-aggregated for 48h before adding treatments, with readings taken at 96h. Statistical analyses were performed using one-way ANOVA.

Results: In the early-treatment assay, all treatments significantly reduced Aβ42 aggregation up to 57% (all p-values are $p<0.0001$). In the late-treatment assay, KDP1, KDP2, mKDP1, and mKDP2 significantly disrupted Aβ42 aggregation up to 45% ($p = 0.0055$, $p < 0.0001$, $p = 0.0002$, and $p = 0.0001$, respectively).

Conclusions: Kefir-derived fractions and peptides showed significant anti-Aβ aggregation effects, supporting their therapeutic potential in neurodegenerative diseases. Further studies should investigate their mechanisms and in vivo efficacy.

Poster Presentation #4

Profiling Saskatchewan Homicide Cases

Mansfield Mela[1,2] MD, FRCPC, Davut Akca[3] Assistant Professor, Lisa Jewell[2] PhD, **Marelize Hagen**[1] MD, PGY5 and Mostofa Kamal Abu-Hena[4] PhD Candidate

1. Department of Psychiatry (Saskatoon campus), College of Medicine, University of Saskatchewan
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3. Lakehead University, Thunder Bay, Ontario
4. Department of Sociology, University of Saskatchewan

Introduction: In 2023, Saskatchewan recorded a homicide rate of Canada of 4.88 homicides per 100,000 people, well above the national average of 1.94. Saskatchewan continuously demonstrates some of the highest rates of homicide and violent crime in Canada per capita. When separated amongst regions, it appears that the North demonstrates the highest rates in Saskatchewan. To date, there has been no study analyzing the factors related to perpetration of homicide, and to assess if there are any factors that may clarify who these individuals are, who their victims are, and common elements of the crimes. The study aims to conduct a content analysis of 97 cases of homicide committed in Saskatchewan between 2011 and 2021.

Methods: CANLII Database searched for cases involving homicide. N=97 cases were identified. One assessor coded all 97 cases for the identified variables. A second assessor coded n=29 (30%) to assess inter-rater reliability (IRR), targeting a minimum of 70% agreement.

Results: A total of n=41 met criteria based on the definition of homicide. Only certain variables reached the cutoff point for IRR. Challenges included lack of available information and variability of interpretation of the variables.

Conclusions: Identifying the homicide case characteristics as well as the profile of offenders and victims will help the police agencies and contribute to establishment of rehabilitation and restorative justice. Future studies should aim to continue to analyze cases as they present, further examine reasons for low IRR on several factors to ensure accuracy and reliability in profiles.

Acknowledgements: We extend our gratitude to the Department of Psychiatry research team, Cameron Bye and Dr. Mariam Alaverdashvili for their guidance on data analysis and interpretation. We thank Shawna LaPlante for her efforts in coding.

Poster Presentation #5

Gene network analysis of TRIM32 and its contribution to neurodegenerative processes using an Alzheimer's disease-like model in *Drosophila melanogaster*

Matheus Henrique Silva[1,2] PhD student, **Serena Mares Malta**[1,2] PhD student, Natalia Carine Almeida Conceição[1], Jessica Regina Costa Silva[1], **Ana Paula Mendes-Silva**[2*] PhD, Carlos Ueira-Vieira[1*] PhD

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**These authors contributed equally to this work and share the last authorship.*

Introduction: Alzheimer's disease (AD) is an age-related disorder characterized by neuronal degeneration, ultimately leading to cognitive decline. As the disease progresses, gene expression in brain cells undergoes alterations. TRIM32 has been identified as crucial for neurodevelopment, but its role in the neurodegenerative process remains unclear. In this study, we aimed to explore how TRIM32 interacts with other genes — in this case, the ortholog tn — potentially involved in Alzheimer's disease progression, using *Drosophila melanogaster* as a model.

Methods: AD-like flies were obtained by crossing the genotypes ELAV-Gal4 (negative control) and ELAV-Gal4>UAS-APP,UAS-BACE. Transcriptome analyses of the flies' heads were conducted at 0–3 days post-eclosion (d.p.e.) and 10 d.p.e. and TRIM32 emerged as a candidate gene of interest. Further we conducted gene network interaction analysis using EsyN, MIST, and ClueGO softwares and visualized in Cytoscape to better understand the broader genetic interactions linked to AD-like neurodegeneration.

Results: The gene network analysis revealed that 46.03% of the genes identified in the brain transcriptome, associated with TRIM32 data from AD-like flies, were involved in ubiquitination, specifically within the ubiquitin E1 and E2 pathways. Additionally, transcriptional changes were observed in certain genes within the TRIM32 network that play roles in the cytoskeleton.

Conclusions: The observed transcriptional changes in genes related to the cytoskeleton further indicate that TRIM32 may influence cytoskeletal dynamics, potentially impacting neuronal structure and function. Further research is needed to validate the findings.

Presentation #6

Contingency Management for Methamphetamine Use Disorder: A Scoping Review of Perspectives, Feasibility, and Adaptability

Sarvenaz Esmaeelzadeh[1] MD, MPH, PGY4, **Katelyn Halpape**[2] BSP, ACPR, PharmD, BCPP**, Isaac Cheveldae**[1] MD, FRCPC; Tapanga T Brooks[2] PharmD student

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[2] College of Pharmacy and Nutrition, University of Saskatchewan

Introduction: Methamphetamine use is on the rise and is a growing public health concern, contributing to increased hospitalizations, mental health crises, and criminal activity. Methamphetamine use is associated with severe psychiatric effects, including psychosis, aggression, and cognitive impairment, which complicate treatment. Contingency management (CM) is an evidence-based behavioral intervention that reinforces abstinence through tangible rewards. Despite its effectiveness, CM remains underutilized, necessitating further exploration of its feasibility, implementation barriers, and adaptability.

Method: This scoping review examined the feasibility and perspectives of CM for methamphetamine use disorder (MUD) by reviewing studies published between 2019 and 2024. A comprehensive search of PubMed, Embase, Medline, and PsycINFO was conducted. Studies were included if they focused on CM's feasibility, adaptability, or participant and provider perspectives rather than solely its effectiveness. After screening, 16 studies met the inclusion criteria.

Results: Participants generally support CM as a motivational tool, however, concerns about stigma and program coercion exist. Cash-based incentives are the preferred reward structure, though providers worry about ethical dilemmas and potential misuse. Modified CM approaches, such as digital interventions and integration with counseling, demonstrate promise in improving engagement and accessibility. Hospital-based CM models and tailored interventions for marginalized groups highlight CM's adaptability. However, logistical and financial barriers limit the widespread adoption of CM.

Conclusions: To enhance CM implementation, a patient-centered approach incorporating flexible treatment goals, mental health support, and culturally sensitive strategies is essential. These insights can guide policymakers and clinicians in optimizing CM programs to improve MUD treatment outcomes.

Poster Presentation #7

Associations Between Attachment, Trauma, and Cannabis Use in First Episode Psychosis

Samantha J. Carley[1] BSc, MSc (pending conferral), Cameron Bye[1] BSc, MSc, Stephen Adams[1] MD, FRCPC, Victoria Paterson[2] PhD, Phil Tibbo[2] MD, FRCPC, G. **Camelia Adam**[1] MD, MSc, FRCPC

1. University of Saskatchewan, College of Medicine, Department of Psychiatry
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Introduction: Early Psychosis Intervention Programs (EPIPs) are cost effective and impactful, but several risk factors increase illness severity, relapse and suicidality. Understanding these risks is crucial for improving outcomes. This study examines the role of attachment insecurity, psychological trauma, and cannabis use in creating vulnerability to severe psychosis and suicide.

Objectives: Examine the relationships between attachment insecurity, psychological trauma, and substance misuse in creating vulnerability for severe psychosis and suicide in those with early psychosis. Participants were recruited from two EPIP centers (Saskatoon, Halifax).

Methods: Forty-four patients (ages 18–35) diagnosed with early psychosis completed questionnaires measuring psychosis severity (PANSS), attachment (PAM), trauma (PCL-8, ACE, TALE), substance misuse (DAST-10, AUDIT-C, DFUQ-CU, ASSIST), and suicidality (CSSRS). Spearman correlations were conducted.

Results: Higher psychotic symptoms (total and positive scores) were positively associated with attachment avoidance, psychological trauma, and suicide attempts. Positive symptoms were also positively associated with cannabis use frequency and negatively correlated with the age of cannabis onset. Finally, attachment anxiety positively correlated to both psychological trauma and suicidal ideation severity.

Conclusions: Findings provide evidence for the co-occurrence and interplay of key risks that can impact psychosis recovery and prognosis. Future research with larger samples could clarify the pathways that unfold when facing these risk factors early in life. Implications for early identification and interventions addressing these risks are discussed.