SASKATCHEWAN

PSYCHIATRIC

ASSOCIATION

DEPARTMENT OF PSYCHIATRY

RESIDENTS, GRADUATE AND UNDERGRADUATE STUDENTS RESEARCH

April 18, 10:20 – 11:30 a.m.

(In person)

CONFERENCE & ANNUAL GENERAL MEETING

April 17 - 18, 2026

Questions to research.psychiatry@usask.ca

Department of Psychiatry, CoM, University of Saskatchewan

Adjudicators:
Dr. Jibril Abdulmalik, MD, FRCPC; Dr. Alexis Arbuthnott, PhD; Dr. Lloyd Balbuena, PhD; Dr. Bassey Edet, MD, FRCPC; Dr. Ana Mendes-Silva; PhD, Dr. Darell Mousseau, PhD; Dr. David Petrishen, MD, FRCPC; Dr. Anicha Vickneaswaran, MD, PGY3; Dr. Jennifer Woo, MD, FRCPC

Poster Session (April 18th, 2026); 10:20 am – 11:30 am. The Poster Session will take place in the Victoria Room.

Introduction: 10:20 am – 10:25 am Dr. Mariam Alaverdashvili, PhD

	Time	Presenters	Campus	Training Program	Adjudicators (Initials)		
1	10:25 - 10:40	**Tyrus New**	Regina	PGY4	DP	DM	JA
2	10:25 - 10:40	**Camellia Srikanthan**	Regina	PGY5	BE	LB	AV
3	10:25 - 10:40	**Grant Forrest**	Saskatoon	Undergraduate	BV	AA	
4	10:40 - 10:55	**Veronica Nguyen**	Saskatoon	Undergraduate	BE	AA	
5	10:40 - 10:55	Kirsten Broderick	Regina	Undergraduate	DP	LB	
		Yun Kim	Saskatoon	Undergraduate			
		Katayoon Karimzadeh	Saskatoon	Undergraduate			
6	10:40 - 10:55	**Samantha Carley**	Saskatoon	PhD	JA	BV	AV
7	10:40 - 10:55	**Pedro Guedes**	Saskatoon	Postdoc	DM	JW	
		Emily Hubick	Saskatoon	Undergraduate			
8	10:55 - 11:10	**Fernanda Mascarenhas**	Saskatoon	Postdoc	DP	LB	JW
		Rafael Ferreira	Saskatoon	PhD			
9	10:55 - 11:10	**Nathan Chen-Mack**	Saskatoon	PGY4	JA	BV	AV
10	10:55 - 11:10	**Riley Plett**	Saskatoon	PGY3	DM	BE	AA
11	11:10 - 11:25	**Miku Tibule**	Saskatoon	MSc	AV	BV	
12	11:10 - 11:25	**Krishna Daida**	Saskatoon	Undergraduate	AA	JW	DP
13	11:10 - 11:25	**Brooke Gessner**	Saskatoon	MSc	JA	BE	
14	11:10 - 11:25	**Shawn Halayka**	Saskatoon	Research Partner	N/A		

Presentations will proceed in 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 Session – Presentation #1

Project Title: Exploring Contemporary Christian Orthodox and Muslim Perspectives on Mental Health in Saskatchewan, Canada

Authors: Tyrus New[1] MD, PGY3, Samantha J. Carley[1] BSc, MSc, Mariam Alaverdashvili[1] PhD, Cameron Bye[1] BSc, MSc, G. Camelia Adams[1] MD, MSc, FRCPC

1. Department of Psychiatry, College of Medicine, University of Saskatchewan, SK, Canada

Background: Religion, Spirituality, and mental health have historically shared a close connection. Contemporarily, growing evidence suggests that religious and spiritual (R/S) beliefs can improve physical and mental health, decreasing all-cause mortality and suicide rates. Despite this, Canadian psychiatrists rarely approach these beliefs with patients. To address this, we aimed to gain insight on how R/S views of Orthodox Christians and Muslims can be implicated in the treatment and medical education surrounding mental health in our province, with the goal of improving quality of life for Saskatchewan's multicultural population.

Methods: We conducted two independent focus groups with Christian Orthodox and Muslim participants as part of a larger mixed-methods study. Using semi-structured open-ended questions, we explored perspectives on R/S and its significance on mental and physical health. Participants' responses were recorded, transcribed, and analyzed using thematic analysis conducted by two independent coders, following Braun and Clarke's six-phase framework.

Results: Four participants identified as Christian Orthodox, and six as Muslim. Themes indicated that R/S views were central to identity across faith groups. Groups highlighted the importance of R/S beliefs as they relate to wellbeing, with emphasis on mental health. Participants voiced a cautious approach to implementing R/S beliefs in healthcare and stressed the importance of enhanced education surrounding these beliefs.

Conclusions: Our themes suggest that R/S beliefs play a central role in the mental and physical health of our sample, and that incorporating these beliefs into healthcare, particularly psychiatric practice, can prove significantly beneficial, if done in a sensitive and educated manner.

Acknowledgments: We would like to acknowledge Dr. Holly Graham, Dr. Harold Koenig, and the Research Assistant, Grant Forrest. This project was supported by a grant from the Social Sciences and Humanities Research Council (SSHRC) Insight Development Grant (ID: 420-2024-01284) to Dr. Camelia Adams (PI).

Poster Session – Presentation #2

Project Title: Psychosocial Correlates of Dysfunctional Anger

Authors: Camellia Srikanthan[1], Lindsay Healey[2], Temitope Ahmed[3], & AG Ahmed[1]

1. Department of Psychiatry, College of Medicine, University of Saskatchewan, SK, Canada. 2. Royal Ottawa Mental Health Centre, Ottawa, Ontario. 3. Precision Medical Centre, Ottawa, Ontario

Background: Anger can be functional or maladaptive depending on its intensity, duration, and expression. Despite links to health and psychological risks, anger remains under-researched and lacks a formal diagnosis in the DSM-5-TR. Most studies focus on non-clinical populations, limiting understanding of anger in clinical settings. This study aims to describe and compare the anger experiences of outpatients referred for anger issues with a non-dysfunctional community sample and identify their psychosocial correlates.

Methods: Data was collected from 405 adults assessed at an outpatient Anger Disorders Clinic between 2007 and 2014. Participants were categorized into Nonclinical, Expressed, or Suppressed Anger groups using validated cut-offs from the State Trait Anger Expression Inventory-2 (STAXI-2). All participants completed structured interviews and self-report measures assessing anger, aggression, impulsivity, mood, and related constructs. Group differences were analyzed using ANOVA and post-hoc tests, with multinomial logistic regressions examining predictors of group membership across demographic, legal, clinical, and interpersonal variables.

Results: Expressed and suppressed anger groups showed significantly higher clinical distress than the nonclinical group across all psychological measures. Dysfunctional anger had higher rates of psychiatric comorbidity, substance use, personality disorders, and self-reported difficulties controlling anger. The expressed group displayed higher physical aggression, impulsivity, and longer anger episodes than suppressed anger, but they differed minimally. Sociodemographic and legal variables also distinguished the groups.

Conclusions: Dysfunctional anger is strongly associated with psychiatric comorbidity and psychosocial impairment. Distinguishing clinical typologies of dysfunctional anger is essential for developing targeted interventions and integrating anger into clinical assessment frameworks.

Acknowledgments: We would like to acknowledge the study participants, ADC Treatment team, and the University of Saskatchewan

Poster Session – Presentation #3

Project Title: Religious/Spiritual Views in Self-declared Atheists and Their Implications for Mental Health

Authors: Grant Forrest BA candidate[1], Samantha Carley MSc[1], G. Camelia Adams MD, MSc, FRCPC[1]

1. Department of Psychiatry, College of Medicine, University of Saskatchewan, Saskatoon, SK, Canada

Background: Research has shown strong links between religiosity, spirituality (R/S), and mental health. However, an increasing number of Canadians now identify as "non-religious." Understanding how non-religious individuals perceive R/S in relation to their mental health is essential for developing sensitive and effective clinical approaches. This study explores the R/S views of self-identified atheists in Canada, and examines their perspectives on its role in mental health.

Methods: Participants completed an online focus group with six open-ended questions exploring their R/S beliefs and mental health experiences. Discussions were recorded, transcribed, and analyzed inductively using Braun and Clarke's thematic analysis. Two independent researchers identified themes, which were finalized among all authors.

Results: Seven participants took part in the focus group. Three main themes were generated: (1) The mental toll of religion: judgment, guilt, and exclusion; (2) Self-defined morality and spirituality: foundations of well-being; and (3) Cautious openness: conditional acceptance of religion and spirituality in mental health care. Findings show that R/S can have beneficial and harmful effects on mental health. Although participants identified as non-religious, many valued spirituality and religious teachings, emphasizing R/S's psychological relevance. Participants were open to discussing these topics in care if handled respectfully. However, systemic barriers continue to limit R/S integration.

Conclusions: R/S influences mental health among both religious and non-religious individuals. Rather than a decline in religiosity, results suggest an evolution in how people engage with spirituality and meaning in Canada. Further research is needed to clarify these relationships.

Acknowledgments: This project was supported by the Social Sciences and Humanities Research Council (SSHRC) Insight Development Grant (ID: 420-2024-01284) to Dr. Camelia Adams (PI).

Poster Session – Presentation #4

Project Title: Access to Guideline-Concordant Adjunctive Therapy for Major Depressive Disorder: A Saskatchewan Psychiatrist Survey and Canadian Environmental Scan

Authors: Diep (Veronica) N. Nguyen[1], Amy Soubolsky BSP MSc(Pharm)[2], Annabelle Wanson MD FRCPC[3], Katelyn Halpape BSP ACPR PharmD BCPP[1]

1. College of Pharmacy and Nutrition, University of Saskatchewan, Saskatoon, SK, Canada. 2. Mental Health & Additions Services – Adult Pooled Referral, Saskatchewan Health Authority, Saskatoon, SK, Canada. 3. Department of Psychiatry, College of Medicine, University of Saskatchewan, Saskatoon, SK, Canada.

Background: Major depressive disorder (MDD) affects a substantial proportion of Canadians. The Canadian Network for Mood and Anxiety Treatments 2023 Clinical Guidelines recommend partial dopamine agonist antipsychotics as first-line adjunctive therapy for difficult-to-treat depression (DTD). These medications are not covered for MDD in Saskatchewan. This work aimed to (1) assess the perspectives of Saskatchewan-based psychiatrists and psychiatry residents regarding the use of aripiprazole and brexpiprazole for MDD, and (2) evaluate and compare public drug coverage of these medications for MDD across Canada.

Methods: A cross-sectional, self-directed online survey of Saskatchewan psychiatrists and psychiatry residents was conducted between May and July 2025. In parallel, a comprehensive environmental scan of all 13 publicly funded Canadian drug formularies was performed.

Results: Forty-three clinicians completed the survey (23% response rate). Approximately 40% of respondents reported prescribing aripiprazole and brexpiprazole for MDD in half of patient cases when indicated and most perceived these medications as more effective and better tolerated than alternative adjunctive therapies. Lack of public coverage was identified as the primary barrier to prescribing. The environmental scan revealed that aripiprazole and brexpiprazole are fully covered for MDD across most publicly funded drug plans except for the Yukon, British Columbia, and Saskatchewan, and Québec (brexpiprazole only).

Conclusions: Saskatchewan psychiatrists recognize the clinical value of aripiprazole and brexpiprazole for MDD; however, formulary restrictions limit patient access. These findings provide complementary clinician- and policy-level evidence to support provincial formulary expansion and promote equitable, guideline-concordant treatment for MDD across Canada.

Acknowledgments: VN would like to acknowledge the USask Interdisciplinary Summer Research Program for the salary award. VN also thanks all participating Saskatchewan psychiatrists and psychiatry residents for completing the survey. VN would like to thank the various representatives from the Canadian drug plans for the information that they provided via email consultations.

Poster Session – Presentation #5

Project Title: Bioenergetic and Calcium Dysregulation Driven by the Mitochondrial DNA Variant m.4917A>G in Bipolar Disorder

Authors: Kirsten Broderick[1], Yun Kim[2], Katayoon Karimzadeh[2], Tatiana Saccon[1], Fernanda Mascarenhas[2], Pedro Henrique Guedes[2], James L. Kennedy[3], Vanessa Gonçalves[3], Mohan Babu[1], Ana Mendes-Silva[2]

1. Department of Chemistry and Biochemistry, University of Regina, Regina, SK, Canada. 2. Department of Psychiatry, College of Medicine, University of Saskatchewan, Saskatoon, SK, Canada. 3. Centre for Addiction and Mental Health, Toronto, ON, Canada

Background: Bipolar Disorder (BD) is a major cause of disability and premature mortality with poorly defined biological mechanisms. Converging evidence implicates mitochondrial dysfunction in BD, including impaired oxidative phosphorylation and calcium regulation. We previously identified an increased frequency of two non-synonymous mitochondrial DNA (mtDNA) variants affecting OXPHOS complex I (e.g., m.4917A>G) in youth with BD, associated with altered brain structure and cerebral blood flow. Here, we examined the cellular consequences of the ND2 m.4917A>G variant as a mechanistic link to BD-related neurobiological alterations.

Methods: We generated cellular models carrying the ND2 m.4917A>G variant and wild-type controls in human fibroblasts and SH-SY5Y neuroblastoma cells. Mitochondrial membrane potential was assessed by live-cell fluorescence imaging using MitoTracker™ CMXRos. Mitochondrial and cytosolic calcium handling were quantified using the Ca^{2+}-sensitive indicators Rhod-2 and Fluo-4, respectively. Cellular bioenergetic function was evaluated using Seahorse extracellular flux analysis to measure oxygen consumption rate (OCR) and extracellular acidification rate (ECAR) under basal conditions and following sequential pharmacological perturbations.

Results: ND2 mutant cells showed reduced mitochondrial membrane potential ($p=0.003$) and impaired mitochondrial Ca^{2+} uptake compared with wild-type cells ($p=0.017$). Bioenergetic profiling revealed lower basal and maximal OCR, a blunted response to mitochondrial uncoupling, and reduced ECAR, indicating compromised oxidative phosphorylation, diminished glycolytic capacity, and limited metabolic flexibility (all $p<0.001$). ND2 mutant cells also exhibited elevated intracellular calcium levels, consistent with impaired mitochondrial calcium buffering ($p=0.013$).

Conclusions: The ND2 m.4917A>G mtDNA variant induces deficits in mitochondrial bioenergetics and calcium homeostasis, providing mechanistic evidence that mitochondrial dysfunction contributes to BD pathophysiology.

Poster Session – Presentation #6

Project Title: Bridging the Gap: A New Scale to Support Clinicians in Integrating Religious and Spiritual Views into Mental Health Treatment

Authors: Samantha J. Carley[1] MSc, PhD Student, Lloyd Balbuena[1] PhD, G. Camelia Adams[1] MD, MSc, FRCPC

1. Department of Psychiatry, College of Medicine, University of Saskatchewan, SK, Canada

Background: Addressing patients' religious/spiritual (R/S) beliefs can positively influence mental health, and major guidelines (WPA, CANMAT) support integrating R/S into care when appropriate. However, many clinicians lack tools and confidence to do so. To address this, we developed and validated the Religion and Spirituality Mental Health Questionnaire (RSMHQ), a brief seven-item measure of perceived R/S relevance to mental health. This study explores relationships between RSMHQ and preferences for psychiatric treatment approaches, as well as mental health implications.

Methods: A survey including the RSMHQ, psychiatric treatment preference items (including R/S approaches), and self-reported health measures was distributed to three Saskatchewan groups: general population (n=790), mental health patients (n=336), and mental health clinicians (n=91). Analyses included Plackett–Luce modeling of treatment rankings, logistic regression of preferences, and linear regression of associations with mental and physical health.

Results: RSMHQ scores explained more variation in treatment preferences than group membership. Higher scores were associated with stronger preference for religious counselling and, in some groups, prayer. Patients with the highest scores (7/7) endorsed prayer more than clinicians (OR = 0.27, 95% CI = 0.13–0.53), while lower-scoring patients (<7/7) endorsed less prayer (OR = 3.28, 95% CI = 1.75–6.26) and less religious counselling (OR = 7.62, 95% CI = 3.84–16.06). Higher RSMHQ scores were also associated with better self-rated mental and physical health.

Conclusions: Routine assessment of R/S relevance using the RSMHQ may support personalized care by guiding appropriate integration (or avoidance) of R/S in treatment, potentially improving therapeutic alliance and outcomes.

Acknowledgments: We would like to acknowledge Dr. Holly Graham, Dr. Evyn Peters, Dr. Chris Hrynkow, Dr. Ana Mendes-Silva, Dr. Harold Koenig, Dr. Mariam Alaverdashvili, Cameron Bye, and Research Assistant, Grant Forrest. This project was supported by the Social Sciences and Humanities Research Council (SSHRC) Insight Development Grant (ID: 420-2024-01284) to Dr. Camelia Adams (PI).

Poster Session – Presentation #7

Project Title: Electrochemical Biosensor Detection of Circulating Mitochondrial DNA in Depression: A Proof-of-Concept Study

Authors: Pedro Henrique Gonçalves Guedes[1], Emily Hubick[1], Fernanda Mascarenhas[1], Maria Acevedo Tapia[2], Mohan Babu[3], Ernesto Figueiro-Filho[4]; Breno Satler[5], Evyn Peters[1], Ana Paula Mendes-Silva[1]

1. Department of Psychiatry, College of Medicine, University of Saskatchewan, Saskatoon, SK, Canada. 2. Universidad de las Américas Puebla, San Andrés Cholula, Mexico. 3. Department of Chemistry and Biochemistry, University of Regina, Regina, SK, Canada. 4. Department of Obstetrics & Gynecology, College of Medicine, University of Saskatchewan, Regina, SK, Canada. 5. University of Connecticut, Farmington, CT, United States of America

Background: Depression is a prevalent mental disorder lacking rapid, minimally invasive, and scalable molecular tools for clinical assessment. Emerging evidence suggests mitochondrial dysfunction contributes to its pathophysiology through oxidative stress and release of pro-inflammatory molecules, including circulating cell-free mitochondrial DNA (ccf-mtDNA). While ccf-mtDNA has been proposed as a biomarker of stress, its integrity and applicability in point-of-care detection platforms remain poorly characterized.

Methods: As a proof-of-concept, plasma samples from seven women diagnosed with depression were analyzed to assess ccf-mtDNA integrity, including levels and deletion rate, using qPCR alongside direct detection with an in-house developed electrochemical biosensor. Associations with depressive symptoms (HAM-D), early life stress (ACE), and affective lability (ALS-DE) were evaluated using Kendall's tau-b correlations.

Results: Ccf-mtDNA levels quantified by qPCR showed a significant positive correlation with the measurements from the novel biosensor ($r=0.867$, $p=0.007$), supporting concordance between methods. Ccf-mtDNA levels were also positively correlated with ACE score ($r=0.732$, $p=0.015$), and ALS-DE (qPCR: $r=1.000$, $p<0.001$; Biosensor: $r=0.867$, $p=0.007$). Indirect measure of ccf-mtDNA deletion rate was correlated with ACE score ($r = 0.732$, $p = 0.015$) and ALS-DE ($r = 0.810$, $p = 0.005$). No significant associations were observed with HAM-D scores.

Conclusions: These preliminary findings support the feasibility of a rapid biosensor for ccf-mtDNA detection in plasma samples and suggest its potential relevance for capturing clinical phenotypes. Further studies with larger and more diverse cohorts, including control groups, are needed to validate these findings and assess the clinical utility of this approach.

Poster Session – Presentation #8

Project Title: Acetonic extract of Saskatoon berry attenuates amyloid-associated neurotoxicity in cellular and Drosophila melanogaster Alzheimer's disease models

Authors: Fernanda Naves Araújo do Prado Mascarenhas[1], Rafael Bernardes Ferreira[1,2], Lucas Matos Martins Bernardes[1,2], Serena Mares Malta[1,2], Alexandre Souza Marquez[2], Luana Ferreira de Freitas[2], Davi Cotrin Ferreira[2], Augusto Silva Moreira[3], Tarcísio Paiva Mendonça[4], Júlia Noémia Bernardo de Sousa[4], Íngrede Ferreira Silva[4], Lucas Ian Veloso Correia[5], Mário Machado Martins[5], Alexandra Zhu[6,7], Haixia Zhang[7], Olamide Adebiyi[8], Adelaine Kwun-Wai Leung[8], Foued Salmen Espindola[4], Carlos Ueira-Vieira[2], Ana Paula Mendes-Silva[1]

1. MitoBrain Laboratory, Department of Psychiatry, College of Medicine, University of Saskatchewan, Saskatoon, SK, Canada. 2. Genetics Laboratory, Institute of Biotechnology, Federal University of Uberlandia, Uberlandia, MG, Brazil. 3. Biochemistry and Animal Toxins Laboratory, Institute of Biotechnology, Federal University of Uberlandia, Uberlandia, MG, Brazil. 4. Laboratory of Biochemistry and Molecular Biology, Institute of Biotechnology, Federal University of Uberlandia, Uberlandia, Brazil. 5. Laboratory of Nanobiotechnology, Institute of Biotechnology, Federal University of Uberlandia, Uberlandia, Brazil. 6. Department of Chemistry, Faculty of Arts and Science, University of Toronto, Toronto, ON, Canada. 7. Department of Food and Bioproducts, College of Agriculture and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada. 8. Western College of Veterinary Medicine, Department of Veterinary Biomedical Sciences, University of Saskatchewan, Saskatoon, SK, Canada.

Background: Saskatoon berry (Amelanchier alnifolia) is rich in polyphenols known to modulate oxidative stress and neuroinflammation, key mechanisms involved in Alzheimer's disease (AD), yet its neuroprotective potential in this context remains unexplored.

Methods: Here, we investigated two Saskatoon berry extracts, acetonic and ethanolic, using integrated chemical, computational, cellular and in vivo approaches.

Results: Antioxidant activity was confirmed across platforms, with stronger radical-scavenging and more moderate responses in assays reflecting reducing capacity. Chemical profiling revealed solvent-dependent differences in phenolic and flavonoid content. In neuroglial models, the ethanolic extract showed mild-cytotoxicity, whereas the acetonic extract exhibited a favorable safety profile. In an amyloid-beta-induced cellular model, the acetonic extract produced only modest effects on viability. In contrast, in vivo studies using Drosophila melanogaster AD models demonstrated consistent protective effects of the acetonic extract, including improved survival, reduced amyloid-beta aggregation, and preservation of retinal structure. Gene expression analysis of brain tissue revealed modulation of mitochondrial and immune pathways. The AD-like model showed increased expression of co1 and dipt, which were significantly reduced following treatment. Expression of sod2 was also decreased by treatment, while hsc70 remained unchanged.

Conclusions: Overall, these findings identify Saskatoon berry as a novel natural source of bioactive compounds with anti-Alzheimer's potential and support a resilience-based mechanism in which neural vulnerability to amyloid toxicity through modulation of mitochondrial function and innate immune signaling. This work provides a foundation for future mechanistic studies and neuronal-specific validation in Drosophila models.

Poster Session – Presentation #9

Project Title: Public Perspectives on The Role of Religion and Spirituality and Spirituality in Mental Health: A Qualitative Exploration Across Catholic and Protestant Canadians

Authors: Nathan J. Chen-Mack[1] MD, Samantha J. Carley[1], G. Camelia Adams[1] MD, MSc, FRCPC

1. Department of Psychiatry, College of Medicine, University of Saskatchewan, SK, Canada

Background: Research demonstrates significant associations between religiosity/spirituality (R/S) and mental health, including improved psychological outcomes and reduced depressive symptoms (Koenig, 2012). Despite this evidence, the integration of R/S into psychiatric care remains contentious in Canada, where national psychiatric organizations emphasize the delivery of care within a secular framework (Chaimowitz et al., 2014). This study explored contemporary views of Christian adults in Saskatchewan, Canada, regarding the role of R/S in mental health care.

Methods: Using a qualitative design, two online focus groups were conducted with adults identifying as Catholic or Protestant. Discussions examined participants' spiritual and religious beliefs, their perceived influence on mental health, and views on the appropriateness of integrating R/S into psychiatric care. Transcripts were analyzed using Braun and Clarke's six-phase framework for thematic analysis (Braun & Clarke, 2006).

Results: Four overarching themes emerged across groups: (1) faith as foundational to mental health, serving as a source of meaning and comfort, while occasionally generating conflict; (2) holistic understanding of wellness integrating mind, body, and spirit; (3) a strong desire for religion and spirituality to be acknowledged within mental health care; and (4) cautious openness toward integrating R/S into health care, shaped by concerns related to trust, boundaries, clinician expertise and time constraints. While themes were largely shared, denominational nuances were evident, including Catholics emphasizing maintaining their identity and expressing moral tension and Protestants emphasizing autonomy and self-directed care.

Conclusions: Findings highlight the importance of patient-centred, faith-sensitive approaches to psychiatric care that respect individual beliefs, autonomy and professional boundaries.

Acknowledgments: This project was supported by the Social Sciences and Humanities Research Council (SSHRC) Insight Development Grant (ID: 420-2024-01284) to Dr. Camelia Adams (PI).

Poster Session – Presentation #10

Project Title: Religion/Spiritual Views and Mental Health: Findings of the Focus Group with keyeyahk - Original Stewards of the Lands

Authors: Riley Plett[1] BSc, MD, MSc; Holly Graham[1] RN, BA, BScN, MN, PhD, R.D. Psychologist

1. Department of Psychiatry, College of Medicine, University of Saskatchewan, SK, Canada.

Introduction: The historical connection between religion and/or spirituality (R/S) and mental health care is undergoing resurgence. There is demonstrated lower all-cause mortality and suicide with R/S connection but little inquiry of R/S clinically. This portion of a larger R/S and mental health project aimed to understand Cree perspectives using a culturally sensitive bottom-up approach. keteyahk is a Cree term most closely translated to "original stewards of the lands".

Methods: Three keteyahk underwent targeted recruitment. A keteyahk focus group occurred over four hours plus time for shared meal and presentation of honorarium and tobacco per cultural protocol. An epistemological standpoint was taken, recognizing validity in traditional knowledge. Previously agreed upon qualitative questions were examined. Researchers independently reviewed notes then met to refine common themes using thematic analysis.

Results: A framework shared for mental health priorities was foundational to examine common themes: Stabilize the Spirit, Patient-Physician Relationship, and Re-examine Pathologizing Culture. Spirituality was vital to health. keteyahk were open to discussing spirituality with healthcare providers, if questions were approached with humility and "spiritual compassion".

Conclusions: This keteyahk focus group portion of a study assessing R/S and mental health provides vital and rich traditional perspectives that are particularly relevant to the Saskatchewan mental health care context.

Acknowledgements: e'winanaskomakik to the keteyahk. Funding was provided by the Social Sciences and Humanities Research Council (SSHRC) Insight Development Grant (ID: 420-2024-01284) to Dr. Camelia Adams (PI) and Drs. Holly Graham and Harold G. Koening (co-Investigators). Dr. Holly Graham holds Indigenous Research Chair in Nursing, (Canadian Institutes of Health Research, Saskatchewan Health Research Foundation, and the Canadian Nurses Foundation). Additional funding was provided by Indigenous Research Chair in Nursing Dr. Holly Graham (ID: 355588).

Poster Session – Presentation #11

Project Title: Leveraging Stem Cells to Understand Pathology and Develop Interventions: A Case Study on Genetic Psychiatric Diseases

Authors: Miku Tibule[1] MSc Student, BSc. (Hons)., Ethan Adams[1] BSc. (Hons) student, Tyler Wenzel[1] PhD, BEd

1. Department of Psychiatry, College of Medicine, University of Saskatchewan, SK, Canada

Background: X-linked adrenoleukodystrophy (X-ALD) is a neurometabolic disorder caused by mutations in the ABCD1 gene, leading to a loss-of-function in the adrenoleukodystrophy protein and toxic accumulation of very long-chain fatty acids (VLCFAs). Currently, allogeneic hematopoietic stem cell transplant (HSCT) is the standard treatment for X-ALD patients. However, HSCT has high morbidity and doubles the risk of life-threatening complications later in life due to the conditioning regimen involved. We hypothesize that the therapeutic benefit of HSCT is due to ABCD1-expressing immune cells engrafting the central nervous system tissue.

Methods: Our study uses ABCD1-expressing human induced pluripotent stem cells (hiPSC)-derived microglia for transplantation into in vitro and in vivo X-ALD models. X-ALD models will be obtained using CRISPR/Cas9 and Cre-loxP systems to knockout ABCD1 in hiPSC cultures and neonate mice. Brains will then be analyzed using core analyses and targeted approaches, examining the DNA, RNA, protein, and lipids of the samples to understand how the microglia transplant method treats X-ALD at the cellular and molecular levels.

Results: Gel electrophoresis image and chromatograms suggest the feasibility of our gene editing system method and liquid chromatography-tandem mass spectrometry to detect VLCFAs in our study models. Microscopy images also validate the efficacy of our brain organoid and microglia differentiation protocols. *(Preliminary Results)*

Conclusions: Our work will show microglia-to-brain transplants as a better alternative to allogeneic HSCT and demonstrate microglia can be used as a vector to deliver disease-modifying treatments.

Acknowledgements: We would like to thank the undergraduate students in our laboratory, Teyanna Harrison, Olivia Dyck, Lily Dobchuk, and Avery Brossart, for their help in maintaining our iPSC lines. We would also like to extend gratitude to the Mousseau Laboratory and Hall Laboratory for allowing our group to borrow equipment.

Poster Session – Presentation #12

Project Title: Investigating the neuroprotective potential of kefir-derived peptides through gut-brain axis modulation in Alzheimer's Disease mouse model

Authors: Krishna Daida[1], Serena Malta[2,3], Fernanda Mascarenhas[2,3], Katayoon Karimzadeh[2], Matheus Henrique Silva[2,3], Lucas Matos Martins Bernardes[2,3], Yun Kim[1], Carlos Ueira-Vieira[3], Paul Mellor[4], John Howland[1], Ana Paula Mendes-Silva[2,3]

1. Department of Anatomy, Physiology, and Pharmacology, University of Saskatchewan, 105 Administration Pl, Saskatoon, Saskatchewan S7N 5A2, Canada. 2. Department of Psychiatry, University of Saskatchewan, 103 Hospital Dr, Saskatoon, Saskatchewan S7N 0W8, Canada. 3. Institute of Biotechnology, Federal University of Uberlândia, Uberlândia, State of Minas Gerais, 38402-045, Brazil. 4. Cancer Research Group, University of Saskatchewan, 107 Wiggins Road, Saskatoon, Saskatchewan S7N 5E5, Canada

Background: Alzheimer's disease (AD) is a progressive neurodegenerative disorder characterized by memory loss, neuroinflammation, and amyloid beta (Aβ) accumulation. Increasing evidence shows that AD is associated with gut microbiome dysregulation via the gut–brain axis. Bioactive peptides derived from fermented foods such as kefir exhibit antioxidant and anti-inflammatory properties and may offer therapeutic potential. This study investigates the effects of a kefir-derived peptide, M25, on AD-related pathology and its role in gut–brain axis modulation.

Methods: For in vitro studies, normal human astrocytes (NHA) and SH-SY5Y neuroblastoma cells were treated with 100 μM M25 to assess cellular viability and oxidative stress under both healthy and Aβ-induced conditions. For in vivo studies, 80 C57BL/6J mice (50% female) received intraperitoneal injections of M25 (10 mg/kg), a scrambled sequence peptide (negative control), or ligurine (positive control) at 20 weeks of age. Biodistribution and blood–brain barrier permeability were evaluated using LC-MS and IVIS imaging with Cy5 fluorescence at multiple time points (1h, 2h, 4h, 8h, 24h), along with tissue collection from brain.

Results: M25 was non-toxic to NHA and its early administration significantly reduced Aβ-induced cytotoxicity and aggregation, whereas late administration showed no significant effect. Peptide distribution was widespread, demonstrating successful brain uptake, with complete metabolism observed at 24 hours.

Conclusions: These findings indicate that M25 can mitigate Aβ-related toxicity and aggregation, highlighting its potential as a therapeutic candidate for AD. Moreover, its ability to cross the blood-brain barrier supports its potential as a therapeutic candidate, which will be further evaluated in APP/PS1 models.

Acknowledgments: This research was supported by SHRF grant ID #6797. A huge thank you to Howland laboratory, and my wonderful lab for helping each step of the way, inside and outside the lab!

Poster Session – Presentation #13

Project Title: Characterizing Clozapine Use in Pediatric Psychiatry: A Retrospective Review of Clinical Practice

Authors: Brooke Gessner[1], Lloyd Balbuena[2], Dave Blackurn[1], Anna Felstrom[2], Jenna Pylypow[2], Andrea Tang[1], Katelyn Halpape[1]

1. College of Pharmacy and Nutrition, University of Saskatchewan, Saskatoon SK. 2. Department of Psychiatry, College of Medicine, University of Saskatchewan, Saskatoon, SK. Canada

Background: Clozapine is the gold-standard antipsychotic for treatment-resistant schizophrenia (TRS) in adults and has evidence for reducing suicidality and aggression. Clozapine is not formally approved for any pediatric psychiatric conditions, but it is prescribed off label. Youth psychosis guidelines recommend clozapine for TRS, but its use in non-psychotic conditions is not well described. The objective is to describe the naturalistic use of clozapine in pediatric psychiatric patients across inpatient and outpatient settings.

Methods: A retrospective chart review was conducted of patients ≤18 years of age prescribed clozapine between January 2015 and January 2026. Data was extracted from inpatient and outpatient electronic medical records, including demographic variables, primary psychiatric diagnosis, and maintenance dosing. Descriptive statistics were used to summarize.

Results: Seventy-one pediatric patients treated with clozapine were identified. The mean age at clozapine initiation was 14 years. Over half of the cohort was Indigenous (54%). Clozapine was prescribed for a wide range of diagnoses, including psychotic disorders (n=22), oppositional defiant disorder (n=18), autism spectrum disorder (n=10), chronic suicidal ideation (n=9), bipolar disorder (n=3), and intellectual disability/fetal alcohol syndrome (n=5). Maintenance dosing varied substantially across diagnoses.

Conclusions: Psychotic disorders are a key indication for clozapine, but this study shows substantial off-label use for behavioural and neurodevelopmental conditions. The cohort largely being indigenous, represents a population that has not previously been described. Dosing varied widely, reflecting the lack of standardized pediatric dosing and the heterogeneity of the population.

Poster Session – Presentation #14

Project title: Minds Undimmed by Darkness

Authors: Shawn Halayka[1] & Lloyd Balbuena[2]

1. Independent Scientist. 2. Department of Psychiatry, College of Medicine, University of Saskatchewan, Saskatoon, SK, Canada.

Background: We have lived a combined 50+ years with mental disorders. We are fortunate to have retained our cognitive powers and contributed to the scientific dialogue about our own condition.

Methods: We present self-directed and collaborative projects that demonstrate our aptitude in computer programming and statistical modeling.

Results: With other members of the Department of Psychiatry, we published the largest longitudinal study of clozapine in Canada that evaluated the risk-to-benefit ratio of clozapine use (Balbuena et al., 2024). This paper was the target of a commentary by a researcher from Japan (Kikuchi, 2025) and an authors' response from us (Halayka & Balbuena, 2025). Shawn Halayka makes use of his remarkable talent in C++ programming to investigate mathematical objects known as quaternion fractals.

Conclusions: People with mental health conditions like us need not be defined by them. Our acceptance of their dual nature as burden and gift as well as our strict adherence to proven ways of staying healthy keep our minds undimmed.