Table of Contents

Plenary

A Social Justice Informed Approach to Paediatric Pain

Dr. Anna Hood
Psychology in the Division of Psychology and Mental Health and the Policy Director at the Manchester, Centre for Health Psychology at the University of Manchester

Abstract

This plenary session will address the persistent racialized inequities in pediatric pain care, with a particular focus on children and young people living with sickle cell. We will explore barriers to equitable healthcare and research, emphasizing systemic racism as a fundamental determinant of health and the impact of racism-based traumatic stress (RBTS) on chronic pain inequities. Through the RESTORATIVE model, the session will examine RBTS as an adverse childhood experience that perpetuates pain disparities and will emphasize the role of healthcare providers' empathy and validation in mitigating these inequities. By advocating for culturally responsive research and care practices, this plenary will contribute to advancing health equity in pediatric pain management, aligning with the broader theme of moving forward with hope in pediatric pain through science, practice, and advocacy.

At the end of this session, participants will be able to:

- Identify key barriers to equitable pediatric pain care and research participation among racialized families of children and young people (CYP) with chronic pain, including systemic racism, institutional mistrust, and the need for culturally inclusive practices.
- Analyze the impact of racism-based traumatic stress (RBTS) as an adverse childhood experience (ACE) that perpetuates chronic pain inequities in racialized youth, using findings from the RESTORATIVE model and longitudinal research data.
- Apply culturally responsive healthcare and research strategies to improve pain management and healthcare transitions for CYP with sickle cell disease and other chronic pain conditions, advocating for provider empathy, validation, and systemic change.

Plenary

The neuroscience of pain: A key to treatment development

Professor Tor Wager
Department of Psychological and Brain Sciences
Dartmouth College

Abstract

Understanding and measuring pathophysiology, and how treatments alter it, is a key to translational success. This concept is widely understood and accepted in many branches of medicine, but it has been notoriously difficult to apply to complex disorders, including mental health disorders, substance misuse, and chronic pain. These three categories of disorders share a substantial brain component, with core symptoms related to brain processes that have defied measurement and characterization in humans. I will describe efforts to create neuromarkers from human fMRI for neural processes underlying these complex disorders. These neuromarkers have revealed novel mechanisms underlying psychological effects on fear, pain, and drug craving. They have the potential to serve as

pathophysiology-linked treatment targets, allowing pharmacological, behavioral, and neuromodulatory treatments to be compared and integrated, accelerating treatment development.

At the end of this session, participants will be able to:

- Investigate why developing measures of pathophysiology, the biological features that cause a disorder, has been challenging in chronic pain.
- Explore the value of neuromarkers for understanding acute and chronic pain, and how to evaluate the scientific evidence base for such neuromarkers.
- Recognize how emerging psychological and neuromodulatory treatments engage brain systems to alter threat and pain.

Concurrent Session One

Session Title: New insights into the role of the claustrum in acute and chronic pain.
Session Chair: Anna Taylor
University of Alberta

Session Abstract:

The processing of nociceptive information into the percept of pain is mediated by a network of brain regions across cortical and subcortical areas. One region within this network that has been systematically overlooked in the pain field is the claustrum. The claustrum is formed of a thin sheet of cells layered between the neocortex and striatum. Because of its small structure and lack of clear anatomical boundaries, it has been difficult to parse the function of the claustrum from neighbouring regions, such as the insula. However, unlike the insula, the claustrum is the most connected structure in the human brain per unit volume. Not surprisingly, the claustrum is densely connected to central nodes of this distributed pain network, and disruptions in claustrum activity seem to influence aspects of sensory saliency. As such, it is poised to be a critical modulator of pain perception, although its role in pain is just beginning to be understood. This symposium will bring together Canadian scientists working at the forefront of this problem who are leveraging advances in human imaging and system neuroscience approaches in rodent models to provide new insight into the function of the claustrum in pain.

At the end of this session, participants will be able to:

- Describe the function of the claustrum in acute and chronic pain
- Describe techniques used to measure claustrum activity and function
- Reflect on ways to manipulate claustrum activity as novel pain therapy

Speaker One

Title: Evaluating MRI capture of the claustrum via a validated histological gold standard
Navona Calarco
University of Toronto

Abstract

Introduction: The claustrum has been ascribed many functions, including a putative role in pain. However, conventional MRI (supramillimeter resolution at 3-Tesla) struggles to detect and distinguish the claustrum's thin dorsal and diffuse ventral aspects. As ultra-highfield and submillimeter imaging become more common, it is timely to evaluate MRI's capacity to capture the claustrum against a histological "gold standard" reference.

Methods: We created a gold standard by manually segmenting the claustrum in the n=1 BigBrain dataset, available at 100µm resolution and reconstructed in continuous 3D space. We validated the gold standard in n=10 brains from the 1µm Julich dataset. We then compared the gold standard to three n=10 healthy adult MRI datasets (T1-weighted MP2RAGE at 7-Tesla), acquired at 0.5mm, 0.7mm, and 1mm isotropic resolution.

Results: The validated gold standard shows that, though often just micrometers wide, the claustrum spans ~5cm anteroposteriorly and dorsoventrally, and comprises ~2% total brain volume. Across all MRI datasets, the claustrum's shape approximates the gold standard, with higher resolutions yielding more accurate volume and extent estimates. However, at all resolutions, the claustrum's long anteroposterior and dorsoventral dimensions are truncated, whilst the thin mediolateral dimension is inflated, producing markedly shorter, shallower, and thicker claustra.

Discussion/Conclusions: Even with submillimeter resolution and ultra-high field MRI, claustral capture is affected by partial voluming. Past MRI studies rarely report volume or extent, but likely demonstrate incomplete coverage and/or confounding with adjacent structures. The gold standard provides a crucial benchmark, and atlas, for future MRI investigation.

Speaker Two

David Seminowicz
University of Western Ontario

Title: The role of the claustrum and cognitive network activity in acute and chronic pain

Abstract

Introduction: Aberrant cognitive network activity and cognitive deficits are established features of chronic pain. However, the nature of cognitive network alterations associated with chronic pain and their underlying mechanisms require elucidation.

Methods: We analyzed two datasets: one consisting of 3T fMRI scans in 39 healthy participants while experiencing pain, and a second consisting of 35 healthy participants and 112 migraine patients who experienced pain and also performed a cognitive task in separate runs.

Results: The claustrum BOLD signal increased in response to experimental heat pain; 2) claustrum BOLD signal was distinguishable from neighboring regions; 3) claustrum activity increased in response to a pain-predictive cue; 4) migraine patients exhibited greater cognitive task associated network activity than controls; 5) migraine patients engaged a pain-responsive prefrontal cortex region - piDLPFC - during pain-free cognitive task processing. Dynamic causal modeling suggested a directional influence of the claustrum on activity in this piDLPFC region.

Discussion/Conclusions: Our study revealed a relationship between claustrum and cognitive control network activity during acute pain and uncovered evidence of a claustrum-DLPFC circuit underlying cognitive network dysfunction in chronic pain. These findings represent empirical support for our previously described Network Instantiation in Cognitive Control model of claustrum function and raise the possibility of the claustrum as a future therapeutic target for chronic pain conditions, with potential implications for other neuropsychiatric disorders characterized by cognitive impairment and cortical network abnormalities. Our ongoing work uses 7T fMRI studies and multiple pain and cognitive paradigms to more precisely map out the role of the claustrum.

Speaker Three

Title: The claustrocingulate circuit in acute and chronic pain

Anna Taylor
University of Alberta

Abstract

Introduction: The anterior cingulate cortex (ACC) is integral for the integration of nociceptive information. The claustrum (CLA) is a narrow subcortical structure that restricts ACC activity by activating inhibitory interneurons. Though its function is unknown, early studies point to regulation of cortical network activity in sensory processing. Here we investigated the role of the claustrocingulate circuit in acute and chronic pain.

Methods: Claustrum activity was measured in adult C57Bl6 mice with postmortem cFOS immunolabeling and in vivo GCaMP fiber photometry. To specifically manipulate the claustrocingulate cortex, Cre dependent viral expression of HM3Dq (activation) or caspase 3 (lesion) was limited to claustrocingulate projections using a Cre-encoding retrograde virus. Nociceptive responses were assessed using evoked mechanical (von Frey) and thermal (tail withdrawal) stimuli. Pain avoidance was assessed using the thermal gradient assay and conditioned place aversion. Chronic pain was modeled with a hindpaw injection of Complete Freund's Adjuvant (CFA).

Results: Acute nociception significantly activated the CLA in a temporally-specific manner; however, chronic inflammatory pain reduced this activation. Lesion of claustrocingulate neurons induced mechanical allodynia, but impaired pain learning. Activation of claustrocingulate projections did not affect acute nociception, but did reverse mechanical allodynia in chronic pain.

Discussion/Conclusions: This work has identified a new neural circuit that participates in pain processing, highlighting a potential dysfunction in chronic pain that could be manipulated to resolve pain hypersensitivity.

Session Title: Innovations in Social Support Across the Lifespan

Session Chair: Melanie McDonald
Pain BC

Session Abstract

Social support is a critical determinant of health. The symposium will focus on innovations in social support across the lifespan highlighting the iPeer2Peer (iP2P) Program from The Hospital for Sick Children in Ontario and the Coaching for Health program from Pain BC. The symposium will focus on the benefits, opportunities, and challenges of delivering social support to youth and adults living with pain in research, hospital, and community-based non-profit settings.

The iP2P program is an evidence-based virtual peer support program that provides an opportunity for adolescents with painful chronic illnesses to connect with young adults with the same illness through Skype or zoom-based video calls. Mentors are nominated by their healthcare teams and undergo 2.5 days of mentor training. The program has demonstrated improvements in disease self-management and coping in various clinical populations (chronic pain, inflammatory bowel disease, sickle cell disease, and juvenile idiopathic arthritis) and has been adopted by several not-for-profit organizations.

The Coaching for Health Program at Pain BC is a telephone and virtual coaching program delivered in a community-based setting, designed to help adults living with pain learn self-management skills, and improve their well-being and social connection. Evaluation of the program suggests that participation helps people with pain to improve their quality of life, confidence in managing pain, and mental health. The panel will highlight the perspective of a volunteer coach who is also a person living with pain to discuss the importance of social support, and their experience as a coach including personal reflections, challenges, and impacts.

At the end of this session, participants will be able to:

- Recognize the benefits and opportunities for providing social support as an intervention to people with pain.
- Familiarize themselves with two innovations in peer support across the lifespan, the iP2P and the Coaching for Health programs.
- Explore the experiences of a Pain BC coach with lived experience of pain and to highlight impacts, challenges, and opportunities.

Speaker One

Title: Community-based Coaching as an Intervention for Adults Living with Pain

Melanie McDonald
Pain BC

Abstract

Pain BC is a registered charity offering a wide range of psychosocial support for people who live with pain, including a coaching for health program. The coaching program offers up to 12 telephone or virtual coaching sessions that focus on goal setting to improve quality of life. The purpose of the program is to help adults living with pain learn self-management skills, improve their well-being and social connection.

People who live with pain are matched with volunteer peer coaches or trained staff depending on client needs. A few important outcomes for clients are to improve the compassion they feel for themselves, gain knowledge/ skills/ resources to better manage their health, and make changes; 96% of clients in 2023 reported that they experienced these outcomes. Additionally, 93.5% reported believing their quality of life can improve and 97% would recommend the program to others. Evidence-based measures for anxiety, depression and pain self-efficacy are used pre and post participation and will be shared and discussed. Program opportunities and challenges will also be shared.

Speaker Two

Title: iPeer2Peer: A Virtual Peer Support Program for Youth

Jennifer Stinson
The Hospital for Sick Kids

Abstract

The iPeer2Peer program is an evidence-based virtual peer support program that provides an opportunity for adolescents with chronic illnesses to connect with young adults with the same illness through video calls (i.e., Skype, WhatsApp, FaceTime). Mentors are nominated by their healthcare teams and trained with an evidence-based framework.

The program has demonstrated improvements in disease self-management and coping efficacy. There are 10+ national, and 2 international sites implementing the program, with application in 6+ clinical populations: including chronic pain, sickle cell disease, and juvenile idiopathic arthritis. Within adolescents with congenital heart disease, there were significant improvements in transition readiness seen post-program.

Qualitative evidence from these studies also supports the utility of the program, especially among transition aged youth. Mentees find comfort, stability, and reassurance in connecting with someone who has successfully completed these transitions. They also find fulfillment and support through shared experiences with many mentees reporting never having met anyone with the same diagnosis prior to the program. Mentors have echoed similar sentiments, expressing satisfaction and achievement in connecting with mentees who share their condition. Mentors have also provided valuable feedback across trials suggesting a need for more support throughout the program and the desire to connect with other mentors at the same time.

Speaker Three

Title: Impacts and Experiences as a Volunteer Coach for People who Live with Pain

Carolyn Harrison
The Hospital for Sick Kids

Abstract

Research demonstrates the significant benefits of social support for people with chronic pain, including building stronger social connections, improved daily functioning, and better pain self-management. The purpose of this presentation will be to explore the experience and impacts of volunteer coaching, and intentional use of lived experience as a coach. In addition, research suggests, and anecdotal feedback agrees, that having a shared experience of pain within peer to peer coaching can provide additional opportunities for modelling self-management, acceptance & outlook, resource sharing, navigating local support systems and more. As a volunteer coach with lived experience of pain, Carolyn Harrison will discuss specific insights and implications of coaching others while continuing to manage their own pain, including their experience, challenges and opportunities as a volunteer coach, the role of intentional use of lived experience and implications coaching with lived experience has had on their client's self-management and their own

Session Title: The Ketamine Connection: Infusing A Multidisciplinary Approach at the Ketamine Infusion Pain Program.

Session Chair: Neilesh Soneji
Toronto Western Hospital

Session Abstract

Introduction/Aim: Ketamine infusions can be used to treat refractory chronic pain conditions, such as complex regional pain syndrome (CRPS) and neuropathic pain. Ketamine is also at the frontier of mental health therapies and is thus positioned as a promising intervention to address both pain and mental

health conditions. The Ketamine Infusion Pain Program (KIPP) is a uniquely designed multidisciplinary program that provides high-dose Ketamine infusion (HDKI) to eligible Canadians with chronic pain.

Methods: The KIPP team is composed of pain physicians, nurses, psychologists, physiotherapists, anesthesiologists and anesthesia assistants. The team provides seamless patient-centered care for patients with chronic pain undergoing HDKI. An innovative aspect of the KIPP is the Ketamine-specific psychology services provided throughout the service pathway. Data is collected at baseline and specific intervals corresponding with medical and nursing care.

Results: At the time of submission, the KIPP has serviced 170 patients between 2023-2024. Preliminary results, including pain and functional outcomes, psychological variables, and patient preparedness, will be presented. Preliminary analysis indicates that 32% of patients receiving HDKI are responders (>30% pain relief) 1-month post-infusion. A patient will be interviewed regarding their experience accessing KIPP services to provide a rich integration of the topics presented.

Discussion/Conclusions: The first of its kind in Canada, the KIPP offers a novel multidisciplinary approach to using HDKI for treating chronic pain. Preliminary results indicate that patients are well prepared for infusion and approximately one third obtain >30% pain relief. Future directions regarding the evolution and expansion of Ketamine therapy for chronic pain are discussed.

At the end of this session, participants will be able to:

- Discuss pharmacological rational and clinical evidence for use of high-dose Ketamine infusions for chronic pain.
- Outline the role of a psychologist and nurse as part of a multidisciplinary team for high-dose Ketamine infusion.
- Describe key aspects of the lived experience of receiving Ketamine infusion for chronic pain, including how patients cope with the infusion, their hopes for treatment outcomes, and any challenges faced during the process.

Speaker One

Title: Clinical Insights into Ketamine Infusion Therapy: The Program in Practice

Neilesh Soneji
Toronto Western Hospital

Abstract

Introduction/Aim: Chronic pain, often resistant to standard treatments, affects millions globally. Ketamine, an NMDA receptor antagonist, is a unique therapy for specific chronic pain conditions such as complex regional pain syndrome (CRPS) and neuropathic pain. Its mechanism involves glutamate inhibition and modulation of pain pathways, reducing central sensitization and hyperalgesia.

Methods: The Ketamine Infusion Pain Program (KIPP) at Toronto Western Hospital is an innovative multidisciplinary approach to chronic pain management. All patients participate in a pre-infusion multidisciplinary education session and undergo a psychological assessment to determine their suitability for treatment. The program offers two timelines for treatment (a single-day or multi-day course), with infusions lasting six hours per day at a dose of 1 mg/kg/hr. Post-infusion follow-up includes a nurse check-in 1 day after the infusion, a psychological integration session within 2 weeks, and

evaluations with the medical team at 1 and 3 months. Data collected includes pain scores, functional assessments, quality-of-life measures, medication usage, and monitoring for adverse effects.

Results: Existing evidence supports the efficacy of Ketamine infusions in reducing chronic pain, particularly in CRPS and refractory neuropathic pain. Our program's specific outcomes, including pain reduction, functional improvement, and adverse events, will be presented. Approximately one third of patients at KIPP obtain >30 pain relief.

Discussion/Conclusions: The KIPP at Toronto Western Hospital, the first of its kind in Canada, offers a novel multidisciplinary approach to treating chronic pain. While initial results are promising, ongoing research is needed to refine treatment protocols, evaluate long-term outcomes, and better predict patient responses.

Speaker Two

Title: Mindset Matters in a Hospital Setting: The Role of Psychology in the Ketamine Infusion Pain Program

Kathryn Curtis and Abigail Muere
Toronto Western Hospital

Abstract

Introduction/Aim: Ketamine is a powerful dissociative anesthetic with psychedelic properties. Ketamine has been used to treat pain and, more recently, is at the forefront of innovative therapies for mental health conditions. Psychologists at the Ketamine Infusion Pain Program (KIPP) support patients with chronic pain along the service pathway, from pre-infusion to post-infusion, with a unique focus on both pain and mental health.

Methods: Prior to Ketamine infusions, KIPP psychologists conduct consultations to assess psychological appropriateness for Ketamine infusions, co-facilitate pre-infusion education sessions, and provide additional preparation sessions for identified patients. Additionally, psychologists conduct check-ins during the infusion and provide post-infusion integrations session(s) to patients undergoing Ketamine infusion.

Results: Pre-infusion Psychology consultations help identify potential psychological risks and benefits for patients undergoing Ketamine infusion. At the pre-infusion education session, patients are informed of the range of psychological symptoms that can be experienced during the infusion (e.g., hallucinations, non-ordinary states of consciousness, flashbacks) and are assisted in identifying coping strategies. Select patients are offered additional drop-in group sessions focused on further cultivating an adaptive mindset for the infusion. Check-ins and post-infusion integration sessions offered by the Psychology team assist patients with integrating their infusion experience, addressing any adverse events, highlighting positive events, and supporting post-infusion behavioural change related to patient goals.

Discussion/Conclusions: The Psychology team plays a vital role in KIPP’s multidisciplinary approach to providing Ketamine therapy to patients with chronic pain. Psychologists empower patients to feel prepared for upcoming infusions and to feel supported during and after their Ketamine infusion.

Speaker Three

Title: Navigating the Journey: The Nursing Role in the Ketamine Infusion Pain Program and Patient Insights into the Ketamine Infusion Experience

Emma Robertson
Toronto Western Hospital

Abstract

Introduction/Aim: This presentation highlights the pivotal role of nurses in coordinating patient care in the Ketamine Infusion Pain Program (KIPP) from referral to follow-up, ensuring a smooth and supportive treatment process. During the second part of this presentation, we will hear from a patient who has lived experience with receiving Ketamine infusion for chronic pain.

Methods: Nurses are involved in many aspects of patient care and clinic management, including being a primary point of contact and managing the waitlist to optimize clinical flow. Prior to infusion, nurses co-facilitate the multidisciplinary education session. During the infusion, nurses conduct daily check-ins and participate in safety monitoring. Nurses are involved in all follow-up time points post-infusion and collect data on patient preparedness. Their consistent support throughout the process is critical to the patient journey. Panel speakers will interview a patient about their experience accessing program services.

Results: Nursing involvement improves patient satisfaction and outcomes through waitlist management, education, and personalized patient communication. The outcomes of a survey that assesses patient level of preparedness will be presented. In addition, the lived experience of an individual with chronic pain underscores the importance of pre-infusion preparation and multidisciplinary support provided throughout the infusion process.

Discussion/Conclusions: The nursing team is integral to the KIPP, acting as coordinators between patients and the multidisciplinary team. Their role in managing waitlists, patient education, and follow-up is vital for delivering comprehensive, patient-centered care. The patient experience shared during the presentation highlights the importance of the multidisciplinary approach provided at the KIPP.

Session Title: Unraveling Medico-Legal Complexities in Adjudicating “Invisible” Pain

Session Chair: Mary-Ann Fitzcharles
Mc Gill University

Session Abstract

Medico-legal jurisprudence involves the application of scientific and medical expertise to legal issues, requiring healthcare professionals to offer objective information and an unbiased opinion to assist the trier of fact in making informed decisions.

Nociplastic pain, an 'invisible' pain, is widely accepted by pain medicine health professionals as a valid condition causing significant suffering. In contrast, medico-legal adjudication presents substantial challenges, particularly when assessing severity, functional impairment, and disability. Subjective symptoms associated with chronic nociplastic pain—such as fatigue, sleep disturbances, cognitive difficulties, and hypervigilance—further complicate adjudication due to absence of precise measurement techniques and objective pathology.

Those suffering from nociplastic pain can only present a personal report to justify their condition, raising concerns about reliability, symptom amplification, or even simulation.

This symposium will explore and juxtapose the distinct roles of the healthcare provider with the independent medical evaluator, highlighting key insights and potential challenges. Causation, severity and impairment related to chronic pain will be discussed.

The adjudication of nociplastic pain will be addressed from the legal perspective by defence counsel familiar with such cases and recent jurisprudence. By examining the nuances of the legal system, as it operates parallel to, but differently from traditional medical practice—healthcare professionals will be better equipped to provide critical and material information that contributes to a fair and just resolution for individuals genuinely suffering from chronic pain.

At the end of this session, participants will be able to:

- Describe the challenges in the medico-legal adjudication of nociplastic pain from the perspective of the treating healthcare professional, the independent expert, and the lawyer.
- Summarize salient points in the medico-legal evaluation of a person with nociplastic pain.
- Discuss the interaction between the medical and legal profession in the adjudication of chronic pain conditions.

Speaker One

Title: Contrasting clinical care with medico-legal evaluation in patients with nociplastic pain
Nimish Matta
University Toronto

Abstract
Dr. Mittal will delineate the distinct roles of the treating healthcare professional and the independent medical expert, underscoring the pivotal role of clinical care in medico-legal adjudication. He will introduce the concept of nociplastic pain and present robust evidence tracing the progression from acute to chronic pain, as well as the shift from regional to widespread pain. The discussion will address the clinician's critical role in conveying pertinent information about pain severity and function to insurers or legal counsel, particularly in the absence of objective measurements. Dr. Clarke will highlight the importance of integrating various symptoms to form a comprehensive picture of a patient's overall health and will detail how clinicians can assess functional capacity when compiling medical reports for adjudication purposes.

Speaker Two

Title: How to assess "invisible pain" and provide the courts with best evidence
Rodrigo Deamo Assis
Rouyn-Noranda

Abstract
Dr. Rodrigo Deamo Assis will provide a comprehensive overview of evaluating individuals with chronic nociplastic pain in the context of independent medical assessments. He will detail the evaluation process, emphasizing key considerations and potential challenges, such as the common pitfalls and valuable insights that can arise during the assessment. Dr. Deamo Assis will also address the

formulation of medical reports and the potential implications of these reports. A focal point of the session will be the clinical examination of individuals with nociplastic pain, particularly in situations where there are concerns of "disbelief" or accusations of symptom amplification or malingering. Additionally, the assessment of functional ability and work-related disability—key issues often faced by evaluators—will be discussed.

Speaker Three

Title: The healthcare professional meets the lawyer in the setting of nociplastic pain...the do's and dont's

David Bertschi
Boslaw

Abstract

Mr. David Bertschi will offer the legal perspective on representing claimants with nociplastic pain, drawing from recent case law. He will emphasize critical considerations for legal teams when reviewing medical records and independent medical examination reports. Mr. Bertschi will outline the key principles to follow when serving as an expert witness and discuss the potential consequences of medical reports for clinicians, evaluators, and claimants. Additionally, he will explore how courts manage subjective pain complaints that lack objective measurement through standard techniques. He will also provide guidance on the proper etiquette for delivering expert testimony, with a focus on maintaining professional credibility and integrity throughout the legal process.

Session Title: Wellness and Resilience in Pain and Substance Use Disorders

Session Chair: Kate M. Nicholson
National Pain Advocacy Center

Session Abstract

Wellness and resilience are hot topics in chronic illness management, yet they rarely figure into the clinical care of pain and substance use disorders. Chronic pain is the most pervasive chronic illness and the most costly. Substance use disorders and overdose deaths are crisis-level public health concerns. This session seeks to close the gap by exploring how evidence-based wellness and resilience interventions can be applied to the treatment of pain and substance use disorders.

Resilience is the capacity to resist, adapt to, recover from, or grow from a stressor.

Research suggests that resilience can be developed, enabling people to respond to health stressors in ways that may pre-empt or mitigate pain or addiction. Wellness is an essential tool in building resilience. We can't just look at wellness and resilience from an individual perspective; we must also examine the social contexts and systems in which individuals live. Food, movement, physical strength, and emotional stress affect resilience, but so do social factors such as community, connectivity, justice, equity, safety, and environmental conditions. Even how we design and deploy our laws and policies significantly impacts the resilience of individuals and communities.

This panel takes a big-picture approach, examining wellness and resilience from three unique perspectives: a pain and wellness expert, a person with lived experience of pain who has expertise in social policy, and a drug policy pioneer.

At the end of this session, participants will be able to:

- Recite the current state of research about preventable chronic illness and how it applies to pain and substance use disorders.
- Explain why equity and social factors are key to resilience and devise strategies for building resilient communities and systems.
- Describe how drug policy shapes the resilience of individuals and communities.

Speaker One

Abstract

Introduction: Resilience and wellness interventions hold promise for the prevention and mitigation of pain at each stage of its lifecycle, including the development of pain, acute to chronic pain transition, and the transition of chronic pain to “high impact” or disabling pain. However, it is critical that these interventions be tailored to individual needs and operationalized in ways that do not double down on existing disparities and disadvantages.

Research: Research suggests that the intensity and duration of health stressors are significant factors in generating resilient or non-resilient outcomes. Therefore, the intensity and duration of pain must be considered when developing wellness and resilience interventions. Current research also suggests that resources matter in resilience. These resources are external or social, such as how quickly relief arrives after a natural disaster or who has access to quality health care, and internal or individual, such as pre-existing emotional and physical bandwidths when stressed.

Methods: We address methods for resourcing individuals, communities, and health systems for resilience and wellness. To create an approach that doesn’t shame or blame individuals or communities for their lifestyles or circumstances but instead empowers them with actionable choices, we must consider everything from an individual’s transportation access or proximity to a gym to payment models that compensate for wellness-based interventions to supporting self-determined communities and Indigenous healing practices.

Discussion/Conclusions: Discussion will suggest a focus on and strategies for creating resilient systems.

Speaker Two

Title: Optimizing Wellness in Clinical Pain Care

Scott M. Fishman
University of California Davis Health Department of Anesthesiology and Pain Medicine; UC Davis Office of Wellness Education

Abstract

Introduction: Health systems function almost entirely as disease response systems. Similarly, healthcare providers are trained to be disease responders rather than focusing on prevention. Yet current research offers a scientific basis for strategic lifestyle choices that may proactively prevent and mitigate pain.
Methods: Emerging research on chronic illness and wellness can be applied to the prevention, mitigation, and management of pain. This research, which will be reviewed in our session, suggests

choices to catalyze resilience and improve quality of life that may prevent or reduce pain at each stage of its lifecycle: acute, chronic, and high-impact.

Results: To benefit from wellness and resilience-based interventions at present, patients must often turn to a wellness marketplace that can be costly and inaccessible. This session will address strategies for applying and integrating wellness research in clinical care.

Discussion/Conclusions: Providers have a duty to inform their patients about lifestyle choices that may prevent or reduce their pain. Discussion will address ways to move health education, research, and the current ill-care clinical model toward a resilience and well-care model.

Speaker Three

Title: How Global Drug Policy Undermines Resilience: A Way Forward Rooted in Health and Human Rights

Ethan Nadelmann
Drug Policy Alliance (past)

Abstract

Introduction: Global drug policy, in both its design and prosecution, has historically been based less in science than who uses or is perceived to use proscribed substances. These laws and the practices emerging from them disadvantage marginalized groups that already disproportionately suffer negative social determinants of health, posing significant complications for resilience in individuals and communities.

Research: We will provide an overview of global drug policy and present evidence on how policies based on criminalization rather than health and science undermine individual and community resilience.

Methods: One way forward for transforming drug policy is demonstrating how criminalization impacts the advancement of scientific research by shaping which substances can be studied. We will explore recent efforts at targeted decriminalization of substances like cannabis and, more recently, psychedelics that may hold promise for promoting wellness and resilience in intractable conditions like pain, mental health, and addiction.

Discussion/Conclusion: This talk will conclude with strategies for shifting global drug policy toward health and science, discussing current and prospective ways to build resilience and wellness in addressing substance use disorders.

Concurrent Session Two

Session Title: Spinal and peripheral neuro-immune interactions in chronic pain
Session Chair: Michael Salter
Hospital for Sick Children/UofT

Session Abstract

Neuro-immune interactions are increasingly recognized to drive pain hypersensitivity. In this symposium we will present recent work on macrophage-neuron signalling that highlights the concept that immune cells may suppress as well as exacerbate pain. Ms. Shuster-Hyman will describe the latest mechanistic insights into a model of microglia-independent pain hypersensitivity, that is driven by peripheral macrophages. Dr. Salter will present evidence that in a sex-dependent manner a specific subtype of macrophage - expressing CD206+ - in the lumbar meninges suppresses pain after a minor injury. Dr. Ji will present exciting findings that the pro-resolving mediator, protectin DX, reduces postoperative pain by activating the receptor GPR37, and subsequent signalling in macrophages and neurons.

At the end of this session, participants will be able to:

- Describe spinal neuro-immune signalling pathways that mediate and modulate pain hypersensitivity in rodent models of chronic pain.
- Identify peripheral neuro-immune signalling that drives neuropathic pain hypersensitivity.
- Discuss the latest evidence for pro-resolving neuro-immune interactions in the dorsal root ganglia.

Speaker One

Title: Peripheral and central neuro-immune mechanisms in microglia-independent neuropathic pain

Hannah Shuster-Hyman
Hospital for Sick Children/UofT

Abstract

Introduction: Microglia have long been thought to drive neuropathic pain, however the clinical translation of microglial-targeting therapies have shown limited success, highlighting the need to explore other contributors. Macrophages have extensive interactions with sensory neurons and are increasingly recognized for their critical roles in pain initiation and maintenance.

Methods: We investigated the role of macrophages in neuropathic pain in a model of microglia-independent neuropathic pain (MINP), induced by applying nucleus pulposus (NP; inner tissue of intervertebral discs) to the sciatic nerve. MINP is dependent on macrophage infiltration to the sciatic nerve in both sexes, thus allowing for the examination of microglial-independent, macrophage-specific contributions to neuropathic pain.

Results: We found that in the periphery IL-1β, an algesic proinflammatory cytokine, is upregulated in the sciatic nerve following MINP induction. Genetic deletion of Gsdmd, a pore-forming protein which permits IL-1β release from cells, reduced MINP hypersensitivity in male but not female mice. In terms of spinal cord mechanisms of MINP, we found that targeting KCC2 or NMDAR activity reversed pain hypersensitivity pointing to a contribution of both mechanisms to hypersensitivity in MINP.

Discussion/Conclusions: We find that hyperexcitability in the spinal cord contributes to MINP-induced hypersensitivity, and that GSDMD contributes to pain behaviours in a sex-dependent manner. Future work will characterize macrophage-mediated activity driving changes within the spinal cord and DRG, and delineate sex-specific molecular mechanisms contributing to pain hypersensitivity.

Speaker Two

Title: Meningeal macrophages keep pain in its place

Michael Salter
Hospital for Sick Children/UofT

Abstract

Introduction: Meninges surrounding the brain and spinal cord house a variety of immune cell types including macrophages that express the CD206 mannose receptor. Here, we investigated whether CD206+ macrophages in the meninges play a role in regulating nociception and pain hypersensitivity.

Methods: We selectively depleted CD206+ macrophages in the meninges around the lumbar spinal cord by intrathecal administration of anti-CD206 coupled to saporin, and . determined the effects of CD206+ macrophage depletion on responses in naïve rats and in those that had received a skin incision. In addition, we investigated transcriptional changes in lumbar meninges. Experiments were done in both male and female rats.

Results: Depleting CD206+ meningeal macrophages did not alter basal responses in naïve animals. By contrast depleting these cells after skin injury induced mechanical hypersensitivity in male rats, but had no effect females. CD206+ meningeal macrophage depletion had no effect on heat or cold sensitivity after skin incision in either sex. Moreover, skin incision caused transcriptional changes in the meninges of male and but not of female rats.

Pain hypersensitivity in spinal cord dorsal horn is mediated by hyperexcitability due to upregulating NMDAR activity and downregulating KCC2 activity. In male rats with skin incision injury, the mechanical hypersensitivity induced by depleting CD206+ meningeal macrophages was reversed by blocking NMDARs and by upregulating KCC2 activity.

Discussion/Conclusions: Taken our findings together, we conclude that in a sex- dependent manner CD206+ meningeal macrophages prevent the spread of pain hypersensitivity after a minor injury.

Speaker Three

Title: Protectin DX reduces fracture-induced postoperative pain through GPR37, macrophage, and neuronal signalling

Ru-Rong Ji
Center for Translational Pain Medicine, Departments of Anesthesiology, Cell Biology, and Neurobiology, Duke University Medical Center

Abstract

Introduction: Protectin DX (PDX) is a recently identified lipid mediator of the expanding family of specialized pro-resolving mediators (SPMs) and exerts anti-inflammatory actions in animal models; but its receptor signaling remains unclear.

Methods: The analgesic actions of PDX and its mechanisms were investigated in a mouse model of tibial fracture-induced postoperative pain.

Results: Intravenous pre-treatment and post-treatment of PDX was found to alleviate postoperative pain. PDX produced superior pain relief, compared to its analog neuroprotectin D1 (NPD1) or its precursor DHA, as well as anti-inflammatory treatments with steroids or meloxicam. PDX's analgesic effect was abrogated in mice lacking the G-protein coupled receptor, Gpr37, which developed chronic pain after fracture. PDX activates GPR37 and induces calcium responses. It was found that PDX differentially regulates the expression of IL-1β, TNF-α, and IL-10 in dorsal root ganglia (DRG) of bone-fractured mice and LPS-stimulated peritoneal macrophages. Pathway analysis revealed that PDX regulates macrophage/neutrophil signaling and tissue regeneration/wound healing. PDX regulates macrophage polarization through GPR37-mediated phagocytosis and efferocytosis, associated with calcium responses. PDX rapidly modulates nociceptor neuron responses by suppressing C-fiber-induced muscle reflex in vivo and calcium responses in DRG neurons ex vivo, as well as modulating mustard oil/capsaicin-induced acute pain and neurogenic inflammation.

Discussion/Conclusions: Our findings highlight multiple benefits of PDX to suppress postoperative pain and promote perioperative recovery.

Session Title: Pain, Selfhood and Suffering: Scientific, Clinical and First-Person Perspectives

Session Chair: Virginia McIntyre
People in Pain Network

Session Abstract

Despite advances in pain research and practice, signs of suffering associated with pain, such as isolation, addiction, and suicidality, are at historically high levels and continue to rise. Innovative approaches are urgently needed to better understand, recognize and address suffering associated with chronic pain. This symposium session will provide a timely review and presentation of novel research and clinical strategies for addressing pain-related suffering. Disruption to one's sense of self is a key attribute that distinguishes experiences of pain and suffering and will be a common theme across the presentations in this session.

The first presentation will advance a new framework for pain-related suffering that aims to expand historical conceptualizations by introducing different modes by which pain can lead to self-disruption

and suffering. The second presentation will introduce innovative phenomenological research methods as a means of studying self-disruption and suffering. The third presentation will focus on exploring how Acceptance and Commitment Therapy (ACT) can be an effective tool to address self-disruption and alleviate pain-related suffering. The session will be moderated by a person living with pain, who will integrate reflections on their first-person experiences with suffering and collaboration on research in this area. This session will thus provide participants with a new foundation for advancing research and practice that aims to better understand and alleviate suffering associated with chronic pain.

At the end of this session, participants will be able to:

- Delineate the modes by which pain can lead to self-disruption and pain-related suffering.
- Evaluate the robustness of methodological tools for assessing pain-related suffering.
- Outline how Acceptance and Commitment Therapy interventions can be used to address self-disruption and mitigate pain-related suffering.

Speaker One

Title: When pain overwhelms the self: Exploring a new mode of pain-related suffering

Timothy Wideman
McGill University

Abstract

Suffering is a foundational yet understudied construct within the field of pain. There is general agreement that pain-related suffering involves disruption to one's sense of self. The selfhood literature characterizes two inter-related modes of self-experience. One mode entails in-the-moment experiences that shape one's stream of consciousness; another involves self-reflective thoughts about the past or expected future, related to one's self-identity. The field's historic conceptualization of pain-related suffering is exclusively anchored to the latter, self-reflective mode of experience.

This presentation will summarize research that argues that this framing fails to account for pain's immediate, disruptive impact and denies the potential for suffering among individuals without self-reflective capacities (e.g. infants). Findings from a recent theoretically-informed, phenomenological study will be used to explore a new potential way by which people living with pain can suffer. This work used in-depth, qualitative interviews with people living with pain to understand their moment-to-moment experiences of their worst episodes of pain. Results revealed important accounts of pain that overwhelmed thoughts and self-reflective capacities and disrupted foundational aspects of self-experience, including sense of agency, bodily ownership and time. Participants reported that these experiences were incapacitating, dehumanizing and dissociating. The pattern of findings is remarkably similar to first-hand accounts of torture and support a new mode of pain-related suffering that does not require self-reflection and is characterized by an immediate, disruptive impact on one's sense of self. Implications for how we define and manage pain-related suffering will be discussed.

Speaker Two

Title: Innovative Approaches to Study Self-Disruption Related to Pain

Peter Stilwell
University of Southern Denmark

Abstract
Dr. Stilwell will discuss how theory on self-disruption can serve as a framework for studying the two modes of pain-related suffering introduced in the first presentation. Specifically, Dr. Stilwell will outline how innovative theoretically driven phenomenological methods can be used to study pain-related disruptions to “minimal” and “narrative” aspects of self. The term minimal is in reference to the foundational role of here and now self-experiences in contrast to the developmentally more complex narrative-self experiences that involve reflection on the past or future. The mode of suffering involving the minimal-self can be studied by asking participants nuanced questions regarding potential pain-related disruptions to immediate self-experiences, including pre-reflective (non-reflective) sense of agency (control) and sense of ownership over one’s experiences and body.

In contrast, the mode of suffering involving the narrative-self can be studied by asking participants specific questions to better understand potential disruptions to important aspects of one’s life story or self-identity (e.g. loss of valued life roles and aspirations). This selfhood theory (minimal-self and narrative-self) and novel qualitative phenomenological methods offer unique value in studying the complex intersection of pain, selfhood and suffering. The result is rich, in-depth descriptions of pain-related suffering that might not be obtained with other available methods. Dr. Stilwell will also review complementary quantitative and mixed methods to better understand and target different modes of pain-related suffering. Participants will gain an understanding of the rigorous and evolving methods that have been developed to study pain-related self-disruptions, including qualitative interview guides, quantitative questionnaires and innovative tools.

Speaker Three

Title: Addressing self-disruption through Acceptance and Commitment Therapy (ACT): Conceptualization and clinical strategies to target pain-related suffering

Lance McCracken
Uppsala University

Abstract
Dr. McCracken will provide an overview of Acceptance and Commitment Therapy (ACT) and its relevance to self-disruption. He will describe the psychological flexibility model underlying ACT and its conceptualization of self. In ACT and psychological flexibility there is a distinction made between self as concept versus self as context, akin to the distinction between “me” and “I.” Next, the state of evidence for the role of self as defined in ACT will be briefly reviewed. This will include findings showing that a flexible contextual sense of self correlates with better functioning and wellbeing in people with chronic pain, is enhanced in treatment that targets it, and these enhancements correlate with improved functioning observed in that treatment. The trajectory of future clinical research will be discussed, particularly in relation to how improved conceptualizations of self may lead to more precise therapeutic targets for change. A case will be made that self processes, which have long sat in the periphery of pain research, may be the most central factor underlying how people can make change in their behavior and

health. In addition to the concepts, evidence, and research directions presented, a short treatment method designed to enhance a contextual sense of self will be demonstrated. By the end of the presentation, participants will have new insights into how to better recognize and target experiences of suffering among their patients living with pain.

Session Title: Enhancing the efficacy of chronic pain treatment by targeting trauma

Session Chair: Joel Katz
York University

Session Abstract

Over the last 30 years, traumatic experiences (i.e., stress response to life threatening situations, neglect, sexual, physical or emotional abuse, including the development of posttraumatic stress disorder (PTSD) and acute stress disorder) have emerged as a central predisposing and perpetuating factor for chronic pain. Trauma is nearly ubiquitous among individuals seeking treatment for chronic pain in tertiary care. Despite understanding the relationship between trauma and pain, few studies have been conducted to specifically address both of these conditions. This symposium discusses state-of-the-art treatments as well as barriers to care. Dr. Joel Katz (Distinguished Professor, York University), expert in chronic pain and trauma, will chair the symposium. Dr. Brittany Rosenbloom (Associate Scientist and Psychologist, Women's College Hospital) will present results from two studies that look at the prevalence of trauma in a chronic pain population as well as current evidence for the psychological treatment of these co-occurring conditions. Dr. Rachel Aaron (Assistant Professor of Physical Medicine and Rehabilitation, Johns Hopkins School of Medicine Faculty) will present results from a systematic review and meta-analysis on the treatment of pain after major injuries. She will also present pilot data on a trial for a novel psychological treatment for pain after major musculoskeletal injury and surgery. Dr. Patricia Poulin (Psychologist at the Ottawa Hospital Pain Clinic, Associate Scientist at The Ottawa Hospital Research Institute and Person with Lived Experience) will speak about the development and evaluation of integrated stepped care intervention for complex trauma and pain.

At the end of this session, participants will be able to:

- Explain the relationship between trauma and chronic pain.
- Describe the current state of psychological treatments for pain following musculoskeletal injury.
- Identify different strategies on a stepped care continuum to alleviate trauma-related problems among people living with chronic pain.

Speaker One

Title: Rising to the Challenge: Innovating Psychological Treatment for Persistent Pain After Musculoskeletal Injury

Rachel Aaron
Johns Hopkins School of Medicine

Abstract

Introduction: Musculoskeletal injuries occur in millions of people a year and is a leading cause of pain and disability. Nearly two thirds of people who sustain major musculoskeletal injuries experience pain that persists for years post injury. Despite the significant prevalence of musculoskeletal injuries, and the potential impact of lasting pain, few psychological treatments have been tailored to address post injury pain.

Methods: In this presentation, we will present findings from a recent systematic review and meta-analysis, which found that the efficacy of psychological treatments for pain post injury is limited. We will discuss several unique challenges of treating pain in this population, including near ubiquitous exposure to stressful life events and mixed etiologies of pain (e.g., nociplastic, nociceptive, neuropathic).

Innovative approaches are essential for treating persistent pain post injury. To address this need, our team has adapted Emotional Awareness and Expression Therapy (EAET)—a recently developed psychological treatment for pain—for people with persistent pain six months post major orthopedic trauma requiring surgery. In collaboration with a board of people with lived experience, we are currently conducting a single arm feasibility trial of EAET.

Results: We will present findings from the pilot phase of this trial, and discuss key considerations and challenges, including the mixed etiology of post-injury pain, addressing trauma exposure, and incorporating insights from the advisory board.

Discussion/Conclusions: By integrating innovative therapies and patient-driven insights, we aim to pave the way for more effective psychological treatment post-injury.

Speaker Two

Title: A lot of trauma, a lot of pain: How are we addressing both?

Brittany N. Rosenbloom
Women's College Hospital

Abstract

Introduction: The experience of trauma is known to both lead to and maintain chronic pain. Traumatic experiences are defined by a stress response to life threatening situations, neglect, sexual, physical or emotional abuse.

Methods: Dr. Rosenbloom will discuss the complex theoretical relationship between pain and trauma. She will present results from a survey of 982 patients with chronic pain who were seeking services from a pain centre in Toronto. This unique survey evaluates the frequency and type of trauma experienced by patients with chronic pain as well as trauma's emotional burden. Results: Given that nearly 60% of patients with chronic pain surveyed have emotional disturbances related to trauma, it is critical that there are treatments for co-occurring chronic pain and trauma. Dr. Rosenbloom will present results from a registered systematic review and meta-analysis of treatments designed for co-occurring chronic pain and trauma.

Results: Indication that while there are few psychological treatment options for these individuals, there is promise with Emotional Awareness and Expression Therapy (EAET). Dr. Rosenbloom will explore the quality of these trials as well as where the direction of psychological treatments for co-occurring trauma and chronic pain is going.

Discussion/Conclusions: A high proportion of chronic pain patients seeking service have histories of trauma and a significant proportion are suffering emotionally from these co-occurring conditions. Few trials have been conducted for treating chronic pain and trauma. There is a strong need for the development of novel psychological treatment programs for these individuals.

Speaker Three

Title: Pain and complex trauma: An integrative stepped care approach within a tertiary care pain center with linkages to the community

Patricia Poulin
Ottawa Hospital Research Institute

Abstract

Background: Pain and trauma are common human experiences. Overwhelming experiences or cumulative effects of trauma in the absence of sufficient resources can lead to distress, debilitating symptoms, and the development of coping mechanisms that can further harm. Historically, people living with chronic pain presenting with trauma-related problems have been referred to mental health services, contributing to care fragmentation and stigma. Given the interconnected nature of pain and trauma, an integrative stepped care approach involving all team members and community holds promise.

Methods: The Ottawa Hospital Pain Clinic team developed an integrative interprofessional stepped care approach for trauma and pain. The program is strength-based and includes improving trauma-informed care within the clinic; a range of treatment options such as workshops and connection with community resources; as well as a 16-week Building Emotional Resilience Program integrating education, emotion-focused therapy, and dialectical behavioural therapy skills.

Results: Dr. Poulin will present the results of ongoing mixed-method evaluation activities (workshop evaluation data; qualitative interviews), challenges associated with the evaluation of different components of stepped care approach, and the limitations with programmatic approaches to pain and trauma recovery.

Discussion/Conclusions: We all have a role to play in supporting people living with chronic pain and the long-term effects of trauma. There are interesting advances in the treatment of co-occurring pain and trauma; however, much of our efforts are centered on individual recovery with generally little attention to intergenerational and collective trauma, and on the role of truth and repair in restoring individual and collective health.

Session Title: Contemporary ethical challenges in pain research and management

Session Chair: Thomas Hadjistavropoulos
University of Regina

Over the last three decades, we have seen dramatic technological and scientific advances that have impacted our pain research and clinical direction. Coupled with strong and increasing demands for transparency and public accountability, these advances have brought to the forefront ethical issues that were not prominent in the past (e.g., possible threats to privacy when using vision technologies to monitor pain behaviour in people living with dementia; questions around consent and possible exploitation with open data sharing;, increased sensitivity to possible conflicts of interest when working with the pharmaceutical industry; risks associated with the use of apps and related technologies for assessment and intervention; ethical dilemmas when working with research partners who have lived experience). Four experienced symposium participants will cover pertinent ethical concerns that are likely to preoccupy our disciplines over the next decade and will offer guidance for ethical dilemma resolutions while focusing on a wide variety of pain populations including pediatric, geriatric and younger adult. In sum, this symposium will provide comprehensive insights, real-world examples, and some guidance for pain experts to navigate these evolving ethical challenges while upholding the highest research and clinical standards and fostering valuable discussions with knowledge users.

At the end of this session, participants will be able to:

- Interpret ways in which technological advances and paradigmatic changes in the way that pain research and practice are conducted have given rise to novel ethical dilemmas.
- Describe changes in practices (e.g., when working with industry or special populations) over time and the rationale underlying these changes.
- Develop strategies to better include the voice of patients in their personal care plans and in the approach to more ethical research.

Speaker One

Title: Ethics in pediatric pain research and practice: Opportunities and challenges
Nichole Alberts
Concordia University

Abstract
Significant advancements have been made in the field of pediatric pain, including increased recognition of the scope of the problem and the need for timely and evidence-based assessment and treatment. There are also several research and clinical sub-areas within the field that are particularly fast-growing including the use of digital health, telehealth, social media, and working with youth and parent partners with lived experience. Despite this, there is little guidance around current and emerging ethical issues that pertain specifically to pediatric pain research and practice. In this presentation, an overview of ethical issues that are relevant to both clinicians and researchers working within pediatric pain will be provided. Specifically, considerations related to the delivery of services via telehealth as well as for conducting digital health research with youth and families will be described. In regard to the latter, ethical considerations related to recruitment, informed consent, privacy and confidentiality, and the evaluation of digital health-based psychological interventions will be discussed. Additionally, ethical issues related to suspicious and fraudulent research participation, parent consent, and working with partners with lived experience within the areas of pediatric pain and pediatric psychology more generally will be outlined. Key ethical issues will be summarized and recommendations for future research and practice will be provided.

Speaker Two

Title: The ethics of integrating the human experience into data frameworks
Desmond Williams

Abstract
How do we approach research that has a finite time for completion and a need to present communicable data while maintaining the nuance of the human element of those who are being researched? Despite the desire to conduct research from the perspective of a single pedagogy, in alignment with previous research standards, it is important to start to contemplate and incorporate the concepts of Social Sciences in order to adequately capture nuance that will include a deeper human element to data. With the inclusion of the human element in the final presentation of data, there can be greater potential for applicable actions to incorporate research findings into practical solutions for research participants and those populations that they represent. The refinement of this process can be most intelligently approached by including people with situated experience from the very beginning, including the initial conversations in the grant-writing process. While there has not been a standard set for what recruitment

of People with Situated Experience (PWSE) would look like and how they will be compensated, the contemplation of these issues should be some of the first conversations had amongst professionals when approaching new areas of research. With these objectives, we can work towards better use of our time in research by focusing on meaningful objectives while incorporating a broader view of how our research can contribute to the fostering of more meaningful and equitable relations between those hoping to help and those needing it.

Speaker Three

Title: The clinician-educator-researcher and collaborations with industry

Norman Buckley
McMaster University

Abstract

Over the past thirty years there has been a significant change in organizational attitudes towards collaborations involving industry partners, academic and clinical institutions, and their individual members. Instances of overt conflicts of interest driving or appearing to drive the behaviour of institutions or individual clinicians, educators, and researchers have led to increasing development of guidelines and policies to limit the influence of industry on the content and presentation of programs in education and the publication of research findings. This concern has also extended to address issues around industry influence on purchasing decisions of public organizations in ways that might subvert a transparent process.

Drawing from examples across 30 years of experience both in academia and supporting public advocacy groups, and from roles as an administrator, educator and researcher, this presentation will highlight the responses of organizations responsible for accreditation of education programs as they endeavour to ensure the independence of content from undue or unrecognized influence by vested interests, and to ensure high quality of educational programs. It will also comment upon the editorial polices of journals concerning the identification of relationships or potential conflicts of interest for authors submitting material for publication. Organizational policies around purchasing decisions will also be commented upon, especially as they attempt to mitigate the risk of inappropriate spending decisions and reputational risk.

Session Title: Transforming Nociplastic Pain Treatment: New Approaches and Pioneering Research

Session Chair: Allen Steverman
Centre Hospitalier de l'Université de Montréal

Session Abstract

In our attempts to provide optimal care in the face of chronic pain, we recognize that strategies will vary in part depending on whether the origin of the pain is thought to be nociceptive, neurogenic, nociplastic, or a mixed presentation. When symptoms are primarily nociplastic, many pain sufferers will only experience mild improvements with many of our pain management tools, including medications, injections, physical therapy, psychotherapy as well as the many other therapies that many pain sufferers will turn to.

Our understanding of pain mechanisms and in particular pain neuroscience has significantly evolved, including the importance of central sensitization in many pain conditions as well as the multitude of biopsychosocial factors that are central factors.

With this understanding, we can look towards Mind-Body approaches to pain management.

Newer approaches including Pain Reprocessing Therapy (PRT) and Emotional Awareness and Expression Therapy (EAET) are examples of novel mind-body approaches to pain.

During this session, we will briefly discuss the history and some of the current practices in mind-body approaches to pain in Canada. The underlying neuroplastic mechanisms of primary pain will also be reviewed.

We will describe some of the novel approaches to pain including pain reprocessing therapy (PRT) and emotional awareness and expression therapy (EAET).

Finally, we will discuss some of the recent research showing the effectiveness of these approaches in primary pain conditions.

At the end of this session, participants will be able to:

- Recognize some of the mind-body approaches to chronic pain provided in Canada and the role of the brain in chronic painful disorders.
- Determine which patients have neuroplastic disorders and be able to discuss neuroplastic disorders in a clear and compassionate manner.
- Describe research using Pain Reprocessing Therapy and Emotional Awareness and Expression Therapy for chronic pain.

Speaker One

Title: Advancing Chronic Pain Care: The Rise of Mind-Body Approaches in Modern Medicine

Allen Steverman
Centre Hospitalier de l'Université de Montréal

Abstract

Mind-body approaches in medicine, although far from new, have not been a mainstay in the approach to chronic pain in most medical settings in North America. They have however been used in various clinical settings in modern day medicine for years, with extensive patient reports of significant benefits and improvements in pain control and quality of life.

We will begin by presenting some of the mind-body practices that have been developed and provided in Canada over the last couple of decades, including some of the approaches that are rooted in mindfulness. These structured programs continue to be offered in various clinical settings with thousands of chronic pain sufferers reporting significant improvements in quality of life.

Other mind-body approaches have emerged as well, capitalizing further on our understanding of pain neuroscience and the underlying mechanisms of primary and nociplastic/neuroplastic pain. One remarkable shift in these approaches is moving away from the notion of managing chronic neuroplastic pain to instead eliminating the pain - or at least reducing its impact to a very significant degree. Anecdotal evidence of significant improvements from large numbers of patients’ reports has been growing for years. And more recently, formal research has emerged that support these exciting outcomes.

These data may indeed lead to a dramatic paradigm shift in the clinical approach to certain types of chronic pain, away from learning to manage pain, to instead significantly reduce and perhaps eliminate pain.

Speaker Two

Title: Chronic Pain Redefined: Exploring Predictive Processing and Effective Therapeutic Approaches

Howard Schubiner
Michigan State University College of Human Medicine, Cormendihealth

Abstract

Patients often present with chronic pain and other symptoms for which there is no clear medical explanation. Current multidisciplinary treatment approaches can be helpful in managing these symptoms, yet many patients remain disabled. The most common of these syndromes include chronic neck and back pain, tension and migraine headache, fibromyalgia, and abdominal and pelvic pain syndromes. High rates of lifetime trauma and unresolved emotional experiences often underlie these conditions.

There is an emerging model of brain function known as predictive processing. This model has led to reconceiving these disorders as “brain-induced.” Psychological approaches using this model have been developed and offer the promise of reversing pain in a significant proportion of patients.

This talk will describe the breath of the chronic pain epidemic, concepts of predictive processing, and will present a novel assessment tool to determine which chronic pain conditions are nociplastic in nature. We will review new research showing that Pain Reprocessing Therapy (PRT) and Emotional Awareness and Expression Therapy (EAET) are more effective than standard approaches in actually reversing pain.

Concurrent Session Three

Session Title: Shedding light on pain using novel preclinical methods
Session Chair: Christopher Dedek
Neuroscience & Mental Health, Hospital for Sick Children. Biomedical Engineering, University of Toronto.

Session Abstract

Preclinical models are fundamental to better understanding the mechanisms underlying acute and chronic pain states. Functional outcomes, such as sensitivity to mechanical and thermal stimuli, changes in facial expressions, altered gait and activity, are critical measures used to phenotype pain outcomes. Identifying new tools to assess such behaviours, in particular those that are observer-independent, can only serve to improve to these assays and provide more reliable and robust data.

Here, we outline several new tools to assess pain in animal models including advanced dynamic weight bearing, which determines changes in weight placement of freely-moving animals and the RAMalgo robot, which allows for remote testing of mechanical, thermal, and optogenetic responses. A canine translational pain model that uses a multimodal evaluation of pain is also introduced to the audience, bridging gaps in preclinical work through introduction of a canine model. Following presentation of these tools, the speakers will hold an open conversation with the audience on best practices for preclinical behaviour.

At the end of this session, participants will be able to:
- Assess the potential of dynamic weight bearing as a tool to measure acute and chronic pain.
- Become familiar automated stimulation in mice and measurement of ensuing behaviours.
- Evaluate the benefits of pairing rodent preclinical models with work in higher-order mammals.

Speaker One

Title: Dynamic weight bearing as an observer-independent test to study acute and chronic pain
Nader Ghasemlou
Department of Biomedical & Molecular Sciences, Queen’s University.

Abstract

Introduction: Chronic pain often results in compensatory changes in gait and/or stepping behaviours, such as favouring the unaffected side in a unilateral person knee pain. Most preclinical models of acute and chronic pain rely on injury to one side; central neuropathic pain, such as with experimental autoimmune encephalomyelitis (EAE) model of multiple sclerosis, is bilateral. We sought to determine whether automated dynamic weight bearing analysis could be used to assess pain in acute and chronic pain states.

Methods: The Advanced Dynamic Weight Bearing (ADWB) system offers an observer-independent approach that can provide objective, reliable data in preclinical pain research. C57BL/6J mice received either intraplantar injections of saline or 0.1% AITC solution (to mimic acute inflammatory pain) or were induced with a relapsing-remitting form of EAE (to mimic central neuropathic pain). The ADWB system was used to determine whether stepping behaviours (total paw surface area and/or weight placement) are correlated to observer-dependent results, as observer-independent measures of pain.

Results: ADWB detected pain-directed changes in weight and surface area distribution in AITC-treated mice, with paw weight and surface area placement correlating to paw licking and biting. The system also was able to identify changes in front/rear weight and surface area distribution in animals induced EAE.

Discussion/Conclusions: While the ADWB system can be used as an objective measure of acute pain, its relevance to chronic neuropathic states is less clear, since the EAE response may be more indicative of locomotor recovery than pain. The system provides advantages and disadvantages, which will be discussed.

Speaker Two

Title: Using RAMalgo the robot to remove human variability in rodent pain testing

Christopher Dedek
Neuroscience & Mental Health, Hospital for Sick Children. Biomedical Engineering, University of Toronto.

Abstract

Introduction: Rodent pain testing is notoriously hard to reproduce and susceptible to influence by environmental factors. Stimuli are often applied by hand, and withdrawals measured by eye, leaving results up to the interpretation of the experimenter. We sought to create a device—RAMalgo (Reproducible Automated Multimodal Algometer)—which automatically and reproducibly applies traditional heat and mechanical stimuli, as well as optogenetic stimuli.

Methods: RAMalgo uses linear actuators to move the stimulator underneath mice on a platform. Using either a plexiglass platform for optogenetic or radiant heat, or metal grid platform for mechanical stimuli, hind paws are stimulated through the platform. A joystick can be used to aim remotely from another room, or the stimulation can be entirely automated using AI to track the hind paw and align the stimulus. We measure withdrawal by shining red light onto the paw and measuring the reflectance at 1 kHz. With video recorded of every trial, we can also evaluate behaviours beyond reflexive withdrawals.

Results: Comparing RAMalgo to handheld optical stimulation showed dramatically more reproducible stimulus power. Applying this optical stimulus to mice expressing ChR2 showed bimodal withdrawal latencies which suggest progressive recruitment of C- then A-fibers. Mechanical stimulation allowed measurement of paw withdrawal threshold. When applying intraplantar capsaicin, we saw not only a reduction in withdrawal latency, but an increase in pain-like behaviours.

Discussion/Conclusions: RAMalgo is a new tool that allows researchers to automatically and precisely conduct their experiments, reducing bias and incorporating more metrics to measure pain beyond withdrawal thresholds/latencies.

Speaker Three

Title: Bridging species: A canine model for mechanistic insights into spinal hyperexcitability in chronic pain

Annemarie Dedek
School of Pharmacy, University of Waterloo

Abstract

Introduction: Preclinical pain research has long relied on rodent models, offering control over experimental conditions and providing insights into pain mechanisms. However, these studies often examine pain induced by artificial means, raising questions about their applicability to naturally occurring pain states in other species. The translational gap poses challenges, as findings from rodent models don't always map effectively onto the complex mechanisms of chronic pain in patients. To bridge this gap, we developed a tool to quantify pain in dogs—who, unlike lab rodents, present with naturally occurring chronic pain conditions.

Methods: We pair validated surveys of the pet dog's perceived pain from owners and veterinarians with an evaluation of the dog's gait using pressure and force per limb, symmetry scores, and gait cycle parameters such as cadence, velocity, and distance. These measures are combined into a holistic score that is used to assign dogs to pain or no-pain groups. Following the dog owner's consent and decision to humanely euthanize the dog, we collect spinal cord tissue for analysis.

Results: Our translational approach enables quantification of pain in dogs through behavioral and clinical assessments that reflect naturally occurring chronic pain. Using spinal cord tissue collected postmortem, we conduct electrophysiological recordings to examine neuronal hyperexcitability, complemented by biochemical and immunohistochemical analyses to identify cellular and molecular markers within pain-processing circuits.

Discussion/Conclusions: By examining spinal cord tissue collected postmortem, we are leveraging these canine cases as a model that combines clinical relevance with mechanistic depth, offering a valuable framework for preclinical pain research.

Session Title: Unequal Pain: Exploring the Impact of Social Disadvantage on Chronic Pain Experiences and Treatment

Session Chair: Carmen-Édith Belleï-Rodriguez
Université de Montréal

Session Abstract

As health disparities grow, understanding how social factors shape chronic pain becomes increasingly urgent. This symposium presents research on the complex interplay between social context, psychological mechanisms, and pain management across diverse populations.

Dr. Bellei-Rodriguez will chair the session, setting the stage by framing the significance of social determinants in chronic pain research and practice. She will provide an overview of key concepts, ensuring the audience has a shared foundation before introducing the speakers.

Dr. Fenan Rassu examines the association between neighborhood disadvantage and pain-related experiences in a pain psychology clinic, with a focus on the mediating roles of pain catastrophizing and fear. His findings reveal how social environments influence psychological responses, exacerbating pain outcomes in disadvantaged communities.

Dr. Nandini Raghuraman investigates the role of socioeconomic position (SEP) in placebo analgesia among individuals with temporomandibular disorders. Her research explores how socioeconomic factors may influence placebo responses, with findings suggesting weaker responses among disadvantaged individuals.

Dr. Matthew Morris applies advanced machine learning techniques to a national dataset, identifying key socioeconomic predictors of high-impact chronic pain. His findings highlight how SEP dimensions influence pain outcomes differently across demographic groups, underscoring the need for personalized pain management strategies.

Together, these presentations illustrate the profound influence of social disadvantage on chronic pain experiences. The symposium offers valuable insights into how disparities emerge and persist by integrating psychological, experimental, and data-driven approaches. An interactive discussion will engage the audience in exploring practical implications and future research directions.

At the end of this session, participants will be able to:

- Identify how socioeconomic factors can affect chronic pain experiences across diverse demographic groups.
- Evaluate the role of psychological mechanisms, such as pain catastrophizing and pain-related fear, in mediating the relationship between social disadvantage and pain outcomes.
- Apply insights from the session to propose equitable pain management strategies and explore approaches to addressing disparities.

Speaker One

Title: Psychological Pathways Linking Neighborhood Disadvantage to Chronic Pain Outcomes: A Mediation Study from a Pain Psychology Clinic

Fenan Rassu
Johns Hopkins University

Abstract

Chronic pain outcomes are significantly influenced by social and psychological factors, with neighborhood disadvantage playing an important role. This study examines how neighborhood-level socioeconomic disadvantage, measured using the Area Deprivation Index (ADI), impacts pain experiences in patients attending a pain psychology clinic. Specifically, we explore whether pain catastrophizing and pain-related fear sequentially mediate the relationship between neighborhood disadvantage and pain outcomes, including pain intensity, fatigue, emotional distress, and interference with daily activities.

Using cross-sectional data from 509 adult patients, sequential mediation analyses revealed that pain catastrophizing alone mediated the relationship between neighborhood disadvantage and all outcomes. Pain-related fear further mediated the effects on fatigue and interference with daily activities but did not significantly mediate pain intensity or emotional distress.

This study provides novel insights into the psychological mechanisms linking neighborhood disadvantage to chronic pain outcomes, offering one of the first clinical applications of these pathways

in a real-world setting. These findings suggest the need to consider both psychological factors and social context when developing pain management approaches for diverse communities. Clinicians should be aware of how neighborhood disadvantage might influence pain experiences through psychological mechanisms such as pain catastrophizing and pain-related fear to better understand how social context shapes pain experiences through psychological mechanisms. Future research should explore these relationships longitudinally to establish causality and explore interventions tailored to the unique needs of socioeconomically vulnerable populations.

Speaker Two

Title: Decoding Pain: How Socioeconomic Position Shapes Endogenous Pain Modulation

Nandini Raghuraman
University of Maryland

Abstract

Socioeconomic disparities significantly affect health outcomes, including pain perception and treatment efficacy. This study investigates the impact of socioeconomic position (SEP) on placebo hypoalgesia, focusing on individuals with chronic temporomandibular disorders (TMD) and pain-free participants. While extensive research has addressed chronic pain and socioeconomic factors, there is a notable gap in understanding their influence on experimental pain and placebo effects. This quasi-experimental study aims to fill that gap by exploring how socioeconomic distress influences pain modulation mechanisms, specifically placebo hypoalgesia.

801 participants were recruited, including 401 TMD patients and 400 pain-free individuals. Participants underwent a placebo manipulation using classical conditioning and verbal suggestion techniques to evaluate placebo hypoalgesia. Socioeconomic status was categorized using latent class analysis based on individual markers (income, education, occupation) and neighborhood markers (Area Deprivation Index, Distressed Community Index). Genetic variations in markers associated with endogenous pain modulation were also analyzed.

Results revealed that SEP distress significantly reduced the placebo effect in TMD patients, with distressed individuals showing lower placebo hypoalgesia compared to those in prosperous SEPs. In contrast, no significant differences were found in placebo hypoalgesia among pain-free participants across SEP groups. Additionally, genetic analysis showed that specific genetic markers, such as OPRM1 and COMT variants, moderated the effects of SEP on placebo hypoalgesia. These findings highlight the need for personalized pain management strategies that account for socioeconomic and biological factors. This research contributes to advancing equitable pain treatment approaches, particularly for populations affected by socioeconomic distress.

Speaker Three

Title: Algorithms to advance health equity: A machine learning approach to evaluate the relative importance of socioeconomic features for classifying high-impact chronic pain

Matthew Morris
Vanderbilt University

Abstract

Lower socioeconomic position (SEP) is associated with worse pain outcomes. However, SEP is a multifaceted construct and there is no consensus on which features are most relevant to high-impact chronic pain and whether the relative importance of these features differs by race and sex. This study

evaluated three machine learning algorithms for classifying high-impact chronic pain among adults in the 2019 National Health Interview Survey. Gradient boosting decision trees achieved the highest accuracy and discriminatory power. Feature importance was examined with Shapley Additive Explanation (SHAP) values. Results revealed that a variety of SEP facets, including income and employment, were among the most important indicators of high-impact chronic pain. SHAP values for these SEP features exceeded those for established chronic pain risk factors such as cigarette smoking and body mass index. Whereas the relative importance of body mass index and owning/renting a residence was higher for Non-Hispanic Black adults, the relative importance of working adults in the family and housing stability was higher for Non-Hispanic White adults. Anxiety symptom severity, body mass index, and cigarette smoking had higher relevance for women, while housing stability and frequency of anxiety and depression had higher relevance for men. Findings highlight the importance of potentially modifiable SEP features for classifying high-impact chronic pain as well as the promise of machine learning algorithms for advancing health equity research. These insights can help doctors and policymakers create more effective pain management strategies tailored to different socioeconomic groups.

Session Title: Parental influences on pain across childhood

Session Chair: Jillian Vinall Miller
University of Calgary

Session Abstract

Pain can profoundly impact both parents and their offspring. Models of intergenerational transmission of pain indicate that pain can impact children through genetic and psychosocial factors. The fetal programing hypothesis outlines that events or stressors occurring during the prenatal period may lead to changes in metabolic, physiological and structural fetal alterations. Stress in the form of pain during gestation may thus influence fetal neurodevelopment. Interpersonal models of stress transmission indicate that parental stress can spillover onto early parent-child interactions through parenting, reactivity, and maladaptive behavior modelling. Thus, both genetic and psychosocial interactions may cumulatively influence developmental outcomes over time. Jenna Jessa (MD/PhD Student in Medical Sciences, University of Calgary) will present findings from her PhD Thesis, examining pain in a maternal cohort throughout the perinatal period and into the postpartum, and implications for infant neurodevelopment. Dr. Rebecca Pillai Ridell (Professor, York University) will present on parental responses to toddler pain-related distress and associations with parents' physiological and psychological responses. Dr. Michelle Gagnon (Associate Professor, University of Saskatchewan) will present on the relationship between parent-adolescent interactions and adolescent pain experiences. Throughout all three studies, the role of parental responses to pain will be explored across the lifespan - in infants, toddlers and adolescents. Clinical insight into parental influences on the optimization of child and adolescent outcomes will be presented.

At the end of this session, participants will be able to:

- Identify the influence of maternal pain in the perinatal and postpartum on infant neurodevelopmental outcomes.
- Describe the spectrum of parent responses to toddler pain-related distress and their associations with parents' physiological and psychological responses in a naturalistic high distress context.
- Explain challenges in parent-adolescent interactions that may occur in the context of adolescent chronic pain.

Speaker One

Title: Pain trajectories in the perinatal period and postpartum amidst the COVID-19 pandemic and associations with infant neurodevelopment.

Jenna Jessa
University of Calgary

Abstract

Introduction: The rapid hormonal and physiological changes occurring during a normal pregnancy give rise to recurrent, and sometimes constant, pain for women. Heightened anxiety and depression amidst the COVID-19 pandemic may have increased the risk of developing chronic pain. Persistent pain for mothers in the perinatal and postpartum period may influence infant neurodevelopmental outcomes. The current study identified pain symptoms from early pregnancy to postpartum in pregnant women and associations with infant neurodevelopment.

Methods: Pregnant women were recruited from across Canada. Sociodemographic variables including parity, BMI, maternal age and education were collected at baseline. Pain intensity, depression, generalized anxiety, and maternal stress were assessed at three timepoints. Mothers completed the first survey during pregnancy and were reassessed at 12 months postpartum and 24 months post-partum. Infants underwent a 3T MRI at Alberta Children's hospital at 12 months. Whole brain diffusion tensor imaging was performed to examine white matter microstructure.

Results: Pain prevalence varied amongst women during pregnancy and into the postpartum, with increasing reports of moderate to severe pain throughout postpartum (9.5% vs 14.0%). Relationships between the maternal pain incidence throughout pregnancy and into the postpartum and infant white matter microstructure will be explored.

Discussion/Conclusions: Distinct groups of pregnant women with varying pain experience throughout pregnancy and into postpartum were identified. Identifying women who are at high risk for experiencing pain symptoms could aid in developing targeted treatment strategies to prevent mothers and their children from chronic pain development and maintenance.

Speaker Two

Title: Understanding Parental Responses to Toddler Pain-Related Distress: Biopsychosocial Dimensions

Rebecca Pillai Ridell
York University

Abstract

Introduction: Young children innately signal caregivers when in pain, and caregivers in turn respond to this distress. These foundational parent responses shape infant pain experience and expression. Therefore, parental responses are an important area to understand when studying infant pain. You cannot understand the infant in pain, without understanding the caregiver. To date, progress toward understanding the mechanisms underlying parents' impact on children's pain expression has been limited by a narrow focus of parents' influence on children.

Methods: The current presentation will present on a new set of analyses of the biological, behavioural, and psychological aspects of parents' responses to their toddler's pain-related distress (n=223). Data from vaccinations over the second year of life will be presented. Study 1 will focus on new research version of a behavioural measure focusing on suboptimal parental behaviours (the OUCH-IE RV). Study 2 will focus on examining change in parent response over a vaccination appointment

Results: Study 1 showed that the OUCH-IE RV shows strong psychometric properties (interrater reliability, internal consistency, convergent and divergent validity). Growth Curve Modelling on parental heart rate variability indicated minor trajectory variability over the appointment that was not associated with parent behavioural responses during the infant vaccination appointment. However, parenting stress was associated with parental cardiac responses. Complex dyadic relationships between suboptimal behaviour and toddler pain-related distress were discerned.

Discussion/Conclusions: Understanding parent-child relational patterns provides significant explanatory power of the variability in the pain experience and pain expression of toddlers.

Speaker Three

Title: Parental response styles to adolescent pain and emotion in the context of adolescent chronic pain

Michelle Gagnon
University of Saskatchewan

Abstract

Introduction: Parent-adolescent communication plays a critical role in adolescent pain experiences. Understanding these interactions may guide improvements in communication. This presentation reports on two studies exploring parental responses to emotions in adolescents with chronic pain.

Methods: In Study 1, 93 parent-adolescent dyads, including 32 adolescents with chronic pain, completed two discussion tasks: one about a worrisome event and another about a pain experience. Parental responses were coded using the Validating and Invalidating Behaviour Coding Scale. Multivariate analyses assessed associations between these behaviors and adolescent outcomes. Study 2 involved parents of adolescents with chronic pain (n = 82), and explored their perceptions of their responses to their adolescents' emotions as well as factors influencing parent-child interactions.
Results: In Study 1, adolescents with chronic pain reported higher pain after both the pain and worry discussion tasks. Although parental validation and invalidation did not differ based on pain status of the adolescent, parental response styles impacted adolescent reported pain and catastrophizing in those with chronic pain. In Study 2, parents described challenges in interpreting and responding to their adolescent's emotions and pain and a desire for practical strategies to manage their child's emotions and their own reactions.

Discussion/Conclusions: Study 1 suggests that parental responses to pain and non-pain events may shape adolescent pain outcomes, while Study 2 highlights the challenges parents face in addressing adolescents' emotions and pain. These findings emphasize the need for tools to support parent-adolescent communication and emotional coping. Clinical implications and future research directions will be discussed.

Session Title: Challenges and opportunities in conducting clinical trials for virtual reality (VR) in people with acute and chronic pain.

Session Chair: Guilia Mesaroli
The Hospital for Sick Children

Session Abstract

Clinical trials for virtual reality (VR) to manage pain date back nearly 30 years with significant acceleration in the past 10 years. VR is an attractive non-pharmacological pain intervention with several theorized mechanisms of action (e.g., cognitive, emotional, physical/behavioral targets), but these are not fully understood. The existing literature has largely focused on adult populations demonstrating the effect of VR in reducing pain intensity in acute and procedural pain populations. Emerging research on VR for pain are evaluating the effects of VR on pain-related outcomes beyond pain intensity (e.g., anxiety, function) and are additionally testing VR as a treatment for recurrent and chronic pain conditions. Current research efforts are fraught with challenges including inability to blind participants to the intervention, technological advances that outpace research, navigating industry partnerships, ensuring clinical adoption, Equity, Diversity & Inclusion (EDI) issues in recruitment and sustainability. This workshop will provide an overview of the current state of the evidence of VR for pain (acute and chronic), highlight emerging research efforts to test VR for pain in understudied populations with novel outcomes, and critically discuss challenges and opportunities to enhance methodological rigor in this field.

At the end of this session, participants will be able to:

- Discuss methodological challenges in VR clinical trials for pain and examine methods to enhance rigor and mitigate bias
- Identify challenges and opportunities to include neurodivergent population in VR pain research
- Compare novel approaches to measure safety, feasibility and effectiveness of VR for acute and chronic pain that extend beyond measuring pain intensity

Speaker One

Title: Enhancing Virtual Reality Use in Pediatric Chronic Pain Rehabilitation

Courtney Wynne Hess
Stanford University School of Medicine

Abstract

Introduction: Limited research exists to guide VR use in pediatric chronic pain populations yet initial studies signal the potential utility of VR in this population. To support youth with chronic pain VR needs to be implemented over time and in a rehabilitation setting, yet clinical feasibility and acceptability in this setting is minimally understood. We examined feasibility and acceptability of VR in the rehabilitation setting according to youth, caregivers, and physiotherapists.

Method: Youth (n=29), caregivers (n=7), and physiotherapists (n=5) who participated in an ongoing VR trial were asked to complete the VR acceptability questionnaire and individual interviews to assess feasibility and utility of VR. Descriptive statistics were used to describe VR acceptability and content analysis was used to code interview transcripts.

Results: Most youth (15/21; 71%) reported using VR in their physio session only 1 or 2 times. Most youth (22/26; 85%) stated that VR was very easy or easy to use, and most youth reported that they enjoyed VR

(10/23; 43%), or enjoyed VR a little (8/23; 35%). Youth, caregiver, and physiotherapist interviews revealed several barriers (e.g., expectation violations, missing the optimal treatment window) and facilitators to VR engagement (e.g., viewing VR as a bridge to achieving treatment goals, champion collaborators).

Discussion/Conclusions: Engagement with VR was variable and qualitative analysis revealed the importance of considering the interaction between the individual, context, and technology to optimize uptake. We will discuss these findings as they can inform future trial design and improve clinical implementation for VR in pediatric chronic pain populations.

Speaker Two

Title: Use of Virtual Reality in Neurodivergent Children for Fear and Anxiety Management During Dental Treatments: VR-TOOTH Pilot Trial

Julien Gardner
University of Montreal, CHU Sainte-Justine Research Centre,

Abstract

Introduction: Dental fear and anxiety (DFA) is a condition that affects approximately a quarter of children and adolescents and represents a challenge with neurodivergent children. It can lead to end appointments prematurely, reschedule or consider pharmacological treatment. Immersive Virtual reality (VR) could be a potential non-pharmacologic adjunct to manage DFA in neurodivergent children undergoing dental procedures.

Methods: Pilot randomized controlled trial with two groups: Control (muted cartoons on wall-mounted TV) and Experimental (VR game). Main outcomes were patient recruitment and completion rates + parental and healthcare professionals (HCP) satisfaction. We used the Venham Anxiety and Behavior Rating Scales (VABRS; 0-5) and salivary alpha amylase (SAA-stress biomarker). Descriptive and non-parametric mean comparisons tests were used for analyses using an alpha of 0.05.

Results: Out of 36 patients, 25 (69.4%) accepted to participate (13 randomized to the VR group and 12 in the Control group). Mean age of participants was 10.2 (± 2.8) years and 64% were males. Overall, 77% (10/13) of participants in the VR group tolerated the headset during the whole procedure. All of the HCPs indicated they would use VR again and parents' mean satisfaction score rated 8/10. No significant differences on the VABRS and SAA mean difference ($p > 0.05$).

Discussion/Conclusions: This pilot study showed that VR was feasible and acceptable for a majority of neurodivergent children during dental treatments. Parents and HCPs were highly satisfied. A full trial is on-going to verify the efficacy of VR with the same population and context of care.

Speaker Three

Title: Enhancing Methodologic Rigor in Open-Label Trials

Naveen Poonai
Children's Health Research Institute

Abstract

Introduction: Open-label designs are often unavoidable in clinical trials that involve the use of technological innovations to mitigate pain and distress. This is particularly true of studies of virtual reality (VR) technology. Ideally, blinding would involve a double-dummy approach where all participants would receive all interventions; only one of which would be an active intervention. However, this would add complexity and risk increasing distress, particularly in young children.

Methods: We conducted a 3-arm, open-label trial comparing VR, tablet distraction, and non-technologic distraction (books, bubbles, etc.) in 200 pediatric cancer patients 5-17 years of age undergoing port-a-cath access. Primary outcome was the Observational Scale of Behavioral Distress-Revised (OSBD-R) during access.

Results/Measures to Mitigate Bias: Bias associated with the open-label design was mitigated using outcome assessors without medical training and screened to rule out preconceived notions about the efficacy of the interventions or experience with VR technology. They scored the OSBD-R using videos so they could be remote from the clinical encounter and not privy to discussions regarding the medical team’s beliefs about efficacy. We used a published training program for outcome assessors to optimize consistency and uniformity in scoring. The training language was agnostic about which intervention is believed to be superior or most frequently used. We used the most objective tool (OSBD-R) to measure behavioral distress. Outcome assessors scored the presence or absence of behaviors that lacked subjective interpretation.

Discussion/Conclusions: Open-label trials can provide meaningful data but measures to mitigate bias in outcome assessments are study-specific and require careful consideration.

Session Title: Intersection of Pain and Substance Use: Highlighting the Need for Integrated Care

Session Chair: Hance Clarke
University Health Network, Toronto General Hospital, University of Toronto

Session Abstract

Pain and substance use frequently co-occur and operate in a positive feedback loop that maintains and exacerbates both conditions over time. In this symposium, led by a multidisciplinary panel of speakers (i.e., physicians, psychologist, patient with lived experience), we will explore theoretical models of pain-substance use relationships, present evidence across substances (e.g., alcohol, opioids, cannabis) and populations, and present clinical implications and recommendations for integrated care. First, Dr. Callon Williams will provide an overview of the leading pain and substance use theoretical models, using empirical evidence among emerging adults to highlight how these relationships may first emerge. Next, Dr. Hance Clarke will share considerations for and challenges of treating co-occurring opioid use disorder and chronic pain through research and clinical data, while highlighting the need for integrated treatment approaches and care. Third, Dr. Andrew Smith will describe the Interprofessional Pain and Addiction Recovery Clinic (IPARC) at CAMH, a gold-standard for integrated pain and substance use care. He will also provide clinical recommendations for assessing and treating co-occurring pain and substance use conditions (e.g., alcohol use disorder). Finally, a person with lived experience (PWLE) will share their journey through the IPARC.

At the end of this session, participants will be able to:

- Identify key theoretical models explaining the relationship chronic pain and substance use, with a focus on developmental and transdiagnostic factors that contribute to the onset and maintenance of these conditions.
- Recognize the unique clinical needs and challenges in treating co-occurring chronic pain and substance use disorders, particularly in individuals receiving opioid agonist therapy.
- Describe the need for integrated approaches in pain and addiction care, incorporating insights from a PWLE, and how integrated care can improve treatment outcomes.

Speaker One

Title: Theoretical Models of Pain and Substance Use: Evidence from Emerging Adulthood

Callon M. Williams
University Health Network, Toronto General Hospital

Abstract

Introduction: Emerging adulthood (18-24 years) is a salient developmental for the initiation and escalation of alcohol and cannabis use. Pain is also highly prevalent among emerging adults, and research indicates pain is a unique motivator for substance use among this population. The aim of this talk is to summarize the primary pain-substance use theoretical models while highlighting current evidence for pain, alcohol, and cannabis use associations among this high-risk population.

Methods: Results from published papers among emerging adult college students, college student-athletes, and a nationally, representative cohort will be summarized and presented.

Results: A growing, albeit predominantly cross-sectional literature, indicates emerging adults with greater pain report greater alcohol consumption, experiencing more alcohol-related consequences, and engaging in more hazardous cannabis use. Several hypothesized transdiagnostic factors (i.e., processes contributing to the onset, maintenance, and worsening of multiple conditions) help explain these relationships, such as pain catastrophizing and expectancies. Finally, initial longitudinal evidence also suggests that pain predicts cannabis initiation and engagement in past-month alcohol-cannabis co-use.

Discussion/Conclusions: Clinicians working with emerging adults in substance use settings may wish to assess levels of pain, and similarly, those working with emerging adults in pain clinics may want to assess substance use behaviours and specific pain-related motives. Future research should continue to examine these relationships longitudinally.

Speaker Two

Title: Critical Gaps in Care for Co-Occurring Pain and Substance Use

Hance Clarke
University Health Network, Toronto General Hospital, University of Toronto

Abstract

Introduction/Aim: Chronic pain and substance use are both highly prevalent, frequently co-occur and pose significant public health concerns. When pain and substance use disorders co-occur, they are associated with even poorer outcomes than either condition alone across a wide range of indicators. People with chronic pain and substance use disorders experience poorer health, worse physical, mental, and social functioning, and lower health-related quality of life, compared to either condition alone, as well as higher levels of opioid misuse, suicidal ideation, and an increased risk of opioid overdose.

Methods: This talk will present recent data that identifies a definite gap in access to care for Canadian patients struggling with chronic pain and concurrent substance use disorders that require pain care (and vice versa).

Results: Recent longitudinal data identifies that a lack of appropriate pain care for patients that are struggling lead to increased relapse for patients that have been placed on opioid agonist therapy.

Discussions/Conclusions: These findings highlight will highlight the critical need for integrated care for patients with chronic pain and co-occurring substance use disorders, and future research and clinical directions will be presented.

Speaker Three

Title: IPARC - An Interprofessional Model of Integrated Pain and Addiction Recovery

Andrew J Smith
Centre for Addiction and Mental Health, University of Toronto

Abstract

Introduction: The Canadian Pain Task Force, in its final report, Action Plan for Pain in Canada (2021) identified the marginalization of people who use drugs, underlined how untreated chronic pain is a driver of the opioid crisis at the societal level, and is a powerful trigger to relapse and ongoing use of substances and an impediment to recovery at the individual level. CPTF called for system integration in which people with chronic pain and substance use disorders receive the care they need in whatever setting they present.

Methods: In this talk, we present the work of an interprofessional pain and addiction recovery clinic (IPARC) situated in an academic teaching hospital which seeks to implement a trauma- and equity-informed model of comprehensive care while also sharing care and transferring skills to primary care providers in the community. A person with lived experience will share their experiences in IPARC.

Results: Patient reported outcomes along with other data show that integrated pain and substance use care improve function and quality of life and reduce substance-related harms.

Discussion/Conclusions: These findings underline the importance of integrated care for patients with chronic pain and concurrent substance use and mental health conditions. Future opportunities for further system integration including leveraging virtual care and knowledge translation will be presented.

Concurrent Session Four

Session Title: The Hippocampus, and implicit and explicit memories of stress and pain.
Session Chair: Brittany Rosenbloom
Women's College Hospital

Session Abstract

Chronic pain affects 1 in 5 individuals in Canada. Stress and pain memories contribute to the development of chronic pain. Both chronic pain and chronic stress follow a similar behavioral pattern, both marked by the inability to extinguish negative memories. The hippocampus is a brain region central to memory formation. Stress disrupts performance on hippocampal-dependent memory. Therefore, the investigation of the hippocampus, stress, and negative memories can provide valuable insights into our understanding of the brain mechanisms involved in both chronic pain and stress. Dr. Brittany Rosenbloom (Associate Scientist, Women's College Hospital), expert in pain across the lifespan will chair the symposium. Dr. Tim Oberlander (Professor, University of British Columbia) will present on findings from a longitudinal study that illustrates a lasting 'fetal serotonergic programming' effect on HPA stress regulation across childhood. Karen Cobos (PhD student in Neuroscience, University of Calgary) will present findings from her PhD work, investigating the role that the hippocampus and negative memories of pain play in the development of chronic post-surgical pain in youth. Dr. Massieh Moayedi (Associate Professor, University of Toronto) will present findings from two meta-analyses investigating hippocampal activation in both acute and chronic pain, highlighting the role of the hippocampus in pain processing, as well as a study in the UKBiobank linking chronic widespread pain, stress and adversity. These three studies will explore the factors that contribute to the development of chronic pain and stress - from intrauterine exposures to neurobiological and life experiences.

At the end of this session, participants will be able to:

- Describe the impact of prenatal maternal depressed mood and SSRI antidepressant exposure on hypothalamic pituitary adrenal (HPA) (stress/diurnal) regulation across childhood.
- Recognize how hippocampal brain efficiency prior to surgery is important to the development of chronic post-surgical pain in youth.
- Explore how the hippocampus plays an important role in the transition from acute to chronic pain.

Speaker One

Title: Hypothalamic pituitary adrenal (HPA) stress responses across childhood, following prenatal exposure to antidepressants and maternal mood disturbances
Tim Oberlander
University of British Columbia

Abstract

Introduction: Long before birth, the neurotransmitter serotonin (5HT) is already shaping development of the hypothalamic-pituitary-adrenal (HPA) system, which plays a role in mediating relationships between stress and chronic pain. Prenatal depressed mood and exposure to serotonin reuptake inhibitor antidepressants (pSRI) affects central 5HT signaling, which could conceivably alter HPA development and stress regulation across childhood.

Aim: This session will present findings illustrating associations between pSRI exposure, prenatal maternal mood and genetic variations for SLC6A4 (encodes the serotonin transporter) and HPA stress regulation across childhood.

Methods: In a longitudinal cohort, following mothers and their children from the second trimester through to the child's 18th year, we investigated the impact of prenatal maternal mood, pSRI exposure and the child's SLC6A4 genotype (which encodes the serotonin transporter) on HPA responses to everyday and lab-stress challenges in children of mothers with prenatal depression (SRI/non-SRI treated).

Results: At 3 months, lower stress and diurnal cortisol levels were observed following pSRI exposure and were dependent on breastfeeding status. At 6 years, heightened diurnal cortisol levels in everyday and lab challenge settings were observed in boys of mothers depressed prenatally. Lower stress-related cortisol levels were observed in pSRI-exposed and among those with LG/S alleles (increased intrasynaptic 5HT). These findings contrast with diurnal cortisol patterns observed at 12 and 18 years.

Discussion/Conclusions: Our data suggest that there are distinct and sustained 'fetal serotonergic programming' effects on HPA stress regulation during childhood associated with pSRI exposure, prenatal maternal mood as well as genetic variations for SLC6A4.

Speaker Two

Title: Hippocampal Efficiency and Pediatric Post-Surgical Pain in Youth.

Karen Cobos
University of Calgary

Abstract

Introduction: Every year, millions of youth require surgery. Approximately, 1 in 5 youth who undergo major surgery will experience chronic post-surgical pain. The development of chronic postsurgical pain appears to be linked to pain memories. Memories of pain set the stage for future pain experiences. However, memories can easily become distorted. Remembering pain as being worse than previously reported has been associated with the development of chronic postsurgical pain. The hippocampus is a brain region known to play a role in memory formation. However, the extent to which the hippocampus plays a role in the shift from acute to chronic postsurgical pain in youth is not known.

Aim: This study investigated baseline hippocampal functional connectivity in relation to pain intensity and interference at 7-days and 4-months post-surgery, accounting for age, sex, baseline pain, memories of pain post-surgery and mental health factors.

Methods: 55 youth between 10-18 years of age requiring major surgery were recruited. An MRI scan was acquired at one-to-four weeks prior to surgery (baseline), and questionnaires about pain intensity and interference were acquired at baseline, and again at 7-days and 4-months post-surgery. Memory interviews were conducted 1-month post-surgery.

Results: Hippocampal global and local efficiencies were negatively associated with pain interference 7-days after surgery. Next, will examine whether baseline hippocampal efficiency together with negatively pain memories predict pain intensity and pain interference scores 4-months post-surgery.

Discussion/Conclusions: Findings from this study provide evidence for the role of the hippocampus in the transition from acute to chronic post-surgical pain.

Speaker Three

Title: Contributions of the Hippocampus to the Experience of Acute and Chronic Pain

Massieh Moayedi
University of Toronto

Abstract

Introduction: Evidence suggests that the hippocampus, canonically involved in memory, may play an important, yet unspecified role in pain. We aim to determine whether acute and chronic pain are associated with hippocampal activity and connectivity. Furthermore, we aim to determine whether hippocampal structure is associated to the spread of MSK pain, and whether this relationship is mediated by stress genes and adversity. Together, these studies provide an overview of pain-related hippocampal activity, and the contribution of hippocampal structure to MSK pain spread.

Methods:
Study 1: A systematic review and meta-analysis of brain imaging studies that reported pain-evoked hippocampal activation.
Study 2: A systematic review and meta-analysis of brain imaging studies of abnormal hippocampal activity in chronic pain.
Study 3: A multiple regression analysis to determine the relationship between hippocampal volume and MSK pain spread, and the contribution of a risk allele of a stress-regulating gene, FKBP5, and the number of reported adverse childhood events (ACEs).

Results: We show that noxious stimuli evoke anterior hippocampal activity. We further show abnormal hippocampal activity in chronic pain. Finally, we show that the relationship between hippocampal volume and MSK pain spread is mediated by the number of risk alleles, and moderated by reported number of ACEs.

Discussion/Conclusions: Based on these three studies, and drawing from evidence in the literature, we propose models for the role of the hippocampus in acute and chronic pain.

Session Title: Moving beyond risk: Multiple approaches to understanding resilience to pain

Session Chair: Max Slepian
Department of Anesthesia and Pain Management, Toronto General Hospital, University Health Network

Session Abstract

Resilience in the context of pain is a complex and multidimensional construct. Pain resilience can be defined as the ability to effectively recover from pain, to maintain positive physical and emotional functioning despite pain, and to experience positive growth despite pain. With increasing recognition that the study of resilience is critical to understanding and treating pain, varied approaches have been taken to characterize pain resilience. This symposium will introduce approaches to the study of resilience at three different levels of analysis: intrapersonal, mechanistic, and interpersonal. Dr. Max Slepian will critically review the concept of intrapersonal resilience, describe a program of research featuring the Pain Resilience Scale, a self-report measure of dispositional resilience, and present a resilience-vulnerability framework for incorporating pain resilience alongside other commonly studied pain-related psychosocial measures. Anna Waisman will outline a neurocognitive model of memory as a mechanism of resilience in adults and will identify promising treatment targets to prevent the development of chronic pain. Dr. Lakeya McGill will situate resilience in a social-ecological framework. She will describe research on the impact of discrimination on pain outcomes and qualitative descriptions of resilience mechanisms for individuals with sickle cell disease. Including a focus on resilience, in addition to risk and vulnerability, is critical to moving forward the field of pain research and management. This symposium will enable audience members to develop a broad understanding of resilience-focused pain research and consider applications for strengths-based approaches for future research and novel pain management strategies.

At the end of this session, participants will be able to:

- Critically evaluate the concept of pain resilience and measurement of resilience.
- Identify cognitive and neural processes underlying autobiographical memory as a mechanism of resilience to chronic pain.
- Explain how resilience is shaped by the interaction between individuals and broader social systems, including families, communities, and institutions, within the context of acute and chronic pain.

Speaker One

Title: What is Pain Resilience? Conceptual overview, measurement, and models of resilience in the context of pain.

Max Slepian
Department of Anesthesia and Pain Management, Toronto General Hospital, University Health Network

Abstract

The concept of resilience has been a focus of pain research for nearly twenty years, incorporated from, and developing alongside, resilience-focused research in psychopathology and stress. Yet, operational definitions of resilience lack consensus. Is resilience a trait or a state? A disposition or a process? Does resilience exist within a person or is it a feature of the environment or system within which a person lives? Dr. Slepian will present a brief overview of resilience research and address conceptual issues in the definition of pain resilience. Self-report measures of general resilience will be briefly discussed, and the Pain Resilience Scale (PRS) will be introduced as a pain-specific measure of intrapersonal, dispositional resilience. The PRS is a 14-item self-report measure that includes two subscales, Behavioural Perseverance and Cognitive-Affective Positivity. The PRS has been extensively validated as a trait-like measure in both healthy adults and for individuals with chronic pain. Dr. Slepian will also review evidence from cross-cultural validation studies of the PRS, studies of the PRS in several clinical populations (e.g. chronic musculoskeletal pain, postsurgical pain, HIV), and research on interactions between experiences of discrimination and PRS responses. Dr. Slepian will introduce a resilience-vulnerability framework for pain, which incorporates pain resilience alongside commonly studied pain-related psychosocial factors, such as catastrophic thinking about pain, kinesiophobia, and acceptance. Future directions in research on pain resilience will be presented, including prospective research examining prediction of chronic pain development, laboratory research on resilience and endogenous pain modulation, and development of resilience-focused interventions.

Speaker Two

Title: Understanding the role of memory and its neural basis in resilience to chronic pain

Anna Waisman
Department of Psychology, York University

Abstract

Chronic pain affects approximately 20% of the world’s population, exerting a substantial burden on the individual and healthcare systems. Identifying factors that promote resilience and prevent chronic pain are crucial. Cognitive mechanisms underlying memory and their neural basis in the brain have been heavily implicated as critical resilience features. Recent research highlights differences in autobiographical memory for painful experiences in individuals with chronic pain, and autobiographical memory specificity has also been found to protect against the onset of chronic pain after surgery. Ms. Waisman will examine the role of emotional processing of memory in chronic pain development. Next, she will review neuroimaging findings that reveal structural and functional alterations in brain regions responsible for autobiographical memory processing, namely the hippocampus, in the transition to pain chronicity. Gender differences in memory and hippocampal function, and their implications will be discussed. Ms. Waisman will then synthesize these findings by introducing a neurocognitive framework for chronic pain. One aspect of the framework will address the role of memory schemas, outlining how these associative networks in the brain guide one’s interpretations of their experiences, shape their sense of identity, and consequently influence physical functioning and recovery. She will explore how this research can inform interventions for the prevention of chronic pain, by promoting contextualization of autobiographical memories and the integration of painful experiences into adaptive schemas. Ms. Waisman will discuss how fostering positive self-schemas by targeting autobiographical memory can enhance the processing of painful experiences, support self-image, and promote adaptive functioning in the world.

Speaker Three

Title: Resilience in Context: How Social and Environmental Factors Shape Experiences of Pain and Sickle Cell Disease

Lakeya McGill
Division of General Internal Medicine, School of Medicine, University of Pittsburgh

Abstract

Resilience in people living with pain is a multifaceted and dynamic process shaped by broader social, cultural, and environmental factors, not merely personal characteristics. Dr. McGill will contextualize resilience within a social-ecological framework: she will emphasize the ever-changing interactions between individuals and various systems - families, communities, and institutions - that can strengthen or impede resilience. She will also present multi-level factors that promote resilience (e.g., social support and healthcare access) and mitigate risk (e.g., stigma and discriminatory policies) among people living with pain.

For people living with sickle cell disease (SCD), resilience is particularly critical, as individuals with SCD frequently encounter acute and chronic pain alongside stigma, discrimination, and other sociopolitical risks. This presentation will highlight findings from a recent qualitative study examining the impact of intersectional stigma (e.g., based on race, gender, or chronic condition) on adults living with SCD.

Participants in this study shared how they cope with and resist these challenges by drawing on social support from their families and communities. The study demonstrates strategies people with SCD use to navigate multiple forms of stigma and discrimination while fostering resilience.

Overall, this presentation challenges the idea of resilience as an individual trait or disposition and calls for a more comprehensive understanding of how broader systems and structures shape people's experiences with pain.

Session Title: Innovative Approaches to Deliver Chronic Pain Care to the Right Person, at the Right Time, in the Right Place

Session Chair: Vina Mohabir
The Hospital for Sick Children

Session Abstract

Chronic pain is incredibly common in Canadians and poses a significant burden to the healthcare system. Chronic pain is not a uniform disease - there are over 100 chronic pain diagnoses with a constellation of biopsychosocial factors that contribute to an individual's pain experience. Managing chronic pain cannot use a one-size-fits-all approach. There is evidence to support multiple treatment modalities but delivering treatment in a timely and equitable manner to high volumes of patients is challenging and requires coordination from primary to tertiary care. Our panel will present innovations to deliver care across the spectrum of the health care system in pediatric and adult populations.

At the end of this session, participants will be able to:

- Describe the role and importance of physiotherapists in interprofessional team-based care in primary care, specialist care and emergency departments to manage patients with chronic pain.
- Discuss the development and implementation of a digital platform (Power Over Pain Portal) to provide access to evidence-based chronic pain resources to people living with pain across the lifespan and levels of care.
- Describe the development and testing of a novel screening tool (Pediatric PainSCAN) to identify patients with neuropathic pain and complex regional pain syndrome to expedite access to tertiary-level pediatric chronic pain care.

Speaker One

Title: Physiotherapists in Interprofessional Teams to Manage Musculoskeletal Pain

Andrews Tawiah
Western University

Abstract

Introduction: Despite strong evidence supporting interprofessional care for patients with chronic pain, patients cannot access these services due to limited access to primary care providers leading to overcrowding in emergency departments and urgent care centres (UCC). One potential solution is to build wider interprofessional teams with physiotherapists to provide more accessible interprofessional care. We integrated physiotherapists as part of the interprofessional team in an UCC to manage patients with musculoskeletal pain.

Aim: To understand the experiences and perceptions of patients who were managed by a physiotherapist in an UCC.
Methods: We conducted a parallel convergent mixed-method study. Phase 1 was a cross-sectional survey to explore the acceptability, satisfaction, and perceived value of the physiotherapists. Phase 2 was a follow-up interview with a subset of the patients to capture deeper meanings of their experiences.

Results: 191 patients completed the survey (54% female, 45% male, 1% self-identified), mean age of 44 (SD:18). 91% of patients were satisfied with the treatment they received, and 83% perceived that they spent a reasonable amount of time in the UCC. Thirteen (13) interviews were conducted. The themes developed included (1) improved access to PT, (2) collaboration between PT and ED doctors (3) reduction in time spent at the UCC, (4) the potential of not getting diagnostic imaging, and (5) limited follow-up support.

Discussion/Conclusions: Physiotherapists in interprofessional teams have the potential to positively impact patient care, experiences, and wait times. This study could inform the development of future interprofessional teams to manage patients living with pain.

Speaker Two

Title: Power Over Pain Portal: Development and implementation of a digital platform for pain management resources

Yaad Shergill
The Ottawa Hospital Research Institute

Abstract

Introduction: The Power Over Pain Portal is an innovative digital platform designed to improve access to pain management resources for patients, caregivers, and healthcare providers. By centralizing educational materials, and tools, the Portal addresses significant gaps in pain management, particularly for underserved communities. The aim is to streamline access to evidence-based resources, enhancing support for those impacted by chronic pain, mental health, and substance use health.

Methods: To develop the portal, an adult and youth advisory committee of individuals with lived experience was formed to guide its creation, ensuring the Portal addressed real-world challenges in chronic pain, mental health, and substance use. This committee collaborated on the design, organized committee meetings, and contributed insights into lived experiences that informed portal content and features. An environmental scan was conducted to identify existing resources, which the advisory committee further refined and prioritized for inclusion. Usability and acceptability testing included youth and adults.

Results: Results indicated a high demand for comprehensive, user-friendly resources, with positive feedback regarding accessibility and relevance. Enhanced access to practical tools for managing pain and mental health, along with navigation support, were noted as key benefits. The Portal has reached over 230,000 Canadians.

Discussion/Conclusions: The Power Over Pain Portal is a valuable addition to the landscape of pain management resources, reducing barriers to information and support for vulnerable populations. By continuing to gather user feedback and adapt resources, the Portal aims to improve its reach and effectiveness, supporting broader, timely access to pain management resources across Canada.

Speaker Three

Title: Development and testing of the Pediatric PainSCAN©: A novel screening tool for pediatric neuropathic pain and complex regional pain syndrome

Giulia Mesaroli
The Hospital for Sick Children, The University of Toronto

Abstract

Introduction: Neuropathic Pain (NP) and complex regional pain syndrome (CRPS) are particularly challenging pain conditions to diagnose and treat in children, often require tertiary-level care. Screening tools are a simple and inexpensive way to identify children with potential disease, to expedite access to specialist care. Through a phased approach (including clinicians, researchers, and patients), we have developed the first pediatric screening tool for NP and CRPS: Pediatric PainSCAN©. Our current study phases aimed to determine: (1) the final item pool, (2) scoring, and (3) measurement properties.

Methods: Aim 1: Single-centre survey was administered to patients and clinicians. Participants rated the importance of each item; the highest rated items were retained in the final version of the tool. Aims 2-3: Multi-centre survey administered to patients with NP, CRPS and other pain conditions. Survey 2 asked participants to complete the Pediatric PainSCAN© amongst a battery of pain-related measures. Participants were asked to repeat the survey 1 week later.

Results: Aim 1: Nineteen items were selected for inclusion in the final version of the tool. Aim 2-3: Each sub-scale of the tool had acceptable criterion validity (Area Under the Curve >0.7) and test-retest reliability (Intra-class correlation coefficient >0.7). For each subscale, a cut-off score was identified with the corresponding sensitivity and specificity profile.

Discussion/Conclusions: Our research findings indicate the Pediatric PainSCAN© has sufficient validity and reliability to support its use in clinical settings. Implementation in clinical practice will be discussed. Future research is needed to evaluate feasibility and impact on clinical practice.

Session Title: Finding our NICHE: Lessons Learned from the Pediatric Pain Pilot in Northwestern Ontario

Session Chair: Virginia McEwen
NOSM University, St. Joseph's Care Group in Thunder Bay, Thunder Bay Regional Health Sciences Centre

Session Abstract

This session will highlight how this pilot program not only met the demand for local, specialized care, but also had a positive impact on the lives of children living with pain in the Northwestern Ontario.
This project demonstrates the feasibility of localized pediatric pain care in an underserved region and the findings from the pilot will inform future programming and advocacy efforts, with a goal of obtaining permanent funding. The session will discuss both the successes, and the challenges encountered, such as the spirit of rural generalism and capacity to provide care across the lifespan discovered as strengths. By sharing these insights, the session will contribute to ongoing efforts to improve equitable

access to pain care for children across Canada, and as a possible model for care outside of larger tertiary health centres.

At the end of this session, participants will be able to:

- Review a model of providing pediatric chronic pain care that could be applied to other communities.
- Apply a strengths-based approach to maximize existing resources, building resilience, and positive problem-solving to improve quality of pain care for children by reflecting on the experience of the Northwestern Ontario pediatric pain pilot program.
- Consider elements of the pilot program that could inform improving equitable access to pediatric pain care in any part of Canada, while learning from the challenges experienced by the pilot.

Speaker One

Title: Grassroots work in launching a pediatric pain pilot program and reflections on outcomes

Virginia McEwen
NOSM University, St. Joseph's Care Group in Thunder Bay, Thunder Bay Regional Health Sciences Centre

Abstract

This section of the three-part presentation will introduce the Northern Interdisciplinary Centre for Health Excellence (NICHE) initiative project, that was born out of the need for locally accessible pediatric pain care in Northwestern Ontario.

A description of how the program was developed and delivered, including the virtual pain education series offered to the youth, will be outlined, followed by the results of the pilot. Demographics of participants, pain diagnoses, and referrants are described. Insights from the team members delivering care on our strengths and challenges both highlight inequities but simultaneously sources of strength.

Speaker Two

Title: Leveraging minimal resources and nurturing key relationships for maximal impact

Tara Kydd
George Jeffrey Children's Centre, Thunder Bay

Abstract

During this second part of the presentation, the focus will be on how minimal resources were maximized to optimize the reach of the pilot program, and how relationship-building created new opportunities to improve program development, both for the initial pilot but possible future permanent programming. Concerns over possible lack of expertise, or inability to recruit providers skilled in both chronic pain care and scope for pediatric patients were later countered by the discovery of inherent strengths in team members ability to provide care across the lifespan.

Speaker Three

Title: Voices that matter – telling the story of the lived experience of one youth living with pain

Jen Cano
George Jeffrey Children's Centre, St. Joseph's Care Group, Thunder Bay

Abstract

In the final component of the symposium, reflecting on the experience of the pilot from the perspective of the participant, one participant's story will be highlighted to amplify the voice of someone that is the key reason the project was undertaken - to serve children living with pain in Northwestern Ontario. The participant will share her story, describing the year she experienced chronic pain prior to the pilot program, barriers faced to care, her experience with the program, and her message to care providers, policy makers, and others living with chronic pain.

Session Title: Breaking the Cycle of Chronic Pain: The role of IV Bisphosphonates in CRPS management

Session Chair: Christine Lamontagne
University of Ottawa, CHEO

Session Abstract

The management of Complex Regional Pain Syndrome (CRPS) remains a significant challenge due to its complex pathophysiology and resistance to conventional therapies. Recent evidence suggests that intravenous (IV) bisphosphonates, known for their role in bone metabolism, may provide effective pain relief in CRPS patients. This workshop will explore the rationale, evidence, and clinical application of IV bisphosphonates for CRPS treatment.

The session will begin with an overview of CRPS, focusing on the underlying mechanisms of pain and bone pathology that support the use of bisphosphonates. Following this, the pharmacology and mechanism of action of IV bisphosphonates will be reviewed, emphasizing their role in modulating bone resorption and alleviating pain.

A comprehensive review of current clinical evidence will be provided, highlighting key studies and the outcomes of IV bisphosphonate therapy in CRPS patients. Attendees will gain insights into patient selection, treatment protocols, and managing side effects in clinical practice.

Participants will also engage in a case study presented by a patient partner with lived experience allowing for discussion on practical implementation and challenges in using IV bisphosphonates. The workshop will conclude with a focus on future directions for research, addressing gaps in the current literature and encouraging further investigation.

This workshop aims to equip clinicians with the knowledge and tools to effectively integrate IV bisphosphonate therapy into the management of CRPS, offering a potential new approach to improving patient outcomes.

At the end of this session, participants will be able to:

- Review of Current Evidence and present the clinical studies and evidence supporting the use of IV bisphosphonates in the management of CRPS. Discuss the strengths and limitations of current studies, and any gaps in knowledge or ongoing research.

- Provide guidelines for the appropriate patient selection for IV bisphosphonate therapy. Discuss protocols for administration, including dosing, monitoring, and managing potential side effects.
- Engage participants in a case study to apply the knowledge gained during the session. Facilitate discussions on the challenges of implementing IV bisphosphonate therapy in real-world practice

Speaker One

Title: How do bisphosphonates work for CRPS?

Leanne Ward
University of Ottawa, CHEO

Abstract

Understanding CRPS and Pathophysiology will provide a brief lecture on the disease, its symptoms, and current treatments, focusing on the bone and pain connection.
Mechanism of Action of Bisphosphonates provides a short presentation explaining how bisphosphonates work, particularly in pain management and bone metabolism.

Speaker Two

Title: From evidence to practice

Nicole Fakhory
University of Ottawa, CHEO

Abstract

Review of Clinical Evidence: Presentation of clinical trials and case reports that show the effectiveness of IV bisphosphonates for CRPS, followed by Q&A session to clarify any doubts on the evidence presented.

Clinical Application and Protocols: Interactive segment on selecting the right patients, dosing protocols, and managing the treatment process followed by discussion on managing side effects and complications.

Speaker Three

Title: Case Study and group discussions

William Dagg
University of Ottawa, CHEO

Abstract

Present a complex CRPS case treated with IV bisphosphonates through patient partner testimonials and nurse practitioner's experience. The aim is to discuss treatment options, challenges, outcomes, and share insights.

Concurrent Session Five

Session Title: Changing the Paradigm of Chronic Pain through Storytelling
Session Chair: Q. Jane Zhao
Toronto Rehabilitation Institute, University Health Network

Session Abstract

In this interactive symposium, we explore the art and science of storytelling through three innovative methods: narrative medicine, graphic medicine, and reader's theatre. Narrative medicine is an interdisciplinary field that emphasizes the importance of patient narratives in healthcare, applying aspects of literature and storytelling to clinical practice. Graphic medicine is the use of comics, image, and text in the discourse of healthcare, including stories of healthcare delivery, illness experiences, caregiving and care receiving. Reader's theatre is a style of theatre where participants collaborate in dramatic readings of narrative material without costume or stage (props, scenery, or special lighting). Here, narrative material refers to verbatim scripts of clinician-patient interactions. Speakers will share regarding the process of developing structured stories and the outcomes of implementing storytelling in different environments. Attendees of this session will participate in a facilitated narrative medicine-based exercise to experience the transformational effect of stories. Facilitated discussion will also encourage researchers, clinicians, educators, and policymakers to share how they have used stories to disrupt the current narratives and paradigms about pain.

At the end of this session, participants will be able to:

- Recognize the role of stories and storytelling in chronic pain research, clinical practice, advocacy, and education.
- Discuss the role of storytelling and different methods of storytelling in order to facilitate transformational learning in health professions education.
- Demonstrate the power of storytelling in chronic pain research and education through an interactive narrative medicine-based exercise of close reading and prompted writing.

Speaker One

Title: What's in a Story? Harnessing the Power of Narrative Medicine in the Study of Pain
Q. Jane Zhao
Toronto Rehabilitation Institute, University Health Network

Abstract

Introduction: "Narrative medicine" (NMed) is a term coined by physician and literary scholar, Rita Charon, who first applied concepts from literary analysis to her clinical encounters. The focus on patient narratives allowed for more holistic understanding of her patient's condition, increased empathy, and enhanced communication. Over the years, NMed has been incorporated into undergraduate and graduate-level health professions education.
The practice of NMed involves two main techniques: close reading and reflective writing. In this presentation, we discuss how NMed can be applied in the study of pain.

Methods: We present a narrative review NMed in health professions education. We then apply this approach in one example around the education of chronic pain.

Results: NMed has been increasingly integrated into health professions education since the 2000s. NMed-trained clinicians have demonstrated increased empathy and reflective practices, improved communication and critical thinking skills, and gained a deeper understanding of holistic patient care. Applying NMed to teach about chronic pain, learners may begin shift their narratives around people with pain. For example, a learner may gain perspective about a patient's psychosocial factors that influence care or become more aware of their own biases and expectations as a clinician.

Discussion/Conclusions: Stories and art can offer new entries into old problems. NMed is a rich field of study that allows clinicians and researchers to gain perspective and skills that facilitate better patient communication and care. NMed can offer a space to critically engage in the education, research, clinical management, and advocacy of chronic pain.

Speaker Two

Title: Challenging stigma related to chronic pain and substance use through graphic medicine storytelling

Susan Tupper
Saskatchewan Health Authority

Abstract

Introduction/Aim: People living with chronic pain report experiences of discrimination which intersect with stigma related to substance use, race, gender, and poverty. Although multifaceted approaches are needed to address stigma, healthcare providers are encouraged to examine underlying biases and assumptions that contribute to difficult healthcare encounters, patient marginalization, and harm. We used a narrative inquiry approach to develop graphic medicine stories for healthcare provider education.

Methods: Narrative interviews were conducted with n=13 people living with pain who use substances and n=5 multidisciplinary healthcare providers. Following narrative analysis, stories were generated through participatory, iterative meetings with researchers, patient partners, clinicians, Indigenous Knowledge Keepers, and graphic designers. Reflexive thematic analysis of interviews with n=6 people living with pain and n=6 healthcare providers, and a focus group with n=7 healthcare educators were used to explore perceptions on key learning opportunities and inform the knowledge mobilization plan.

Results: Three graphic medicine stories were developed depicting difficult healthcare encounters in a family medicine practice, emergency department, and surgical ward with calls to action to address structural and interpersonal stigma. Reflection interviews revealed a range of learning opportunities related to interpersonal communication, self-reflection on biases, and pain knowledge and skills. Healthcare providers and health system decision-makers were identified as key knowledge mobilization targets and interprofessional healthcare learners as intended recipients.

Discussion/Conclusions: Graphic medicine stories created through a participatory, patient-engaged approach provide an educational resource for healthcare educators to support self-reflection and transformational learning that can challenge stigma toward people living with chronic pain who use substances.

Speaker Three

Title: “Your Partners Will See You Now”: Exploring the Impact of a Reader’s Theatre Script on Learner Perceptions of Patient Partnerships

Sylvia Langlois
Centre for Advancing Collaborative Healthcare & Education (CACHE), University of Toronto,

Abstract

Introduction/Aim: Patient partnership with the health and social care teams is evolving, yet the process of understanding and facilitating the partnership continues to be challenging for many clinicians and learners. However, learners can be prepared to consider these approaches through their training in health professions programs. Engaging in a Reader’s Theatre activity encourages participants to step into the shoes of patients, thus giving voice to the patient’s experience.

Methods: A faculty/student team interviewed five patients and three providers. Transcribed interviews were coded and quotations were used to create a themed, verbatim script, “Your Partners Will See You Now.” Health profession students from nine programs were assigned one of the voices in the verbatim script and read them in Reader’s Theatre format. Following completion, students wrote a one-page reflection. Inductive thematic analysis of the reflections explored learners’ experiences and their understanding of patient partnership.

Results: Data consisted of 550 submitted reflections from learners in Medicine, Nursing, Pharmacy and Occupational Therapy. Themes included: developing insights through the patient perspective; recognizing attitudes that promote therapeutic partnerships; promoting partnerships with patients; and advocating for the patient to be a team member.

Discussion/Conclusions: Immersion into the patient’s voice through this participatory Reader’s Theatre experience fostered learning regarding patient partnerships with the healthcare team and deepened learner reflexivity of their clinical practice. In 2023, three additional interviews informed revisions to the script to address important concepts related to equity and diversity and the resulting impact on the healthcare team relationships.

Session Title: When the body tells the story: Reciprocal associations between chronic pain and trauma across the lifespan

Session Chair: Maddison Tory
HUGS Social Enterprise

Session Abstract

Trauma, including adverse childhood experiences (ACEs) and childhood maltreatment, triggers a host of neurobiological (e.g., altered central nervous system circuitry) and psychosocial changes (e.g., posttraumatic symptoms) that create vulnerability for chronic pain onset. Shared factors that maintain both posttraumatic stress symptoms and chronic pain have been examined predominantly in adult and youth samples presenting with chronic pain at tertiary pain clinics. Little is known about chronic pain, its prevalence, characteristics, and associated factors in people who experienced ACEs and live with pain, but do not necessarily present at specialized clinics. Further, existing treatments for chronic pain rarely assess or address past ACEs and associated symptoms. Maddison Tory, international motivational speaker, founder and CEO of HUGS Social enterprise, and author of Your Secret Superpower: Ignite your Spark, will chair this symposium. Dr. Pavlova will present key findings of a recent systematic review

and meta-analysis of chronic pain prevalence in youth exposed to ACEs, as well associations between ACEs and pediatric chronic pain. Dr. Tsur will discuss pain as an inherent part of ACEs (with a focus on childhood maltreatment) and report on potential mechanisms that explain how ACEs create vulnerability for later-onset chronic pain. Dr. Miller will discuss the impact of trauma on treatment of pediatric chronic pain, and the effects of trauma on placebo and nocebo responses. The panel includes an interdisciplinary group of clinical researchers applying a developmentally informed lens to examine reciprocal associations between chronic pain and trauma and new avenues in treatment of co-occurring pain and trauma.

At the end of this session, participants will be able to:

- Examine how trauma influences treatment responses in youth.
- Investigate the prevalence and characteristics of acute pain during child maltreatment, as well as intrusive posttraumatic pain symptoms.
- Describe the prevalence of pediatric chronic pain in youth exposed to adverse childhood experiences (ACEs), as well as associations between ACEs and pediatric chronic pain.

Speaker One

Title: The influence of trauma on placebo and nocebo brain responses in youth

Jillian Miller
University of Calgary

Abstract

Trauma is associated with the development of chronic pain in youth. Treatments for chronic pain rarely include trauma-informed care and are often limited to medications. However, pharmaceutical treatments for chronic pain have low response rates, and often demonstrate little to no superiority to placebo. Enhancing placebo (related to positive expectations of treatment) and reducing nocebo (related to negative expectations of treatment) effects may significantly improve treatment outcomes for youth with chronic pain. However, it is currently unknown how trauma may influence placebo and nocebo responses in youth. 75 youth between the ages of 14-18 years will be asked about their adverse child experiences (ACEs) and undergo an MRI and pain testing at the Alberta Children’s Hospital. During their lab visit, a 3x3 grid will be drawn on their forearm, and a single cream, dyed 3 different colours (blue, pink, and white) will be spread across this grid, 1 colour per row. Participants will be made to believe that the pink cream increases sensitivity to heat (nocebo), the blue cream decreases sensitivity to heat (placebo), and the white cream is neutral (does not change heat sensitivity). Pain perception and responses to heat pain will be recorded using a 0 to 10 rating scale and functional MRI. We will examine whether higher ACEs (4 or more) are associated with lower placebo and greater nocebo responses in youth compared to those with lower ACEs (3 or less). It is important for clinicians to understand how trauma histories influence treatment responses in youth.

Speaker Two

Title: Peritraumatic pain and intrusive pain symptoms during and following child maltreatment

Symposium Speaker 2

Noga Tsur
Tel Aviv University

Abstract

Extensive findings point to the risk of chronic pain following trauma in general, and child maltreatment (CM) in particular. However, coherent explanations for the mechanisms underlying these processes are lacking. This study sheds light on two potential factors that have barely been tested for their relevance for chronic pain following CM: peritraumatic (acute) pain during CM incidents, and posttraumatic intrusive pain symptoms (i.e., pain flashbacks).

Study 1 included two samples of adult CM survivors (Sample 1: N=120, Sample 2: N=164). Study 2 included 164 adult CM survivors (Sample 2), and a community sample of 430 women (Sample 3). Participants completed self-report questionnaires.

The results of Study 1 showed that peritraumatic pain was reported by 57% (n=69) and 42.2% (n=76) of participants in Samples 1 and 2, respectively. While pain was most prevalent in physical abuse (90%), it was also prevalent in sexual (63%) and emotional abuse (37.5%). Peritraumatic pain was most prevalent when the perpetrator was a family member, and in longer CM duration. The tendency to conceal peritraumatic pain was associated with later cPTSD. The results of Study 2 revealed that 23.1% of Sample 2 (n=37), and 8.9% of Sample 3 (n=36) reported pain flashbacks. Participants who experienced pain flashbacks reported more severe CM, and more cPTSD symptoms compared to controls. Pain flashbacks were correlated with a higher risk of chronic pain.

These findings demonstrate that pain is a substantial constituent of CM experience, and inherently woven within posttraumatic symptomatology. Potential explanations for later chronic pain will be presented.

Speaker Three

Title: Prevalence and characteristics of pediatric chronic pain in youth exposed to Adverse Childhood Experiences (ACEs): A systematic review and meta-analysis

Maria Pavlova
University of Guelph

Abstract

Adverse childhood experiences (ACEs), including childhood maltreatment, are common among youth, with over 50% reporting the experience one or more ACEs. ACEs impact developmental trajectories increasing the risks for mental and physical health struggles across lifespan. There is emerging evidence that ACEs exposure is frequent in youth presenting with chronic pain (i.e., pain lasting > 3 months). In epidemiological samples, exposure to ACEs was associated with higher rates of chronic pain. However, there has not been a systematic review of existing evidence regarding prevalence of pediatric chronic pain and its association with ACEs in youth exposed to ACEs. The present study aims to fill this gap.

Articles included in meta-analysis were drawn from the ACEs Catalogue that was formed from searches of MEDLINE, Embase, and PsycINFO databases in 2018, 2021, and 2023. Three studies reported the prevalence of pediatric chronic pain in youth exposed to ACEs. Ten studies reported on the association between ACEs and pediatric pain. The prevalence of chronic pain in youth who experienced ACEs varied from 7% to 21%. Cumulative number of ACEs were associated with somatic symptoms (r = .22) and pediatric chronic pain (r = .06).

Chronic pain may be overlooked and, as a result, not managed in youth exposed to ACEs. Youth who experienced maltreatment and/or household dysfunction are potentially at a higher risk of suffering from the cumulative effects of maltreatment and chronic pain. Establishing the prevalence and characteristics of chronic pain in this population is the first step in addressing this issue.

Session Title: Invasive procedures for low back pain - nerve blocks, surgery, neuromodulation - who, when and why to offer?

Session Chair: Anuj Bhatia
University of Toronto

Session Abstract

The treatment of low back pain (LBP) remains a public health concern with a growing cohort plagued by medically refractory, unrelenting pain and disability that ruins their quality of life and productivity. A holistic biopsychosocial approach (medications, physical therapy and mental health treatments) can help many patients with LBP. Interventional treatments for low back pain including nerve blocks, surgery, and neuromodulation implants are often offered to patients who do not respond to conservative measures. It is vital to be aware of the indications for these invasive treatments and to understand the potential for benefit and harms from these treatments. Nerve blocks include epidural and intra-articular (facet and sacroiliac joints) steroid injections and radiofrequency ablation of innervation to spinal joints.

Surgical options include discectomy and decompression with or without spinal fusion. Neuromodulation is defined as the alteration of nerve activity through targeted delivery of a stimulus through implants such as spinal cord stimulators. These invasive therapies share some key features linked to positive outcomes - appropriate selection of individuals likely to benefit, appropriate pre-procedure diagnostic tests, procedural considerations, and the importance of periodic long-term follow-up to assess efficacy and harms. The analgesic impact of these therapies including magnitude and persistence of benefit will be presented at the symposium along with implications for cost and adverse effects. The four speakers including a person with lived experience of pain and these treatments will address different aspects of this topic including domains that need more research.

At the end of this session, participants will be able to:

- Describe the types of nerve block procedures and their application in relieving low back pain.
- Recognize and appraise the role of surgical procedures for low back pain including their indications and limitations.
- Identify the indications for neuromodulation for treating common refractory LBP syndromes and the evidence-base supporting these.

Speaker One

Title: Nerve block procedures for low back pain

Abeer Alomari
University Health Network, University of Toronto

Abstract

Nerve blocks including epidural steroid injections, intra-articular injections in the lumbar fact and sacroiliac joints, and radiofrequency ablation procedures to denervate these joints are used as diagnostic and therapeutic tools for patients with LBP. Among patients with chronic non-radicular LBP, commonly cited sources of pain include 10-15% with zygapophyseal (facet) joint pain, 15-20% with sacroiliac joint pain, and 40% with pain from internal disc disruption. Back pain sources are further nuanced by an understanding of myofascial and ligamentous sources of pain. Image-guided nerve block procedures can help identify and treat patients who have specific anatomical generators for their LBP. There are ongoing investigations on the type of injectates employed for these blocks (local anesthetics, steroids, dextrose, platelet-rich plasma), optimal injectate volumes, frequency of procedures, and relevant patient-centric outcomes. Recent guidelines on the role of these procedures highlight the level of available evidence and the need for outcome-based research. This talk will present the current status of these interventions in treating LBP, importance of utilizing these procedures in a multimodal approach, and summarize recommendations from Canadian and international guidelines.

Speaker Two

Title: The role of spinal surgery in the treatment of low back pain

Raja Rampersaud
Toronto Western Hospital

Abstract

Acute LBP is frequently self-resolving, but recurrence is common, and a significant proportion of patients will develop chronic LBP. This transition is perpetuated by anatomical, biological, psychological and social factors. Spinal surgery has a role in alleviating radicular pain and disability resulting from neural compression, or where LBP relates to cancer, infection, or spinal instability. The evidence base for spinal surgery with pain as the primary symptom is weak. Given the high rates of imaging abnormalities of degenerative spinal disease in both symptomatic and asymptomatic individuals, the findings frequently prompt referral to a spinal surgeon. This may then be associated with increased rates of intervention, resource utilisation, and the potential for adverse outcomes. This talk will highlight the importance of appropriate patient selection for spine surgery, a multidisciplinary approach in managing LBP, and ensuring common outcome goals for patients and surgeons. Indications (disc herniation with neural compression, spinal stenosis, instability) and outcomes for common surgical interventions including discectomy, decompression and fusion surgery will be presented and discussed. The role of newer minimally invasive surgical techniques for LBP and domains for evaluating outcomes and research will also be presented.

Speaker Three

Title: Perspectives of a person with lived experience of pain and neuromodulation implant for low back pain
Pilar Szarko
Toronto Western Hospital

Abstract
Ms. Szarko will provide a lived experience perspective of LBP and implanted neuromodulation therapy. She will begin by sharing the beginning of her journey with LBP including her experiences with psychological, pharmacological, and physical strategies for pain management. She will also present her experience with spinal cord stimulation (SCS) assessment, trial, and implant. She will discuss the impact of SCS on LBP, physical and mental health, and quality of life.

Session Title: Critical approaches to pain research: What is it and how might it be useful to understand issues of equity?
Session Chair: Desmond Williams
PEPR Partnership

Session Abstract
There is growing interest in issues of equity and social justice in chronic pain research, in part based on the growing awareness that rising social inequities impact both the prevalence of this condition and its management. However, we have fewer critical sociologists, and critical social scientists more broadly, represented among researchers in the chronic pain field. Yet there is a significant and growing body of work from these scholars that offers new insights and provides direction for alternative approaches to research that begin with the experiences of those living with chronic pain and marginalization. In this panel, the presenters will be speaking about 1) what "critical" means and how we can apply critical approaches to chronic pain research; 2) what a critical lens can offer when it comes to understanding chronic pain and marginalization and, 3) the findings of a specific study on pain that is grounded in critical disability studies. The speakers and Chair are all members of PEPR, a national SSHRC funded Partnership concerned with promoting equity, diversity, and inclusion (EDI) in patient engagement and building capacity for critical social science approaches to pain scholarship

At the end of this session, participants will be able to:

- Evaluate key underpinnings of critical social science research and their relevance to issues of equity in pain research.
- Formulate approaches that have been applied in research focusing on marginalization with recommendations for future use.
- Outline how a specific critical social science approach, namely critical disability studies, have been applied.

Speaker One

Title: What does it mean to be a critical scholar?
Fiona Webster
Western University

Abstract
This opening panel will offer thoughts aimed to promote discussion of what constitutes critical scholarship broadly. There are several definitions and approaches encompassed by this term. Often when people hear the term "critical", they think immediately of "criticizing". But critical scholarship refers instead to long-standing philosophies of science that understand the world as operating through unequal access to resources, with society organized around dominant groups who can define values that privilege their own interests, rather than through a system of shared values.

Therefore, critical scholarship draws attention to structures and systems that inform our understandings of the world, our health, our bodies and our health care systems. It takes up the assumption that knowledge is socially produced and is never neutral, thereby countering the dominance of objectivism in research. Critical scholars ask questions such as, "who benefits from this organization of thought or care?" and "how might we introduce systemic changes so that our systems are more equitable?" It is therefore concerned also with questions of social justice and moving beyond acceptance of the "status quo". The speaker will introduce three critical approaches that might be useful to researchers new to these approaches: feminist theories, critical race theories and critical qualitative research.

Speaker Two

Title: Understanding how marginalization has been taken up in chronic pain research
Laura Connoy
Western University

Abstract
As a complex and deeply intertwined social process, marginalization is often a challenging concept to grasp. Given that marginalization is an area of growing focus for those interested in equity in chronic pain scholarship, we conducted a scoping review to get a sense of how marginalization has been understood to date. Drawing on 67 studies, this presentation will focus on the critical synthesis of our findings: the need for considerations of sociopolitical and socioeconomic contexts; conflations between sex and gender; and problems in language use in describing people living with chronic pain. Our review identified that despite increasing attention to EDI, several challenges remain that limit our understandings of marginalization.

The presentation will therefore conclude with suggestions for how those who study chronic pain can better account for processes and effects of marginalization in ways that better support people living with chronic pain and advance social justice. This includes drawing from social science literatures and critical forms of scholarship to assist with clear understandings of marginalization; providing definitions and explanations of guiding conceptual or theoretical frameworks that are drawn upon in research on chronic pain and marginalization; and accounting for gender as a social construct.

Speaker Three

Title: Co-producing knowledge of disabled youth's 'everyday pain': A critical disability studies lens
Gail Teachman
Western University

Abstract
'Everyday pain' for disabled youth includes care-related pain, or pain induced through activities thought necessary to manage the effects of impairment. Despite disproportionately higher rates of pain experienced by disabled youth compared to their non-disabled peers, almost no research has focused on this group. Moreover, what little research has been undertaken, has most often been framed through a narrow biomedical lens. In contrast to biomedical perspectives where disability is positioned as a deficit within individuals, critical disability studies draw on the embodied experiences and perspectives of disabled persons to argue that disability is produced through discriminatory and stigmatizing social relations.

This presentation provides an overview of emerging results from a line of research that draws on critical disability studies and uses participatory arts-based methods in collaboration with disabled youth to co-produce knowledge concerning the complexity of what it is like to live with pain as a disabled youth. Findings to date illustrate the ways that pain, disability, and impairment are often conflated to the extent that everyday pain may be taken for granted as an inevitable consequence of living with impairment and thus overlooked by clinicians, researchers, and even disabled youth themselves. By explicitly adopting a critical disability studies lens, our work highlights tensions in how disability is understood across fields and the ways these tensions contribute to material effects for disabled youth.

Session Title: Advancing Integrated Person-Centred Care with Digital Health Innovation for Chronic Pain Management: Insights from Co-design, Implementation and Evaluation
Session Chair: Regina Visca
McGill University Health Centre

Session Abstract
Quebec's Digitally-Enabled Integrated Care Program aims to enhance equitable access, patient engagement, care coordination, and continuity of care through digital solutions. While In the long run, digitally-enabled integrated care should be equitably beneficial for all members of society, evaluation efforts focused on understanding the impact of implementing digital health solutions on health outcomes, patient and provider experience and health system performance have not been a central component of deployment efforts. Understanding digital health's role in chronic pain care requires rigorous evaluation across all transformation phases—planning, implementation, and health system impact—to support comprehensive system change.

The session will feature panellists addressing three key transformation areas: (1) co-designing digitally-enabled care trajectories to align with user needs; (2) identifying opportunities and challenges in integrating digital health into routine practice; and (3) assessing the health system impact of digitally-enabled models. Each of these areas is critically important when considering how technology can help accelerate wider health system transformation efforts toward more integrated health care delivery.
The moderator will weave in concepts from implementation science and knowledge mobilization, prompting panellists to discuss challenges and opportunities related to technology adoption across

micro, meso, and macro dimensions of integrated care. The discussion will conclude with reflections on critical considerations and strategies necessary to ensure that patients remain central in the integration of technology into care models.

At the end of this session, participants will be able to:

- Develop a better understanding of how digital solutions and data can support access to integrated patient-centric chronic pain trajectories, improve coordination and continuity of care (informational, relational, management) and align with the Quintuple Aim for Health Care Improvement by advancing health equity, improving population health, enhancing the care experience, reducing costs, and supporting care team well-being.
- Share novel and innovative approaches to co-design, implementation, evaluation of a digitally-enabled integrated trajectory including unique opportunities and challenges for supporting scale and spread.
- Propose strategies related to telehealth, policy, governance and partnership building to further the broader adoption of effective telehealth solutions in Quebec's healthcare system.

Speaker One

Title: Designing, Implementing and Evaluating Digitally-Enabled Integrated Care: Insights from Multiple Phases of Transformation

Regina Visca
McGill University Health Centre

Abstract

Introduction: In Quebec, fragmentation of the health system and health data can hinder service delivery and compromise patient outcomes. To address these challenges, Quebec has integrated innovative digital technologies - virtual care coordination and telemonitoring - into chronic pain management pathways. This aims to improve accessibility, enhance patient engagement, facilitate care coordination, and ensure continuity of care. Using the Pan-Canadian Digital Health Evaluation Framework, we explore the opportunities/challenges of implementing digital health solutions and demonstrate their impact.

Methods: As part of a multi-phased mixed-methods study, participatory design workshops were conducted with key stakeholders during the planning phase to identify needs, conceptualize a prototype, and validate its functionalities. In the current implementation phase, semi-structured interviews are being conducted with decision-makers, healthcare providers, and patients to understand barriers and facilitators at micro, meso, and macro levels. Surveys were distributed to end users to evaluate appropriateness, acceptability, feasibility, effectiveness, value proposition, and outcomes related to the Quintuple Aim. The Framework Method will guide thematic analysis, while quantitative data will be analyzed using descriptive statistics.

Results: A co-design approach, coupled with evidence-based implementation strategies (e.g., education, network engagement, rapid-cycle evaluation), facilitated the integration of technology into complex care pathways. Preliminary data indicate that incorporating technology with clinical/administrative processes and people improves access to equitable care, coordination/continuity of care, and experience.

Discussion/Conclusions: User-centered co-design and evidence-based strategies guided the development and implementation of a digital approach to chronic pain management, optimizing processes to build capacity and strengthen patient-centered care, when and where they need it.

Speaker Two

Title: Agile Governance and Partnership Building : Enablers of Digital Health and Patient Centred Care

Michele Bleau
Centre intégré universitaire de santé et de services sociaux, Centre-Ouest-de-l'ile-de-Montreal

Abstract

Introduction: Effective governance and meaningful partnerships are crucial for the large-scale implementation and evaluation of sustainable digital health interventions. This study aims to identify key stakeholders involved from the planning to implementation phases and to understand their relationships and influence on organizational structures and processes necessary for successful digital health intervention.

Methods: An integrated knowledge translation and qualitative approach was employed to determine the governance structures and stakeholder partnerships required at macro, meso, and micro levels for a patient-centric digital health system. Semi-structured interviews were conducted with managers, clinicians, patients, and telehealth teams across eight local health networks in Quebec. The Framework Method will identify common themes regarding governance and partnerships from multi-stakeholder perspectives.

Results: An agile governance strategy has been established to support the design, implementation, and evaluation of a digitally-enabled chronic pain trajectory. This strategy fosters collaboration/engagement by addressing key domains such as policy, funding, security, interoperability, infrastructure, and analytics. Emphasizing flexibility, communication, and defined roles allows teams to adapt to operational needs while focusing on strategic goals. Key elements include patient agency, informed consent, and enhancing digital literacy. Building a network of relationships among political, regulatory, and community partners is vital for resource sharing and shared learning.

Discussion/Conclusions: The agile governance framework has facilitated seamless collaboration and alignment with strategic objectives in deploying a digitally-enabled care trajectory. By integrating cross-functional teams and promoting an iterative approach, stakeholders are empowered to make timely decisions to address ongoing challenges and fostering innovation and continuous improvement.

Speaker Three

Title: Creating an Enabling Environment for Effective Large-Scale Deployment of Sustainable Digital Health: The Role of Provincial Telehealth in Building Capacity and Driving Partnerships

Melissa Spenard
McGill University Health Centre

Abstract

Introduction: Implementing digital tools in healthcare requires careful consideration of how these tools interact with existing technologies, workflows, and personnel. This study presents a provincial telehealth

team's approach to navigating these complexities through a multi-site digitally-enabled care pathway intervention in Quebec, focusing on local priorities and co-designing change management strategies.

Methods: In partnership with the provincial telehealth team, an integrated knowledge translation and qualitative methodology is being used iteratively to identify barriers to implementation and co-create evidence-based strategies to address these needs. Semi-structured interviews are conducted with managers, clinicians, patients, and telehealth teams in 8 local health networks in Quebec. The Framework Method is being used to identify common themes in change management.

Results: To address low initial adoption, three evidence-based strategies were co-designed:
1. Flexible Training/toolkits were redesigned to be available online 24/7, offering professionals convenient access and increasing engagement and digital knowledge/proficiency.
2. Consistent, agile and proactive communication was adapted for each healthcare establishments across all phases of deployment, fostering trust, collaboration and engagement of key partners.
3. Tailored change management support was provided to address ongoing challenges, with iterative small tests of change to refine strategies based on stakeholder feedback. These approaches reduced resistance and empowered establishments to innovate sustainably.

Discussion/Conclusions: A user-centered approach to change management is crucial for the successful adoption of digital health solutions. Continuous evaluation and adaptation of implementation strategies to local contexts ensure sustainability and effective telehealth delivery across Quebec, highlighting the critical role of the provincial telehealth team in this process.

Concurrent Session Six

Session Title: Should disease explanations of chronic pain guide anti-stigma interventions?
Session Chair: Karen Davis
University Health Network, University of Toronto

Session Abstract

Chronic pain continues to be under researched, underfunded, and poorly understood. The combination of these factors contributes substantially to chronic pain stigma which has immeasurable impact on the everyday lives of people with chronic pain. In recent decades, advocates have argued that many chronic pain conditions should be considered a disease or even a brain disease in its own right to help legitimize chronic pain and reduce stigma. However, whether disease framings will reduce pain stigma is unknown. This has implications for public anti-stigma campaigns as the evidence of what works best to reduce stigma is mixed. Our symposia adopts a multidisciplinary approach to explore ethical strengths and limitations of disease framings on chronic pain for potential pain anti-stigma efforts.

Each speaker provides a diverse perspective to the topic beginning with 1) reporting on a qualitative study of adults with chronic pain in Canada on their perspective on disease models and its relationship to stigma, 2) discussion of the findings from a critical disability studies perspective, and 3) perspectives on the learned and lived experience in chronic pain from a researcher and person experiencing chronic pain. Through our collective lived experience and learned expertise, we hope to illuminate the complexities of disease framings of chronic pain and explore potential avenues for improving chronic pain care to reduce stigma.

At the end of this session, participants will be able to:

- Identify ethical strengths and limitations for framing chronic pain as a disease or brain disease from empirical bioethics, critical disability studies, and lived experience perspectives.
- Describe historical examples of disease framings of conditions such as the brain disease model of addiction or genetic explanations of mental illness and the influence these framings have had on stigma.
- Provide evidence-informed recommendations to guide anti-stigma efforts in pain management.

Speaker One

Title: What can we learn about stigma from disease explanations of chronic pain?
Daniel Buchman
University of Toronto, Centre for Addiction and Mental Health

Abstract

Introduction: Chronic Pain is highly stigmatized. Pain scientists are using tools such as advanced neuroimaging and AI to identify objective and reliable biomarkers of chronic pain. The goal is to help place chronic pain within a disease state which many believe will help reduce stigma. However, whether this will transpire is unknown. The aim of this study is to investigate the meaning and significance of a brain disease model of chronic pain on stigma among people who live with chronic pain.

Methods: We used a qualitative description research design informed by phenomenology and moral experience to conduct semi-structured interviews with adults who live with chronic pain in Canada. We analyzed 31 interviews using a codebook approach to thematic analysis.

Results: Our preliminary analysis generated three themes: the potential validating and invalidating effects of a disease label, the potential validating and invalidating effects of a physical representation of their brain through brain imaging, and the contradictory role of the brain as central to these potentially stigmatizing determinations.

Discussion: Participants expressed both support for calling chronic pain a brain disease to legitimize their experiences, while also expressing concern that localizing the disease process in the brain would reinforce harmful stereotypes associated with mental illness and one's identity.

Conclusion: Our preliminary findings suggest that anti-pain stigma efforts which draw upon disease labels may have mixed meanings for people in pain. We should be careful that our framing of the aetiology of chronic pain helps to reduce stigma as opposed to entrenching it.

Speaker Two

Title: Chronic Pain and Stigma: Thinking with a Critical Disability Studies Lens

Brooke Magel
Centre for Addiction and Mental Health

Abstract

Introduction: Chronic pain has often been understood through a biomedical lens which has led to a push for framing it as a disease or a brain disease. While these approaches may be well intended, reducing chronic pain to a disease can limit chronic pain to individual pathology and traditional scientific thought and negate the political, systemic, and structural determinants.

Methods: Drawing upon the findings presented in the first talk of this symposia, I offer a critical disability studies theoretical framework to critically reflect on the conditions of stigma as a fundamental cause of population-level inequity for people living with chronic pain.

Results: Chronic pain should be constituted beyond individual (brain) disease-based pathology and normative ideologies so we can begin to investigate systems of oppression (e.g. racism and sexism) and systemic barriers (e.g. underfunding of pain program and inadequate financial support from provincial disability support programs) that severely entrench chronic pain stigma.

Discussion: Chronic pain stigma will continue to persist unless we actively address systems of oppression and structural factors. A critical disabilities studies perspective allows us to challenge the multiple intersecting systems that shape pain stigma and the lived experience of pain itself.

Conclusion: Critical disability studies offer a shift in perspective on chronic pain stigma as a structural issue (structural stigma). This suggests that our efforts to reduce stigma should be focused on systemic changes to work towards disability justice and improved health outcomes for people living with chronic pain.

Speaker Three

Title: The Dual Knowledge of Chronic Pain and the Implications for Pain Stigma

Emeralda Burke
Independent Researcher

Abstract

Introduction: Funders increasingly recognize the invaluable knowledge that people with chronic pain lived experience have, emphasizing the necessity of their engagement in research to ensure that findings are meaningful to their population. For example, pain researchers are using new tools and technologies, such as neuroimaging and AI, to better understand chronic pain to help legitimize it as a disease. Therefore, it is important to engage with people with lived experience to develop a deeper understanding of how these advancements might impact their lives and the stigma that they may face. Methods: As both a researcher and person living with chronic pain, I aim to harmonize the learned and lived experiences of chronic pain, emphasizing the importance of incorporating the dual knowledge in research on disease labels and stigma.

Results: The issue of whether chronic pain should be considered a disease is important but secondary to the need for tangible benefits for people with chronic pain, such as improved access to effective pain management.

Discussion: Research must actively include people with chronic pain to provide learned and lived perspectives on emerging technologies and new frameworks, such as disease labels, and how these might help or worsen the stigma they experience.

Conclusion: Pain researchers must meaningfully engage with people who have lived experience of chronic pain to ensure that knowledge creation and anti-stigma campaigns are non-stigmatizing.

Session Title: Struggling to manage chronic pain? A workshop to support your clinical practice and enhance patient experiences.

Session Chair: Jennifer Burton
Victorian Order of Nurses Canada - Ontario Branch

Session Abstract

Chronic pain is a common, yet complex condition managed mainly in busy primary care settings. The complex issues that may surround an individual with chronic pain include dynamic physical pains, progressing disability, mental health challenges, sleep disturbances and complications of long-term opioid therapy. Managing these problems in a family practice can be a daunting task for primary care providers in underserviced communities, lacking support and resources which further compounds the suffering of patients. While national chronic pain guidelines advocate for multidisciplinary approaches, such programs remain largely confined to urban areas.

This symposium brings together three diverse speakers to discuss how chronic pain programs have the potential to significantly impact patient care when informed by patients with lived experience and a strong evidence base. First, Dr Andrea Furlan will present on ECHO Ontario Chronic Pain and Opioid Stewardship, a virtual education platform designed to build clinician capacity in managing chronic pain through the delivery of evidence-based didactics and real-life case presentations. Second, Jennifer Burton, Nurse Practitioner, will describe the biopsychosocial model of the VON Chronic Pain Program

and how ECHO Chronic Pain informed program growth, leading to collaboration with primary care and improved patient experiences. Lastly, Cheryl Beland, a patient with lived experience of chronic pain, will tell her story. You will hear how Cheryl was supported by the VON Chronic Pain Program to identify her values and goals in order to mobilize an individualized pain management plan to improve pain and quality of life.

At the end of this session, participants will be able to:

- Recognize the benefits of adopting evidence from ECHO Chronic Pain and Opioid Stewardship into chronic pain management.
- Advocate for biopsychosocial chronic pain programs to support patients and primary care providers in managing chronic pain within community settings.
- Reflect on the experience of the patient with chronic pain and how comprehensive chronic pain programs can improve pain and quality of life.

Speaker One

Title: Building clinician capacity for chronic pain management: The ECHO Pain model

Andrea Furlan
University Health Network, University of Toronto, Toronto Rehabilitation Institute, Institute for Work & Health

Abstract

Introduction: Extension for Community Healthcare Outcomes (ECHO) is a health professions education model, using telehealth technology to bridge specialists in academic centres to health care clinicians who work in community. The goal of ECHO is to disseminate best practice knowledge and foster interprofessional collaboration to support real patient cases. In 2014, amidst a national opioid crisis, the first Canadian ECHO was launched: ECHO Ontario Chronic Pain and Opioid Stewardship (‘ECHO Pain’). ECHO Pain expanded with the goal of educating, supporting, and improving chronic pain and opioid management in Ontario’s rural, remote, and underserved areas.

Methods: Rigorous multi-method evaluations of ECHO Pain are underway involving pre-post questionnaires and focus group discussions. Questionnaires assess changes in confidence, knowledge, and satisfaction. Focus group discussions explore clinician experiences, clinical behaviour change, and impact of ECHO.

Results: Since 2014, ECHO Pain has completed 20 cycles (419 sessions) for 924 participants equaling 22,600+ hours of Continuing Professional Development (CPD) credits and 573 case presentations. Of our 924 participants, 29% were physicians and 26% were nurse practitioners. Pre-post evaluations demonstrated positive changes in clinician confidence and knowledge, as well as high program satisfaction. Focus group discussions demonstrated nuanced benefits of ECHO Pain, including the development of a community of practice and strong adoption of ECHO Pain in rural and remote communities.

Discussion/Conclusions: Evaluation of ECHO Pain has demonstrated strong impact of the program on clinician knowledge and competence. ECHO Pain is a sustainable health professions education platform to build capacity and mobilize knowledge in Ontario and Canada.

Speaker Two

Title: The evolution of chronic pain programs: Meeting the needs of communities with a biopsychosocial approach.

Jennifer Burton
Victorian Order of Nurses Canada - Ontario Branch

Abstract

Introduction: The VON Chronic Pain Program, operational since 2011 in southern Ontario's Erie-St Clair region, supports primary care providers and patients to manage chronic non-cancer pain. Funded by Ontario Health, this program employs Nurse Practitioners and Counsellors to assess chronic pain, create individualized pain management plans and provide psychosocial support.
Methods: As the needs of our community evolve, ECHO Chronic Pain has provided a reliable platform to inform practice. The VON Chronic Pain Program has consistently utilized this virtual community to expand services within a biopsychosocial approach to address patient needs. Nurse Practitioners have begun prescribing and monitoring opioid tapers. Counsellors expanded their therapeutic approaches and launched a virtual chronic pain self-management group to accommodate growing mental health challenges.

Results: Since 2019, the program has assessed an average of 329 new patients annually, supported over 80 patients with opioid tapers and facilitated 124 group sessions. Preliminary outcome measures demonstrate a reduction in pain severity and pain interference scores. Patient satisfaction surveys demonstrate a 90% satisfaction rate and report feeling supported, listened to, safe and less alone since participating in our program. Primary care providers are grateful for the collaborative approach to caring for complex individuals.

Discussion/Conclusions: The VON Chronic Pain Program has evolved to create a safe and supportive environment where patients can access evidence-based treatment options and psychosocial support from a client centered perspective. Patient satisfaction data demonstrates the value of this approach. ECHO Chronic Pain has provided a strong evidence base for this model of care.

Speaker Three

Title: "I was so broken." The lived experience of chronic pain.

Cheryl Beland

Abstract

Introduction: Cheryl's referral to the VON Chronic Pain Program in 2020 marked a turning point in her struggle with chronic pain. She was trapped in a cycle of pain, depression, and fear, having lost friendships, employment, and hope. Her daily life was characterized by severe pain, depression, sleep difficulties, lack of focus, isolation, and despair.

Methods: Cheryl's family doctor referred her to the VON Chronic Pain Program for assessment and recommendations for her chronic pain. At the start of the COVID-19 pandemic, a phone call intake was the start of her journey toward connection and healing. It was important to Cheryl that she feel seen and heard for the suffering she endured every minute of every day. Her pain management plan, guided by her

values and goals, included an opioid taper, one-on-one counseling, a virtual chronic pain self-management group, and the VON SMART (at-home activity) program.

Results: Slowly Cheryl began to see progress; opioid doses lowered, depression eased, fear subsided. She rediscovered joy in neighborhood walks and socializing. Reaching her main goals were an important milestone and celebration, regaining her sense of self, discontinuing opioids and walking down the aisle on her wedding day pain free.

Discussion/Conclusions: Cheryl's story highlights the common struggles that people with chronic pain face every day and how a patient centered approach allowed her to meet her goals and feel supported along the way. Cheryl now has a variety of tools to employ when pain creeps in and an understanding that nothing lasts forever.

Session Title: From Evidence to Practice: Nurse-Led Research on Acute Pain Management

Session Chair: Monakshi Sawhney
Queens University, School of Nursing

Session Abstract
This symposium includes insightful presentations from nurse researchers that address acute pain management from diverse perspectives, highlighting the importance of understanding pain in various surgical contexts.

The first presentation focuses on the issue of pain as the primary reason patients return to the emergency department or have a hospital admission after ambulatory surgery. The presentation will provide information on which patients are most at risk of emergency department visit or hospital admission. It also discusses strategies to enhance post-operative care and education, ultimately aiming to reduce unnecessary emergency visits.

The second presentation explores the complex relationship between pain and sedation following surgery. It examines how sedation protocols impact patient outcomes, including pain levels and recovery times, emphasizing the need for tailored approaches that balance pain relief with sedation to optimize patient care.

The final presentation specifically addresses pain following breast surgery in South Asian women, an equity-deserving group. This research highlights unique cultural and social factors that influence pain perception and management in this population. By shedding light on the disparities faced by these patients, the presentation advocates for more inclusive pain management strategies that consider cultural contexts.

Together, these presentations underscore the necessity of a comprehensive understanding of acute pain management that incorporates diverse experiences and backgrounds. Attendees will gain valuable insights into improving patient care, enhancing recovery, and promoting equity in pain management practices.

At the end of this session, participants will be able to:
- Gain insight into practice and policy changes that can improve post-operative pain management and optimize patient recovery.

- Critically evaluate research findings on post-surgical pain management, focusing on disparities and differences in pain experiences across various demographics.
- Describe actionable strategies that can be implemented into acute pain management practices, enhancing care for all patients.

Speaker One

Title: Pain and haemorrhage are the most common reasons for emergency department use and hospital admission in adults following ambulatory surgery

Monakshi Sawhney
Queen's University, School of Nursing

Abstract

Introduction: Advances in healthcare delivery allow for the increase in the number of ambulatory surgery procedures performed in Canada. Despite these advances, patients return to hospital following discharge. However, the reason for unplanned healthcare use after ambulatory surgery in Canada is not well understood. Therefore, the aim of this study was to examine unplanned healthcare use, specifically emergency department visit and hospital admissions, in the 3 days after ambulatory surgery.

Methods: This population-based retrospective cohort study was conducted using de-identified administrative databases. Participants were residents in Ontario; 18 years and older; and underwent common ambulatory surgical procedures between 2014 and 2018. The outcomes included emergency department (ED) visit and hospital admission.

Results: 484,670 adults underwent select common surgical procedures during the study period. Patients had healthcare use in the first 3 days after surgery, with 14,950 (3.1%) ED visits and 14,236 (2.9%) admissions. The incidence of ED use was highest after tonsillectomy (8.1%) and the incidence of admissions was highest after appendectomy (21%). Acute pain (19.7%) and haemorrhage (14.2%) were the most frequent reasons for an ED visit and "convalescence following surgery" (49.2%) followed by acute pain (6.2%) and haemorrhage (4.5%) were the main reasons for admission.

Discussion/Conclusions: These findings can assist clinicians in identifying and intervening with patients at risk of ED use or hospital admission after ambulatory surgery. Importantly, pain management protocols and strategies that are tailored to the patient should be implemented, and earlier follow-up for some patients may be required.

Speaker Two

Title: Harnessing Knowledge in Expert Nursing Practice: A Picture of Opioid-Induced Sedation

Danielle Dunwoody
Brock University, School of Nursing

Abstract

Introduction: Within the pain management landscape, linear pain and sedation scales are not enough to support clinical judgement and prevent adverse events when using opioids to manage acute pain. As opioid-induced sedation exists on a continuum, it takes expertise to identify a patient at risk for advancing sedation.

Methods: Using an interpretive phenomenological design, twenty expert Post-Anesthetic Care Unit RNs were interviewed regarding their lived experiences assessing sedation in the context of managing patients with an opioid. Interviews were analyzed using a modified seven-stage process for interpretation by Diekelmann, Allen and Tanner (1989).

Results: Findings from the study revealed four themes that emerged from patients' stories including: (a) recognizing that all patients are different, (b) walking a fine line between effective pain control and minimum sedation, (c) engaging in iterative knowing and (d) looking beyond and anticipating. In addition to these themes, the study expanded the concept of level of sedation to include the components of (a) arousability, (b)hemodynamic and respiratory stability, (c)mobility/motor function, (d)cognition, and (e) safety.

Discussion: Nurses within the study adapted their practices around pain management with opioids, based on their experiences and expertise.

Conclusion: This study indicates a deeper complexity in the way opioid-induced sedation is assessed and balanced with pain management by nurses. By harnessing the knowledge in expert nursing practice, we can advance the science of acute pain management to meet our patient's needs, while safely delivering their care.

Speaker Three

Title: Postoperative Pain Intensity in South Asian Females with Breast Cancer Undergoing Mastectomy or Lumpectomy

Jasleen Farwaha
William Osler Health System

Abstract

Introduction: Breast cancer is the most common cancer diagnosed in Canadian females, with surgery being a primary treatment option1. Due to sociocultural backgrounds and fear of stigma, South Asian females face barriers in seeking care for breast symptoms, leading to the need for more extensive cancer treatments including lumpectomy and mastectomy.3,4,5 However, there is a void in research regarding the postoperative pain trajectory in South Asian females undergoing surgical interventions for breast cancer.

Methods: This descriptive observational study was conducted at one health care organization in the Greater Toronto Area. The primary outcome was feasibility of recruiting and retaining South Asian participants, with secondary outcomes examining post-operative pain intensity, pain-related interference and side effects of analgesics.

Results: Of 29 eligible South Asian females screened, 23 (79.3%) consented to participate. Participants had a mean age of 58.8 years (SD 13.3) and most were from India (60.9%). On postoperative day 1 participants reported a mean "worst" pain intensity of 6.3 (SD 2.4), and on day 7 mean pain was 4.5 (SD 2.5) by day seven. The most common analgesic used to manage pain was Tramadol. Pain interfered with usual activities, especially sleep, during the first week after surgery.

Discussion/Conclusions: This study provides information regarding pain and pain related interference with usual activities for females who undergo surgery for the treatment of breast cancer. It addresses existing disparities in knowledge by shedding light on the specific pain experiences encountered by South Asian females after breast cancer surgery.

Session Title: Embracing Diversity in Partnership: Engaging Equity-Deserving People with Lived Experience in Pain Research

Session Chair: Rebecca Pillai Riddell
York University

Session Abstract

Researchers are becoming more aware of their ethical responsibility to engage people with lived experience (PWLE) or patient partners in pain research. Many funding bodies worldwide have developed national strategies and programs to promote partnerships with PWLE in research. Although this is a positive change, many patient partners remain largely homogenous with limited diversity in terms of race, ethnicity, gender, age, and geography. Global events in the 2020s, particularly the murder of George Floyd in the US and Joyce Echaquan in Canada, highlight the oppression racialized, Indigenous, gender-diverse, and Disabled people experience, creating an increased need for Equity, Diversity, and Inclusion (EDI) within health and research institutions.

Often, with the best intentions, researchers have aimed to diversify the PWLE engaged in their work. Unfortunately, many PWLE have reported feeling tokenized and unsafe during engagement activities. There is a need to engage marginalized communities in pain research and practice, but a lack of guidance on how to ethically engage diverse communities.

Our panel discussion will share our experience and practical advice for engaging diverse communities in research. Vina Mohabir (she/her), SickKids, will discuss her work engaging diverse youth with pain across Canada in digital health research. She also has lived experience with pain since adolescence and has been a patient partner in research since 2010. Dr. Anna Hood (she/her), University of Manchester, will share her work applying an anti-racism lens when engaging children and youth with sickle cell disease. Dr. Jaris Swidrovich (they/he), University of Toronto, will share their work engaging Queer and Indigenous Peoples in research and applying a decolonial perspective to engagement. The panel will be chaired by Dr. Rebecca Pillai-Ridell (she/her), York University, who brings a wealth of insight from her many roles in health systems and years of experience engaging diverse communities in pain research.

At the end of this session, participants will be able to:

- Identify ethical strengths and limitations for framing chronic pain as a disease or brain disease from empirical bioethics, critical disability studies, and lived experience perspectives.
- Describe historical examples of disease framings of conditions such as the brain disease model of addiction or genetic explanations of mental illness and the influence these framings have had on stigma.
- Provide evidence-informed recommendations to guide anti-stigma efforts in pain management.

Speaker One

Title: From Patient Partner to PhD: Lessons in Partnership

Vina Mohabir
The Hospital for Sick Children, University of Toronto

Abstract

In Canada, patient partnership has become more common since the introduction of the Strategies for Patient-Oriented Research (SPOR) networks by the Canadian Institutes of Health Research (CIHR), which provide training and funding opportunities for Canadian researchers engaging patient partners in research. SPOR defines a patient partner as anyone with a personal experience of health issues. During this interactive discussion panel, Vina will share how she was engaged as a patient partner in research by her childhood nurse practitioner, which led to 15 years of patient partnership. Vina's experiences as a patient partner have highlighted the potential harms of engagement, including tokenization, stigmatization, discrimination, and traumatization.

As a truly empowered patient partner, Vina is now leading pain research through her PhD studies, engaging diverse, underrepresented children, youth, and caregivers at iOUCH Pain Lab supervised by Drs. Jennifer Stinson and Chitra Lalloo at the Hospital for Sick Children. With a team of passionate patient partners, Vina co-developed four questions for researchers to guide patient engagement. Using an example from her PhD work engaging diverse children, youth, and families living with painful conditions in research, Vina will share how researchers can apply these four questions to their own work when engaging patient partners.

Speaker Two

Title: Confronting Racism when Engaging People with Lived Experience in Pain Research

Anna Hood
The University of Manchester

Abstract

In a society embedded with White supremacy, racialized people are confronted with frequent uncontrollable racist experiences that are stress-inducing and have the potential to produce traumatic responses. Engaging diverse people with lived experience (PWLE), embedded in colonial White systems, is not exempt from producing harm and trauma for racialized people.

Throughout Dr. Hood's career, she has engaged diverse Black populations with pain in research. Dr. Hood will discuss how systems of oppression, including implicit and explicit anti-Black racism impact the safety of Black PWLE engaging in research. Dr. Hood will share lessons learned and best practices for engaging Black PWLE in pain research, specifically from her work engaging Black children and young people living with Sickle Cell Disease. She will present strategies for pain researchers to confront anti-Black racism, while creating safety and trust during patient engagement. Learners will leave the session with practical strategies to incorporate principles of justice and anti-racism into their practice engaging Black PWLE in research.

Speaker Three

Title: Foundations of Engaging with Indigenous Peoples in Pain Research: Towards Decolonization and Indigenization

Jaris Swidrovich
The University of Toronto

Abstract

To fully move towards reconciliation, Indigenous Peoples must be meaningfully engaged and empowered in all areas of health systems. The lived experiences of Indigenous Peoples have continually been dismissed and invalidated by colonial, racial, and other systems of oppression. Western perspectives and biases are often brought with pain researchers when engaging Indigenous communities in research. These long-held biases driven by systemic racism inform Western ways of knowing and community engagement, which harm Indigenous Peoples with pain engaging in research.

Pain researchers must decolonize their engagement practices by acknowledging the painful history of Indigenous People on Turtle Island, honour traditional medicines and healing practices, and decolonize their practice when engaging communities in research. During this discussion panel, Dr. Swidrovich will share strategies for pain researchers to indigenize their community engagement practices and move toward true reconciliation in pain research.

Session Title: Transforming Pain Care: A Collaborative Journey in BC

Session Chair: Tori Etheridge
Pain Care BC

Abstract:

Introduction: Pain care BC (PCBC) is transforming pain care across the province by addressing variations in transitional and chronic pain care. This involves engaging with health system and community partners to create a BC Strategic Action Plan (SAP), develop Tiers of Service, work towards a model for Stepped Care, and foster collaboration through clinical, patient, and research networks. PCBC analyzed the pain care system through patient and provider journey mapping, identifying key challenges and opportunities. The outcomes, including patient, clinical, research and operational networks, promote patient-centered care and cross-region collaboration. Early results show improved connection, coordination and communication amongst clinicians working in pain as well as enhanced expertise of healthcare professionals.

Methods: A comprehensive analysis of BC's pain care landscape was conducted through surveys, patient-provider journey mapping and key health system and community partner interviews, and literature reviews. Focus groups with clinicians and patients identified challenges and opportunities. From here, networks were co-developed to support initiatives related to the SAP.

Results: BC's approach highlights the importance of engaging diverse partners, centering patient voices, and building collaborative networks. The BC SAP and networks are working to improve communication and coordination among practitioners, policymakers, researchers and the community. These efforts offer a data and evidence informed model of pain care improvements that can be scaled.

Discussion/Conclusion: Partners input shaped the BC SAP. Clinical, research and manager networks were created to foster collaboration across regions. The patient advisory group plays a crucial role by incorporating the perspective of those with lived experience. Clinical networks enhance collaboration across disciplines and regions, promoting unified efforts to improve pain care. The research network facilitates collaboration, knowledge sharing, and knowledge mobilization among researchers and clinicians. The Tiers of Service initiatives will ensure consistent and aligned planning across the healthcare system.

At the end of this session, participants will be able to:

- Recognize the comprehensive approach to the development of BC Strategic Action Plan for Pain, including patient journey mapping and health system partners engagement.
- Evaluate the importance of forming networks and advisory groups to enhance communication and collaboration among clinicians, policymakers, and researchers.
- Identify how to engage clinicians to work towards provincial competencies to strengthen the expertise and educational standards of healthcare professionals in managing chronic pain.

Speaker One

Title: Developing a Provincial Strategic Action Plan

Garry Palak
Pain Care BC

Abstract

This talk will explore the process of developing a strategic action plan to enhance pain care in British Columbia. The initiative began with a comprehensive analysis of the current pain care landscape, utilizing surveys, patient-provider journey mapping, key stakeholder interviews, and literature reviews. Based on these insights, a draft strategic action plan was created and refined through feedback from the executive steering committee and regional health authorities. The final plan highlights five key focus areas: improving access, enhancing education, standardizing care, measuring outcomes, and promotion/prevention. This session will discuss the collaborative approach taken and the next steps in implementing the plan.

Speaker Two

Title: Forming Provincial Networks and Engaging Clinicians to Enhance Educational Standards

Tori Ethridge
Pain Care BC

Abstract:

This talk will highlight the importance of forming networks and advisory groups to enhance collaboration among clinicians, people with lived experience, policymakers, and researchers. A key focus will be discussions on provincial pain competencies across allied health and nursing disciplines to strengthen expertise and educational standards in chronic pain management.

Speaker Three

Title: Tiers of Service framework and Stepped Care model and their role in aligning pain services with broader healthcare system.

Matt Smith
Pain Care BC

Abstract:

Developing a Tiers of Service framework and a Stepped Care Model is critical for improving patient outcomes and system coordination. This symposium will explore how a tiered model categorizes services to ensure patients receive the right level of care while identifying gaps and opportunities for system-wide improvements.

The Stepped Care Model for Transitional and Chronic Pain will work to provide a flexible, patient-centered, and trauma-informed approach, ensuring individuals receive appropriate care at the right time. It prioritizes early intervention, self-management, and seamless transitions between care levels, integrating principles of safety, trust, choice, and collaboration. Patients can move between steps based on their goals, values, and readiness for change, with care tailored to their evolving needs.

END